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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 1BR-DYE1623 /
Renewal – Amendment

October 27, 2016

Tamara Van Dyck, Coordinator
Environmental Services
Defence Construction Canada
180 Kent Street, 14th Floor
Ottawa, Ontario K1P 0B6

Email: Tamara.VanDyck@dcc-cdc.gc.ca

RE: NWB Renewed – Amended Licence No. 1BR-DYE1623

Dear Ms. Van Dyck:

Please find attached Licence No. **1BR-DYE1623** issued to Defence Construction Canada (DCC) by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Land Claims Agreement or NLCA)*. The terms and conditions of the attached Licence related to water use and deposit of waste are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee may be in contravention of the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least six (6) months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for 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,

Thomas Kabloona
Nunavut Water Board
Chair

TK/sj/ip

Enclosure: Licence No. **1BR-DYE1623**
Comments – AANDC

Cc: Qikiqtani Distribution List

¹ -Aboriginal Affairs and Northern Development Canada (AANDC), March 13 2015

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I Introduction

The Cape Dyer, DYE-M site is a former Distant Early Warning (DEW) Line site located on Cumberland Peninsula on the easternmost point of Baffin Island in the Qikiqtani Region, Nunavut. The site is approximately 150 kilometres southeast of Qikiqtarjuaq and 150 kilometres northeast of Pangnirtung. The site was upgraded in 1993 to an unmanned, Long – Range Radar (LRR) site to become part of the DND’s North Warning System (NWS), resulting in redundant infrastructure. Initial clean-up of site including the removal of unwanted structures occurred during the period 2004 – 2009, while continuation of clean-up activities and Phase II remediation activities occurred over the period 2011 – 2013. Full remediation of the site was completed in 2014, and no other construction and infrastructure work were undertaken subsequent to that period.

Following completion of site remediation activities, Defence Construction Canada (DCC) initiated a site monitoring program for the thirteen (13) landfills established during the site clean-up and remediation activities. However, as the water Licence issued in support of the remediation work expired in May 2014, the Licensee submitted an application to not only renew but also to amend the Licence to allow for the continuation of its post-remediation, landfill monitoring program.

II Procedural History

The application and supporting documents (the Application), excluded the amended application form, to renew and amend Licence No. 1BR-DYE0914 was submitted to the Nunavut Water Board (NWB or Board) by Defence Construction Canada (DCC) on behalf of the Department of National Defence (DND), on March 2, 2015. The Application consisted of the following documents:

- Amendment Application (Received on March 10, 2015);
- Amendment Cover Letter;
- Remote Camp Questionnaire;
- Monitoring Program Report 2015;
- Executive Summary (English);
- Executive Summary (Inuktitut);
- DND-NTI Agreement;
- Amendment Spill Contingency Plan;
- Amendment Monitoring Program Report 2015; and
- 2004 Screening Decision Report.

Following receipt and an internal preliminary review of the Application in which the proponent was requested to and provided clarification on certain aspects of its submission, the NWB distributed the Application on March 13, 2015, for a thirty (30) day public review and comment period with the deadline for submissions set for April 13, 2015. On or prior to the deadline for comments, the NWB received a submission from Aboriginal Affairs and Northern Development Canada (AANDC), now known as Indigenous and Northern Affairs Canada (INAC). The comments provided by AANDC generally pertained to the term or duration of the requested Licence, waste management issues, and the spill contingency plans.

With respect to pre-licensing consideration, the NWB received confirmation for the Nunavut

Planning Commission (NPC), on January 12, 2015, indicating that the Project falls outside of the area of the two approved land use plans currently in use. On April 2, 2015, the NWB received a copy of the Nunavut Impact Review Board's (NIRB) screening exemption decision for the Application.

All information received in support of the Application has been placed in the NWB's public registry, which can be accessed using the following link:

<ftp://ftp.nwb-oen.ca/1%20PRUC%20PUBLIC%20REGISTRY/1%20INDUSTRIAL/1B/1BR%20-%20Remediation/1BR-DYE0914%20DYE%20M/>

III Application Scope

The scope of the above-mentioned Application, as requested by the Licensee, is limited to renewal of the Licence for a term or period of twenty-five (25) years and amendments to the terms and conditions of the expired Licence to transition from remediation / reclamation activities to its Landfill Monitoring Program, now that the clean-up and remediation stages of the Project have been completed.

IV General Consideration

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

A. Term of the Licence

In accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* s. 45, 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 renewed and amended Licence to allow it to conduct its Landfill Monitoring Program for a specific duration and at pre-determined intervals. The term requested by the Licensee is supported by AANDC as indicated in AANDC's technical review comments for the Application.

Phase I of the Landfill Monitoring Program for the Project was initiated in 2014 and is expected to be ongoing for a period of up to five (5) years after which potential changes may be proposed to the monitoring program prior to initiating Phase II monitoring. Taking these factors into consideration, the Board has granted a seven (7) year term for the renewed and amended Licence. The term granted will provide the Licensee the time required to carry out Phase I monitoring as well as assess the results prior to consideration of a longer term licence under a future renewal application. Given the delay in the Board's issuance of this renewed and amended Licence, the term of the Licence is granted for the period 2016 to 2023, to reflect the time allocated for completion of Phase I monitoring plus added time for carrying out part of Phase II monitoring and/or renewing the Licence.

B. Annual Report

Under the reporting section in the Licence, Part B, Item 1, the Licensee is required to submit, on an annual basis, a report pertaining to the activities carried out under the Project during the preceding year. 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 a standardized form for reporting that licensees can use to submit annual reporting information, supplemented by other relevant details. 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

Under the expired Licence, the Licensee was authorized to use up to 110 cubic metres of water daily for domestic and other purposes related to the Project. The Licensee indicated in its Application that water use will be required during the monitoring program for sampling purposes only. Consequently, the Board has amended the quantity water allowed for use by the Project, with issuance of the renewed and amended Licence, to five (5) cubic metres annually for sampling and related purposes as stipulated under Part C, Item 1 in the Licence.

D. Waste Deposit

As stated above, the clean-up and remediation activities associated with the site have been completed; therefore, it is expected that the type and quantity of waste generated will be significantly reduced. Consequently, the Board has amended the relevant Licence terms and conditions related to waste disposal with issuance of the renewed and amended Licence to reflect changes in the management of waste generated by the project.

Specifically, terms and conditions allowing for the disposal of sewage at the sewage disposal facility or sewage lagoon have been removed from the Licence as this facility has been decommissioned following completion of clean-up activities. The Licensee is now allowed to dispose of any sewage and grey water generated during the monitoring program through the use of a sump or pit latrine. Further, terms and conditions related to the disposal of demolition rinse wastewater have been removed with the issuance of the renewed and amended Licence as the activities that generate such effluent have been completed.

E. Spill Contingency Planning

A Spill Contingency Plan, dated January 7, 2009, was approved under the expired Licence. A different Spill Contingency Plan, received March 2, 2015, was submitted as part of the Application to renew and amend the Licence, which the Board has approved under Part I, Item 1 of this Licence to supersede the one approved under the expired Licence. Notwithstanding approval of the aforementioned plan, the Licensee is required, under Part I, Item 2, to update the plan so as to address the comments and recommendations provided by INAC and the NWB, and submit the updates, in the form of an addendum to the Plan, within the next annual report for the Project.

F. Closure and Reclamation

The Licensee has indicated that reclamation activities associated with the Project have been completed and that extensive monitoring, which has already been started, would be undertaken until approximately 2038. Under the expired Licence, the Licensee was required to submit an Abandonment and Reclamation Plan at least six (6) months prior completion of on-site activities and contractor demobilization. While the plan was not submitted during the term of expired Licence, the Board has decided to not carry over this condition to the renewed and amended Licence as the main activities that would have been included in this plan have already been completed. General terms and conditions related to closure and reclamation have

therefore been included under Part J in the renewed and amended Licence.

G. Monitoring

The Licensee submitted a Landfill Monitoring Program as additional information with the Application, which the Board has approved under Part K, Item 1 in the renewed and amended Licence to supersede the program dated 2005 that was approved under the expired Licence. The Monitoring Program is designed to collect sufficient information to assess the performance of the landfills from geotechnical and environmental perspectives and will consist of four main components: 1) Visual Monitoring, 2) Soil Monitoring, 3) Groundwater Monitoring, and 4) Thermal Monitoring.

The visual monitoring component will assess the physical integrity of the landfills as well as examine the areas of concern for evidence of settlement, erosion, lateral movement and other factors. During this phase of monitoring, photographic records will be compiled to document general site conditions as well as to substantiate all recorded observations over time. Soil and ground water monitoring will include background or baseline assessment and contaminants evaluation for use in identifying impacts or changes in environmental conditions during and following operation of the landfills. In general, monitoring wells will be installed up-gradient and down-gradient of each landfill to monitor ground water quality. Thermal monitoring will involve the installation of thermistor strings and beads at specific intervals for the purposes of comparing and verifying ground temperature. A minimum of three thermistors will be installed at each landfill for which permafrost aggradation is inherent to the design.

Three (3) phases will be involved in the monitoring program: Phase I, which started in 2014, is expected to occur annually and last for a period of five (5) years and will consist of monitoring site conditions to confirm whether equilibrium is achieved. Upon completion of Phase I monitoring, the data obtained will be evaluated to determine if chemical and thermal equilibria are achieved and whether there are areas of the site that are experiencing stability issues. This Phase of monitoring is expected to be conducted by an independent contractor. It should be noted that although not all of the landfills on site require yearly monitoring, the Tier II disposal facility does require yearly monitoring; consequently, the Licensee has decided to monitor all waste disposal facilities on an annual basis.

Phase II Monitoring is scheduled to be carried out at intervals of 7, 10, 15, and 25 years and is designed to verify equilibrium conditions established in Phase I. At the end of Phase II monitoring an evaluation will be conducted to determine if the landfill performance is satisfactory from a geotechnical and thermal perspective.

Phase III Monitoring is expected to be conducted at 10-year intervals, if required, and following completion of Phase II monitoring. Although the scope of Phase III monitoring has not been determined, it is likely to involve identifying long-term issues such as liner integrity and permafrost stability. An evaluation of whether further monitoring will be required will be made after the 25-years.

To ensure that the monitoring program achieves its desired objectives, an Environmental Working Group (EWG), comprised of qualified engineering and environmental scientists with expertise in remediation and cleanup activities in northern environments, has been established to provide technical support and recommendations. The EWG will review the results of the monitoring program based on predetermined methodologies and provide recommendations

relevant to the monitoring program and / or remediation requirements to the Department of National Defence – Nunavut Tunngavik Incorporated (DND-NTI) Steering Committee.

QA/QC Plan

With issuance of the renewed and amended Licence, the Board allowed for the implementation of the previously approved *Quality Assurance (QA) and Quality Control (QC) Plan for the Collection of Effluent Samples at the DYE-M, (Cape Dyer) DEW Line Site*, revised September 2005. Given the date of the aforementioned document, the Board has included requirements in the Licence for the submission of an updated letter of acceptance to ensure that the QA/QC Plan fully meet the needs of the landfill monitoring program approved under this Licence.

H. Plan and Drawings

Under Part H, Item 1 in the expired Licence, the Licensee was required to submit to the Board for review, as-built plans and drawings within ninety (90) days following completion of construction activities or within sixty (60) days following issuance of the expired Licence. The Licensee submitted in 2015 copies of as-built drawings, which the Board accepts as meeting this requirement.

DECISION

LICENCE NUMBER: 1BR-DYE1623

This is the decision of the Nunavut Water Board (NWB) with respect to an Application dated March 6, 2015 for the renewal and amendment of a Water Licence made by:

DEFENCE CONSTRUCTION CANADA (DCC)

to allow for the use of water and deposit of waste during activities related to a Landfill Monitoring Program at the DYE-M, Cape Dyer, former Distant Early Warning Line (DEW) Site, located approximately 150 kilometres southeast of Qikiqtarjuaq and 150 kilometres northeast of Pangnirtung, in the Qikiqtani Region, Nunavut, generally at the following geographical coordinates:

Latitude: 66° 39' N

Longitude: 61° 21' W

DECISION

After having been satisfied that the Application was for a location that falls outside of an area with an approved Land Use Plan¹ as determined by the Nunavut Planning Commission (NPC) and exempt from the requirement for screening as described within Schedule 12-1 by the Nunavut Impact Review Board² in accordance with Article 12 of the *Nunavut Land Claim Agreement (NLCA)*, the NWB decided that the Application could proceed through the regulatory process. In accordance with s. 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (Act)* and Article 13 of the *NLCA*, public notice of the Application was given and interested persons were invited to make representations to the NWB.

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

Licence No. 1BR-DYE0914 be renewed and amended as Licence No. 1BR-DYE1623 subject to the terms and conditions contained therein (Motion #: 2016-B1-015).

Signed this 27th day of October 2016 at Gjoa Haven, NU.

Thomas Kabloona
Nunavut Water Board, Chair

TK/sj/ip

¹ Nunavut Planning Commission (NPC) Determination, January 12, 2015.

² Nunavut Impact Review Board (NIRB) Screening Exemption Decision, April 2, 2015.



NUNAVUT WATER BOARD
WATER LICENCE RENEWAL – AMENDMENT

Licence No. 1BR-DYE1623

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

DEFENCE CONSTRUCTION CANADA (DCC)

(Licensee)

180 KENT STREET 14TH FLOOR OTTAWA, ONTARIO 1K1P 0B6

(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-DYE1623 / TYPE “B”

Water Management Area: NORTHWESTERN DAVIS STRAIT WATERSHED (# 50)

Location: DYE-M, CAPE DYER DEW LINE SITE – POST-REMEDICATION LANDFILL MONITORING PROGRAM
QIKIQTANI REGION, NUNAVUT

Classification: INDUSTRIAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

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

Date of Licence Issuance: OCTOBER 27, 2016

Expiry of Licence: OCTOBER 26, 2023

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

Thomas Kabloona,
Nunavut Water Board, Chair

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the deposit of waste for an Industrial undertaking classified as per Schedule 1 of the *Regulations* at the DYE-M, Cape Dyer Landfill Monitoring Program Project, located approximately 150 kilometres southeast of Qikiqtarjuaq and 150 kilometres northeast of Pangnirtung within the Qikiqtani Region, Nunavut.

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

2. Definitions

In this Licence: 1BR-DYE1623

“**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;

“**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;

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

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

“Engineer” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“Existing Landfill Facilities” refers to all the landfill in the Monitoring Plan that predated clean-up activities;

“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 Facility” means existing facility designed and constructed to contain and/or treat Type “B” soil;

“Licensee” means the holder of this Licence;

“Modification” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

“Monitoring Program” means a program established to collect data on soil and water quality and for the purposes of assessing the performance of treatment facilities and impact to the receiving environment as described in the Plan entitled *Water Use Licence Amendment DYE-M, Cape Dyer Landfill Monitoring*, February 2015.

“Non-Hazardous Waste Landfill Facilities” means facilities constructed for the disposal of non-hazardous debris, demolition material, and Tier I contaminated soil;

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

“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 Defense 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

“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;

“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;

“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 all facilities designated for the disposal of wastes including the Tier II Disposal Facilities, the Non-Hazardous Waste Landfill (NHWL) Facilities and Existing Landfill Facilities and Landfarm Facility;

“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. A summary report of water use and waste disposal activities;
 - b. A list of unauthorized discharges and a summary of follow-up actions taken;
 - c. A summary of all waste backhauled for disposal at approved facilities as required under Part D;
 - d. A summary of any construction work, modification and major maintenance work (Including as-built drawings), carried out on the Waste Disposal Facilities,

- e. including all associated structures;
 - f. Tabular summaries and analyses of all data and information generated under the “Monitoring Program”
 - g. 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;
 - h. Any revisions to the Plans, as required by Part B, Item 7, submitted in the form of Addendums;
 - i. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
 - j. 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;
 - k. A copy of any public consultation/participation report describing consultation with local organizations and the residents of the nearby communities;
 - l. A brief summary of work done to address any concerns or deficiencies listed in the inspection reports and/or compliance reports prepared by an Inspector;
 - m. An executive summary in English, Inuktitut, and Inuinnaqtun of all plans, reports, or studies conducted under this Licence; and
 - n. 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, where applicable, install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes as required under Part K.
 4. 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.
 5. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
 6. 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.
 7. 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.
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8. The Licensee shall, within thirty (30) days following issuance of the Licence, post signs in the appropriate areas identifying the locations of the Waste Disposal Facilities, and the “Monitoring Program Stations”. All postings shall be in the Official Languages of Nunavut.
9. 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
10. 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.
11. 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.
12. 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 use up to five (5) cubic metres of water annually for sampling and related purposes. Total quantity of water for all purposes under this Licence shall not exceed five (5) cubic metres per year.
 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.
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4. The Licensee shall implement sediment and erosion control measures to prevent the deposition of dust and/or sediment into the Water Supply Lakes 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 distance 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 utilize the Waste Disposal Facilities authorized under the Licence for the continued treatment of acceptable waste generated by the Project until the appropriate treatment objectives are met.
3. The Licensee shall backhaul and dispose of all Hazardous Wastes and waste oil generated through the course of the operations, to an approved waste disposal facility.
4. 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.
5. 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.
6. 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.
7. The Licensee shall provide to the Board for, review, documented authorization from all communities in Nunavut receiving wastes from the DYE-M, Cape Dyer Landfill Monitoring Program prior to the backhauling and disposal of any wastes to those communities.
8. All discharged and/or contact water from the Waste Disposal Facilities shall not exceed the following discharge limits prior to being released in to the receiving environment:

Parameter	Maximum Allowable Concentration (µg/L)
pH	6 to 9 (pH units)
Oil and Grease	5000
Arsenic (total)	100
Cadmium (dissolved)	10
Chromium (dissolved)	100
Cobalt (dissolved)	50
Copper (dissolved)	200
Lead (dissolved)	50
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Zinc (total)	500
Benzene	370
Toluene	2
Ethylbenzene	90

9. If the effluent referred to in Part D, Item 8 does not meet the discharge limits, it shall be considered Hazardous Waste requiring collection, treatment and /or disposal off-site at an approved facility or as otherwise approved by the Board in writing.
10. The discharge location for the effluent described in Part D, Items 8 shall be at a minimum of thirty-one (31) metres from the ordinary High Water Mark of any water body and where direct flow into a water body is not possible and no additional impacts are created.
11. The Licensee shall not mix or blend soils that exceed the maximum levels of Tier II criteria for the expressed purpose of attaining the specific limits of Table No.1.
12. 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.
13. 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, upon the failure of any constructed facilities any constructed facilities fail, repair such facilities immediately to the appropriate standards as recommended by an Engineer.
2. The Licensee shall minimize disturbance to terrain, permafrost and drainage during extraction of granular material, development and closure of landfills, movement of contractor's equipment and personnel around the site and removal of site debris.
3. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
4. The Licensee shall implement sediment and erosion control measures prior to and maintained during the operation to prevent entry of sediment into water.
5. The Licensee shall design and construct all stream crossings to minimize erosion and/or deposition of waste into water.
6. The Licensee shall ensure that existing creek channels are maintained at their normal width and depth to the extent possible, during and after site remediation.
7. Granular materials and rock rip-rap used for any temporary stream crossings, approaches or as may be required for bank stabilization must be obtained from a source approved by an Inspector, and the material shall be clean and free of contaminants. Such material must not be removed or gathered from below the ordinary High Water Mark of a creek, stream or any water body.
8. All sites affected by remediation 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.
9. The Licensee shall restore and stabilize all areas affected by the undertaking upon completion of the work.
10. The 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.
11. Areas designated for waste disposal shall be located at a minimum of thirty-one (31) metres from the ordinary High Water Mark of any body of water, unless otherwise authorized.

PART F: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURE AND OPERATIONS

1. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes except what is for immediate use. Camps shall be located 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. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of water, ice, or snow and be removed prior to spring break-up.
4. With respect to access road, pad construction, demolition 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.
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 CONSTRUCTION AND MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to any Water Supply and Waste Disposal Facilities 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.
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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 Response Plan*, received March 2, 2015, as additional information for the Application.
2. The Licensee shall submit to the Board for review an Addendum Plan in Part I, Item 1, within the next Annual Report for the Project to address the following:
 - a. Inclusion of an NT-NU Spill Report Form;
 - b. Inclusion of spill response measures to address spills on different media, including land, ice/snow, and water;
 - c. Inclusion of Inventory of all chemicals stored on site;
 - d. Updating Section 3.2, *Communication and Contacts* section of the Plan, to reflect the recent name changes for AANDC and EC; and
 - e. Replacement of “Cape Hopper” in with “Cape Dyer” in the *Contact Information* section of the Plan; and
 - f. Inclusion of MSDS for any chemicals stored on site
3. The Licensee shall review the Plan referred to in this Part as required by changes in operation and/or technology and modify the Plan accordingly. Revisions to the Plan are to be submitted in the form of an addendum to be included with the Annual Report, unless directed otherwise by the Board.
4. The Licensee shall ensure that any chemicals, petroleum products or wastes associated with the project do not enter water. 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.
5. 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.
6. 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.
7. The Licensee shall, in addition to Part I, Item 6, 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 carry out progressive reclamation of any components of the project no longer required for the Licensee's operations
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 plan entitled *Water Use Licence Amendment DYE-M, Cape Dyer Landfill Monitoring*, dated February 2015, which was submitted as additional information with the Application.
2. The Licence shall replace the draft, as-built drawings contained in the Plan under Part K, Item 1 with finalized versions and resubmit Plan within the next annual report for by the Board.
3. In addition to the monitoring stations that may be established to address the monitoring requirements under Part K, Item 1, the Licensee shall maintain, as needed, Monitoring Program Stations at the following locations:

Monitoring Program Station Number	Description	Status
DYE-3a	Final Point of Discharge from the Non- Hazardous Waste Landfill (upper)	Active (Water Quality)
DYE-3b	Final Point of Discharge from the Non- Hazardous Waste	Active (Water Quality)

DYE-4	Final Discharge Point from the Landfarm Facility	Active (Water Quality)
DYE-5c (New)	Final Discharge Point from the Tier II Soil	Active (Water

4. The Licensee shall measure and record in cubic metres, the daily quantities of water utilized for all purposes under this Licence.
5. The Licensee shall measure and record in cubic metres, the quantities of effluent discharged from any Waste Disposal Facilities authorized under this Licence.
6. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of water are utilized for all purposes under this Licence.
7. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with camp operations are deposited.
8. The Licensee shall monitor compliance with respect to Part D Item 12, by collecting a representative composite sample from a minimum of 5% of the total volume of Effluent to be released from the Final Discharge Point of each of the Waste Disposal Facilities.
9. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board.
10. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025 for all required analyses. The accreditation shall be current and in good standing.
11. The Licensee shall implement the plan entitled *Quality Assurance (QA) and Quality Control (QC) Plan for the Collection of Effluent Samples at the DYE-M, (Cape Dyer) DEW Line Site*, revised September 2005, or any subsequent version there of accepted by the Board in writing.
12. The Licence shall provide an updated letter of acceptance within the next Annual report submitted for the Project, confirming that the plan under Part K, Item 11 is acceptable for the monitoring program requirements associated with the Plan approved under Part K, Item 1 of this Licence.
13. Additional monitoring requirements may be requested by the Inspector.
14. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.

Table No.1

(From INAC Abandoned Military Site Remediation Protocol)

DEW Line Clean-up Criteria (DCC)^a Substance	DCC Tier I^{b, c}	DCC Tier II^{b, d}
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.