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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **8BW-GJO1617**

July 7, 2016

Shawn Stuckey
Senior Administrative Officer
Hamlet of Gjoa Haven
Gjoa Haven, NU X0B 1J0

Jivko Jivkov
Principal
Jivko Engineering Ltd.
Box 1341
Yellowknife, NT X1A 1G3

Email: saogjoa@quinq.com
jivko@jivko.ca

RE: NWB Licence No. 8BW-GJO1617

Dear Mr. Stuckey and Mr. Jivkov

Please find attached Licence No. **8BW-GJO1617** issued to the Hamlet of Gjoa Haven 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 the use of Water and the deposit of waste are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB decides 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 three 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 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 interested persons on issues identified. This information is attached for your consideration.¹

Sincerely,

Thomas Kabloona
Nunavut Water Board
Chair

TK/sa/ip

Enclosure: Licence No. **8BW-GJO1617**
Comments

Cc: Kitikmeot Distribution List

¹ Indigenous and Northern Affairs Canada (INAC), January 4, 2016; Fisheries and Oceans Canada (DFO), January 4, 2016 and February 19, 2016

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BACKGROUND

In 2008 the Government of Nunavut (GN), Department of Economic Development and Transportation (ED&T) of the Hamlet of Gjoa Haven (the Applicant or the Licensee) planned the construction of a bridge over the Swan Lake River, at the same time, ED&T hired Jivko Engineering (Jivko) to design the bridge and acquire the necessary construction materials. Following this, in 2015 the ED&T retained Jivko in order to start the construction of the bridge in 2016.

Water Works Description:

According to the Summary of the Project provided with the Application, the site for construction of the bridge was selected following a visual inspection, a detailed geotechnical study was deemed unnecessary, and therefore it was not carried out.

At present, the site is used by local residents for fording the river with vehicles ranging from ATV's to heavy construction equipment; approximately 20 vehicles per day cross the river. As informed by the contractor, the bridge construction will positively impact the site environmental conditions by reducing the number of vehicles crossing within the river.

In summer and fall, the watercourse at the proposed location is between 12 m and 15 m wide and less than 0.3 m deep. The riverbanks, marginally vegetated with polar grass, are of slopes 1:8 to 1:12 towards the river. The longitudinal grade of the river is less than 0.5%. At High Water Levels during the spring thaw the river runs 35 m to 40 m wide and 1.0 m deep.

The Work is planned to be completed in three weeks. The bridge superstructure is a 29m long twin-girder-steel, single-lane construction fabricated of weathering steel. The bridge deck is 4.5 m wide; the deck is boarded with 0.70 m of high galvanised steel rail. The abutments will be steel boxes in-filled with a mixture of gravel and cement. Armour rock will be placed around the abutments to prevent washout and ice damage. In addition, approximately 120m of an Approach Road will be built on the north side of the bridge.

Also, approximately 400m² of staging area will be built adjacent to the bridge, to be used for material storage and pre-assembly of the abutment components. Eventually, this area could be used by local residents as Picnic Area.

Material for earthworks will be obtained from the local granular rock sources and it includes gravel and rock.

Regulatory Requirements Related to Waterworks:

All streams crossing work in Nunavut must be in compliance with Federal and Nunavut legislation, such as Fisheries Act, Canadian Navigable Waters Protection Act, Species at Risk Act, Nunavut Waters and Nunavut Surface Rights Tribunal Act and the Nunavut Waters Regulations.

The Fisheries Act is the main Federal Act related to fish, fish habitat, and water quality for the protection of fish. Anytime an activity has the potential to deposit a “deleterious substance” or

it has the potential to destroy or alter fish or fish habitat, the Fisheries Act is invoked.

Key sections of the Fisheries Act that the Applicant should be aware of are:

Section 35(1)

“no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat”;

and Section 36(3)

“... no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish...”

The Act is administered federally by the Department of Fisheries and Oceans Canada (DFO) and Environment Canada (EC, now Environment and Climate Change Canada, ECCC).

Nunavut Legislation, the Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSTRA) and the Nunavut Waters Regulations (NWR) apply to water works in Nunavut Fresh Waters. In addition, the Project Proposal must be in compliance with the requirements of the Nunavut Planning Commission (NPC), the Nunavut Impact Review Board (NIRB) and the Nunavut Water Board (NWB).

Best Practices Related to Water Works

Best practices are recommended techniques or methods of work that have been demonstrated to be effective and practical means of preventing or limiting harmful impacts to the fresh waters, fish, fish habitat and surroundings, such as those described in the DFO's documents, *Clear-Span Bridge Statement* and the DFO's *Timing of Works*.

The DFO's Clear-Span Bridge Statement

The construction of clear-span bridges is often preferred to structures that are placed within the stream bed and therefore result in loss of fish habitat or alteration of natural channel processes. In the construction of a clear-span bridge, the bridge structure (including bridge approaches, abutments, footings, and armouring) is built entirely above the ordinary *High Water Mark* (HWM). The DFO's document entitled *“Clear-Span Bridge, Fisheries and Oceans Canada, Nunavut Operational Statement”* assists the constructors in providing guidance to procedures or practices widely accepted as being most effective in order to avoid or mitigate impact to the water body during construction.

According to DFO, the Hamlet of Gjoa Haven's proposed bridge cannot be considered a Clear – Span Bridge². The proposed locations of the bridge abutments are below the river ordinary HWM and therefore, the bridge cannot be regarded as a Clear-Span Bridge. Nevertheless, the DFO allowed the proponent to follow the DFO's guidance for Clear-Span Bridges Nunavut Operational Statement. Further to that, the DFO asked the Applicant in the future, to design clear-span bridges that will be above the ordinary HWM of creeks and rivers (where possible).

² Department of Fisheries and Oceans (DFO)'s email, September 20, 2010

The Timing of Works

Fish and wildlife populations and their habitats can be significantly impacted at any time during the bridge construction. To reduce the risk of such impacts, the work can be limited to non-critical periods of the year or periods of least risk. These periods are referred to as reduced risk windows; they are established by DFO and may vary by provinces, species or watercourse.

Timing windows minimize harm to spawning habitat, fish eggs and juvenile fish by instream works, while also preventing impacts to adults and juveniles that may be migrating, over-wintering or rearing. Proponents must plan the timing of their work based on the specific reduced risk window for the Region in which the proposed works will occur.

During the NIRB's and the NWB's review period of the Application, DFO indicated its support to the Project, provided that:

“the proponent implement the required mitigation measures for its project, and follow the guidance available on DFO's website....”
“the proposal should not result in serious harm to fish or contravene sections 32, 33 or 58 of the Species at Risk Act.”

DFO also indicated³ that:

“in-water work (construction of the bridge abutments) be completed between July 1 and August 15. If grayling are present, then any in-water work should be completed between July 15 and Aug 15”

On February 26, 2016, the Applicant⁴ acknowledged DFO's recommendation and expressed disposition to comply with the specified timing window for the Project.

PROCEDURAL HISTORY

On July 10, 2015 the Nunavut Water Board (NWB) acknowledged receipt of an application for a new water licence (the Application) from Jivko Engineering Ltd. on behalf of the Hamlet of Gjoa Haven (the Applicant or the Licensee) for the construction of a bridge crossing over Swan Lake River.

The Application includes the following documents:

- Clear Span Bridges, Nunavut Operational Statement, DFO, on September 20, 2010
- Email from DFO to Jivko Jivkov, Bridge Abutments on September 20, 2010
- Swan L. River Bridge Drawing, General Layout, on November 14, 2014
- Project Status Report for DFO on November 14, 2014
- Email from J. Jivkov to NIRB Re: Gjoa Haven Bridge Construction on November 14,

³ email from DFO to NWB, Re: DFO Review Comments on file 8BC-GJO Application for a New Water Licence, dated February 19, 2016

⁴ email from Jivko Jivkov to NWB, Re: 8BC-GJO Application for a new Water Licence, dated February 26, 2016

2014

- Email Cover Letter on June 25, 2015
- General Layout, Elevation Plan on June 25, 2015
- General Layout, Side View of Abutment Timber Deck Detail, on June 25, 2015
- Hamlet of Gjoa Haven, NU, Swan Lake River Bridge Project Brief on June 25, 2015
- Application for a New Water Licence submitted on July 09, 2015
- Signed Application for a New Water Licence submitted on July 09, 2015
- Non – Technical Project Description English dated July 9, 2015
- Non – Technical Project Description Inuktitut dated July 9, 2015

In addition, more information pertaining to the Application was submitted as follows:

- Hamlet of Gjoa Haven, NU, Swan Lake River Bridge Construction, Additional Information dated August 5, 2015
- Hamlet of Gjoa Haven, NU, Swan Lake River Bridge Construction, Additional Information on Spill Contingency Plan dated September 11, 2015
- Hamlet of Gjoa Haven, NU, Swan Lake River Bridge Construction, Amendment to Additional Information on Spill Contingency Plan submitted on Sep 11, 2015, dated September 24, 2015
- Spill Contingency Plan for Construction of Swan Lake River Bridge Project, Gjoa Haven, Nunavut, submitted on April 12, 2016.

NPC and NIRB Requirements:

The Project falls outside of an area with an approved Land Use Plan, however, the NWB recognizes that since the implementation of the Nunavut Planning and Project Assessment Act (NUPPAA), all project proposals must first be screened by the NPC before proceeding to the water licensing stage. As such, NPC was required to provide the NWB with its determination regarding whether in this case a review of the Project Proposal is applicable. At the same time, the NPC was informed that the Project Proposal was submitted to the NIRB for screening on November 17, 2014.

The NPC responded that the given that NUPPAA came to effect on July 9, 2015, and the Project Proposal was received by the NIRB in late 2014 and it had been assessed by the NIRB, with no major modifications prior to July 9, 2015, the Application is exempt from NUPPAA and therefore NPC does not intend to review the Project Proposal. As such, and following NPC's recommendation, the Proposal was not submitted to the NPC for review⁵.

On September 9, 2015, following a thorough assessment of all material, in accordance with the principles identified within Section 12.4.2 of the NLCA, the NIRB issued its Screening Decision Report which allowed the Project to proceed to the licensing process without further review.

GENERAL CONSIDERATIONS

⁵NPC email on September 15, 2015

Although the application was first acknowledged by the Board as an application for the construction and coded under 8BC, however following the receipt of the full application package and review, timing and final review of the application and comments, it was determined that the file would be more appropriately addressed as a Water works rather than construction as the main undertaking is the bridge and coded under 8BW.

Term of 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 term of one (1) year to complete construction of the bridge. The NWB believes that a term of approximately one year is appropriate. The Licence's term will allow the Licensee to complete the bridge installation and will ensure that sufficient time is given to permit the Licensee to develop, submit, and implement the plans required under the licence to the satisfaction of the NWB.

Annual Reporting

Conditions included in the Licence related to Annual Reporting are for the purpose of ensuring that the NWB has an accurate annual update on the use of water and the deposit of waste during the calendar year. This information is maintained on the public registry and is available to interested parties 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 the NWB's public registry and FTP site using the following Link:

<ftp://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/>

Use of Water

No direct water use was requested for the Project as the Licensee indicated that it will not require any direct use of water. Accordingly, the Licensee is prohibited from withdrawing any water from nearby sources to carry out the project.

Deposit of Waste

The Applicant indicated that personnel associated with the project will either be residents of or reside within the community of Gjoa Haven, therefore, there will be no use of Water or deposit of Waste will at the project site and no camp infrastructure will be established. With respect to construction Waste generated by the project, all waste steel, wood, and other construction Waste shall either be reused or backhauled to the hamlet's landfill facility for disposal.

Construction Drawings and Plans

The Licensee submitted as part of its Application, design drawings for the structures to be constructed in connection with the Project, dated November 12, 2014. Following completion of construction activities, the Licensee is required to submit a construction summary report that includes as-built drawings of the facilities constructed under the licence.

Spill Contingency Planning

The Board generally requires that all Licensees prepare a comprehensive Spill Contingency Plan to establish a state of readiness to ensure a prompt and effective response to possible spills or system failure events. The site-specific spill contingency plan will assist the Licensee in responding to emergencies such that the impacts to water in particular and the environment and public health in general are minimized.

On April 12, 2016, following the recommendation of INAC and at request of the NWB, the Applicant submitted a Spill Contingency Plan entitled “Spill Contingency Plan for Construction of Swan Lake River Bridge Project Gjoa Haven, NU”; prepared by CAP Enterprises Ltd, undated. Following this, under condition F, Part 1 of the Water Licence, the Board has approved the submitted Spill Contingency Plan (SCP), a copy of the SCP shall be maintained at site during construction work.

Abandonment and Restoration

To ensure that all future abandoned facilities are reclaimed in an appropriate manner, the NWB has imposed appropriate terms and conditions under Part G of the Water Licence.

DECISION

LICENCE NUMBER: 8BW-GJO1617

This is the decision of the Nunavut Water Board (NWB) with respect to an application submitted on July 9, 2015 for a new Water Licence made by:

Hamlet of Gjoa Haven

to allow for the construction of a bridge across the Swan Lake River located approximately 8 km from the Hamlet of Gjoa Haven within the Kitikmeot Region, Nunavut and is generally located at the geographical coordinates as follows:

Latitude: 68°38'13.27" N Longitude: 95°59'41.17" W

DECISION

After having been satisfied that the application was for a location that falls outside of an area with an approved Land Use Plan⁶ and subject to a 12.4.4(a) Screening Decision by the Nunavut Impact Review Board⁷ 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:

New Licence No. 8BW-GJO1617 be issued subject to the terms and conditions contained therein. (Motion #: 2016-B1-005)

Signed this 4th day of July, 2016 at Gjoa Haven, NU.

Thomas Kabloona
Nunavut Water Board
Chair

⁶ NPC Confirmation dated September 15, 2015

⁷ NIRB Screening Decision Report September 9, 2015



NUNAVUT WATER BOARD WATER LICENCE

Licence No. 8BW-GJO1617

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to the

HAMLET OF GJOA HAVEN

(Licensee)

GJOA HAVEN, NU X0B 1J0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence:

Licence Number/Type: 8BW-GJO1617 / TYPE "B"

Water Management Area: KING WILLIAM ISLAND WATERSHED NO. 41

Location: GJOA HAVEN
KITIKMEOT REGION, NUNAVUT

Classification: OTHER UNDERTAKING

Purpose: WATERCOURSE CROSSING

Quantity of Water use not to Exceed: NO WATER USE IS AUTHORIZED

Date of Licence Issuance: JULY 4, 2016

Expiry of Licence: JULY 3, 2017

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

Thomas Kabloona,
Nunavut Water Board
Chair

Licence No.8BW-GJO1617

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the construction of a bridge crossing over Swan Lake River; the bridge is to be located within the Hamlet of Gjoa Haven, in the Kitikmeot Region of 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, **8BW-GJO1617**:

“Abutment” means the structure built to support the lateral pressure of an arch or span, e.g., at the ends of a bridge;

“Act” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Addendum” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report.

“Amendment” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

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

“Armoring” means the application of various materials to protect banks and shores of water bodies from erosion;

“Bank stabilization” means any works undertaken to protect or amour a bank or shore from erosion.

“Best Management Practice (BMP)” means a recommended technique shown to be effective and practical in preventing or limiting harmful impacts to the environment. Best Management Practices include any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces pollution. A practice, or combination of practices, that are determined to be the most technologically and economically feasible means of preventing or managing potential impacts.

“Bridge” means a structure spanning and providing passage over a gap or barrier, such as a river or roadway;

“Bridge Abutment” means that part of a bridge structure which supports the bridge span at the ends;

“Bridge Superstructure” means the part of the bridge structure which supports traffic, all the parts of the bridge which is mounted on a supporting system is classified as superstructure.

“Buffer” means the land that surrounds and protects an environmentally valuable resource against adverse effects of activities on, or encroachment from, adjacent land;

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

“Clear-span Bridge” means a stream crossing structure that spans the bank full channel and does not involve the construction or installation of any structure within the banks of the stream;

“Culvert” means one or more pipes, pipe arches, or structures covered with soil and lying below the road surface, used to carry water, but does not include log structures;

“Debris” means an accumulation of loose, predominantly coarse grained soil and rock fragments, and sometimes with large organic material such as limbs and trunks of trees, that have become mixed together in an unsorted fashion. The term is sometimes used to refer solely to organic materials as in "logging debris";

“Deleterious Substance” means a substance is deleterious if it is harmful to fish, if it limits the use of fish by humans (for example contamination of fish by dioxins or shellfish by E. coli), or if by going through some process of degradation, it harms the water quality (for example, oxygen-depleting wastes). A substance is also deleterious if it exceeds a level prescribed by regulation;

“Divert” means taking water from a stream and includes causing water to leave the

channel of a stream and making a change in or about the channel that permits water to leave it;

“Dredging” means an excavation activity or operation usually carried out at least partly underwater, in shallow seas or freshwater areas with the purpose of gathering up bottom sediments and disposing of them in a different location;

“Embankment” means a bank of earth or rock constructed above the normal ground surface, usually referred to as a bank;

“Embedded” means enclosed firmly in a surrounding mass;

“Ecosystem” means the dynamic and interrelated complex of plant and animal communities and their non-living environment. All parts of an ecosystem, including physical, chemical, and biological components, are interconnected; that is, they affect and are affected by all other parts;

“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;

“Endangered” means a species designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as facing imminent extirpation or extinction if limiting factors are not reversed;

“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*;

“Entrained” means when a fish is drawn into a water intake and cannot escape;

“Ephemeral” means seasonal, usually in reference to a watercourse that does not flow year-round or a wetland that is dry in summer months, also known as an intermittent stream;

“Erosion” means a process by which surface soil and rock is loosened, dissolved or worn away and moved from one place to another, usually by wind or water;

“Fish” includes parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals;

“Fish-bearing Waters” means a stream having a fish population present at some time during the year;

“Fish Habitat” means spawning grounds and nursery, rearing, food supply and

navigation areas on which fish depend directly or indirectly in order to carry out their life processes (Fisheries Act). Fish habitat comprises physical, chemical and biological attributes of the freshwater, estuarine, marine and terrestrial (riparian) environment that directly or indirectly supports fish populations, including streamside habitat;

“Fish Passage” means by which fish in a stream are able to pass by or through in both upstream and downstream directions;

“Fish Salvage” means the removal of imperiled fish populations by methods delineated in relevant regulation for their protection;

“Fisheries Window” means a time of reduced risk for important commercial, sport and resident fish species when instream construction is permitted;

“Freshet” means a large increase in water flow down a river or estuary, typically from heavy rains or melting snow;

“Grade” means the slope of road, channel, or natural ground;

“High Water Mark” means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

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

“Licensee” means the holder of this Licence;

“Mitigation” means actions taken during the planning, design, construction, and operation of a project to control, reduce or eliminate a potential adverse impact of a project;

“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;

“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;

“Permanent Stream” means a stream that typically contains surface waters or flows for periods more than six months in duration, also known as perennial stream;

“Permanent Structure” means any building or structure that was lawfully constructed, placed or erected on a secure and long lasting foundation on land in accordance with any local government bylaw or approval condition in effect at the time of construction, placement or erection;

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

“Riparian Area” means the area adjacent to a stream that may be subject to temporary, frequent or seasonal inundation, and supports plant species that are typical of an area of inundated or saturated soil conditions, and that are distinct from plant species on freely drained adjacent upland sites because of the presence of water;

“Riparian Vegetation” means vegetation adjacent to a watercourse, lake, swamp, or spring, which is generally critical for wildlife cover, fish food organisms, stream nutrients and large organic debris, and for stream bank stability;

“Sediment” means the material carried in suspension by a flowing body of water and which will ultimately settle to the bottom as water velocity decreases. Fine silt particles suspended in water are extremely difficult to remove;

“Sediment Control Plan” means a plan developed by a qualified professional to control sediment, and implemented prior to site preparation and construction;

“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” means an excavation in impermeable soil for the purpose of catching or storing water or waste;

“Timing Window” means a period of reduced risk during which a particular type of works are permitted. It is referred to by various terms including "reduced risk window" and "window of least risk". Timing windows vary depending on a site-specific basis, depending on which species may be present and the sensitivity of habitat.

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

“Water” or “Waters” means waters as defined in section 4 of the *Act*.

3. Enforcement

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31st of the year following the calendar year being reported, containing the following information:
 - a. A summary report of all construction activities;
 - b. Summary of acid rock drainage and metal leaching characterization of the borrow materials to be used for construction as required under Part C, Item 12;
 - c. All information required under Part H;
 - d. A list of unauthorized discharges and a summary of follow-up actions taken;
 - e. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
 - f. Any revisions to approved plans and manuals as required by Part B, Item 9, submitted in the form of an addendum;
 - g. A summary of any studies or reports requested by the Board that relate to Water use and Waste disposal or restoration, and a brief description of any future studies planned; and
 - h. 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 comply with the Monitoring Program described in this Licence, and any amendments to the Monitoring Program as may be made from time to time, pursuant to the conditions of this Licence.
4. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Board.
5. 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.

6. In the event that a Plan is not found acceptable to the Board, the Licensee shall, within thirty (30) days of notification by the Board provide a revised version to the Board for review or approval in writing.
7. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
8. 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.
9. 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.
10. 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, AANDC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

11. 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 English and Inuktitut.
12. 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. This Licence is assignable as provided for in Section 44 of the *Act*.

13. 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 PROTECTION OF WATER

1. The Licensee shall not deposit or permit the deposit of sediment into any water body.
2. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless authorized.
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 not gather rock or construction materials from below the ordinary High Water Mark of any Water body.
5. The Licensee shall minimize stream bank disturbances and shall provide necessary controls to prevent erosion of stream banks.
6. The Licensee shall undertake appropriate corrective measures to mitigate impacts on surface drainage resulting from the Licensee's activities.
7. The Licensee shall limit any in-stream activity to either no-flow or low Water periods. In stream activity is prohibited during fish migration.
8. The Licensee shall locate stream crossings to minimize approach grades. Approaches shall be stabilized to control runoff, erosion and subsequent siltation of any Water body.
9. Machinery is not permitted to travel up the stream bed and fording of any Water body is to be kept to a minimum and limited to one area and a one-time event. Equipment used should be well cleaned and free of oil and grease and maintained free of fluid leaks.
10. The Licensee shall ensure that pollutants from machinery fording the crossing do not enter Water.
11. To minimize impacts on surface drainage, the Licensee shall prepare all sites in such a manner as to prevent rutting of the ground surface.
12. Equipment storage holding areas should be located on gravel, sand or other durable land, a distance of at least thirty-one (31) meters above the ordinary High Water Mark of any Water body in order to minimize impacts on surface drainage and Water quality.

13. The Licensee shall designate an area for the deposition of excavated and stockpiled materials that is at least thirty-one (31) metres above the ordinary High Water Mark of any Water body.
14. The Licensee shall not utilize any equipment or vehicles in the course of this undertaking unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall cease if rutting occurs.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. Permanent disposal of waste at site is not authorized.
2. The Licensee shall locate areas designated for temporary 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.
3. The Licensee shall not practice on-site land filling of domestic waste, unless otherwise approved by the Board in writing.
4. The Licensee shall backhaul and dispose of all domestic Waste at an approved Waste disposal facility. The Licensee shall backhaul and dispose of all hazardous Waste, Waste oil, and non-combustible Waste generated through the course of the operation in an approved Waste disposal site.
5. The Licensee shall provide to the Board, documented authorization from all communities in Nunavut receiving Waste from the Swan Lake River Bridge Construction Project, prior to the backhauling any Waste.
6. 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 CONSTRUCTION AND OPERATIONS

1. The Licensee shall notify the Board and the Inspector at least ten (10) days prior to the construction of the watercourse crossing associated with the Project.
2. The Licensee shall, within ninety (90) days of completion of construction activities, submit to the Board for review a Construction Summary Report that includes stamped as-built plans and drawings, explanation for any deviation from construction drawings, and consideration of construction and field decisions and their effects on the performance of engineered facilities.

3. The Licensee shall only use fill material for construction, from approved sources that have been demonstrated by appropriate geochemical analyses to not produce Acid Rock Drainage and to be Non-Metal Leaching, and free of contaminants, prior to its use, with results and assessment to be submitted within the annual reporting requirements of Part B, Item 1.
4. All surface runoff or discharges impacted by construction activities associated with the Project, where flow may directly or indirectly enter Water, shall not exceed the following Effluent quality limits:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of Any Grab Sample (mg/L)
Total Suspended Solids	50.0	100
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

5. The Licensee shall locate stream crossings to minimize approach grades. Approaches shall be stabilized to control runoff, erosion and subsequent siltation of any Water body.
6. The Licensee shall not gather rock or construction materials from below the ordinary High Water Mark of any Water body.
7. Sediment and erosion control measures shall be implemented prior to and maintained during project activities to prevent entry of sediment into Water.
8. The Licensee shall maintain an undisturbed buffer zone of at least one hundred (100) metres between any proposed borrowing operation and the ordinary High Water Mark of any water body.
9. The Licensee shall not excavate and/or remove material from the quarry/borrow area beyond a depth of one (1) metre above the ordinary High Water Mark or above the groundwater table, to prevent contamination of groundwater.

PART F: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee shall submit to the Board for approval in writing, at least sixty (60) days prior to construction final design and for-construction drawings, stamped and signed by a Professional Engineer, for all infrastructure and/or facilities designed to contain, withhold, divert or retain Water and/or Waste including the bridge crossing the Swan Lake River.
2. The Licensee may, without written consent from the Board, carry out Modifications to the Water Crossing 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 to include:
 - i. a description of the facilities and/or works to be constructed;
 - ii. the proposed location of the structure(s);
 - iii. identification of any potential impacts to the receiving environment;
 - iv. a description of any monitoring required, including sampling locations, parameters measured and frequencies of sampling;
 - v. schedule for construction;
 - vi. drawings of engineered structures signed and stamped by an Engineer; and
 - vii. proposed sediment and erosion control measures.
 - b. the proposed 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.
3. Modifications for which all of the conditions referred to in Part G, Item 2 have not been met can be carried out only with written approval from the Board.
 4. 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 G: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Board has approved the Plan entitled “Spill Contingency Plan for Construction of Swan Lake River Bridge Project, Gjoa Haven, Nu.” Undated, that was submitted as additional information with the Application.
2. 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.
3. The Licensee shall conduct any equipment maintenance and servicing in designated areas, a minimum of thirty-one (31) metres above the ordinary High Water Mark of any water body and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste, and contain potential spills.
4. If during the term of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:

- a. Employ the approved Spill Contingency Plan;
 - b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the 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 H, 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.
6. The Licensee shall have a spill kit with a minimum capacity of approximately 205 litres available at the site, in the event of fuel lines and/or hydraulic hoses rupture on equipment being used near the water.
7. The Licensee shall remove any hydrocarbon contaminated soils to an approved facility.

PART H: CONDITIONS APPLYING TO RECLAMATION AND CLOSURE

1. The Licensee shall complete all restoration work prior to the expiry of this Licence.
2. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.
3. The Licensee shall backfill and restore all sumps to the pre-existing natural contours of the land.
4. The Licensee shall remove from the site, all infrastructure and site materials, including all fuel caches, drums, barrels, buildings and contents, docks, water pumps and lines, material and equipment prior to the expiry of this Licence.
5. The Licensee shall restore the drainage to match the natural channel. Measures shall be implemented to minimize erosion and sedimentation.
6. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.
7. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, 2010. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.

8. The Licensee shall contour and stabilize all disturbed areas to a pre-disturbed state upon completion of work.
9. The Licensee shall re-establish vegetation and/or stabilize exposed soils before removing erosion control measures.

PART I: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall monitor all activities for signs of erosion and shall implement and maintain sediment and erosion control measures prior to the undertaking to prevent entry of sediment into any Water body.
2. The Licensee shall obtain a digital photographic record of the water crossing before, during, and after the completion of construction activities.
3. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of the location where the watercourse crossing (bridge) is located.
4. Additional monitoring requirements may be requested by the Inspector.
5. The Licensee shall include in the Annual Report required under Part B, Item 1, all monitoring data and analysis and information required by this Part.
6. Modifications to the Monitoring Program may be made only upon written request and subsequent approval of the Board in writing.