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November 19, 2020

File: W2020L8-0001

Ziaur Rahman  
Department of Infrastructure  
Government of the Northwest Territories  
P.O. Box 1320, Yellowknife, NT X1A 2L9

Sent by email

Dear Ziaur Rahman,

**Re: GNWT-INF – Issuance Package – Water Licence W2020L8-0001 – Tłjchq All-Season Road**

The Wek'èezhìi Land and Water Board (Board) met on September 23, 2020 and considered the Application from the Government of the Northwest Territories Department of Infrastructure (GNWT-INF) for Water Licence (Licence) W2020L8-0001 for the Tłjchq All-Season Road (TASR or the TASR Project) in accordance with the *Waters Act*. Water Licence W2020L8-0001 will be the prevailing instrument for all future activities of the TASR Project.

Water Licence W2020L8-0001 (attached) has been granted, effective November 19, 2020 and expiring May 29, 2026 and is supported by the Board's Reasons for Decision.<sup>1</sup> These documents are posted to the Board's Public Registry.<sup>2</sup>

**Management Plans – Revision and Resubmission Required after Annual Review**

The Board requires that the management plans be revised to include changes detailed in the Reasons for Decision and resubmitted along with any other changes when GNWT-INF conducts its annual review of the plans as per Part B, Condition 8 of the Licence. The Board expects that these changes are also outlined in a revision history table as per the MVLWB's *Document Submission Standards*.<sup>3</sup>

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<sup>1</sup> See WLWB Online Registry for [W2020L8-0001 – TASR – Type A Water Licence – RFD and Recommendation to Minister – Oct 5 20](https://www.wlwb.ca/registry/W2020L8-0001)

<sup>2</sup> See WLWB Online Registry for <https://www.wlwb.ca/registry/W2020L8-0001>

<sup>3</sup> See WLWB's Policy and Guidelines page for [MVLWB Document Submission Standards \(2019\)](https://www.wlwb.ca/policy-guidelines)

Inspectors:

Inspectors referred to in this Licence can be contacted at the following office:

GNWT-ENR - North Slave Regional Office  
PO Box 2668  
3803 Bretzlaff Drive  
Yellowknife, NT X1A 2P9  
Phone: 1-867-767-9238 ext. 53247

Analyst:

The Analyst referred to in the Surveillance Network Program annexed to this Licence can be contacted as follows:

Street Address:

Taiga Environmental Laboratory  
4601 – 52<sup>nd</sup> Ave  
Yellowknife, NT  
X1A 1L4

Mailing Address:

Taiga Environmental Laboratory  
P.O. Box 1320  
Yellowknife, NT  
X1A 2L9

Phone: (867) 767-9235, ext 53151  
Fax: (867) 920-8740

Full cooperation of GNWT-INF is anticipated and appreciated. Please contact Jessica Pacunayen at (867) 765-4591 with any questions or concerns regarding this letter.

Yours sincerely,



Joseph Mackenzie  
Wek'èezhii Land and Water Board, Chair

Copied to: TASR Distribution List

Attached: Water Licence W2020L8-0001



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Pursuant to the *Mackenzie Valley Resource Management Act* and Regulations, the Wek'èezhii Land and Water Board, hereinafter referred to as the Board, hereby grants to:

**Government of the Northwest Territories – Department of Infrastructure (GNWT-INF)**

**(Licensee)**

of

**P.O. Box 1320  
Yellowknife, NT X1A 2L9**

**(Mailing Address)**

Hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the *Waters Act* and Regulations made there under and subject to and in accordance with the conditions specified in this Licence.

Licence Number:	<u>W2020L8-0001</u>
Licence Type:	<u>A</u>
Water Management Area:	<u>NORTHWEST TERRITORIES 01</u>
Location:	<u>KM 196 AT HIGHWAY 3 TO WHATÌ, NT</u>
Purpose:	<u>WATER USE FOR THE CONSTRUCTION OF THE TLICHO ALL-SEASON ROAD</u>
Quantity of water <u>not to be exceeded</u> :	<u>SEE PART C, CONDITION 1 AND 2</u>
Effective Date of Licence:	<u>November 19, 2020</u>
Expiry Date of Licence:	<u>MAY 29, 2026</u>

This Licence issued and recorded at Yellowknife, NT includes and is subject to the annexed conditions.

**Wek'èezhii Land and Water Board:**

**Witness**

**Chair**

**Minister of Environment and Natural Resources**

**APPROVED BY:**

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## Part A: Scope and Definitions

### 1. Scope

- a) This Licence entitles the Government of the Northwest Territories Department of Infrastructure to use Water and to deposit Waste for the purpose of the Construction of the Tłı̄chq All-Season Road in the Northwest Territories. This undertaking is described in Report of Environmental Assessment (EA-1617-01), and Preliminary Screening for W2016L8-0001, dated May 30, 2019, June 18, 2020, and September 23, 2020, and includes the following:
- i. withdrawal and use of Water from the Water Sources identified in Part C, Condition 3;
  - ii. Construction, operation, and maintenance of road and Water crossings;
  - iii. operation of camps;
  - iv. quarrying;
  - v. Construction, operation, and decommissioning of a Sewage Disposal Facility;
  - vi. Construction, operation, and maintenance of groundwater well (Water Source ID 16);
  - vii. depositing of Waste; and
  - viii. progressive Reclamation and associated Closure and Reclamation activities.
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of Water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposit of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Commissioner in Executive Council under the *Waters 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 automatically amended to conform with such Regulations.

## 2. Definitions

**Act** means the *Waters Act*.

**Board** means the Wek'èezhìi Land and Water Board established under section 57.1 of the *Mackenzie Valley Resource Management Act*.

**Construction** means any activities undertaken to construct or build any components of, or associated with, the development of the Project.

**Discharge** means the direct or indirect deposit or release of any Waters or Waste to the receiving environment.

**Engineered Structure** means any constructed facility which was designed and approved by a Professional Engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists.

**Freeboard** means the vertical distance between the Water or Wastewater line and the lowest elevation of the effective Water or Wastewater containment crest on the upstream slope of a containment structure.

**Greywater** means all liquid wastes from showers, baths, sinks, kitchens, and domestic washing facilities but not including toilet wastes.

**Hazardous Waste** means a Waste which is a dangerous substance or material that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage.

**Inspector** means an Inspector designated by the Minister under Section 35(1) of the Act.

**Licensee** means the holder of this Licence.

**Management Plans** means the specific plans required by the Board under this Water Licence.

**Minister** means the Minister of the Government of the Northwest Territories – Department of Environment and Natural Resources

**Modification** means a change, other than an expansion, that does not alter the purpose or function of a structure.

**Ordinary 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. In flowing Waters (rivers, streams) this refers to the “active channel/bank-full level” which is often the 1:2 year flood flow return level. In inland lakes, wetlands, or marine environments, it refers to those parts of the Watercourse bed and banks that are frequently flooded by Water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs, this refers to normal high operation levels (full supply level).

**Project** means the undertaking as described in Part A, Condition 1 (a) of this licence.

**Receiving Environment** means the natural environment that, directly or indirectly, receives any deposit of Waste from the Project.

**Regulations** means Regulations proclaimed pursuant to Section 63 of the *Waters Act*.

**Sewage** means all toilet Wastes and Greywater.

**Sewage Disposal Facility** means the area and structure designated to contain Sewage as approved by the Board.

**Surveillance Network Program (SNP)** means a monitoring program required by this Licence and detailed in Annex A.

**Traditional Knowledge** means the cumulative, collective body of knowledge, experience and values built up by a group of people through generations of living in close contact with nature. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual, and political change.

**Unauthorized Discharge** means a release or Discharge of any Water or Waste not authorized under this Licence.

**Waste** means Waste as defined by section 1 of the *Waters Act*:

- a) A substance that, if added to water, would degrade or alter or form part of a process of degradation or alteration of the quality of the water to an extent that is detrimental to its use by people or by an animal, fish or plant, or
- b) Water that contains a substance in such a quantity or concentration, or that has been so treated, processed or changed, by heat or other means, that it would, if added to other water, degrade or alter or form part of a process of degradation or alteration of the quality of the water to the extent described in paragraph (a),

And includes

- c) A substance or water that, for the purposes of the *Canada Water Act*, is deemed to be waste,
- d) A substance or class of substances prescribed by regulations made under subparagraph 63(1)(b)(i),
- e) Water that contains a substance or class of substances in a quantity or concentration prescribed in respect of that substance or class of substances by regulations made under subparagraph 63(1)(b)(ii), and water that has been subjected to a treatment, process or change prescribed by regulations made under subparagraph 63(1)(9b)(iii).

**Waste Management Plan (WMP)** means a document, developed in accordance with the MVLWB *Guidelines for developing a Waste Management Plan*, that describes the methods of Waste management for the Project from Waste generation to final disposal.

**Water** means Water as defined by section 1 of the *Waters Act*: water under the administration and control of the Commissioner, whether in a liquid or frozen state, on or below the surface of land.

**Watercourse** as defined in Section 1 of the *Waters Regulations*: a natural watercourse, body of Water or Water Supply, whether usually containing Water or not, and includes Groundwater, springs, swamps and gulches.

**Water Source** comprises the Water bodies listed in Table 1.

## Part B: General Conditions

1. The Licensee shall take every reasonable precaution to protect the environment.
2. Compliance with the terms and conditions of this Licence does not excuse the Licensee from its obligation to comply with the requirements of any other applicable federal, territorial, Tlicho, or municipal laws.
3. The Licensee shall ensure a copy of this Licence is maintained at each Project camp or office at all times.
4. All information submitted to the Board, as required by this Licence, shall:
  - a) be in a form that is acceptable to the Board;
  - b) be in accordance with the Mackenzie Valley Land and Water Board's *Document Submission Standards*; and
  - c) include a conformity table which identifies wherein the pertinent requirements of the Licence are addressed.
5. The Licensee shall ensure that all Project activities are confined to locations as described in the Water Licence application.
6. The Licensee shall make effort to ensure that no historical or archaeological site will be affected by this operation.
7. The Licensee shall operate in accordance with any plans approved pursuant to the conditions of this Licence and with any revisions to the plans as may be made from time to time pursuant to the conditions of this Licence and as approved by the Board. If any plan is not approved by the Board, the Licensee shall revise the plan according to the Board's direction and re-submit it to the Board for approval.
8. The Licensee shall annually review the plans referred to in: Part B, Condition 15; Part B, Condition 16; Part B, Condition 17; Part B, Condition 18; Part E, Condition 9; Part G, Condition 1; Part G, Condition 2; Part G, Condition 7; Part H, Condition 1; Part H, Condition 3; Part I, Condition 1; and Part J, Condition 1; and shall revise the plans as necessary to reflect changes in operations or technology, or as requested by the Board. All revised plans shall be submitted to the Board for approval.
9. Any revised plan submitted to the Board under this Licence shall include a list of notable revisions to the plan.
10. The plans referred to in: Part B, Condition 15; Part B, Condition 16; Part B, Condition 17; Part B, Condition 18; Part E, Condition 9; Part G, Condition 1; Part G, Condition 2; Part G, Condition 7; Part G, Condition 16; Part H, Condition 1; Part H, Condition 2; Part I, Condition 1; and Part J, Condition 1, shall be presented in a format consistent with the Mackenzie Valley Land and Water Boards' *Standard Outline for Management Plans*, unless otherwise approved by the Board.
11. The Licensee shall comply with the **Schedules**, which are annexed to, and form part of this Licence, and any changes to the as may be made by the Board.
12. The Schedules and any compliance dates specified in this Licence may be updated at the discretion of the Board.
13. Meters, devices or other such methods used for measuring the volumes of Water used and Waste Discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.



14. The Licensee shall submit an **Annual Report** to the Board no later than March 31<sup>st</sup> of the year following the calendar year reported. The Report shall contain the information listed in Schedule 1, Condition 1.
15. In each management and/or monitoring plan submitted to the Board, the Licensee is to identify how it has incorporated adaptive management as outlined in Appendix B of the Report of EA or provide a rationale for why an adaptive management framework was not adopted.
16. In each management and/or monitoring plan submitted to the Board that includes monitoring activities, the Licensee is to identify how it has incorporated monitoring requirements as outlined in Appendix C of the Report of EA or provide a rationale for why monitoring requirements were not adopted.
17. A minimum of 90 days prior to commencement of Construction, the Licensee shall submit to the Board, for approval, a revised **Engagement Plan**. The Licensee shall comply with the **Engagement Plan**, once approved.
18. A minimum of 90 days prior to commencement of Construction, the Licensee shall submit to the Board, for approval, a revised **Wildlife Management and Monitoring Plan** in accordance with Schedule 1, Condition 2. The Licensee shall comply with the **Wildlife Management and Monitoring Plan**, once approved.
19. A minimum of 90 days prior to commencement of Construction, the Licensee shall submit to the Board, for approval, a revised **Permafrost Management Plan**. The Licensee shall comply with the **Permafrost Management Plan**, once approved.
20. The Licensee shall comply with the approved **Archaeological Site Chance Find Protocol**.
21. Any reference to an Act, Regulation, plan, or guideline in this Licence is a reference to the most current version unless otherwise explicitly stated.
22. In conducting its activities under this Licence, the Licensee shall make best efforts to consider and incorporate any scientific information and Traditional Knowledge that is made available to the Licensee.
23. In each submission required by the Licence or a directive from the Board, the Licensee is to identify all recommendations based on Traditional Knowledge received, describe how the recommendations were incorporated into the submission and provide justification for any recommendation not adopted.
24. The Licensee shall notify the Inspector and the Board immediately of any non-compliance with the conditions of this Licence or any direction provided by the Board.
25. The Licensee shall comply with all directives issued by the Board in respect of the implementation of the conditions of this Licence.
26. The Licensee shall comply with the **Surveillance Network Program**, which is annexed to and forms part of this Licence, and any updates to the Surveillance Network Program as may be made by the Board.
27. The Licensee shall ensure that a copy of any written authorization issued to the Licensee by an Inspector is provided to the Board.

### Part C: Conditions Applying to Water Use

1. The Licensee may only withdraw Water up to:
  - a. 601 m<sup>3</sup>/day until Water Licence W2016L8-0001 is cancelled;
  - b. 900 m<sup>3</sup>/day once Water Licence W2016L8-0001 is cancelled until August 30, 2022;
  - c. and 299 m<sup>3</sup>/day from August 31, 2022 until the expiry of the Licence.
2. The Licensee may only withdraw up to 33 m<sup>3</sup>/day of Water from the groundwater well (Water Source ID 16).
3. The Licensee shall only obtain Water from the Water Sources described in Table 1.

**Table 1:** Authorized Water Sources for the Project

Water Source	Water Source ID	Type	Location	
			Latitude	Longitude
James River (Crossing 14)	1	River	62°58'26.16"N	116°54'43.16"W
La Martre River (Crossing 15)	2	River	63° 6'33.69"N	116°58'31.90"W
Duport River (Crossing 8)	3	River	62°43'47.28"N	116°50'21.69"W
Crossing 9	4	stream	62°46'12.54"N	116°48'51.2"W
Crossing 12	5	stream/lake	62°51'56.49"N	116°51'29.84"W
Unnamed Lake 1	6	Lake	62°50'31.18"N	116°51'20.34"W
Unnamed Lake 2	7	lake	62°49'24.41"N	116°51'29.15"W
Unnamed Lake 3 (Shallow Lake)	8	lake	62°29'53.70"N	116°30'33.52"W
Unnamed Lake 4 (Peanut Lake)	9	lake	62°29'28.84"N	116°32'35.49"W
Unnamed Lake 5	10	lake	62°39'31.71"N	116°51'33.03"W
Unnamed Lake 6	11	lake	62°39'38.65"N	116°50'50.60"W
Unnamed Lake 7	12	lake	62°46'41.42"N	116°49'17.26"W
Unnamed Lake 9	14	lake	63°08'41.22"N	116°59'5.78"W
Unnamed Lake 10	15	lake	62°55'29.62"N	116°51'58.34"W
Water Well near Main Camp	16	Groundwater	62°32'59.63"N	116°48'52.17"W

Note: Location indicates approximate center for lakes and approximate crossing point for rivers and streams

4. In any single year, the Licensee shall not withdraw greater than 10% of the available Water volume of any Water Source, with the exception for Water Source ID 16.
5. In any single ice-covered season, the Licensee shall not withdraw greater than 10% of the available Water volume of any Water Source with the exception for Water Source ID 16, as calculated using the appropriate maximum expected ice thickness.
6. For Source IDs 1-5 identified in Table 1, the Licensee shall not withdraw greater than 10% of instantaneous flow.
7. Prior to locating a Water intake in a fish-bearing Watercourse, the Licensee shall obtain written authorization for the location from an Inspector.
8. Prior to the commencement of withdrawal from Water Source IDs 1-5, the Licensee shall submit hydraulic assessments to the Inspector, DFO, and the Board.
9. Prior to the commencement of withdrawal from for Water Source ID 6-15, the Licensee shall submit maximum Water volumes with supporting documentation (e.g., bathymetry data) to the Inspector, DFO, and the Board.
10. If supporting documentation referenced in Part C, Condition 9 for Water use of lakes is not based on bathymetry, then approval by the Board is required prior to use.

#### **Part D: Conditions Applying to Stream Crossings**

1. The Licensee shall not remove naturally occurring material from the bed or banks of any Watercourse below the Ordinary High-Water Mark, except as described in the application.
2. The Licensee shall not cut or modify any stream banks while constructing ice bridges, unless approved by the Board. Construction of winter ice bridges or snow fills shall be in accordance with the **Fish and Fish Habitat Protection Plan** referred to in Part H, Condition 3.
3. The Licensee shall not ford wet Watercourses or areas of overflow, unless authorized in writing by an Inspector.
4. The Licensee shall not destroy or damage beaver or muskrat dams or lodges without approval from the GNWT-ENR, and shall minimize disturbance to beaver and muskrat activities.
5. Every effort shall be made to retain riparian vegetation, as it is critical for the protection of littoral and riparian fish habitats as well as for providing cover and enhancing bank stability.

## Part E: Conditions Applying to Construction

1. The Licensee shall provide the Board with the names and contact addresses for all Construction contractors prior to Construction.
2. The Licensee shall ensure that all contractors and sub-contractors are aware of, and shall conform to, all Terms and Conditions of this Licence.
3. A minimum of 90 days prior to the commencement of Construction of any Engineered Structures, with the exception of the Sewage Lagoon, the Licensee shall submit to the Board for approval a Detailed Design Report. The Report shall be signed and stamped by a Professional Engineer and shall include: construction drawings, construction specifications, and construction quality control/quality assurance plan.
4. A minimum of 90 days prior to the commencement of Construction of any Engineered Structures, with the exception of the Sewage Lagoon, the Licensee shall submit to the Board for approval, a **Construction Plan** in accordance with Schedule 2, Condition 1. The Licensee shall comply with the **Construction Plan**, once approved.
5. Within 30 days of the effective date of the Licence, the Licensee shall submit to the Board an updated schedule of Construction activities for the first year of Construction, and thereafter updated annually in the **Annual Report**.
6. A minimum of 10 days prior to commencement of Construction, the Licensee shall provide written notification to an Inspector.
7. Within 90 days of completion of the Construction of Engineered Structures related to Water use and Waste disposal for the Project, excluding the Construction of sumps, the Licensee shall submit an as-built report to the Board. The report shall be prepared by a Professional Engineer and shall include: as-built drawings, documentation of field decisions that deviate from original plans, and any data used to support these decisions.
8. The Licensee shall ensure that Construction of Engineered Structures is supervised by a Professional Engineer.
9. A minimum of 90 days prior to the commencement of Construction, the Licensee shall submit to the Board for approval a **Quarry Operations Plan** in accordance with Schedule 1, Condition 3. The Licensee shall comply with the **Quarry Operations Plan**, once approved.
10. The Licensee shall ensure that there is no obstruction of Water flow in Watercourses as a result of Engineered Structures being placed in, or about, a Watercourse.
11. The Licensee shall undertake necessary corrective measures to mitigate negative impacts on surface drainage resulting from the Licensee's activities. Camp or work facilities shall be located so as to minimize negative impacts to surface drainage.
12. The Licensee shall construct and operate all infrastructure and facilities designed to contain, withhold, divert or retain Water or Waste in accordance with all applicable Federal or Territorial legislation and industry standards.
13. The Licensee shall construct and operate any Bulk Fuel Storage Facilities in accordance with all applicable Federal and Territorial legislation and industry standards, including: Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (2003), and the National Fire Code of Canada (2010).
14. All materials used for Construction or materials used for bank restoration, including riprap and infill gravel materials, must be obtained from an approved source, and be clean and free of contaminants.

Such material shall not be removed or gathered from below the Ordinary High-Water Mark of any waterbody, or from any other Watercourse.

15. Prior to Construction of the Sewage Disposal Facility, the Licensee shall conduct a Site Investigation and submit a **Design and Construction Report for the Sewage Disposal Facility** based on the results and analysis of the investigation for Board approval. The requirements of the Site Investigation and the **Design and Construction Report for the Sewage Disposal Facility** are outlined in Schedule 2, Conditions 2 and 3, respectively. The Licensee shall not commence Construction of the Sewage Disposal Facility prior to Board approval of the Report.

## **Part F: Conditions Applying to Modifications**

1. The Licensee may, without written approval from the Board, carry out Modifications to Engineered Structures 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 the proposed Modifications at least 60 days prior to beginning the Modifications;
  - b) the proposed Modifications do not place the Licensee in contravention of either the Licence, the Act, or Federal, Territorial or Municipal Legislation;
  - c) the Board has not, during the 60 days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than 60 days;
  - d) An Inspector has authorized the proposed Modifications and provided a letter of notification to the Board; and
  - e) the Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part F, Condition 1, have not been met, may be carried out only with written approval from the Board.
3. Within 90 days of completion of the Modifications, the Licensee shall provide to the Board as-built plans and drawings of the Modifications referred to in this Licence.

## **Part G: Conditions Applying to Water and Waste Management**

1. A minimum of 90 days prior to the commencement of Construction, the Licensee shall submit to the Board for approval a **Waste Management Plan** in accordance with the Mackenzie Valley Land and Water Board's *Guidelines for the Development of a Waste Management Plan*. The Plan shall describe how all Waste streams associated with the Project are managed, including references to other plans as necessary.
2. The Licensee shall manage all Sewage, Greywater, solid Waste, and Hazardous Waste in accordance with the approved **Waste Management Plan** or as otherwise approved by the Board.
3. No materials cleared from the site shall be disposed of in any Watercourse. All materials shall, if necessary, be disposed of above one hundred (100) metres from the Ordinary High-Water Mark of the Watercourse, and in such a manner to prevent entry into the Watercourse.
4. The Licensee shall ensure that any unauthorized Wastes associated with the Project do not enter any Watercourse.
5. The Licensee shall not store Waste on the surface of frozen streams or lakes except what is required for immediate use.
6. The Licensee shall comply with the approved **Erosion and Sediment Control Plan**. This Plan shall be in accordance with Schedule 3, Condition 1.
  7. The Licensee shall minimize erosion by installing and maintaining erosion control structures where necessary to prevent the deposition of sediment into any streams.
8. A silt curtain, constructed of woven geotextile, or another appropriate erosion control structure will be used when working in waterways. It will be maintained in any manner at the request of an Inspector.
9. All sites affected by construction or removal activities shall be stabilized in accordance with the approved **Closure and Reclamation Plan**, and suitable erosion control measures implemented to minimize sediment deposition into any Watercourse.
10. Topsoil, any other material removed from the stream bank, or un-used fill material shall be stockpiled at a minimum 100 metres from the Watercourse or any drainage if possible and be sufficiently bermed. Topsoil stockpile will be covered to prevent erosion.
11. Erosion Mitigation:
  - a) erosion prevention structures that are satisfactory to an Inspector shall be used at all points where Water or Waste is Discharged; and
  - b) daily erosion inspections of Discharge points shall be carried out and records of these inspections shall be kept for review upon the request of an Inspector. If any erosion is observed, the Licensee shall notify an Inspector and take necessary corrective action to mitigate the erosion problem to the satisfaction of an Inspector.
12. During Construction the Licensee shall collect Water samples upstream and downstream of each monitored Watercourse crossing, as described in the approved **Water Monitoring Plan** referred to in Part H, Condition 1.

13. The Licensee shall ensure that in-water Construction activities meet the following criteria:
  - a) if background TSS is  $\leq 250$  mg/L, the maximum concentration for Total Suspended Solids shall not exceed 25 mg/L above background concentration TSS in any daily sample, or 5 mg/L above background TSS averaged over any 30-day period;
  - b) if background TSS is  $> 250$  mg/L, TSS shall not exceed 10% of background levels; and
  - c) all TSS samples are to be measured in accordance with the approved Water Monitoring Plan referred to in Part H, Condition 1.
14. The Licensee shall notify the Inspector on any day when weather, or other circumstances, do not permit the collection of a TSS sample.
15. The Licensee shall maintain a minimum Freeboard limit of one metre at the Sewage Disposal Facility, or as recommended by a Professional Engineer and approved by the Board.
16. The Licensee shall operate and maintain the Sewage Disposal Facility to prevent structural failure and to the satisfaction of an Inspector.
17. The Licensee must cease operation of the Sewage Disposal Facility at the following instances:
  - a) Freeboard limit is exceeded;
  - b) Monitoring exceeds approved thresholds as outlined in the approved Design and Construction Report for the Sewage Disposal Facility; and/or
  - c) Structural failure occurs.
18. Within seven (7) days of ceasing operation of the Sewage Disposal Facility in accordance with Part G, Condition 17 (b) and/or (c), the Licensee shall provide the Board groundwater monitoring results and propose corrective action.



#### **Part H: Conditions Applying to the Aquatic Effects Monitoring**

1. A minimum of 90 days prior to the commencement of Construction, the Licensee shall submit to the Board for approval a **Water Monitoring Plan**. The Plan shall be in accordance with Schedule 4, Condition 1. The Licensee shall comply with the **Water Monitoring Plan**, once approved.
2. The Licensee shall consult the Tłıchq Government in the assessment of aquatic effects within the Project area.
3. A minimum of 90 days prior to the commencement of Construction, the Licensee shall submit to the Board for approval a **Fish and Fish Habitat Protection Plan**. The Plan shall be in accordance with Schedule 4, Condition 2. The Licensee shall comply with the **Fish and Fish Habitat Protection Plan**, once approved.

## **Part I: Conditions Applying to Contingency Planning**

1. The Licensee shall comply with the **Spill Contingency Plan**, developed in accordance with *Indian and Northern Affairs Canada's Guidelines for Spill Contingency Planning*, once approved. The **Spill Contingency Plan** shall include a description of proper work practices for fueling equipment and handling petroleum.
2. The Licensee shall ensure that petroleum products, hazardous material and other Wastes associated with the Project do not enter any Waters.
3. The Licensee shall ensure all refueling, and storage of fuels, chemicals or deleterious substances are located a minimum of 30 metres from the Ordinary High-Water Mark of any Waters.
4. If, during the period of this Licence, a spill or Unauthorized Discharge occurs or is foreseeable, the Licensee shall:
  - a) implement the approved **Spill Contingency Plan**;
  - b) report the incident immediately via the 24-Hour Spill Reporting Line (867) 920-8130 in accordance with the instructions contained in the Spill Report Form NWT;
  - c) report each spill and Unauthorized Discharge of Waste to the Board and an Inspector, within 24 hours; and
  - d) within 30 days of a spill or Unauthorized Discharge reported under Part I, Condition 4(b), the Licensee shall submit a detailed report to the Board and an Inspector.
5. All spills and Unauthorized Discharges of Water or Waste shall be cleaned up and the affected area reclaimed to the satisfaction of an Inspector.

**Part J: Conditions Applying to Closure and Reclamation**

1. The Licensee shall comply with the approved **Closure and Reclamation Plan** developed in accordance with Schedule 5, Condition 1.
2. The Licensee shall carry out progressive Reclamation of areas that are abandoned prior to the end of the Construction of the Project.

**Schedule 1**  
**Part B: General Conditions**

1. The **Annual Report** referred to in Part B, Condition 14, shall include, but not be limited to, the following:

Measuring and Reporting on Water and Waste:

- a) A summary of the calibration and status of the meters and devices referred to in Part B of this Licence;
- b) Monthly and annual quantities in cubic metres of Water obtained from each water source;
- c) Monthly and annual quantities and types of solid Waste, Hazardous Waste and Sewage generated;
- d) Management methods and disposal locations for solid Waste, Hazardous Waste and Sewage;
- e) Monthly and annual quantities in cubic metres of solid Waste accepted by the communities of Whatì and Behchokò;
- f) Monthly and annual quantities in cubic metres of Sewage accepted by the communities of Whatì and Behchokò; and
- g) Water quality monitoring results and acid rock drainage/metal leaching (ARD/ML) testing results.
- h) Tabular summaries of all data and information generated under the Surveillance Network Program for SNP station 2020-1 in a format acceptable to the Board. The Licensee shall provide raw data in electronic form upon request by the Board;

Management Plans and Activities:

- i) A summary of engagement activities conducted in accordance with the approved Engagement Plan, referred to in Part B, Condition 17 of this Licence;
- j) Details of work completed, including restoration;
- k) A summary of Construction activities in accordance with Part E of this Licence;
- l) A summary of Modifications and/or major maintenance work in accordance with Part F of this Licence;
- m) A summary of any Closure and Reclamation work completed during the year;
- n) A summary of activities conducted in accordance with the approved **Erosion and Sedimentation Plan**, required in Part G, Condition 7 of this Licence, including:
  - i. A summary of approved updates or changes to the process or facilities required for the management of erosion and sedimentation;
  - ii. A description of any erosion susceptible areas encountered;
  - iii. A summary of activities undertaken to prevent or mitigate erosion;
  - iv. A report of the performance of mitigations applied to each area;
  - v. A summary and interpretation of monitoring results, including any Action Level exceedances; and
  - vi. A description of actions taken in response to any Action Level exceedances;
- o) A report of activities/studies conducted in accordance with the approved **Wildlife Management and Monitoring Plan**, required in Part B, Condition 18 of this Licence, including but not limited to:

- i. Updates on progress specific to the management and protection of boreal and barren ground caribou and caribou habitat according to measures 6-1, 6-2, and 6-3 of the REA; and Measures 7-1 and 7-2 of the REA, respectively;
  - ii. include results of available surveys and monitoring, such as caribou, bird (Measure 10-1), and moose surveys;
  - iii. include Traditional Knowledge as a source of information;
  - iv. include a summary of training sessions related to quarry operations conducted; and
  - v. traffic monitoring results.
- p) A description of any updates or revisions to any of the following plans:
- i. **Erosion and Sedimentation Plan;**
  - ii. **Waste Management Plan;**
  - iii. **Incineration Management Plan;**
  - iv. **Spill Contingency Plan;**
  - v. **Water Monitoring Plan;**
  - vi. **Quarry Operations Plan;**
  - vii. **Permafrost Management Plan;**
  - viii. **Fish and Fish Habitat Protection Plan;**
  - ix. **Wildlife Management and Monitoring Plan;**
  - x. **Archaeological Site Chance Find Protocol;** and
  - xi. **Closure and Reclamation Plan.**

Spills and Unauthorized Discharges:

- q) A list and description, including volumes, of all Unauthorized Discharges and summaries of follow-up action taken; and
- r) An outline of any spill training and communications exercises carried out;

Other Reporting Requirements:

- s) Results and findings from the annual inspection;
- t) A report on any studies required by the Board that relate to the Licence;
- u) Updated schedule of Construction activities, as required by Part E, Condition 5;
- v) A report of activities/studies conducted in accordance with the approved Water Monitoring Plan, required in Part H, Condition 1 of this Licence, including but not limited to:
  - i. Summary of water quality monitoring data collected;
  - ii. Summary of calibration and status of the meters and devices;
  - iii. Summary of the annual quantity in cubic metres of water obtained from each water source;
  - iv. Any actions taken under the response framework of the Water Monitoring Plan;
  - v. Rationale where measurements or samples were not collected;
  - vi. Any changes to procedures; and
  - vii. Interpretation of QA/QC procedures.

2. The **Wildlife Management and Monitoring Plan** (WMMP) referred to in Part B, Condition 18, shall include but not be limited to the following:
  - a) Findings of the of the program that uses Tłıchq harvesters' traditional knowledge and methods to monitor the state of barren-ground caribou (ᐃᓃᓂᓄ) winter habitat, during and after the construction of the Project while the WMMP is in place, as per Measure 7-1(c) of the Report of EA;
  - b) a description of how the WMMP has been updated based on results of available surveys and monitoring, such as caribou, bird (Measure 10-1), and moose surveys, as per Measure 10-2, Part 2;
  - c) a description of the management and protection of migratory birds and bird species at risk, providing a description of potential habitat (e.g., borrow sources, nesting areas etc.) and its protection;
  - d) include Traditional Knowledge from all Aboriginal groups that harvest in the area on ways to mitigate, monitor, and adaptively manage impacts from the Project to wildlife;
  - e) Construction activities, including clearing, consider sensitive wildlife periods, for example nesting periods of migratory birds; and
  - f) references to any relevant monitoring plans.
  
3. The **Quarry Operations Plan** referred to in Part E, Condition 9, shall include, but not be limited, to the following:
  - a) details regarding the design of the quarry sites;
  - b) hydrogeological considerations contemplated in the design of the quarry;
  - c) geochemical analysis of each quarry site that includes:
    - i. potential acid-rock drainage and metal-leaching issues associated with road Construction and operation;
    - ii. a description of how the Licensee will ensure that materials used within the proposed TASR corridor are not susceptible to acid-rock drainage and/or metal leaching; and
    - iii. a description of the characterization, testing, monitoring, and management of rock with acid rock drainage and/or metal leaching potential to prevent impacts associated with quarrying and road Construction on Water quality.
  - d) details of any camps that will be located at quarry sites, as well as the details pertaining to explosives management; and
  - e) proposed sequence and timing of quarry development.

**Schedule 2**  
**Part E: Conditions Applying to Construction**

1. A **Construction Plan** referred to in Part E, Condition 4, will include, but not be limited to, the following information:
  - a) a description of the facilities to be constructed;
  - b) the proposed location for the structures;
  - c) any potential impacts to the aquatic environment;
  - d) a description of any monitoring including, but not limited to, sampling locations, parameters measured, and frequencies of sampling to be carried out to determine impacts to the aquatic environment, with rationale;
  - e) a detailed description of any measures used to prevent or mitigate impacts to the aquatic environment;
  - f) a schedule for the Construction;
  - g) drawings of Engineered Structures stamped by a Professional Engineer; and
  - h) description of adaptive management processes that systematically link monitoring results to management activities and allow management activities to be developed adaptively, in response to changes in the environment.
2. The Site Investigation referred to in Part E, Condition 15, shall include, but not be limited to:
  - a) in-situ soil percolation testing;
  - b) soil sampling and laboratory testing to validate the values and assumptions in the design report; and
  - c) Definition of the sub-surface soil thickness and hydraulic conductivity.
3. The **Design and Construction Report for the Sewage Disposal Facility** referred to in Part E, Condition 15, will include, but not be limited to, the following information:
  - a) a detailed description, with appropriate maps or diagrams, of the location and design of the Sewage Disposal Facility;
  - b) details regarding the total volume of wastewater that will be in the lagoon, the elevation of the wastewater from the base of the lagoon, and the freeboard level at the end of 6-month storage;
  - c) relevant background information used to inform the design;
  - d) design drawings signed and stamped by an Engineer which note “issued for construction” or similar phrase clearly shown;
  - e) construction and materials specifications;
  - f) construction quality assurance and quality control plan, including but not limited to:
    - i. A copy of the lagoon-specific inspection and testing plan, quality control inspection checklist.
  - g) a schedule for the Construction;

- h) a copy of the report for the site investigation (as required by Part E, Condition 15 and Schedule 2, Condition 2) that details the work conducted and the results;
- i) a summary of the stability analysis model inputs and provide the output figures for the scenarios considered in the design;
- j) a report on a stand-alone hydrogeologic evaluation (model of groundwater flow and containment transport), including all inputs, assumptions, methods, results, and interpretation of results; the hydrogeologic evaluation should include:
  - i. a comprehensive list of receptors. Receptors should include but not be limited to the proposed water well for the camp, areas where groundwater may discharge to surface, and discharge to surface water;
  - ii. A plan view map that identifies receptors and their location(s) in comparison to the plume and lagoon;
  - iii. A cross-section map through the plume centreline to depict the sub-surface soil types and the horizontal and vertical extents of the plume.
- k) a description of any potential impacts to the aquatic environment, including but not limited to:
  - i. an assessment of potential impacts to receptors including but not limited to impacts resulting from a change in groundwater;
- l) a detailed description of any measures used to prevent or mitigate impacts to the aquatic environment;
- m) details of monitoring, with rationale, including but not limited to:
  - i. sampling frequency and parameters for monitoring at the inflow to the Sewage Disposal Facility (last point of control at Surveillance Network Program Station 2020-1); and
  - ii. a proposed location, sampling frequency, and parameters, for a groundwater monitoring well (Surveillance Network Program Station 2020-2) downstream of the Sewage Disposal Facility.
- n) a description of adaptive management processes that systematically link monitoring results to management activities and allow management activities to be developed adaptively, in response to changes in the environment; including but not limited to:
  - i. a threshold for the cessation of operations of the Sewage Disposal Facility as outlined in Part G, Condition 17 (b).
- o) operations and maintenance requirements, including but not limited to:
  - i. sludge management;
  - ii. frequency of inspection and monitoring; and
  - iii. emergency storage.



### **Schedule 3**

#### **Part G: Conditions Applying to Water and Waste Management**

1. An **Erosion and Sediment Control Plan** referred to in Part G, Condition 7, will include but not be limited to, the following information:
  - a) plans for implementing erosion and sediment control measures for road construction and operation;
  - b) measures for potential thermal erosion events; and
  - c) relevant lessons learned from other northern road projects (e.g., Inuvik to Tuktoyaktuk Highway) with respect to sediment and erosion control.

**Schedule 4**  
**Part H: Applying to the Aquatic Effects Monitoring**

1. A **Water Monitoring Plan** referred to in Part H, Condition 1, will include, but not be limited to, the following information:
  - a) identification of monitoring locations and parameters;
  - b) sampling frequency and duration;
  - c) analytical requirements (e.g., proposed levels of TSS);
  - d) quality assurance and quality control;
  - e) reporting requirements; and
  - f) specific frequency by which TSS monitoring will occur.
  
2. A **Fish and Fish Habitat Protection Plan** referred to in Part H, Condition 3, will include, but not be limited to, the following information:
  - a) a description of how fish and fish habitat (i.e., Watercourses) will be managed regarding Water quality for the Project, and specifically at the proposed Water crossings;
  - b) a description of the potential pathways of fish habitat degradation (e.g., use of explosives, blasting residue, sediment release, spills);
  - c) the plans for mitigation of fish habitat degradation and protection;
  - d) the maximum volume of Water intended for withdrawal (i.e. annual and under-ice limits) from each Water Source, to ensure no impacts to fish and fish habitat;
  - e) the baseline data (e.g., fish species swim speeds) and calculations used to inform the sizing of the culverts that will be constructed in fish-bearing streams to ensure that they provide passage for all fish that are subject to commercial, recreational, and Aboriginal fisheries; and
  - f) intended screen size(s) that will be used, and the design criteria that were used to inform the design.

**Schedule 5**  
**Part J: Applying to the Closure and Reclamation**

1. A **Closure and Reclamation Plan** referred to in Part J, Condition 1, including but not limited to, the following information:
  - a) A description of each Project component, including, but not limited to:
    - i. temporary access roads, and work camps;
    - ii. quarries;
    - iii. areas affected by spills or Unauthorized Discharges; and
    - iv. other areas affected by Project activities.
  - b) A description of closure and reclamation of borrow sources, focusing on the restoration of natural drainage patterns, slope grading, capping with organics/vegetation (from pre-stripping stockpiles), and revegetation with native plant species;
  - c) A description of any planned Progressive Reclamation; and
  - d) An implementation schedule that includes Progressive Reclamation and final Closure and Reclamation activities.

**Annex A: Surveillance Network Program (SNP)**  
**Annexed to Water Licence W2020L8-0001, Part B, Condition 26**

**Table of Contents:**

Part A: Reporting Requirements

Part B: Sampling and Analysis Requirements

Part C: Surveillance Network Program Station Descriptions

**Part A: Reporting Requirements**

1. The effective date of this Surveillance Network Program is July 15, 2020.
2. The Licensee shall include all of the data and information required in Part C of this Annex in the Annual Report, as specified in Schedule 1, Condition 1(h) of this Licence.
3. The Licensee shall also provide SNP data at other times, if requested by an Inspector or the Board.

**Part B: Sampling and Analysis Requirements**

1. More frequent sample collection or provision of data may be required at the request of an Inspector.
2. The location of sampling sites is subject to the approval of an Inspector. The Licensee shall work with an Inspector to determine suitable locations for sampling sites.
3. All sample collection, sample handling, and analyses shall be conducted in accordance with methods prescribed in the current edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater* at the time of analysis, or by other such methods approved by an Analyst.
4. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.

**Part C: SNP Station Descriptions and Monitoring Requirements**

<b>SNP Station</b>	<b>Location</b>	<b>Sampling Frequency</b>	<b>Sampling Parameters</b>	<b>Rationale:</b>
<b>2020-1 (not yet active)</b>	Inflow to the Sewage Disposal Facility	To be determined	To be determined	To monitor water quality from the Sewage Disposal Facility at the last point of control. The details of this station will be determined after the submission of the Design and Construction Report of the Sewage Disposal Facility.
<b>2020-2 (not yet active)</b>	Ground Water Monitoring well at a location to be determined	To be determined	To be determined	To monitor water quality from the Sewage Disposal Facility. The details of this station will be determined after the submission of the Design and Construction Report of the Sewage Disposal Facility.