NUNAVUT WATER BOARD

TYPE "A" WATER LICENCE NO. 3AM-IQA27XX

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Licence No. 3AM-IQA27XX

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

CITY OF IQALUIT

(Licensee)

P.O. BOX 460 IQALUIT, NU X0A OHO

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use Water or deposit Waste for a period subject to restrictions and conditions contained within this Licence:

Licence Number / Type:	**3AM-IQA27XX / TYPE "A"**
Water Management Area:	**FROBISHER BAY WATERSHED (53)**
Location:	**WITHIN CITY OF IQALUIT'S MUNICIPAL BOUNDARIES, QIKIQTANI REGION, NUNAVUT**
Classification:	**MUNICIPAL UNDERTAKING**
Purpose:	**USE OF WATERS AND DEPOSIT OF WASTE**
Quantity of Water not to be Exceeded:	**~~2,000,000~~ 3,500,000 CUBIC METRES ANNUALLY FROM LAKE GERALDINE RESERVOIR, ~~500,000~~ 1,600,000 CUBIC METERS ANNUALLY FROM NIAQUNGUK RIVER (APEX RIVER) FOR TRANSFER TO LAKE GERALDINE AND/OR THE NEW RESERVOIR, 1,300,000 CUBIC METERS ANNUALLY FROM LAKE QIKIQTALIK FOR TRANSFER TO LAKE GERALDINE AND/OR THE NEW RESERVOIR, AND 2,500 CUBIC METRES ANNUALLY FROM IMIQTARVIVINIQ (DEAD DOG LAKE).**
Date Licence Issuance:	**FEBRUARY XX, 2027**
Expiry of Licence:	**~~JUNE 16, 2026~~XXXXXXX**

This Licence issued **(Motion Number: ~~2016-02-P6-14~~XXXXXXX)** and recorded at Goji Haven, Nunavut, includes and is subject to the annexed conditions.

~~Norman Mike~~
XXXXXX
Nunavut Water Board,
Hearing Chair

APPROVED BY: Minister of Crown-Indigenous Relations and Northern Affairs Canada

APPROVAL DATE:

Commented [RC1]: Change to the territorial Minister of Environment

PART A: SCOPE, DEFINITIONS, AND ENFORCEMENT

1. SCOPE

a. This Type "A" Water Licence No. 3AM-IQA27XX ("Replacement and Amended Licence" or "Licence") authorizes the City of Iqaluit ("Licensee" or the "City") to use Water and deposit Waste in support of a Municipal undertaking, as classified under Schedule 1 of the *Regulations*, within the City's municipal boundaries at the following approximate geographic coordinates:

Undertaking	Latitude	Longitude
Overall Extents	63° 50' 56.31" N	68° 39' 49.87" W
	63° 50' 57.30" N	68° 33' 41.94" W
	63° 43' 48.91" N	68° 18' 12.53" W
	63° 41' 06.60" N	68° 18' 18.82" W
	63° 41' 04.08" N	68° 32' 44.20" W
	63° 44' 46.02" N	68° 39' 43.1 0" W
West 40 Landfill	63° 43' 58.15" N	68° 32' 08.54" W
Water Treatment Plant	63° 45' 12.24" N	68° 30' 22.79" W
Wastewater Treatment Plant	63° 44' 45.15" N	68° 32' 19.80" W
Waste Transfer Station	63° 45' 52.06" N	68° 32' 38.86" W
North 40 Landfill	63° 48' 46.71" N	68° 34' 32.95" W
New Water Reservoir	63° 45' 38.48" N	68° 29' 22.65" W
Niaqunngut (Apex) River Pumphouse and Intake	63° 45' 38.47" N	68° 28' 36.52" W
Lake Qikiqtalik Pumphouse and Intake	63° 46' 58.04" N	68° 27' 11.86" W
Imiqtariviviniq (Dead Dog Lake) Dust Suppression Site	63° 44' 48.87" N	68° 29' 19.58" W

The scope of activities, works, and undertakings authorized in accordance with the terms and conditions of this Replacement and Amended Licence is as follows:

a. Use, management, and protection of the Lake Geraldine drainage basin and operation of the Water Treatment Plant;
b. Management and protection of Waters surrounding the West 40 Landfill site;
c. Management, collection, and monitoring of leachate from the West 40 Landfill site and adjacent Sludge Management Facility;
d. Management of improved drainage works at the West 40 Landfill site;
e. Management, operation, and eventual closure and reclamation of the current West 40 Landfill site and associated solid waste disposal facilities;
f. Upgrades, operation, maintenance, monitoring, and eventual closure and reclamation

of a Wastewater Treatment Plant (WWTP);

g. Operation, maintenance, monitoring, and eventual closure and reclamation of a Sludge Management Facility;
h. Operation, maintenance, monitoring and eventual closure and reclamation of a Sewage Lagoon Facility;
i. Implementation of contingency measures for the Wastewater and Landfill management facilities; and
j. Implementation of changes to the monitoring requirements including frequency, parameters, and stations being monitored.
k. Construction, operation, and removal of temporary facilities for the Supplementary Pumping Program (SPP).
l. Construction and operation of the new solid waste management facilities, including the Waste Transfer Station, the New North Landfill, and associated infrastructure.
m. Construction and operation of permanent facilities associated with the Long-Term Water Supply Project, including a new reservoir located east of the Lake Geraldine Reservoir, water intakes and pumphouses at the Niaqunguk (Apex) River and Lake Qikiqtalik, pipelines, and related infrastructure.
n. Installation, operation and removal of temporary facilities to provide pumping water from Niaqunngut (Apex) River to the Lake Geraldine Reservoir and/or the New Reservoir, until permanent facilities have been constructed, or as a contingency measure if the permanent facilities are inoperable.
o. Construction, operation and removal of temporary facilities to provide for pumping water from Lake Qikiqtalik to the Lake Geraldine Reservoir and/or the New Reservoir, until permanent facilities have been constructed, or as a contingency measure if the permanent facilities are inoperable.
~~m.~~p. Withdrawal from Imiqtarivivinig (Dead Dog Lake) for dust suppression purposes.

b. This Licence is issued subject to conditions contained herein with respect to the taking of Waters 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 Act, or other statutes imposing more stringent conditions relating to the quantity, type or manner under which any such Waste may be so deposited, this Licence shall be deemed to be subject to such requirements; and

c. Compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with all applicable legislation, guidelines, and directives.

2. DEFINITIONS

a. The Licensee shall refer to Schedule A for definitions of terms used in this Licence.

3. ENFORCEMENT

a. Failure to comply with this Licence shall 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.

c. For the purpose of enforcing the terms and conditions of this Licence with respect to the use of Water and deposit or Discharge of Waste in Waters, Inspectors appointed under the Act, hold all powers, privileges, and protections that are conferred upon them by the Act or by other applicable laws.

PART B: GENERAL CONDITIONS

1. The Licensee shall file, with the Board for review, no later than the 31st of March of the year following the calendar year being reported, an Annual Report formulated in accordance with the requirements under Schedule B of this Licence.

2. The Licensee shall maintain a copy of this Licence at the Municipal Office, potable Water Treatment Facility, and the Waste Treatment Facilities at all times.

3. The Licensee shall file an application for renewal of this Licence at least one (1) year prior to the Licence expiry.

4. The Licensee shall, to the satisfaction of an Inspector, install, operate, and maintain metres, devices or other appropriate methods for measuring the volumes of Water used and Waste Discharged or deposited.

5. The Licensee shall post the necessary signs to identify the stations of the Monitoring Program included under Schedule I of this Licence. All signage shall be in the Official Languages of Nunavut.

6. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted cannot be undertaken without subsequent written approval and/or directions from the Board. The Board may alter or modify a Plan if necessary to achieve legislative objectives and will notify the Licensee in writing of acceptance, rejection, or alteration of the Plan.

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, within thirty (30) days of notification or within the timeframe specified by the Board, submit for review and/or Board's approval revisions for any plan found to be unacceptable to the Board.

9. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of the Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board shall also become part of the Licence. All relevant terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.

10. The Licensee shall review the Plans referred to in this Licence as required by changes in

operation and/or technology and modify the Plans accordingly. Revisions to any Plan shall be submitted in the form of an addendum to be included within the Annual Report required under Part B, Item 1, complete with the lists of revisions detailing where significant content changes are made.

11. The Licensee shall immediately report to the NWT/NU 24-Hour Spill Report Line (867-920-8130) any spills of Waste associated with the Undertakings under this Licence including the potable Water Treatment Facility and Waste Treatment Facilities, which are reported to or observed by the Licensee.

12. Any communication with respect to this Licence shall be made in writing to the attention of:

    Manager of Licensing
    Nunavut Water Board
    P. O. Box 119
    Goji Haven, NU X0B 1J0
    Telephone: (867) 360-6338
    Fax: (867) 360-6369
    Email: licensing@nwb-oen.ca

13. Any notice made to an Inspector shall be made in writing to the attention of:

    Water Resources Officer
    Nunavut District, Nunavut Region
    P.O. Box 100
    Iqaluit, NU X0A 0H0
    Telephone: (867) 975-4295
    Fax: (867) 979-6445

14. The Licensee shall submit, to the Board for information or as otherwise directed, one (1) paper copy and one (1) electronic copy of all reports, studies, and Plans generated for the works, activities, and undertakings under this Licence. All Reports, studies or Plans submitted to the Board by the Licensee shall include an executive summary in English, Inuktitut, and French.

15. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received by the Board and maintain on file a copy of the acknowledgment of receipt issued by the Manager of Licensing or his/her designate.

16. This Licence is assignable as provided for in section 44 of the Act.

17. 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 SECURITY

1. The Licensee is not required to post reclamation security for the activities, works, and undertakings authorized under this Licence.

Commented [RC2]: To be updated with contact information for the Government of Nunavut inspector

Commented [RC3]: Are paper copies still required by the Board?

PART D: CONDITIONS APPLYING TO THE USE OF WATERS AND WATER MANAGEMENT PLANS

1. The Licensee is authorized to withdraw from the Lake Geraldine Reservoir at Monitoring Station No. IQA-01, up to ~~23~~,5~~0~~00,000 cubic metres of Water annually for the relevant activities, works, and undertakings authorized under the scope of this Licence.

   The Licensee is authorized to withdraw from the Niaqunguk River (Apex River) at Monitoring Station No. IQA-10, up to a total of ~~500,000~~1,600,000 cubic metres of Water annually ~~for the supplementation of Water levels in~~ to transfer into the Lake Geraldine Reservoir and/or the New Reservoir. The Licensee shall ensure that withdrawals from the Niaqunguk River (Apex River) only occur when the natural flow in the Niaqunguk River (Apex River) is above 30% of the mean annual discharge (MAD). The following pumping rates are permitted:

   - Pumping rate of 10% of instantaneous discharge when flow of the Apex River is between 0.143 m^3/s and 0.156 m^3/s
   - Pumping rate of 20% of instantaneous discharge when flow of the Apex River is >0.156 m^3/s (33% of MAD)

   The Licensee is authorized to withdraw from Lake Qikiqtalik at Monitoring Station No. IQA-11 up to 1,300,000 cubic metres of Water annually to transfer into the Lake Geraldine Reservoir and/or the New Reservoir. The withdrawal must occur under the following withdrawal rules:

   [Insert withdrawal rules – to be discussed with DFO]

   The Licensee is authorized to withdraw from Imiqtarviviniq (Dead Dog Lake) at Monitoring Station No. IQA-14, a total of 2,500 cubic metres of Water annually for dust suppression and general municipal purposes.

2. The Board has approved with this Licence 3AM-IQA27XX ~~The Licensee shall submit to the Board for approval,~~ the operation and maintenance manual ~~within sixty (60) days of the Effective Date of the Licence, an updated manual~~ for the potable Water Treatment Facility dated April 2026. ~~The Manual shall be prepared in accordance with relevant aspects of the format outlined in the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (GNWT, 1996). The manual shall, address among other items, the following:~~

   ~~a. Purpose of facility;~~
   ~~b. Site setting;~~
   ~~c. Operational procedures for storage, treatment and distribution of potable water, waste generated and hazardous substances associated with the facility; site inspections; and personnel training~~
   ~~d. Maintenance procedures including equipment servicing;~~
   ~~e. Sampling and monitoring requirements; and~~
   ~~f. Emergency response measures.~~

3. The Licensee shall equip all freshwater intake structures with screens of appropriate mesh size that meet the requirements of Fisheries and Oceans (DFO) Canada's *Freshwater Intake*

Commented [RC4]: Adapted from wording in Part D, Item 10 of Amendment No. 5 to reflect what is presented in DFO's letter of advice dated March 25, 2024 (included as Attachment 04 of the Application).

Commented [RC5]: Not sure this is required if the Board approves the current version of the O&M manual as part of the new licence.

End-of-Pipe Fish Screen Guidelines (1995 or the most current) so as to prevent the entrainment of fish and control Water withdrawal rates such that fish do not become impinged within the screens.

4. The Licensee shall undertake Dam Safety Inspections (DSI) and/or Dam Safety Reviews (DSR) of the Lake Geraldine water supply facility in accordance with requirements of the Canadian Dam Association (CDA), *Dam Safety Guidelines* (2007, or the most current version). The Licensee shall submit for the Board's review, within the Annual Report required under Part B, Item 1, the report generated for the DSIs or DSRs along with the Licensee's recommended actions to address any deficiencies identified in the inspections and/or reviews.

5. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless otherwise approved by the Board in writing.

6. The Licensee shall not cause erosion to the banks of any body of Water and shall provide the necessary controls to prevent such erosion.

7. The Licensee shall implement necessary measures to control sediment and erosion prior to and during operations to prevent entry of sediments into Water.

8. The Licensee shall maintain the potable Water Treatment Facilitiesy in accordance with applicable guidelines, procedures, and regulations and to the satisfaction of an Inspector.

9. The Licensee shall, as part of any proposal to supplement the Lake Geraldine Reservoir, evaluate the potential impact on freshwater resources, including fish and fish habitat. The results of the evaluation must be included as part of any application to augment the Lake Geraldine Reservoir with Water from proximal water bodies.

10. Unless approved or otherwise authorized by Fisheries and Oceans Canada, the Licensee shall ensure that withdrawals from the Niaqunguk River (Apex River) at Monitoring Station No.: IQA-10 only occur when the natural flow in the Niaqunguk River (Apex River) is above 30% of the mean annual discharge (MAD) and the withdrawals will not exceed 10% of the instantaneous flow of the Niaqunguk River (Apex River). If, at any time, Fisheries and Oceans Canada advises the Licensee that due to potential effects on fish or fish habitat the withdrawals from the Niaqunguk River (Apex River) are no longer acceptable, the withdrawals must cease until Fisheries and Oceans Canada indicates that the withdrawals can resume.

11. The Licensee shall, at least thirty (30) days prior to the intended annual start of water withdrawals referred to in Part D, Item 10, submit to the Board, for review, an updated Lake Geraldine Water Balance Model completed with the most up to date data available.

12. The Licensee shall, prior to the expiry of this Licence in 2026, submit to the Board a contingency plan in either a standalone document or as an addendum to a current plan that includes the options for action if the Niaqunguk River (Apex River) is found to have insufficient water volumes to fully supplement the Lake Geraldine Reservoir. At least 60 days of operating the new pump stations to fill the new reservoir, the Licensee shall submit

Commented [RC6]: Completed as part of the NIRB screening, water licensing, and DFO authorization processes for the LTWP

Commented [RC7]: A revised version of this item has been incorporated into Item 1 of this part.

Commented [RC8]: The Lake Geraldine Water Balance Model was a planning tool that was used to determine flow supplementation needs and the new water reservoir capacity requirements. It is no longer required as a planning tool. The City will operate its excel-based water balance to internally assess the need for pumping from the two new water sources an an annual basis, and to withdraw water annually within the annual withdrawal volume limits and other restrictions specified in this licence.

Commented [RC9]: The Long Term Water Plan represents the permanent solution to this plan

Commented [RC10]: Commitment TM-12
The City will submit an updated Operations and Maintenance Manual for the Water Supply Facilities to be submitted to the Board for review 60 days prior to initiating pumping into the new reservoir.

operation and maintenance manual(s) for the new water supply components associated with the Long Term Water Project, including the new reservoir, pipelines, and pumphouses.

9. At least 60 days prior to pumping into the new reservoir, a dam breach analysis that considers cascading effects (new reservoir to Lake Geraldine) along with Issued for Construction (IFC) drawings will be submitted to the Board for review.

Commented [RC11]: Commitment TM-11
A dam breach analysis that considers cascading effects (new reservoir to Lake Geraldine) will be submitted with the Issued for Construction (IFC) drawings to the Board for review 60 days prior to initiating pumping into the new reservoir.

PART E: CONDITIONS APPLYING TO THE DEPOSIT OF WASTE AND WASTE MANAGEMENT PLANS

1. The Licensee is authorized to use the ~~Sewage Lagoon Facility and the~~ Wastewater Treatment Plant to treat and dispose of Wastewater generated by the Undertaking authorized under this Licence ~~until such time that the Upgraded Wastewater Treatment Plant authorized by the Licensee is constructed and commissioned~~, or as otherwise approved by the Board in writing.

2. The Licensee is authorized to use the Sewage Lagoon Facility for the storage of untreated sewage and sewage sludge during period of upset conditions in the Wastewater Treatment Plant, or as otherwise approved by the Board in writing.

~~2.~~3. The Licensee shall provide written notice to an Inspector and the Board at least ten (10) days prior to any planned Effluent Discharges from the Solid Waste Facilities~~y~~, Sewage Lagoon Facility, and Wastewater Treatment Plant~~, and the Upgraded Wastewater Treatment Plant once commissioned~~.

Commented [RC12]: Note that the current WWTP will likely need to be expanded or a new WWTP will need to be constructed (to replace the current WWTP or to operate in parallel to it) within the term of this new licence. Such plans and engineering drawings will be submitted to the Board in accordance with Part G regarding Modifications.

~~3.~~4. The Licensee shall establish the relevant monitoring stations for the facilities authorized under this Licence in accordance with Schedule I.

5. The Licensee shall ensure that Surface Drainage or surface Water runoff associated with site activities or generated during the construction of any facility designed to withhold, divert, or retain Water or Waste, does not exceed the ~~following Effluent criteria~~Discharge Limits below.~~:~~

Parameter	Maximum Average Concentration	Maximum concentration of Any Grab Sample
Total Suspended Solids (TSS)	50.0 mg/L	100.0 mg/L
pH	Between 6 and 9~~.~~	
Ammonia-nitrogen (when blasting is involved)	4.0 mg/L	

~~4.~~6. ~~Upon commissioning of the Upgraded Wastewater Treatment Plant, t~~Once no longer utilized, the Sewage Lagoon Facility shall be ~~used as a back-up facility or closed and~~ reclaimed in accordance ~~with~~in Part J, Item 34.

~~5.~~7. The Board has approved with this Licence 3AM-IQA27XX ~~The Licensee shall submit to the Board for approval in writing, within four (4) months of the Effective Date of the Licence, an~~ the Operation and Maintenance Manual for the Sewage Lagoon Facility dated July 21, 2026 that addresses requirements for both the Sewage Lagoon and Sludge

Management Facilities. The manual and any updates shall be prepared in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (GNWT, 1996).

6.8. The Board has approved with this Licence 3AM-IQA27XX ~~The Licence shall submit to the Board for approval in writing, by December 21, 2018 or as otherwise directed by the Board in writing, an~~ the Operations and Maintenance Manual for the ~~Upgraded~~ Wastewater Treatment Plant ~~that incorporates the requirements of Part E, Item 6~~dated April 24, 2020. The manual shall be prepared in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (GNWT, 1996).

~~7. The manual referred to in Part E, Item 7 shall supersede the manual referenced in Part E, Item 6, following approval by the Board in writing.~~

~~8. The Licensee shall submit to the Board for approval in writing, by December 31, 2018, an updated version of the plan entitled *City of Iqaluit Solid Waste Management Plan*, dated January 2014 that addresses relevant intervener's comments and recommendations made during the licensing process, such as inclusion of details related to future uses of the landfill, timeframe for closure, and ongoing activities within the scope of this Licence.~~

9. The Licensee shall undertake Dam Safety Inspections (DSI) and/or Dam Safety Reviews (DSR) of the Wastewater Treatment Facilities (as applicable) in accordance with requirements of the Canadian Dam Association (CDA), *Dam Safety Guidelines* (2007, or most current version). The Licensee shall submit for the Board's review, within the Annual Report required under Part B, Item 1, the report generated for the DSIs or DSRs along with the Licensee's recommended actions to address any deficiencies identified in the inspections and/or reviews.

10. The Licensee shall dispose of and contain all municipal solid waste generated by the City at the West 40 Landfill or the Solid Waste Disposal Facilities and associated site(s) authorized under this licence or as otherwise approved by the Board in writing.

~~11.~~ The Licensee shall ~~submit to the Board for approval, within sixty (60) days of the Effective Date of the Licence, an updated~~ operate the West 40 Landfill according to the Landfill Operation and Maintenance Manual dated January 8, 2024. Any proposed changes to landfill operations shall be documented in an updated manual submitted to the Board for approval more than 60 days before implementing the proposed change(s). ~~that addresses concerns raised by intervening parties during the licensing process including the following:~~

~~a. Management of Leachate from the facility;~~
~~b. Updated sampling and monitoring requirements; and~~
~~c. Open burning practices.~~
~~d. Ongoing activities within~~

~~12.~~11. The Licensee shall collect and contain all leachate generated by the West 40 Landfill within the Landfill.

Commented [RC13]: The City of Iqaluit now has its long-term waste management facilities in place. This was a planning document that is no longer applicable.

Commented [RC14]: The sewage lagoon has been classified in the last as a low consequence dam. CDA guidelines state that DSIs for low consequence dams are required every 1-2 years, and DSRs are not required (as long as the classification of a low consequence dam does not change).

Commented [RC15]: Modified text to reflect that there is an approved O&M manual in place for the West 40 Landfill, and that the manual will require updating and approval of the Board before any operational changes are implemented

~~13. The Licensee shall submit to the Board for review, by December 31, 2017, an updated version of the document entitled *West 40 Landfill Drainage Management Review*, dated September 16, 2011, that addresses the concerns raised by intervening parties including information on the absence of permafrost related data.~~

~~14.~~12. The Inspector may authorize an emergency Discharge, following the Licensee's written submission to the Inspector and to the Board, at least fifteen (15) days prior to discharge or as instructed by the Inspector, that includes the following information:

a. Proposed quantity of discharge;
b. Reason for discharge;
c. Identification of the Final Discharge Location;
d. Proposed sampling and analysis to be conducted; and
e. Proposed mitigation measures to implemented.

~~15.~~13. The Licensee shall submit to the Board and the Inspector for review, within sixty (60) days following any emergency Discharge authorized by the Inspector, a report that includes, among other items, an analysis of results for the emergency Discharge.

~~16.~~14. The Licensee shall maintain the Licensed Facilities to the satisfaction of an Inspector.

~~17.~~15. The Licensee shall remove from the site associated with the undertaking, all Hazardous Wastes, waste oil and non-combustible waste generated through the course of the operation, for disposal at a licensed waste disposal facility.

~~18.~~16. The Licensee shall maintain records of all Waste removed from site and records of confirmation of proper disposal of removed Waste. These records shall be made available to an Inspector or the Board upon request.

~~19.~~17. ~~The Board has approved under this Licence No: 3AM-IQA1626, Amendment No.5, the Plan entitled "City of Iqaluit Operations and Maintenance Manual Landfill and Waste Transfer Station," dated October, 2020. The Licensee shall submit to the Board for review, within sixty (60) days of approval of Amendment No. 5, an updated Manual, as referred to above, that addresses interveners' comments and recommendations provided during the review of the Application dated April 9, 2020.~~ The Licensee shall submit to the Board for approval, at least sixty (60) days prior to commencement of operations of the North 40 Landfill and Waste Transfer Station, an updated Operation and Maintenance Manual for that reflects how the City or its designate will operate the facility. The updated manual will incorporate the Leachate Collection and Characterization Plan previously approved by the Board (dated February 2, 2023). An updated implementation schedule from the Leachate Collection and Characterization Plan will be incorporated into the updated manual.

~~20.~~18. The Licensee shall collect and contain all leachate and runoff generated by the ~~New~~ North 40 Landfill and Waste Transfer Station within the facility collection ponds/sumps.

~~21.~~19. The Licensee shall characterize leachate chemistry from the ~~New~~ North 40 Landfill and Waste Transfer Station, prior to discharge to the Wastewater Treatment Facilities.

Commented [RC16]: This was completed. A closure plan will be filed for the West 40 Landfill in the near future.

Commented [RC17]: The current version of this manual is dated August 2022. It was submitted to the NWB on Sept 7, 2022, though there is no indication on the pubic registry that the Board approved it. The 2022 version was also presented as Attachment 51 of the Application.

~~22.~~20. ~~The Licensee shall submit to the Board for approval, at least six (6) months prior to commissioning of the New North Landfill or within one (1) year of approval of the Amendment No. 5, whichever comes first, a Leachate Characterization and Management Plan that includes methods for characterization of leachate and contingency measures for discharge that incorporate appropriate mitigations, including, if necessary, leachate treatment, to avoid adverse effects in the receiving environment.~~ The Licensee shall implement the *Leachate Characterization and Management Plan* dated February 2, 2023 that includes methods for characterization of leachate and contingency measures for discharge that incorporate appropriate mitigations, including, if necessary, leachate treatment, to avoid adverse effects in the receiving environment.

~~23.~~21. The Licensee shall monitor and report on the leachate before the leachate collection ponds become full and implement any treatment methodologies within one year of making a decision that treatment of the leachate in the ponds is as per the Leachate Characterization and Management Plan ~~required under Part E, Item 23~~.

~~24.~~22. The Licensee shall inspect the leachate collection system on a daily basis during periods of flow as per the ~~"City of Iqaluit~~ Operations and Maintenance Manual for the North 40 Landfill and Waste Transfer Station~~," dated October, 2020~~.

~~25.~~23. The Licensee shall add additional ground cover at the landfill, if disturbance occurs due to nuisances' wildlife or other causes.

PART F: CONDITIONS APPLYING TO CONSTRUCTION

1. The Licensee shall, submit to the Board for review, within thirty (30) days prior to commencing construction of any facilities or infrastructure authorized under this Licence, for-construction designs and drawings, signed and stamped by an Engineer.

2. The Licensee shall ensure that all relevant approved facilities are designed and constructed to engineering standards such that, at a minimum, they comply with the most current version of the *Canadian Dam Safety Guidelines*.

3. The Licensee shall use fill material for Construction only 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.

4. The Licensee shall maintain shoreline stability during construction.

5. The Licensee shall ensure that all final designs and drawings are qualified by an Engineer confirming that:

   a. Works are designed under sound engineering principles;
   b. Design limitations are understood and communicated within the report; and
   c. Measures are implemented to minimize impact to Water.

6. The Licensee shall, submit to the Board for review, within ninety (90) days of completion

of any structure authorized under this licence, to contain, withhold, divert or retain Water or Wastes; a construction summary report prepared by an Engineer that includes, among other relevant information, as-built drawings, documentation of field decisions that deviated from original plans, and any data used to support these decisions.

7. The Licensee shall, if contamination of surface and/or ground water is encountered during construction and excavation, notify the Inspector immediately and implement the Spill Contingency Plan.

8. The Licensee shall develop and implement measures necessary to prevent and mitigate erosion and/or the release of sediment into Water during the construction of the Upgraded Wastewater Treatment Plant or during any construction activities associated with the Undertaking.

9. The Board ~~has~~ approved under this Licence 3AM-IQA27XX~~1626 Amendment No. 4~~, the Plan entitled "Apex River Water Withdrawal: Erosion and Sediment Control Plan," dated December 21, 2018.

The Board has approved under this Licence No: ~~3AM-IQA1626~~3AM-IQA27XX, ~~Amendment No.5,~~ the Plan entitled "City of Iqaluit Environmental Protection Plan Construction Phase, Landfill and Waste Transfer Station," dated ~~December 2020~~August 2022. ~~The Licensee shall submit to the Board for review, within sixty (60) days of approval of Amendment No. 5, an updated Plan. as referred to above, that addresses interveners' comments and recommendations provided during the review of the Application dated April 9, 2020~~.

10. The Board has approved under this Licence No: ~~3AM-IQA1626~~3AM-IQA27XX, ~~Amendment No.5,~~ the Plan entitled "City of Iqaluit Environmental Protection Plan - Operations, Closure and Post-Closure Phases, Landfill and Waste Transfer Station," dated ~~October, 2020~~August 2022. ~~The Licensee shall submit to the Board for review, within sixty (60) days of approval of Amendment No. 5, an updated Plan, as referred to above, that addresses interveners' comments and recommendations provided during the review of the Application dated April 9, 2020.~~

11. The Board has approved with this Licence 3AM-IQA27XX ~~The Board has approved under this Licence No: 3AM-IQA1626, Amendment No.5,~~ the Plan entitled "City of Iqaluit Erosion and Sediment Control Plan, Landfill and Waste Transfer Station," dated ~~October, 2020~~August 2022. ~~The Licensee shall submit to the Board for review, within sixty (60) days of approval of Amendment No. 5, an updated Plan, as referred to above, that addresses interveners' comments and recommendations provided during the review of the Application dated April 9, 2020.~~

~~11.~~12. ~~The Licensee shall, submit to the Board for review, at least six (6) months prior to commencing construction of the New North Landfill facility, a Heat Generation and Permafrost Mitigation Plan that addresses comments and recommendations provided during~~

Commented [RC18]: Item #9 was duplicated in Amendment No. 4 and No. 5. This is Item #9 from Amendment No. 4.

Commented [RC19]: This is Item #9 from Amendment No. 5.

Commented [RC20]: The updated O&M manual for the North 40 Landfill and Waste Transfer Station with thermal mitigation dated August 2022 was submitted on September 7, 2022. This item is no longer required.

~~the review of the Application dated April 9, 2020.~~

~~12. The Licensee shall, submit to the Board for review, at least sixty (60) days prior to commencing construction of the New North Landfill facility, the proposed cut methodology for mitigating permafrost degradation.~~

13. The Licensee shall submit an updated Environmental Protection Plan to the Board for review at least 60 days prior to the start of construction of the Long Term Water Project.

14. The Licensee shall submit a Site-Specific Erosion and Sediment Control Plan to the Board for review at least 60 days prior to the start of construction of the Long Term Water Project. The Site-Specific Erosion and Sediment Control Plan shall present the following information:
    a. Potential sources of erosion and sedimentation
    b. Location-specific mitigation measures
    c. Stockpile management procedures
    d. Setbacks from waterbodies
    e. Drainage controls
    f. Inspection and maintenance requirements
    g. Corrective action and stabilization measures.

15. The Licensee shall submit a final Construction Water Management and Monitoring Plan to the Board, incorporating intervenor comments received during the technical review, for review at least 60 days prior to the start of construction of the Long Term Water Project.

Commented [RC21]: Provided with IFC drawings 60 days prior to construction. No longer required.

Commented [RC22]: Commitment TM-08
The City will submit an updated Environmental Protection Plan to the Board for review and approval 60 days prior to the start of construction of the Long Term Water Project.

Commented [RC23]: Commitment TM-09
The City will submit a site-specific Erosion and Sediment Control Plan to the Board for review and approval 60 days prior to the start of construction of the Long Term Water Project.

Commented [RC24]: Commitment TM-10
As per CIRNAC's Aug 17, 2026 response to Commitment TM-10.

PART G: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the potable Water Treatment Facilitiesy and Waste Treatment Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:

   a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
   b. Such Modifications are consistent with the NPC Land Use Planning (NPC) Conformity Determination and the NIRB Screening Decision;
   c. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
   d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
   e. The Board has not rejected the proposed Modifications.

2. Modifications for which all of the conditions referred to in Part G, Item 1 have not been met can be carried out only with written approval from the Board.

3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications. These plans and drawings shall be stamped by an Engineer.

PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Board has approved under this Licence 3AM-IQA27XX3AM-IQA1626 Amendment No. 4, the Plan entitled "*Apex River Water Withdrawal: Site Specific Spill Contingency Plan*," dated December 21, 2018.

2. The Board has approved with this Licence 3AM-IQA27XX Spill Contingency Plan Rev. 4 dated April 24, 2026 covering current municipal operations.

3. The Licensee shall submit to the Board for review an updated Spill Contingency Plan for municipal operations that incorporates the elements of the Long Term Water Project at least 60 days prior to initiating pumping into the New Reservoir.

4. The Licensee shall submit a construction-focused Spill Contingency Plan to the Board for review at least 60 days prior to the start of construction of the Long Term Water Project that identifies the planned locations of temporary storage of fuel and other hazardous materials.

2.5. The Licensee shall, subject to section 16 of the Regulations, report any unauthorized deposits

Commented [RC25]: Commitment TM-14
The City will submit an updated Spill Contingency Plan to include the Long Term Water Project to the Board for review and approval 60 days prior to initiating pumping into the new reservoir.

Commented [RC26]: Commitment TM-13
The City will submit a Spill Contingency Plan for the construction phase of the Long Term Water Project (LTWP) to the Board for review and approval 60 days prior to the start of construction of the LTWP that identifies the location of planned temporary storage of fuel and other hazardous materials.

of Waste or foreseeable unauthorized deposits of waste and/or Discharges of Effluent, and:

a Employ, as required, the approved Spill Contingency Plan;
b Report the incident immediately via the NWT/NU 24-Hour Spill Reporting Line (867) 920-8130 and to the Inspector at (867) 975-4295; and
c For each spill occurrence, submit a detailed report to the Inspector, no later than thirty (30) days after initially reporting the event. The report shall include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain, clean up and restore the spill site.

~~3.~~6. The Licensee shall, in addition to Part H, Item 2, regardless of the quantity of release of a harmful substance, report to the NWT/NU Spill Line if the release is near or into a Water body.

PART I: CONDITIONS APPLYING TO MONITORING

1. The Licensee shall monitor the relevant potable Water Treatment Facilities~~y~~ and Waste Treatment Facilities authorized under this Licence in accordance with requirements included under Schedule I.

2. The Licensee shall, submit Board for approval in writing, within sixty (60) days of the Effective Date of this Licence, an updated Monitoring Program that addresses monitoring requirements for the Water Treatment Facilities~~y~~ and Waste Treatment Facilities. The Monitoring Program shall address, among other items, the requirements outlined in Schedule I.

3. All analyses required under Schedule I shall be conducted using methods as described in the most recent edition of "*Standard Methods for the Examination of Water and Wastewater*", or by such other methods as approved by the Board in writing.

4. All laboratory analyses shall be performed at a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

5. The Board has approved with this Licence 3AM-IQA27XX ~~The Licensee shall, submit to the Board for review, within sixty (60) days of the Effective Date of the Licence, an updated~~ The Environmental Monitoring Program and Quality Assurance/Quality Control (QA/QC) Plan prepared in accordance with *Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" Licensees in Meeting SNP Requirements and for Submission of a QA/QC Plan* (INAC, 1996 or most current version). The updated plan shall be accompanied by a letter from an Analyst of an accredited laboratory confirming acceptability of the Plan.

6. The Licensee shall measure by instrument and record in cubic metres, the monthly quantities of freshwater extracted for use for all purposes under this Licence from the following water sources:

a. Lake Geraldine Reservoir, at Monitoring Program Station No. IQA-01~~, used for all purposes under this Licence.~~
b. Niaqunngut (Apex) River at Monitoring Program Station No. IQA-10

c. Lake Qikiqtalik at Monitoring Program Station No. IQA-11
d. New Reservoir discharging to the Lake Geraldine Reservoir at Monitoring Station No. IQA-12
e. Withdrawal from Imiqtarivivinig (Dead Dog Lake) at Monitoring Program Station No. IQA-13

6.7. The Licensee shall measure, by instrument and record in cubic metres, the quantities of Effluent released from the Sewage Lagoon Facility at Monitoring Station No. IQA-02, Wastewater Treatment Plant ~~and/or Upgraded Wastewater Treatment Plant~~ at Monitoring Station No. IQA-04, ~~and~~ the West 40 Landfill at Monitoring Station No. IQA-08, the leachate tank at the Waste Transfer Station at Monitoring Station No. IQA-15, and the leachate collection ponds at the North 40 Landfill at Monitoring Station No. IQA-16.

7.8. The Licensee shall measure and record in cubic metres, the monthly and annual volumes of sludge removed from the Wastewater Treatment Facilities.

8.9. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations of sources of Water utilized and Waste deposited under this Licence.

9.10. The Licensee shall include all of the data and information required by the Monitoring Program under Schedule I within the Annual Report required under Part B, Item 1 of the Licence or as otherwise requested by an Inspector and/or the Board.

10.11. Additional Monitoring may be requested by the Board and/or the Inspector.

12. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Board in writing and do not constitute an application for Amendment as defined in the *Act.*

11.13. The Licensee shall monitor the Supplementary Pumping Program (SPP) in accordance with requirements included under Schedule I.

12.14. The Licensee shall monitor water uptake from Imiqtarviviniq (Dead Dog Lake) in accordance with requirements included under Schedule I.

13.15. The Licensee shall implement the Plan entitled "*Facility Monitoring Plan, Landfill and Waste Transfer Station*," dated December 2020 that was ~~submitted within the Application and~~ approved by the Board with the issuance of Licence No: 3AM-IQA1626, Amendment No. 5.

PART J: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

~~1. The Board has accepted the document entitled *Iqaluit Solid Waste Management Plan West 40 Landfill Decommissioning Technical Memorandum*, dated January 2014, submitted as additional information with the Application.~~

~~2.~~1. The Licensee shall submit to the Board for approval in writing, at least one (1) year prior to commencing the decommissioning of the West 40 Landfill, a Final Closure and Reclamation Plan prepared by an Engineer in accordance with industry's best practices and relevant guidelines.

~~3.~~2. The Licensee shall, for the Plan required under Part J, Item 12~~,~~, include a presentation of data and a discussion of ~~environmental conditions existing before the use of the site by the Licensee as a municipal landfill, as well as~~ remediation objectives.

~~4.~~3. The Licensee shall notify the Board in writing, at least one year prior to the implementation of final closure, of its intentions to proceed with final closure of any Water use or Waste disposal facilities included within the scope of this Licence, excluding the Facility under Part J, Item 12.

4. The Licensee shall provide to the Board for review, the final closure design report, including details pertaining to site drainage, within one year of closure of the West 40 Landfill and one year prior to undertaking West 40 Landfill reclamation work.

Commented [RC28]: The environmental conditions before using the area for the West 40 Landfill are not known. Additionally, it is unclear the objective of trying to surmise pre-development conditions.

Commented [RC29]: From Amendment No. 5 of the current licence. This overlaps somewhat with the Final Closure and Reclamation Plan identified in Item #1 (previously, Item #2) above. Perhaps these could be consolidated into a single item? The one above is asking for a PLAN prepared by an Engineer and this item is asking for a DESIGN REPORT. Both sounds like an engineering deliverable that includes design drawings, which is presumably what will be required.

SCHEDULES

Schedule A: Scope, Definitions, and Enforcement
Schedule B: General Conditions
Schedule C: No Schedule for Security
Schedule D: No Schedule for Use of Water and Water Management Plans
Schedule E: No Schedule Waste Disposal and Waste Management Plans
Schedule F: No Schedule for Construction
Schedule G: No Schedule for Modifications
Schedule H: No Schedule for Spill Contingency Planning
Schedule I: Monitoring
Schedule J: No Schedule for Closure and Reclamation

Schedule A: Definitions

In this Licence, 3AM-IQA1626:

"**Act**" means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

"**Addendum**" means the supplemental text that is added to a full plan, manual, or report, usually included at the end of the document and is not intended to require a full resubmission of the revised report. It may also be considered as an appendix or supplement;

"**Amendment**" means a change to any terms and conditions of this Licence through application to the NWB, requiring a change, addition, or deletion of specific terms and conditions of the Licence not considered as a modification;

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

"**Annually**" means, in the context of monitoring frequency, one sampling event occurring every 365 days with a minimum of 200 days between sampling events;

"**Application**" means, for the purposes of this License, the totality of the NWB Public Register opened as a result of the filing of the application to replace and amend expired Water Licence 3AM-IQA0611(3AM-IQA0612);

"**Biannually**" means, in the context of the monitoring frequency, two sampling events occurring per calendar year, with a minimum of 150 days and a maximum of 210 days between sampling events;

"**Board**" means the Nunavut Water Board established under Article 13 of the *Nunavut Land Claims Agreement* and under section 14 of the Act;

"**Discharge**" means the release of any Water or Waste to the receiving environment;

"**Effective Date**" means the date on which the Minister of Indigenous and Northern Affairs Canada approves the Licence;

"**Effluent**" means treated or untreated liquid Waste material that is Discharged into the environment from the site water management facilities such as a settling pond or a treatment plant;

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

"**Engineered Structure**" means any facility, designed and approved by a Professional Engineer who is registered with the Association of Professional Engineers, Geologists and Geophysicists of Nunavut;

"**Grab Sample**" means an undiluted quantity of material collected at a particular time and place that may be representative of the total substance being sampled at the time and place it was collected;

"**Greywater**" means the component of Effluent produced from domestic use (i.e. washing, bathing, food preparation and laundering), excluding Sewage;

"**Hazardous Waste**" means materials or contaminants categorized as dangerous goods under the *Transportation of Dangerous Good Act* (1992), no longer used for their original purpose and intended for recycling, treatment, disposal or storage at appropriate facilities;

"**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*);

"Imiqtarviviniq (Dead Dog Lake)" means the water body located within the City's boundaries and identified in the Application ~~dated April 9, 2020~~ for use as a water source for dust suppression and general municipal activities, as described in that Application.

Commented [RC30]: Added with Amendment No. 5.

"**Inspector**" means an Inspector designated by the Minister under section 85 (1) of the Act;

"**Licence**" means this Type "A" Water Licence No. 3AM-IQA1626, issued by the Nunavut Water Board to the City of Iqaluit in accordance with the Act;

"**Licensee**" means the entity to whom Licence No. 3AM-IQA1626 is issued or assigned;

"**Minister**" means the Minister of Indigenous and Northern Affairs Canada (INAC);

"**Modification**" means an alteration to a physical work that may introduce a new structure or eliminates an existing structure and does not alter the purpose or function of the work;

"**Monitoring Program**" means the program to collect data on surface water and groundwater quality to assess impacts to the environment of an appurtenant undertaking;

"**Monthly**" means, in the context of monitoring frequency, one sampling event occurring within calendar month with a minimum of twenty-one (21) days between sampling events;

"~~New~~ North 40 Landfill" means the solid waste management facility located approximately 6 km north of the City, functioning as a landfill to receive waste from the Waste Transfer Station, and other sources, as described in the Application ~~dated April 9, 2020~~.

"**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;

"**Quality Assurance / Quality Control (QA/QC)**" Quality Assurance means the system of activities designed to better ensure that quality control is done effectively; Quality Control means the use of established procedures to achieve standards of measurement for the three principle components of quality: precision, accuracy and reliability;

"**Quarterly**" means divisions of the calendar year, comprised of three month intervals from January to December, inclusive (January – March, April – June, July – September and October – December);

"**Regulations**" means the *Nunavut Waters Regulations* (SOR/2013/669 18th April, 2013);

"**Sewage**" means all toilet wastes and greywater;

"**Sewage Lagoon Facility**" refers to the waste disposal facility and associated structures designed and constructed to treat Sewage in the City of Iqaluit since 1978, which has also been upgraded in subsequent years;

"**Sludge Management Facility**" means the facility located within the West 40 Landfill that is used for the disposal and treatment of sludge generated by the Wastewater Treatment Plant;

"Solid Waste Disposal Facilities" means the New North Landfill, Waste Transfer Station, West 40 Landfill, Sludge Management Facility and all other facilities identified in the Application dated April 9, 2020 that are designed and constructed to manage solid waste generated by the City of Iqaluit;

"Supplementary Pumping Program (SPP)" means the pumps, pipe/hose, intakes, coffer dams, and related temporary facilities to use fresh Water from the Niaqunguk River (Apex River)), to augment Water levels in the Lake Geraldine Reservoir. The active pumping under the SPP is authorized to proceed in accordance with the terms and conditions of the Licence from June to October annually to address a potential Water shortage in the following winter.

"Surface Drainage" means all surface waters resulting from the flow over, through or out of an operations area and is collected by means of Engineered structures;

"**Undertaking or Undertakings**" means an undertaking or undertakings in respect of which Water is to be used or Waste is to be deposited, as classified in Schedule 1 of the *Regulations*;

~~"**Upgraded Wastewater Treatment Plant (UWWTP)**" means the current Wastewater Treatment Plant, which was designed, constructed, and commissioned under Phase 1, for the preliminary treatment of Wastewater, in addition to the infrastructure scheduled for construction and commissioning by December 2018, under Phase 2, for the secondary treatment of Wastewater as described in the Application;~~

"**Use**" means use as defined in section 4 of the Act;

"**Waste**" means Water as defined in section 4 of the Act;

Commented [RC31]: From Amendment No. 5, replaced the above definition for Solid Waste Facility.

Commented [RC32]: From Amendment No. 4.

"**Waste Transfer Station (WTS)"** means the solid waste management/transfer facility located within the City's industrial area, functioning to receive, compact, and bale municipal waste prior to transferring to the ~~New~~ North 40 Landfill, as described in the Application ~~dated April 9, 2020~~.

"**Waste Treatment Facilities**" refers to all facilities constructed and operated by the City of Iqaluit to manage solid and liquid Waste associated with this licence.

"**Wastewater**" means the water generated by site activities or originates on-site that requires treatment or any other water management activity;

"**Wastewater Treatment Facilities**" means the Sewage Lagoon and~~,~~ Wastewater Treatment Plant~~, Upgraded Wastewater Treatment Plant~~ and associated facilities authorized under this Licence;

"**Wastewater Treatment Plant**" means the engineered system, located adjacent to the Sewage Lagoon Facility that is designed for the containment and ~~preliminary~~ treatment of Sewage generated by the City of Iqaluit as described in the Application;

"**Water or Waters**" means water as defined in section 4 of the *Act*;

"**Water Treatment Facilities~~y~~**" means the engineered facilities and appurtenances designed and constructed for the withdrawal, storage, treatment, and distribution of fresh water for domestic purposes, described in the Application; and

"**West 40 Landfill**" means the Solid Waste Facility or original landfill facility along with its Northern Expansion and Sludge Management Facility that is designed to manage solid waste generated by the City of Iqaluit.

Commented [RC33]: From Amendment No. 5.

Schedule B: Annual Reporting Requirements

The Annual Report referred to in Part B, Item 1, shall include the following:

a. The monthly and annual quantities in cubic metres of fresh Water withdrawn from the Lake Geraldine Reservoir at Monitoring Station No. IQA-01, the Niaqunguk River (Apex River) at Monitoring Station No.: IQA-10, Lake Qikiqtalik at Monitoring Station No. IQA-11; the discharge of the New Reservoir to Lake Geraldine Reservoir at Monitoring Station No. IQA-12; the volumes of water removed from the ponds within the LTWP footprint that are discharged to the Niaqunguk (Apex) River at Monitoring Station No. IQA-13; and the volume of water removed for dust suppression purposes from Imiqtarviviniq (Dead Dog Lake) at Monitoring Station No. IQA-14.
b. The monthly and annual quantities in cubic metres of any Discharges from the Wastewater Treatment Facilities at Monitoring Stations IQA-02, IQA-04, ~~and~~ IQA-08, IQA-15 and IQA-16;
c. Copy of reports generated from Dam Safety Inspections and Dam Safety Reviews along with the Licensee's proposed actions to address issues identified and/or updates on continuing actions to address issues;
d. The monthly and annual quantities in cubic metres of sludge removed from the Wastewater Treatment Facilities;
e. The monthly and annual quantities of Wastes disposed of at the West 40 landfill and North 40 Landfill;
f. A summary report which includes all data and information generated under the Monitoring Program, including the QA/QC program, in electronic and printed formats acceptable to the Board;
g. A summary of all construction activities carried out for facilities under the Licence;
h. A summary of modifications and/or major maintenance work carried out on the potable Water Treatment and Waste Treatment Facilities, including all associated structures;
i. A progress report and revisions (if applicable) to any studies requested by the Board that relate to Waste management, Water use or reclamation and a brief description of any future studies planned by the Licensee including, a non-technical executive summary for the general public, translated into Inuktitut;
j. Any revisions required, in the form of addenda, to Plans, Manuals and Reports approved under the Licence;
k. A list and description, including volumes and Spill Report Line Identification Number, of all ~~un-authorized~~unauthorized Discharges, spills and summaries of follow-up action taken;
l. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling;
m. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector;
n. A brief update on the implementation plan of all facilities within the scope of this Licence including changes projected implementation and status of the Upgraded Wastewater Treatment Plant;
o. A summary of any studies, reports and plans requested by the Board that relate to Waste disposal, Water use or reclamation and a brief description of any future studies planned; and

Commented [RC34]: Leachate from WTS and North 40 Landfill, respectively (confirm these numbers haven't changed)

p. Any other details on the use of Water or Waste disposal requested by the Board by November 1st of the year being reported.

~~q. The 2019 Annual Report referred to in Part B, Item 1, shall provide the following information about the SPP including:~~
~~1. A summary of the SPP program, including lessons learned, based on monitoring and mitigation efforts.~~
~~2. GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) and datum for the locations of all water withdrawals.~~
~~3. The daily and monthly quantities in cubic metres of fresh Water withdrawn from the Niaqunguk River (Apex River) watershed at Monitoring Station No. IQA-10.~~
~~4. The daily water levels and/or flow rates in the Niaqunguk River when withdrawals are occurring at Monitoring Station No. IQA-10.~~
~~5. All other monitoring conducted to meet the Fisheries and Oceans Canada requirements.~~
~~6. Discussion of any observed trends, exceedances, or unanticipated impacts.~~

~~r. The monthly and annual quantities in cubic metres of fresh Water withdrawn from Imiqtarviviniq (Dead Dog Lake) at Monitoring Station No. IQA-14.~~

~~s.~~q. The monthly and annual quantities, and general types of Wastes brought to the Waste Transfer Station and disposed of at the ~~New~~ North 40 Landfill.

~~t.~~r. A review of procedures for packaging, storage, and shipment of harmful hazardous waste.

~~u.~~s. An update on the capacity of the landfill cell currently in use, including the installation timing calculation (inputs and result), including discussion on the required actions/schedule for the design and installation of the next lined disposal area in the sequence.

Commented [RC35]: IQA-14 captured under Item #1 above, with the other water withdrawal sources.

Schedule I: Condition Applying to Monitoring

Table 1: Water Quality Parameters

Test Groups	Analytical Parameters	Units
Flow (F)	Volume	m^3
Field	pH	pH units
	temperature	°C
	conductivity	µS/cm
	Dissolved Oxygen (DO)	mg/L
	Turbidity	NTU
Construction runoff (CR)	pH	pH units
	Total suspended solids (TSS)[1]	mg/L
	Ammonia-nitrogen[2]	mg/L
Laboratory (L)	PHCs Fractions F1 to F4, including BTEX	
	Total metals	
	Dissolved metals	
	PFAS (WTS only)	
	PAHs	
	Dissolved major ions (including alkalinity), hardness, total dissolved solids and total suspended solids	
Effluent (E)	pH (field and lab)	N/A
	Conductivity (field and lab)	µS/cm
	Temperature (field)	°C
	Total suspended solids (TSS)	mg/L
	Biological oxygen demand (BOD_5)	mg/L
	Fecal coliforms	CFU / 100 mL
	Nitrate	mg/L
	Nitrite	mg/L
	Ammonia-nitrogen	mg/L
	Sulphate	mg/L
	Chloride	mg/L
	Total hardness	mg/L
	Total alkalinity	mg/L
	Total phenols	mg/L

Commented [RC36]: Incorporate into LS

Commented [RC37]: This is a standardized list that appears in other recent municipal Type A water licences.

	Total organic carbon (TOC)	mg/L
Initial Leachate Characterization (ILC)	Chemical Oxygen Demand (COD)	mg/L
	Total phosphorus	mg/L
	Orthophosphate	mg/L
	Total Kjeldahl nitrogen (TKN)	mg/L
	ICP metals scan (Al, As, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Na, Ni, Pb, Zn)	mg/L
	Polychlorinated biphenyls (PCBs)	mg/L
	Benzene, toluene, ethylbenzene, xylenes (BTEX)	mg/L
Landfill Specific (LS)	Polychlorinated biphenyls (PCBs)	mg/L
	Benzene, toluene, ethylbenzene, xylenes (BTEX)	mg/L
	Polychlorinated biphenyls (PCBs)	mg/L

NOTE:

1. Turbidity can be used as a surrogate for TSS provided adequate testing of turbidity and TSS has been conducted on the same samples, and the resultant relationship established between turbidity and TSS has been filed with the Board.
2. Runoff from areas subject to blasting must be tested for ammonia-nitrogen.

Commented [RC38]: These are in additional to the "Effluent" parameters above, and these are taken from Dillon's 2023 Leachate Collection and Characterization Plan". It does not appear in other municipal Type A water licences. These parameters are important to know how oxygen consuming and nutrient-rich the leachate is, to determine potential treatment options.

Once the initial characterization period is completed, these parameters will no longer be tested for. Instead, it will be Effluent and Landfill Specific as per other municipal Type A water licences.

~~Table 1 – Water Quality Parameters~~		
~~Test Groups~~	~~Analytical Parameters~~	~~Units~~
~~Field~~	~~pH~~ ~~temperature~~ ~~conductivity~~ ~~Dissolved Oxygen (DO)~~ ~~Turbidity~~	~~pH units~~ ~~°C~~ ~~µS/cm~~ ~~mg/L~~ ~~NTU~~
~~Laboratory~~	~~PHCs Fractions F1 to F4, including BTEX~~ ~~Total metals~~ ~~Dissolved metals~~ ~~PFAS (WTS only)~~ ~~PAHs~~ ~~Dissolved major ions (including alkalinity), hardness, total dissolved solids and total suspended solids~~	~~mg/L~~
~~Routine (R)~~	~~Alkalinity, Acidity, Chloride, Carbonate, Bicarbonate,~~ ~~Total Hardness, Hydroxide, Sulphate, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Total Organic Carbon (TOC), Total Inorganic Carbon (TIC)~~	~~mg/L~~
	~~pH (field and lab)~~	~~pH units~~
	~~Oxidation-Reduction Potential (ORP) (field)~~	~~mV~~
	~~Conductivity (field and lab)~~	~~uS/cm~~

	Temperature (field)	°C
	Turbidity	NTU
Effluent (E)	Total Suspended Solids (TSS)	mg/L
	Temperature (field)	°C
	Conductivity (field and lab)	uS/cm
	pH (field and lab)	pH units
Acute Lethality (AL)	Based on Environment Canada's *Procedure for pH Stabilization During the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout* (EPS 1/RM/50, March 2008), if single concentration test fails and un-ionized ammonia concentration is less than or equal to 1.25 mg/|L	"Pass" / "Fail"
ICP- Metals Scan (Total)	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Sn, Ag, Sr, Tl, Ti, U, V, Zn, Hg	mg/L
Nutrients (N)	Ammonia-N, Nitrate-N, Nitrite-N	mg N/L
	Total Phosphorus, Orthophosphate	mg/L
Biological (B)	Biochemical Oxygen Demand	mg/L
	Total and Fecal Coliform	CFU/100 mL
Potable Water (PW)	Fecal Coliform	CFU/100 mL
	ICP Metals (Total and dissolved)	mg/L
	Total Suspended Solids - TSS	mg/L
Flow (F)	Volume	m^3
Landfill Specific (LS)	Polychlorinated Biphenyls (PCBs) Benzene, Toluene, Ethylbenzene and Xylene (BTEX)	mg/L

Table 2: Water Quality Monitoring Criteria

Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
IQA-01	Water withdrawal from the Lake Geraldine Reservoir ~~– Raw Water~~	Active	F	Monthly	~~Biannually~~ Annually
			~~R, PW~~	~~Monthly~~	
~~IQA-01(#)~~	~~Based on Part I, Item 4 of Expired Licence~~	~~Inactive~~	~~N/A~~	~~N/A~~	~~N/A~~
IQA-02	Sewage Lagoon – Effluent Discharge Point	Active	~~B, N,~~ E~~, ICP~~	Once prior to discharge; once during discharge; and once prior to the completion of discharge	Annually
			F	During decant	
IQA-03	Sewage Lagoon – Influent	Inactive	N/A	N/A	N/A
IQA-04	Wastewater Treatment Plant - Effluent	Active	~~B, N, E, ICP~~	~~Quarterly – Prior to commissioning of the WWTP~~	Annually
			~~B, N,~~ E~~, ICP~~	Monthly~~– Following commissioning of the WWTP~~	
			~~AL~~	~~Annually – following commissioning of the WWTP~~	
			F	During Discharge	
IQA-05	Wastewater Treatment Plant - Influent	~~A~~Inactive	~~B,~~ E~~, N, ICP~~	Biannually – Prior to commissioning of the WWTP	Annually
				No testing requirements following commissioning of the WWTP	N/A
IQA-06	Sludge – From WWTP	Active	~~B,~~ E, ~~N, ICP~~	Quarterly	Annually
IQA-07	Surface Water entering West 40 Landfill – Based on Part E, Item 4 of the Expired Licence	Inactive	N/A	N/A	N/A

Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
IQA-08	West 40 Landfill – Effluent Discharge Point~~, Based on Part E, Item 4 of the Expired Licence~~	Active	~~B,~~ E, ~~N, ICP, F,~~ LS	Once prior to discharge; once during discharge; and once prior to the completion of discharge	Annually
			F	During Discharge	
~~IQA-08(#)~~	~~Based on E, Item 17, Part F, Item 10 & Part I, Item 4 of the Expired Licence~~	~~Inactive~~	~~N/A[2]~~	~~N/A~~	~~N/A~~
IQA-08A	Station situated up-gradient of West 40 Landfill	Active	~~B,~~ E, ~~N, ICP, F,~~ LS	Annually	Annually
IQA-08B	Station situated down-gradient of West 40 Landfill	Active			
IQA-09	Contaminated soil accepted at the West 40 Landfill	Inactive	NA	N/A	N/A
IQA-10	W~~ater w~~ithdrawal from ~~Upper~~ Niaqunngut (Apex) River ~~for transfer directly into the Reservoir~~	Active	F	Daily when withdrawals occur~~ring~~ at this station~~.~~	~~Annual Report~~Annually
~~IQA-11~~	~~Withdrawal from Middle Niaqunngut River watershed for transfer directly into the Reservoir. Withdrawal point to be located on an ephemeral tributary near where it enters the Niaqunngut River or on the river itself just downstream of the confluence with the tributary.~~	~~Inactive~~	~~F~~	~~Dailing when withdrawals occurring at this station.~~	~~N/A~~
~~IQA-12~~	~~Withdrawal from small unnamed source water lakes adjacent to Lake Geraldine Reservoir for transfer directly to the reservoir~~	~~Inactive~~	~~F~~	~~Dailing when withdrawals occurring at this station.~~	~~N/A~~
~~IQA-13~~	~~Withdrawal from large unnamed source water lake for transfer into~~	~~Inactive~~	~~F~~	~~Dailing when withdrawals occurring at~~	~~N/A~~

	~~ephemeral tributary to Niaqunngut River. Intent of withdrawal is to provide water to withdrawal point at Monitoring Station IQA-10.~~			~~this station.~~	
IQA-11	Water withdrawals from Lake Qikiqtalik	Active	F	Daily when withdrawals occur at this station	Annually
IQA-12	Water transfers from the new reservoir to the Lake Geraldine Reservoir	Active	F	Daily when withdrawals occur at this station	Annually
IQA-13-Pond-A IQA-13-Pond-B	Dewatering of ponds within the LTWP footprint during construction, discharged to local drainages	Active	F, Field, CR	Flow: Continuous during discharge Water quality: two grab samples >150 m apart at least 5 days prior to discharge; two grab samples twice during discharge (at least 1 day apart)	Monthly and annually
IQA-13-Pond-C IQA-13-Pond-D IQA-13-Pond-E		Active	F, Field, CR	Flow: Continuous during discharge Water quality: one grab sample at least 5 days prior to discharge; one grab sample during discharge	Monthly and annually
IQA-14	Water withdrawal from Imiqtarivivinig (Dead Dog Lake) for dust suppression~~.~~	Active	F	Daily when withdrawals occur~~ring~~ at this station	Annually
IQA-15	Waste Transfer Station Runoff/Leachate Discharge Point	Active	~~B, E, N, ICP,~~ E, F, LS ILC instead of LS (first two years only)	~~Daily flow~~Flow: volume removed from leachate collection tank for disposal Water quality: ~~once prior to discharge;~~ once during discharge~~, and once prior to the completion of discharge~~	Annually
IQA-16 ~~(WS-103)~~	Landfill Runoff/Leachate Discharge Point	Active	~~B,~~ E, ~~N, ICP,~~ F, LS ILC instead of LS (first two years only)	Flow: during discharge from the leachate collection pond ~~Daily flow measurements,~~ Effluent quality: once prior to discharge; once during discharge; and once prior	Annually

Commented [RC39]: The leachate will be collected in a 4,500 L tank, thus the volume is not significant and one sample should be adequate.

				to the completion of discharge	
SW1 to SW3	Waste Transfer Station surface water monitoring	Active	Field, Laboratory	Twice per year~~Monthly~~ Twice per year, one month apart	Annually
WS-100 to WS-102	New North Landfill surface water monitoring	Active	Field, Laboratory	Twice per year~~Monthly~~ Twice per year, one month apart	Annually
Monitoring wells 19MW-01 to 19MW-045	Waste Transfer Station ground-water monitoring	Active	Field, Laboratory	Twice per year~~Monthly~~ Twice per year, one month apart	Annually
W-107 to W-111	New North Landfill ground water monitoring	Active	Field, Laboratory	Twice per year~~Monthly~~ Twice per year, one month apart	Annually

[1] Table 2 may be modified by the Board and re-issued where necessary. Re-issuance is not considered an Amendment to the application or Licence as defined in the *Act.*
[2] Means not applicable