

WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Qikiqtarjuaq	Gord Marinic
Licence No. / Expiry	Representative's Title
3BM-QIK1924	Regional Engineer
Land / Other Authorizations	Land / Other Authorizations
Date of Inspection	Inspector
June 22 ,2022	Joseph Monteith
Activities Inspected	

☐ Camp

☐ Drilling

☐ Mining

☐ Construction

☐ Reclamation

☐ Fuel Storage

☐ Roads/Hauling

☒ Other: Potable Water Source, Waste Water Treatment Facility, Solid Waste Facility

☐ Other:

Conditions:	A- Acceptable	U-Unacceptable	C-Concern	NI-Not Inspected	NA- Not applicable
PART:				Condition	Observation No.*
A: SCOPE, DEFINITIONS AND ENFORCEMENT				A	
B: GENERAL CONDITIONS				A	
C: CONDITIONS APPLYING TO SECURITY				NI	
D: CONDITIONS APPLYING TO WATER USE				A	1-5
E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT				C	6-19
F: CONDITIONS APPLYING TO MODIFICATIONS				NI	
G: CONDITIONS APPLYING TO CONSTRUCTION				NI	
H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING				A	20
I: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING				NA	
J: CONDITIONS APPLYING TO MONITORING				A	
SCHEDULES				A	
*The observation number corresponds with specific comments provided below.					
Samples taken by Inspector:		Location(s): N67° 33' 00'',W64°02' 00''			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					

SECTION 1

☒ Comments (s.__)

☐ Non-Compliance with Act or Licence (s.__)

☐ Action Required (s.__)

BACKGROUND

On August 2, 2019, The Nunavut Water Board emailed the proponent, and WRO Monteith acknowledging receipt of a Water Licence Renewal application. On September 20, 2019, The Nunavut Water Board approved the Hamlet a renewal licence 3BM-QIK1924 effective on September 20, 2019, and expires on September 19, 2024. The licence renewal authorizes the Hamlet to withdrawal 34,500m³ per annum or maximum of 299 m³ per day.

Community infrastructure includes:

- A Water Supply Facilities which draws water from Tulugak River. Water is transferred by gravity from the intake location to the Water Storage Reservoir, and is treated in the truck-fill station and is delivered by trucks to holding tanks in each building;
- A Sewage Disposal/Treatment Facilities (double celled lagoon system) which receives trucked sewage collected from holding tanks in each building and houses, with a wetland area between the lagoon and the ocean; and
- A Solid Waste Facility, which includes a Metals disposal area, and Hazardous Waste storage area. Segregation of waste needs to be approved.

Inspector Statement

On June 22, 2022, A water licence inspection was conducted by Water Resource Officer (WRO) Joseph Monteith at the Hamlet of Qikiqtarjuaq, Qikiqtani Region, Nunavut.

General Condition

On July 29, 2021, Richard Dwyer, Nunavut Water Board – Manager of Licencing, emailed WRO Monteith a copy of Qikiqtarjuaq’s 2020 Annual Report, satisfying Part B: Subsection 1 of the general condition of the water licence.

Water Use and Related Structures

1. Water is being withdrawn from Tulugak River (photo 1). The water is transferred by gravity to the intake

location, which settles approximately 4-6 inches above the intake pipe. The activity of filling up the Water reservoir requires filling the pipe (photo 2) which recharges the reservoir as described above (photo 3) using underground pipe made out of HDPE approximately 8 inches in diameter transfers the water to the water reservoir, then into the treatment facility (photo 4). After filling up the reservoir the water is then transferred to the truck fill station and treated with liquid Chlorine, and filtered before being pumped into trucks for delivery (photo #5). At the time of the inspection the recharge pipe was closed, and the water level below the recharge pipe (photo 3).

- 2. An operating water flow meter was observed on site, and read Gallons (photo 6).
- 3. A log sheet for truck fill procedures undated showed a weekly total of 34954497 Litres was withdrawn at the time of the inspection (photo 7).
- 4. The water reservoir didn't appear to be working as intended as there is a suspected leak in the liner of the reservoir. The outer walls appeared to be slumping and leaking water from the reservoir on the North wall of the reservoir (Photo 8). Samuel Nuqingaq, Municipal Forman for Hamlet of Qikiqtarjuaq said that once the reservoir hits 22 metres full(measured diagonally from the top of the water table to the bottom of the lagoon on the opposite side of the water table measurement), the leak of the water reservoir begins.
- 5. On June 27, 2022 Samuel Nuqingaq, Qikiqtarjuaq foreman, Hamlet of Qikiqtarjuaq emailed WRO Monteith a copy of the Hamlet of Qikiqtarjuaq's Water Usage Records. Water Usage Records between January 2022, and May 2022 shows a total of 10,455,952.40 Litres withdrawn.

Waste Water Treatment Facility

- 6. The waste water treatment facility lagoon walls continue to appear to have a sign of a leak in the south east side of the lagoon (photo 9).
- 7. The freeboard was below the 1 metre mark in most parts of the lagoon (photo 10).
- 8. Windblown garbage was observed in the Waste Water Treatment Facility (photo 10).
- 9. The decanting pipe protruding up above the waste water table. With freeboard height, this pipe doesn't appear to be operating as intended (photo 10).
- 10. On September 20, 2022 Samuel Nuqingaq emailed WRO Monteith an email notifying me of the hamlet intent to decant.
- 11. On September 29, 2022, Samuel Nuqingaq, Qikiqtarjuaq foreman, Hamlet of Qikiqtarjuaq emailed WRO Monteith a copy of the sample results, and all parameters were compliant against the water license. In the same email Matthew Nuqingaq, Qikiqtarjuaq foreman, Hamlet of Qikiqtarjuaq notified me his intent to decant south side lagoon.
- 12. On October 14, 2022 Matthew Nuqingaq, Qikiqtarjuaq foreman, Hamlet of Qikiqtarjuaq notified WRO Monteith by email that they had completed the decanting of the sewage lagoons.

Solid Waste Facility

- 13. The licensee manages their solid waste by segregating the hazardous waste, burning and capping, and stocking bulk metals and woods separately. The licensee manages water by building dykes to limit the amount of water flowing in and out of the facility.
- 14. The Solid Waste Facility has good signage indicating where the metals dump, and land farm.
- 15. The hazardous Waste is within the fenced part of the burn and cap section of the Solid Waste Facility. Although there is sea can for the public to deposit waste in, it is full of batteries, paints, waste oil containers. Some signs of hazardous waste was observed in the burn and cap. Another sea can to deposit more hazardous waste was requested by Bhabesh Roy, P,Eng., Regional Engineer in 2021.
- 16. The fencing around the burn and cap facility requires maintenance on the East wall and repair on the North wall

Hazardous Materials and Waste/Soil Treatment Facility

- 17. Further to the Solid Waste Facility is a mix of historic metals waste home heating fuel tanks, white waste such as washers, dryers, fridges, freezers, and hazardous waste as oil drums, and propane tanks in bermed and no berm sections on the south side. Some of the bermed sections have lining, but are improperly installed or unmaintained (photo 16).
- 18. Hazardous Waste was observed throughout the Solid Waste Facility. Numerous signs of historic spills (photos 15).
- 19. A soil treatment facility lays uncommission. It was observed that the incomplete soil remediation project contained water (photo 13), and must be discharged appropriately as per the water licence discharge requirements. The plan to complete the soil treatment facility was authorized to be completed. At the time of the inspection, it was noted that the consulting engineer of the facility had visited the site, but did not say it was completed.

Spill Report 2019

- 20. On Friday March 1, 2019 the Hamlet submitted spill report 2019-081to the NT/NU Spill Line. The spill was for 38850.00 Litres of sewage, covering an area of 600 m³.

SECTION 2	<input type="checkbox"/> Comments	<input checked="" type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
-----------	-----------------------------------	--	--

- Part B: Item 7
The Licensee shall immediately report to the 24-Hour Spill Report Line at (867) 920-8130, any spills of Waste, which are reported to, or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.
- Part D: Item 10
The Licensee shall segregate and store all hazardous waste material and/or hazardous waste within the Solid Waste Facility in a manner as to prevent the deposit of deleterious substances into any water until such a time as proper disposal arrangements are made;
- Part D: Item 11
The Licensee shall implement measures to prevent hazardous materials and/or leachate from the Solid Waste Disposal Facility from entering water.

As such, to ensure the terms and conditions of your water license are met, your attention in this matter is required.

SECTION 3


☐ Comments

☐ Non-Compliance with Act or Licence

☒ Action Required

- The following information is a summary of the Actions Required by the licensee to promote and ensure compliance. Please provide a response to the following Actions Required within 30 days of receiving this report proposing timelines to address the concerns noted.
- Provide an update for the completion of the Soil Remediation Structure.
 - Investigate the cause of the leak, and slumping of the Water Treatment Facility Reservoir walls.
 - Purchase the proper cap for the Water Treatment Facility Water Reservoir Recharge Pipe, to stop the leak of water into the reservoir.
 - Consolidate all hazardous waste in the burn and cap, and bulk metals facilities and segregate
 - The Licensee is reminded to remain diligent to prevent wastes from entering water, the environment, and adhere to the discharge requirements for waste disposal detailed in the water licence.
 - Submit a spill report for the historical spills observed in the Hazardous Waste Facility.

As such, to ensure the terms and conditions of your water license are met, your attention in this matter is required.

Licensee or Representative	Inspector's Name
Gord Marinic	Joseph Monteith
Signature	Signature
	
Date	Date
	December 12, 2022

CC: Licensing Department, NWB
Jeremy Fraser, Manager of Field Operations, CIRNAC

Photo Log

Date	Camera	Inspector
------	--------	-----------

June 22, 2022	Galaxy S9	Joseph Monteith
Photo Log #1	Location	
Photo 1	Qikiqtarjuaq	
		
Description: Tulugak River: Water Withdrawal location. Ice froze the top portion of the ditch.		

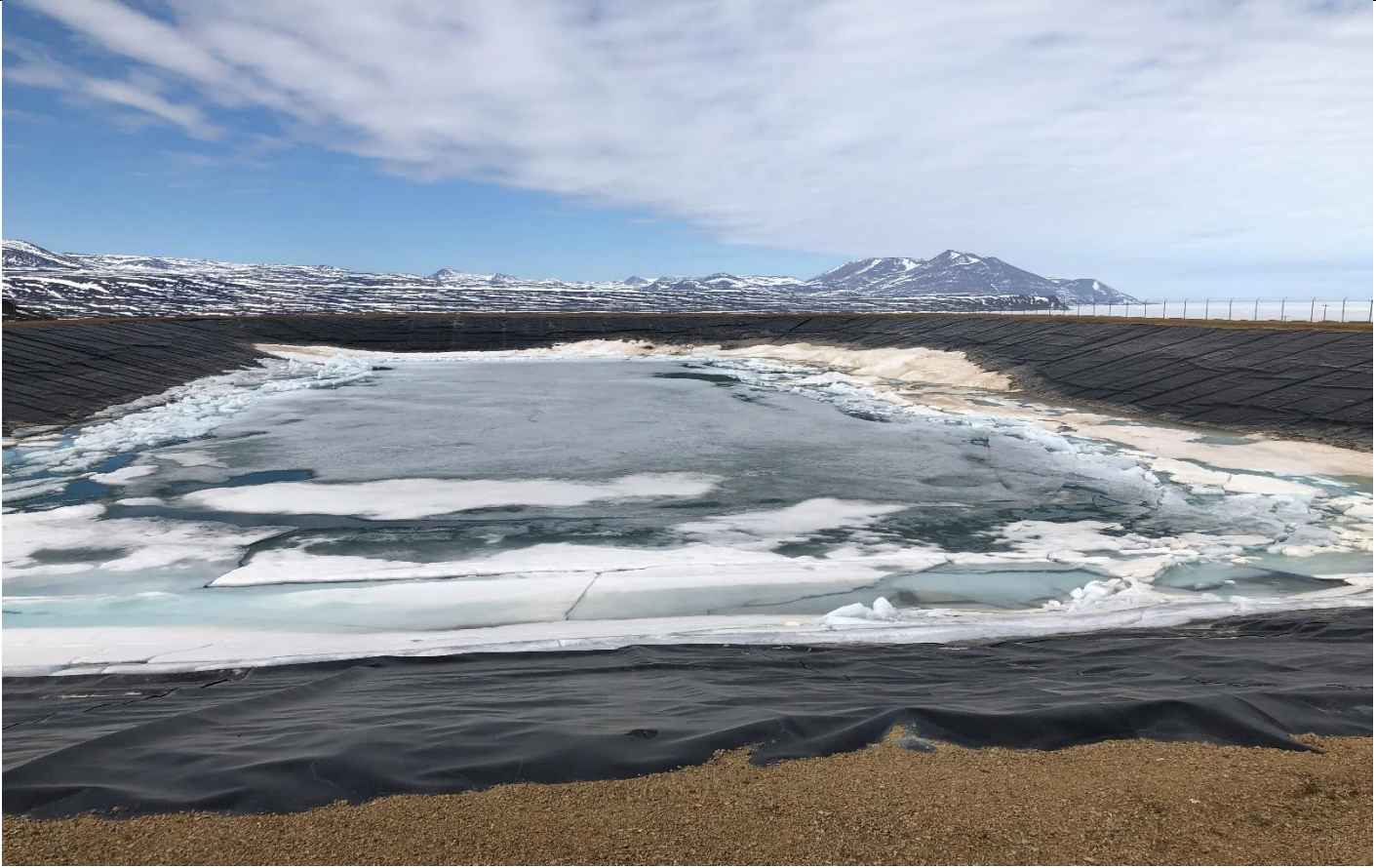
Photo Log #1	Location
Photo 2	Qikiqtarjuaq
	
Description: water intake pipe. More than 50% below the water table.	

Photo Log #1	Location
--------------	----------



Photo 3

Qikiqtarjuaq



Description: Water Reservoir – intake pipe from water withdrawal location at Tulugak River. Uncontrolled withdrawal of water from the water source

Photo Log #
Photo 4

Location
Qikiqtarjuaq



Description: Water Treatment Facility/Truck Pumping House. Samuel Nuqingaq

Photo Log #

Location

Photo 5

Qikiqtarjuaq



Description: Inside Water Treatment Plant. Mobile Water Pump with mesh screen behind auger drill.

Photo Log #1

Location

Photo 6

Qikiqtarjuaq




Description: McCrometer Water Meter reads 871658 Gallons x 100

Photo Log #1

Photo 7

Location

Qikiqtarjuaq



Name of the Community Water System *Qikiqtarjuaq*

Date *June 20* To *June 24*

Operator *JB*

Water Truck # <i>ALC/100-0-0-0-0-0</i>	Monday <i>9:30am</i>	Tuesday <i>9:05</i>	Wednesday <i>9:14</i>	Thursday <i>9:14</i>	Friday <i>9:20</i>	Saturday <i>9:20</i>	Sunday <i>9:20</i>
Time <i>9:30am</i>	<i>9:30am</i>	<i>9:05</i>					
Flow Meter (Litres) <i>34954497</i>	<i>34954497</i>	<i>34954497</i>	<i>34954497</i>				
Flow Rate of Water Pump <i>26.1/308.1</i>	<i>26.1/308.1</i>	<i>307.0</i>	<i>2993</i>				
Chlorine Tank Level <i>21.0</i>	<i>21.0</i>	<i>20.0</i>	<i>19</i>				
Chlorine Pump Stroke Setting <i>30/38</i>	<i>30/38</i>		<i>30/40</i>				
Free Chlorine (mg/l) Between 0.2 and 0.5 <i>0.41</i>	<i>0.41</i>	<i>0.38</i>	<i>0.37</i>				
Total Chlorine (mg/l) Greater than Free Chlorine <i>0.48</i>	<i>0.48</i>	<i>0.51</i>	<i>0.44</i>				
Turbidity (NTU) Raw <i>1.88</i>	<i>1.88</i>	<i>2.81</i>	<i>1.70</i>				
Treated <i>9:38am</i>	<i>9:38am</i>	<i>9:15</i>	<i>2.03</i>				
Building Temperature (°C) <i>9:38am</i>	<i>9:38am</i>	<i>9:15</i>	<i>2.03</i>				
Heat Trace Power On (Y or N) <i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>				
Operators Initials <i>J.B.</i>	<i>J.B.</i>	<i>J.B.</i>	<i>J.B.</i>				

Please email to Bhabesh Roy at broy@gov.nu.ca, Jason Mablick at jmablick@gov.nu.ca and Janise Idlout at jidlout3@gov.nu.ca

Comments *Tuesday, National Indigenous day National True day*

Description: 3. A log sheet for truck fill procedures not dated. a total of 34954497 Litres withdrawn to date. This appears to run contrast to whats been observed in the water meter. An articulation on how the community records water usage is required.

Photo Log #1

Photo 8

Location

Qikiqtarjuaq



Description: signs of slumping on outer wall of Water Reservoir. Once the reservoir reaches 22 metre(measured diagonally) the reservoir leaks

Photo Log #1

Location

Photo 9

Qikiqtarjuaq



Description: Signs of slumping of the South side outer wall of Waste Water Treatment Facility.

Photo Log #1

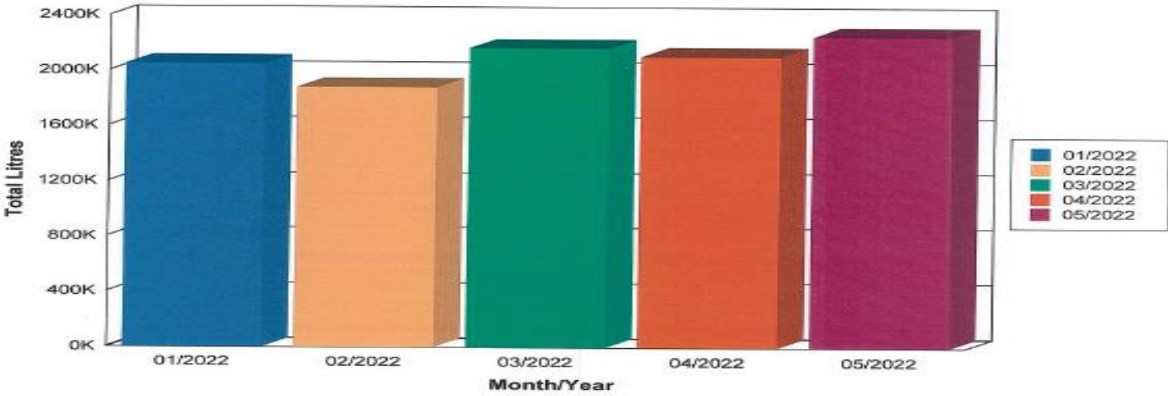
Location

Photo 10

Qikiqtarjuaq

Delivery Summary By Month and Year

Printed on: Jun 22 2022 @ 2:58:14PM
Page: 1 of 1



Month / Year	Litres Delivered
January 2022	2,048,671.70
February 2022	1,879,223.30
March 2022	2,166,638.00
April 2022	2,107,782.10
May 2022	2,253,637.30
Grand Total:	10,455,952.40

Description: Water Usage Records between January 2022, and May 2022 shows a total of 10,455,952.40 Litres withdrawn.



Photo Log #1

Location

Photo 11

Qikiqtarjuaq



Description: Fence requires repair on the North East side of burn and cap facility

Photo Log #1

Location

Photo 12

Qikiqtarjuaq




Description: Damaged fencing on North Side of Wall of burn and cap facility

Photo Log #1	Location
Photo 13	Qikiqtarjuaq



Description: Signs of windblown garbage in Waste Water Treatment Facility – Decanting Pipe appears above the lagoon waste water table. Freeboard appears to be above the 1 metre freeboard.

Photo Log #1	Location
Photo 14	Qikiqtarjuaq



Description: Below the lined, and unlined berms and mixed metals. Water exiting the bulk metals. Observed 2019, this area seems to be the natural drainage route of water.

Photo Log #1	Location
--------------	----------



Photo 14

Qikiqtarjuaq



Description: Water in the soil remediation berm. No signs of activity in 2021, but the accumulation of water in the berm indicates the berm isn't damaged.

Photo Log #1
Photo 15

Location
Qikiqtarjuaq



Description: Hazardous waste in the bulk metals section of the solid waste facility. Batteries, paint cans, and propane tanks.

Photo Log #1

Location



Photo 15

Qikiqtarjuaq



Description: Hazardous Waste Facility. Multiple signs of spills. Signs of historic spills.