



WATER LICENCE INSPECTION FORM

☒ Original
☐ Follow-Up Report

Licensee		Licensee Representative	
Hamlet of Grise Fiord		Gord Marinic	
Licence No. / Expiry		Representative's Title	
3BM-GRI2025		Regional Engineer	
Land / Other Authorizations		Land / Other Authorizations	
Date of Inspection		Inspector	
July 5, 2022		Joseph Monteith	
Activities Inspected			
<input type="checkbox"/> Camp	<input type="checkbox"/> Drilling	<input type="checkbox"/> Mining	<input type="checkbox"/> Construction
<input type="checkbox"/> Roads/Hauling	<input checked="" type="checkbox"/> Other: Potable Water Source, Waste Treatment Facility, and Solid Waste Facility	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Fuel Storage

Conditions:	A- Acceptable	U-Unacceptable	C-Concern	NI-Not Inspected	NA- Not applicable
PART:				Condition	Observation No.*
A: SCOPE, DEFINITIONS AND ENFORCEMENT				NA	
B: GENERAL CONDITIONS				A	
C: CONDITIONS APPLYING TO SECURITY				NI	
D: CONDITIONS APPLYING TO WATER USE				A	1-9
E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT				C	10-21
F: CONDITIONS APPLYING TO MODIFICATIONS				NI	22-24
G: CONDITIONS APPLYING TO CONSTRUCTION				A	
H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING				A	
I: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING				NI	
J: CONDITIONS APPLYING TO MONITORING				A	
SCHEDULES				A	
<i>*The item number corresponds with specific conditions within the licence and the observation number corresponds with specific comments provided below.</i>					
Samples taken by Inspector:		Location(s): N76 25 32.5 W82 54 31.			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					

SECTION 1	<input checked="" type="checkbox"/> Comments (s. __)	<input type="checkbox"/> Non-Compliance with Act or Licence (s. __)	<input type="checkbox"/> Action Required (s. __)
BACKGROUND <p>The Hamlet of Grise Fiord is a small community located on the southern tip of Ellesmere Island at Latitude 76°25'N and Longitude 83° 01'W, within the Qikiqtani Region of Nunavut. The Community is located approximately 320 km NE of Resolute. The Community is situated on a narrow strip of beach near the mouth of Grise Fiord. Surface soils in the area consist of free-draining gravel deposits. The depth of the active layer of permafrost is approximately 0.6m.</p> <p>The Hamlet is responsible for providing municipal services to its estimated 178 (2020) residents, including potable water supply, sewage treatment, and solid waste management, partly in the context of a water licence issued by the Nunavut Water Board (NWB or Board) to the Hamlet. The potable water source for the community is a stream of glacial runoff which lasts for about 45 to 50 days a year during the summer from mid-June to beginning of August, resupplying two storage tanks through gravity feed. These storage tanks were built in 1986 (Tank A) and 2002 (Tank B) and have a capacity of 4,000 m3 each. The Community has a secondary water source (Airport River) about 300 m away from these tanks.</p> <p>The Hamlet of Grise Fiord is licenced to withdrawal 7,700 cubic metres per annum, and less than 300 cubic metres per day.</p> Inspector Statement <p>On July 5, 2022, a water licence inspection by Water Resource Officer (WRO) Joseph Monteith was conducted at the Hamlet of Grise Fiord, Qikiqtani Region, Nunavut.</p> General Conditions <p>On August 19, 2020, Richard Dwyer, Manager of Licensing, Nunavut Water Board emailed WRO Monteith with a copy of the Hamlet of Grise Fiord's 2020 Annual Report, satisfying the general conditions to submit an annual report.</p> <p>WRO Monteith reviewed the Nunavut Water Board Public Registry and found the submission of the 2021 Annual Report.</p>			



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Water Use and Related Structures

1. Water withdrawal is conducted from a glacier run-off stream that meanders down to the Hamlet of Grise Fiord from the mountain above Grise Fiord. A pond with walls that extend up approximately a metre and a half catches water run-off, and pools up. Fencing was being erected around the ponds at the time of the inspection. Due to the repairs to the storage tank, water truck withdrawal was required. No sign of fish mesh screen (photo 1,3,4).
2. At the time of the inspection a yellow triangle sign was observed titled GRI-1. A monitoring station as listed in the water licence.
3. The secondary water source at airport river was observed with a water pump and hose (photo 2). The hose from the water pump deposited the water in the water reservoir.
4. A 4 inch HDPE piping with a Fish Mesh Screen extends into the pond through the pond walls.
5. The single walled piping from the water source to the water storage tank has multiple holes in the piping, patched only by screwing in screws with the rubber washers built into the screws. At the time of the inspection no signs of leaks in the pipes were noted. The length of piping from the pond to the water treatment facility is approximately 173 metres. The pipe changes into a flexible hose before it goes into water treatment facility. A green hose was observed.
6. The Water Treatment Plant , and its inner pipes (photo 5,6,7,8).
7. Couldn't get flow meter readings in the water treatment plant. Got Totalizer amount on the community water truck (photo 9).
8. On October 7, 2022 Daryl Dibblee, Hamlet of Grise Fiord, NU emailed WRO Monteith with the water usage typed into the body of the email (Photo 18). In the email it showed the Water Usage Record from January 1, 2022 to September 30, 2022 shows that the community withdrew 3,924,055 Litres. Below the authorized amount of 8000m³.
9. Water Storage Tank under repair. Equipment outside of tank (photo 10,11).
10. A bridge crossing was inspected within the community. No signs of erosion on the banks or sedimentation were observed in the fresh water. Buildup of sand was observed on the bridge. This buildup has the potential to spill over into the fresh water. A containment wall should be fixed onto the bridge, and maintained to prevent sedimentation into the river. (photo 17).

Waste Water Treatment Facility

11. The amount of waste deposited at the sewage lagoon should match the amount withdrawn from the potable water source, but doesn't take into account the amount water use such as dust suppression, which cannot be calculated as the same amount discharged at the sewage lagoon waste water. At the time of the inspection no record of waste deposited at the lagoon was observed (photo 13).
12. The walls of the sewage lagoon appeared to be working as intended, with no signs of erosion or leaks. The freeboard was above the 1 metre freeboard on the south wall (photo 13).
13. Two yellow triangle signs titled GRI-3 and GRI-4 was observed. GRI-3 was observed at the sewage lagoon. GRI-4 was observed down slope of the sewage lagoon indicating monitoring sites.
14. Notification of intention for decanting was emailed to WRO Monteith on June 29, 2022. No sample results were provided. A spill report is required for unauthorized discharge of waste.

Solid Waste Facility

15. The Solid Waste Facility was loosely segregated into Woods, Metals, Hazardous Wastes and Burnable Wastes (photo 14).
16. The burnable waste is open pit burned, pushed off the end of that section then capped with soil. No fencing around the burnable waste.
17. The bulk metals contain white waste, and metal from construction. Hazardous Waste was observed at this site (photo 16).
18. Wood waste was segregated, probably for the purpose of allowing the community help themselves to the wood wastes (photo 15).
19. The Hazardous Waste sea can is mixed with the bulk metal waste. Lots of hazardous waste observed within the bulk metals (photo 16).
20. A yellow triangle sign titled GRI-2 was observed, which indicated a monitoring site. No Samples were taken on this inspection.

Spill Report 2018-088

21. A follow up on Spill Report 2018-088 is still listed as "Open" and is led by the Government of Nunavut. The spill occurrence of 3100 Litres from the Qulliq Energy Corp. power station happened on March 16, 2018. The GN is the lead due to it being outside any of the facilities of the water license. The spill had migrated to a fresh water pond then out to the ocean. A follow up with the GN, on their investigation will determine our course of action.
22. A spill was observed adjacent to the repair of the water storage tank. It is unknown whether the spill is



within the property of facilities authorized by this water license. The spill isn't in close proximity to a water body (photo 12).

SECTION 2	<input type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input checked="" type="checkbox"/> Action Required
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The following information is a summary of the actions Required by the licensee to promote and ensure compliance:

- Consolidate Hazardous Waste from Solid Waste Facility and deposit into Hazardous Waste section (photo 9).
- Build a containment wall on the bridge to mitigate the amount of soil falling into the river and causing sedimentation (photo 5).
- Erect fencing around the open pit burning section of the Solid Waste Facility to manage wind-blown litter (photo 8).
- Separate bulk metals, bulk wood, domestic waste, and hazardous waste to be in line with National Standards for the management of Solid Waste Facilities.
- Consider a plan to divert surface water run off away from Solid Waste Facility to mitigate the amount of wastes migrating to the receiving marine environment.
- Email joseph.monteith@rcaanc-cirnac.gc.ca notifying the inspector the intent to decant the sewage lagoon.
- Send WRO Monteith sample results ahead of a decant of the sewage lagoon.
- Verify whether there is Fish Mesh Screen on the intake hose at Airport River secondary water source, and the water source with the green hose.

SECTION 3	<input type="checkbox"/> Comments	<input checked="" type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
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Part C: Conditions Applying to Water Use

Item 5. The Licensee shall implement sediment and erosion control measures, prior to and during operations, to prevent entry of sediment into Water.

Part D: Conditions Applying to Waste Disposal

Item 2. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector prior to initiating any decant of the Sewage Disposal Facility.

Item 4. The Licensee shall maintain at all times, a Freeboard of at least 1.0 metre, or as recommended by a qualified Geotechnical Engineer and as approved by the Board in writing, for all dams, dykes or other structures intended to contain, withhold, divert or retain Water or Waste.

Item 6. The Licensee shall manage all solid Waste disposed of at the Solid Waste Disposal Facility in accordance with acceptable standard and practices.

Item 8. The Licensee shall segregate and store all hazardous materials and/or hazardous Waste within the Solid Waste Disposal Facility in such a manner as to prevent the deposit of deleterious substances into any Water, until such a time that the materials have been removed for proper disposal at an approved facility.

Part F: Conditions Applying Operation and Maintenance

Item 6. The Licensee shall, during the term of this Licence, undertake the following activities in addition to any other required action should an unauthorized discharge of waste occur or if such a discharge is foreseeable:

a. Employ the appropriate contingency measures as approved under the Spill Contingency Plan for the Hamlet of Grise Fiord;

b. Report the incident immediately via the NWT/NU 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and

c. Submit to the Inspector, a detailed report on each occurrence, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and preventative measures to be implemented.

Licensee or Representative	Inspector's Name
Gord Marinic	Joseph Monteith
Signature	Signature
Date	Date
	December 14, 2022

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



PHOTO LOG

Date	Camera	Inspector	
July 5, 2022	Galaxy S9	Joseph Monteith	
Photo Log #1		Location	
Photo 1		Grise Fiord, NU	



Description: Water Source, Non-Engineered water reservoir. Water Treatment Plant, and Water Storage Tanks top left of photo.

Photo Log

Location

Photo 2	Grise Fiord, NU
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Description: Secondary Water Withdrawal from Airport River. Water pumps and hoses observed in place. Hose goes from Water pump to Water Reservoir.



Photo Log

Photo 3

Location

Grise Fiord, NU



Description: Sign Reads Hamlet of Grise Fiord, Water Supply

Photo Log

Photo 4

Location

Grise Fiord, NU



Description: Green Hose may have been used to withdrawal water while the water storage tanks are repaired.



Photo Log

Photo 5

Location

Grise Fiord, NU



Description: 3x Water Storage Tanks. 2 of 3 Water Storage Tanks damaged. Of the 2 damaged storage tanks, 1 was being repaired (left tank). The other decommissioned (right tank).

Photo Log

Photo 6

Location

Grise Fiord



Description: Soil build up on bridge. No walls on bridge to prevent soil from falling into fresh water.



Photo Log
Photo 7

Location
Grise Fiord, NU



Description: Water meter observed on site.

Photo Log
Photo 8

Location
Grise Fiord, NU



Description: Internal piping to distribute water to the 3 different water storage tanks.



Photo Log

Photo 9

Location

Grise Fiord, NU



Description: Water Meter on the Water Delivery Truck.. Totalizer reads

Photo Log

Photo 10

Location

Grise Fiord, NU



Description: Outside the Storage Tank, Storage Tank under repairs.



Photo Log

Photo 11

Location

Grise Fiord , NU



Description: Inside the Water Storage Tank. Storage Tank under repairs.

Photo Log

Photo 12

Location

Grise Fiord, NU



Description: spill observed behind building adjacent to storage tank construction.



Photo Log

Photo 13

Location

Grise Fiord, NU



Description: bulk metal within the sewage lagoon

Photo Log

Photo 14

Location

Grise Fiord, NU



Description: Pile of waste. Bulk woods, mixed with Styrofoam, bulk metals, petroleum carrying jerry cans, and domestic waste. Surface water observed.



Photo Log

Photo 15

Location

Grise Fiord, NU



Description: Bulk woods section of the solid waste facility

Photo Log # 1

Photo 16

Location

Grise Fiord, NU



Description: Bulk Metal waste. Waste drums not in secondary containment.



Photo Log

Photo 17

Location

Grise Fiord, NU



Description: Soil build up on bridge. No walls on bridge to prevent soil from falling into fresh water.

Photo Log

Photo 18

Location

Grise Fiord, NU

From: Grise Fiord SAO <gfsao@qiniq.com>
Sent: Friday, October 7, 2022 2:07 PM
To: Monteith, Joseph <joseph.monteith@rcaanc-cirnac.gc.ca>
Cc: Marty ASAO <gfasao@qiniq.com>
Subject: RE: Water Usage Records

2022
Jan 480,628
Feb 416,732
March 460,233
April 470,910
May 453,718
June 385,958
July 366,799
August 464,775
September 424,302

Yes decanting was completed in Early summer
Marty will forward details, he is copied
He is in course

Daryl Dibblee

Description: Water Usage Record from January 1, 2022 to September 30, 2022. Shows 3,924,055 Litres