



Richard Dwyer,
Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven, NU X0B 1J0

May 30, 2023

Re: Request for Change to Schedule I of Type A Water Licence 2AM-BRP1831

Dear Mr. Dwyer,

B2Gold Nunavut is hereby requesting changes to the description and frequency requirements provided in Schedule I of the Type A Water Licence 2AM-BRP-1831 (Licence) related to Monitoring Program Station BRP-17. Schedule I of the Licence describes Monitoring Program Station BRP-17 as “Goose Property Sewage Treatment Plant (discharge point for treated sewage onto land)” and requires a sampling frequency of “prior to discharge”. B2Gold Nunavut proposes that the BRP-17 sampling location be moved to a representative discharge drainage point immediately prior to entry of discharge to the freshwater receiving environment. B2Gold Nunavut also proposes that the sampling frequency be changed from “prior to discharge” to monthly. No changes to the body of the Licence or the water quality criteria outlined in Part F, Item 4 of the Licence are being requested.

Sabina considers the proposed changes to be “manifestly insignificant” and therefore does not require submission to NPC and NIRB. The proposed changes do not require modification and/or amendment of the Approved Type A Water Licence. The requested change will be undertaken in accordance with general monitoring requirements and will be aligned with the management and monitoring activities outlined in the approved Water Management Plan for the approved mine site. No changes are required to the NIRB Project Certificate No. 007 and/or in relation to NIRB Monitoring or reporting requirements.

B2Gold Nunavut outlines below background related to current Licence requirements, the proposed changes, the ability to request a change, as well as justification for the request. In addition, B2Gold Nunavut has included a self-assessment in relation to the Nunavut Planning Commission (NPC) and Nunavut Impact Review Board (NIRB) guidance related to self-assessment of the significance of the proposed modifications.

1. Background

1.1 CURRENT LICENCE REQUIREMENTS

Part F, Item 4 of The current Type A Water Licence 2AM-BRP1831 (Licence) issued by the Nunavut Water Board (NWB) on August 31, 2021 allows the discharge of Goose Property Sewage Treatment Plant (STP) Effluent to either land and/or the Tailings Storage Facility and requires that *“The Discharge of Effluent onto land from the STP at Monitoring Program Station BRP-17 and/or to the Tailings Storage Facility or Tailings Facilities at BRP-17A (or any replacement Monitoring Program Stations as described in an update to Schedule I) shall not exceed the following Effluent quality limits:”*

Parameter	Monitoring Program Station BRP-17 Maximum Allowable Concentration (mg/L)	Monitoring Program Station BRP-17A Maximum Allowable Concentration (mg/L)
BOD ₅	30	100
Total Suspended Solids (TSS)	35.0	120
Fecal Coliform (CFU/100 mL)	1,000	10,000
Ammonia (NH ₃ -N)	4 ^a , 8 ^b	
Phosphorus	4 ^a , 8 ^b	
Total Oil and Grease	No Visible Sheen	
pH	Between 6.0 and 9.5	

Notes: a - Maximum average concentration; b - Maximum concentration of any grab sample.

Part D, Item 27 of the Licence further requires that “the Licensee shall operate the Sewage Treatment Plant in accordance with the conditions provided in Part F, Item 4 with Effluent compliance at Monitoring Program Stations BRP-17 and BRP-17A (or any replacement Monitoring Program Station as described in an update to Schedule I), during discharge to the tundra.”

Schedule I, Table 2 of B2Gold Nunavut’s Type A water licence further defines the monitoring program associated with General Monitoring Station BRP-17 as:

Monitoring Program Station	Monitory Type	Description	Mine Phase	Group Code ¹	Frequency
BRP-17	Regulated Monitoring ²	Goose Property Sewage Treatment Plant (discharge point for treated sewage onto land)	Construction to Closure	A, F	Prior to discharge

1. Schedule I, Table 1 defines monitoring groups A to J and provides a descriptor and associated parameters to be monitored. Specifically, Group Code A represents field chemistry with monitoring for pH, specific conductivity and temperature, and Group Code F represents Sewage with monitoring for Biochemical Oxygen Demand (5-day), TSS, Fecal Coliform, ammonia, phosphorus, Oil and Grease, and pH.

2. Regulated Monitoring is defined in B2Gold Nunavut’s approved Water Management Plan as monitoring that is to be set by legislation or authorization requiring specific discharge/effluent criteria to be met for compliance.

1.2 REQUESTING A CHANGE TO SCHEDULE I

Part B, Item 19 of the Licence states that:

“The Schedules attached to this Licence provide details regarding the requirements associated with specific items in the main body of the Licence and are included in the Schedule to provide greater clarity and as an aid to interpretation for the Licensee. If the Board subsequently determines that an item in any of the Schedules requires revision in order to better reflect the intent and objectives of the Licence, the Board may at its discretion, and upon consulting and providing written notice to the Licensee and interested parties, revise the Schedule accordingly. Unless the Board directs otherwise, such revision may not necessarily be considered as an “Amendment” to the Licence.”

Part I, Item 19 of the Licence further indicates that:

“As noted in Part B, Item 19, changes to the Schedules, including Schedule I, which provides details of the Monitoring Program, may, at the Board’s discretion, be considered without requiring an Amendment to the Licence. However, the Board must approve any changes to the Monitoring Program, as outlined in Part I and Schedule I; any request for changes to the Monitoring Program should be submitted to the NWB in writing, and should include the justification for the change.”

2. Change Being Requested

B2Gold Nunavut is requesting that the description and sampling frequency provided in Schedule I of the Licence related to Monitoring Program Station BRP-17 be changed as illustrated below:

Monitoring Program Station	Monitory Type	Description	Mine Phase	Group Code ¹	Frequency
BRP-17	Regulated Monitoring	Goose Property Sewage Treatment Plant (discharge point for treated sewage into freshwater-onto land into freshwater)	Construction to Closure	A, F	Prior to discharge <u>Monthly</u>

Notes: strikethrough indicates proposed deleted text; underlining indicates proposed new text.

3. Justification for Requested Change

In accordance with Part I, Item 19, B2Gold Nunavut is providing the following written justification of the requested change.

Upon review of B2Gold Nunavut’s Type A Water Licence, B2Gold Nunavut noticed the Effluent quality limits defined in Part F, Item 4 of the Licence (originally proposed by B2Gold Nunavut during the regulatory review process) appear to have been taken prescriptively from the approved Mary River Type A Water Licence. However, in the case of Mary River, discharge criteria sampling occurs at the effluent discharge location to the aquatic receiving environment and the associated terms and conditions of Water Licence 2AM-MRY (Part F, Item 19) specifies the effluent quality limit be met where the effluent enters a polishing pond, directly into the ocean, or to ditches flowing into the ocean.

Further, Section 7.4.3.1 (Goose Property Sewage Treatment and Disposal) of the approved Back River Project Water Management Plan (April 2022), states that:

“Sewage at the Goose Property will be treated using a package Sewage Treatment Plant (STP), such as a Membrane Bioreactor or similar. The STP will be located in the Goose Plant Site area

(Figure A-02), and during the Construction Phase and Closure Phase (i.e., when all tailings management facilities are not available), treated sewage effluent will be discharged to the tundra west of the Goose Plant Site (Figure A-24). It will be land discharged to maximize attenuation distance prior to entering an outflow watercourse from Fox Lake and ultimately entering Goose Lake.”

By sampling BRP-17 at the “discharge point for treated sewage onto land” (per Schedule I of the Licence), B2Gold Nunavut, and subsequently the NWB in Schedule I of the Licence, has unintentionally imposed more stringent requirements for regulating the effluent discharge than what is required to protect the freshwater receiving environment given that the overland flow path of the discharge effluent to the nearest freshwater receiving environment is intended to allow for continued treatment of effluent (i.e., increase retention time, settling of solids, filtration, and potential wetland treatment) prior to entering the freshwater receiving environment.

As a result, B2Gold Nunavut believes that compliance criteria would be more appropriately monitored at a point immediately prior to entry into the freshwater receiving environment to reflect the benefit of this additional treatment and the effluent quality at point of entry to freshwater. It is additionally requested that monitoring be undertaken monthly to 1) align with the request to sample post land treatment and, 2) to better reflect the sporadic nature of the discharge of treated STP effluent which is discharged on an as needed basis (e.g. via a float system) based on camp occupancy and water use, with discharge occurring once every few days to multiple times a day. As a result, requirement for “monthly” sampling would remove the ambiguity inherent in sampling “prior to discharge” with such intermittent discharge.

These changes to BRP-17 sampling in Schedule I would not alter the effluent quality criteria outlined for BRP-17 in the Licence or other related Licence conditions. These changes additionally align with B2Gold Nunavut’s sampling of greywater discharge at the Marine Laydown Area and be consistent with B2Gold Nunavut’s approach to mitigate impacts through the application of best management practices and adaptive management strategies.

To further enhance the potential benefits of overland treatment and reduce impacts to the aquatic environment, B2Gold Nunavut’s proposes updating the current approved Water Management Plan (April 2022) to allow Inspector approval of the location of discharge to the land. This would allow in-field selection of the optimal discharge point to land within the Goose Lake Watershed. This could be accommodated with the below modification to Section 7.4.3.1 of the Water Management Plan and an update to the mapped STP Effluent land discharge location (once confirmed):

“Sewage at the Goose Property will be treated using a package Sewage Treatment Plant (STP), such as a Membrane Bioreactor or similar. The STP will be located in the Goose Plant Site area (Figure A-02), and during the Construction Phase and Closure Phase (i.e., when all tailings management facilities are not available), treated sewage effluent will be discharged to the tundra west of the Goose Plant Site (Figure A-24). It will be land discharged at a location selected in consultation with the Inspector to maximize attenuation distance prior to entering ~~an outflow watercourse from Fox Lake and ultimately entering Goose Lake.~~”



4. NPC and NIRB consideration

On April 6, 2018 the Nunavut Impact Review Board (NIRB) provided *NIRB Guidance: Approached to Assessment of Proposed Amendments to Approved Projects*.

B2Gold Nunavut considers the proposed monitoring station change to be “manifestly insignificant” and therefore does not require submission to NPC and NIRB. The proposed change does not constitute modification under the Approved Type A Water Licence or require an amendment of the Licence. They do not require any changes to any project management plans and will be undertaken in accordance with general monitoring requirements and the approved Water Management Plan for the approved mine site. Further, B2Gold Nunavut notes no changes are required to the NIRB Project Certificate No. 007 and/or NIRB Monitoring or reporting requirements.

I trust the above information meets the NWB requirements for a request for changes to Schedule I of our Type A Water Licence for a mining undertaking. If you have any questions regarding this application, please call me at (902) 318-5671.

Thank you very much,

Merle Keefe
Manager, Environmental Permitting



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