



CIRNAC Comments to NIRB Re: B2Gold Corporation's Back River Project 2023 Annual Report



Nunavut Regional Office
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Your file - Votre référence
12MN036
Our file - Notre référence
GCdocs # 125492132

July 4, 2024

Leah Klaassen
Impact Assessment Officer
Nunavut Impact Review Board
29 Mitik Street, P.O. Box 1360
Cambridge Bay, Nunavut, X0B 0C0
via email at info@nirb.ca

Re: Comment Request for B2Gold Corporation's Back River Project 2023 Annual Report

Dear Leah Klaassen,

On May 13, 2024, the Nunavut Impact Review Board (NIRB) requested parties to review and provide comments on B2Gold Corporation's (B2Gold) Back River Project 2023 Annual Report for effects and compliance monitoring, pursuant to Section 12.7.3 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (Nunavut Agreement), s. 135(4) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14 (NuPPAA), and the Back River Gold Mine Project Certificate No. 007.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed the 2023 Annual Report and related documents for effects and compliance monitoring, according to its mandated responsibilities and jurisdiction, and has provided comments for NIRB's consideration.

CIRNAC appreciates the opportunity to review B2Gold's Back River Project 2023 Annual Report and looks forward to working with the NIRB and B2Gold through any future reviews for this project. Should you have any questions, please do not hesitate to contact John MacInnis or David Abernethy by email at john.macinnis@rcaanc-cirnac.gc.ca or david.abernethy@rcaanc-cirnac.gc.ca.

Sincerely,



Richard Bingley
A/Manager, Impact Assessment



1. Effects Monitoring

CIRNAC reviewed the 2023 Annual Report to assess measurable effects to valued components under its mandate against the potential effects that were predicted from the proposed development of the Back River Project, taking into account the Final Environmental Impact Statement (FEIS), previous years' monitoring reports, and the requirements included in the Project Certificate. This assessment considered the following:

- a. ***Whether the conclusions reached by B2Gold in the 2023 Annual Report are valid; and,***
- b. ***Any areas of significance requiring further supporting information or any changes to the monitoring program which may be required.***

CIRNAC did not identify information under its mandate and jurisdiction that would invalidate the conclusions reached by B2Gold in the 2023 Annual Report, but has identified information that requires further clarification. CIRNAC has provided the NIRB and B2Gold with the following comments for consideration.

Comment Number:	CIRNAC #1
Subject:	Permafrost Mapping
References:	<ul style="list-style-type: none">• NIRB Project Certificate No. 007, Term & Condition 11• Back River Project 2023 Annual Report: Section 4.5.4, Appendix D
Background/Rationale:	<p>Section 4.5.4 in the 2023 Annual Report states: <i>"As part of the 2023 scope of works, B2Gold Nunavut revisited the locations where past thermistors or Ground Temperature Cables (GTCs) have been installed, taking readings were possible, and generating an initial draft of Goose site Thermal Monitoring Plan."</i> However, the Site-wide Ground Thermal Monitoring Plan (Appendix D) states: <i>"At the time of reporting, the historic sites are considered to be inactive, and no recent measurements have been made from the sites."</i> Thermal monitoring data obtained from background sites in 2023 was not presented in the Site-wide Ground Thermal Monitoring Plan. It is unclear to CIRNAC if background sensors were re-established in 2023.</p> <p>Reporting requirements for Term & Condition 11 state: <i>"During construction, the Proponent shall, on an annual basis, provide additional permafrost mapping information documented in fulfillment of this Term and Condition in the Proponent's annual report to the Nunavut Impact Review Board."</i> Additional permafrost mapping for background sites has not been provided in any of the 2021, 2022, and 2023 Annual Reports. Continued permafrost monitoring and mapping is required to verify the predictions of the FEIS.</p>
Recommendation:	<p>CIRNAC recommends that B2Gold:</p> <ol style="list-style-type: none">a) Confirm if background sensors were re-established in 2023 and provide any mapping from those sensors; and,b) Provide background thermal monitoring data and compare to previous results in future Annual Reports.



Comment Number:	CIRNAC #2
Subject:	Permafrost Monitoring
References:	<ul style="list-style-type: none"> • NIRB Project Certificate No. 007, Term & Condition 12 • Back River Project 2023 Annual Report: Section 4.5.4, Appendix E • Back River Project 2022 Annual Report: Sections 3 and 4.5.4, Appendix B
Background/Rationale:	<p>Section 4 in the 2023 Annual Geotechnical Inspection (the Report, Appendix E) states: <i>"In general, the roads and pads are still in a partially built state. In some areas the roads have been built up and are approaching the expected design thickness. However, the majority of the roads are typically only in the fill thickness range of 1 m thick, with some areas thicker and some areas thinner (typically fills always at least 0.5 m thick)."</i> The presence of underbuilt roads, embankments, and pads has been previously identified as a threat to permafrost integrity. The presence of underbuilt roads will continue to exacerbate permafrost degradation until an adequate fill thickness is placed and permafrost begins to aggrade into the fill.</p> <p>The Report also notes the presence of water ponding, and in some instances, permafrost degradation, near various infrastructure at both the Goose and Marine Laydown Area sites, including the air strips, tank farms, processing plant pad, roads, culverts, etc. The Report provides recommendations for redirecting or pumping ponded water away from these areas, to slow down permafrost degradation, and provides figures showing the locations of ponding water near the Goose airstrip, Primary Pond, as well as the airstrip, lower laydown pad, and temporary fuel storage at the Marine Laydown Area. Mapping and monitoring locations of persistent ponded water near infrastructure is warranted to identify if the ponds are expanding and contributing to permafrost degradation.</p>
Recommendation:	<p>CIRNAC recommends that B2Gold:</p> <ol style="list-style-type: none"> a) Provide mapping that confirms the locations of underbuilt roads, pads, and embankments in its 2024 Annual Report; b) Provide analyses for determining the thicknesses of all existing underbuilt roads, pads, and embankments, and monitor these structures, to minimize impacts to permafrost, in its 2024 Annual Report; c) Monitor and map locations of persistent ponded water near infrastructure annually to report any identified ponds which are expanding.

Comment Number:	CIRNAC #3
Subject:	Sensitive Landform Mitigation and Monitoring
References:	<ul style="list-style-type: none"> • NIRB Project Certificate No. 007, Term & Condition 13 • Back River Project 2023 Annual Report: Section 4.5.4, Appendix E • Back River Project 2022 Annual Report: Section 4.5.4



Comment Number:	CIRNAC #3
	<ul style="list-style-type: none"> Sabina Responses to 2022 Annual Report Comments
Background/Rationale:	<p>Reporting requirements for Term & Condition 13 state: <i>“During construction, the Proponent shall, on an annual basis, provide information regarding the results of additional geotechnical investigations undertaken and any associated mitigation and monitoring measures implemented by the Proponent in the Proponent’s annual report to the Nunavut Impact Review Board.”</i></p> <p>In response to the 2022 Annual Report, CIRNAC recommended that B2Gold provide the results or status of the geotechnical investigations undertaken in 2021, and any subsequent geotechnical investigations. In response, B2Gold noted that geotechnical drilling occurred in 2021 at the Primary Pond and the Umwelt Dam Saline Water Pond. B2Gold provided an overview of the subsurface drilling that was completed prior to construction at the Primary Pond, including the 2021 drilling results. However, a summary was not provided for the geotechnical investigation work completed at the Umwelt Dam Saline Water Pond. CIRNAC is uncertain as to whether there are sensitive landforms or associated mitigation and monitoring measures in the information provided on the Primary Pond.</p> <p>In the response to its 2022 Annual Report comments, B2Gold also stated: <i>“Additional geotechnical investigations have been completed 2023. These include foundation checks (mainly test pitting and a couple air rotary drill holes) completed at the Goose camp and plant pads, and at the MLA tank farm. An overview of the 2023 geotechnical investigations will be presented as part of the 2023 annual reporting.”</i> In reviewing the 2023 Annual Report and the 2023 Annual Geotechnical Inspection (Appendix E), CIRNAC did not locate a summary of the 2023 geotechnical investigations, comments on sensitive landforms, or any associated mitigation and monitoring measures relating to the 2023 geotechnical investigations.</p>
Recommendation:	<p>CIRNAC recommends that B2Gold:</p> <ol style="list-style-type: none"> Provide a summary of the geotechnical investigation work completed and comment on sensitive landforms identified and any associated mitigation and monitoring measures for the Primary Pond, Umwelt Dam, and other works in 2023 in its 2024 Annual Report; and, Provide summaries of the geotechnical investigations undertaken each year in its Annual Reports and comment on sensitive landforms identified as well as any associated mitigation and monitoring measures.

Comment Number:	CIRNAC #4
Subject:	Aquatic Effects Monitoring Plan
References:	<ul style="list-style-type: none"> NIRB Project Certificate No. 007, Term & Condition 21



Comment Number:	CIRNAC #4
	<ul style="list-style-type: none"> • Back River Project 2023 Annual Report: Section 4.5.7, Appendices F1 and F2 • Back River Project 2022 Annual Report: Section 4.5.7 • Sabina Responses to 2022 Annual Report Comments
Background/Rationale:	<p>Term & Condition 21 states that: <i>"The [Aquatic Effects Monitoring Plan] AEMP should include sufficient sampling and monitoring programs to appropriately characterize the receiving environment to ensure that adequate data is available to assess impact predictions made within the Final Environmental Impact Statement."</i></p> <p>The 2023 Annual Report indicated that additional baseline data was collected in 2023, including:</p> <ul style="list-style-type: none"> • Open-water water quality sampling at multiple stations and water column depths in Goose Lake in July and September; and • Open-water water quality sampling in the outflow of Goose Lake (Propeller Lake inflow) and various Goose Lake inflows in May, July, and September. <p>The 2023 Annual Report indicates that the water quality in Goose Lake and streams was generally consistent with results from previous years (Golder 2019, 2022; WSP 2023). CIRNAC notes that this data was not provided with the 2023 Annual Report, limiting the Department's ability to evaluate the conclusions presented by B2Gold.</p>
Recommendation:	<p>CIRNAC recommends that B2Gold:</p> <ol style="list-style-type: none"> a) Provide consolidated, up-to-date monitoring data in each Annual Report, including monitoring data of past years; b) Provide the summarized results of the current and past sampling in its next Annual Report and ensure that the data are included in the full AEMP to be issued in 2024; and, c) Include any updated AEMP reports in all future Annual Reports.

Comment Number:	CIRNAC #5
Subject:	Vegetation Monitoring Plan
References:	<ul style="list-style-type: none"> • NIRB Project Certificate No. 007, Term & Condition 34 • Back River Project 2023 Annual Report: Section 4.5.9, Appendix J • Back River Project 2022 Annual Report: Section 4.5.9, Appendix E • Sabina Responses to 2022 Annual Report Comments • Back River Project FEIS Addendum, Volume 5
Background/Rationale:	<p>A Vegetation Monitoring Report was not provided for 2023, and the vegetation monitoring photos provided for the 2023 monitoring activities (Appendix J) do not provide a quantitative assessment of the information for long-term comparisons and verification of predictions in the FEIS.</p>



Comment Number:	CIRNAC #5
	The 2022 Vegetation Monitoring Program Report (Appendix E) indicates that no invasive species were detected within the new Winter Ice Road monitoring plots; however, one vascular plant was identified only as a graminoid (a grass-type plant), with no genus or species provided. In response to the 2022 Annual Report comments, B2Gold stated that no non-native species were not observed, however, it was not clear if this species was also non-invasive. Without further details on the plant characteristics to confirm that it is not invasive, the predictions and commitments made in the FEIS cannot be verified.
Recommendation:	CIRNAC recommends that B2Gold: <ul style="list-style-type: none"> a) Provide quantitative vegetation data from vegetation monitoring plots to facilitate long-term comparisons and quantify the potential impacts from the Project; and, b) Clarify how the unknown graminoid species detected in 2022 vegetation monitoring plots was determined to be non-invasive.

Comment Number:	CIRNAC #6
Subject:	Groundwater and Surface Water Quality
References:	<ul style="list-style-type: none"> • NIRB Project Certificate No. 007, Term & Condition 22 • Back River Project 2023 Annual Report: Sections 3 and 4.5.7, Appendix E • Water Management Plan (October 2020): Section 5.2.2
Background/Rationale:	<p>Term & Condition 22 states: <i>"The Proponent shall, reflecting any direction from the Nunavut Water Board, maintain a Site Water Monitoring and Management Plan designed to: minimize the amount of water that contacts mine ore and wastes; appropriately manage all contact water and discharges to protect local aquatic resources...The plan should include monitoring that demonstrates contact water (runoff and shallow groundwater) from the ore storage and waste rock storage areas is adequately captured and managed, as per the Mine Waste Rock Management Plan."</i></p> <p>Page 4-57 of the 2023 Annual Report states that: <i>"There were no waste rock or ore storage areas in use during 2023, so no monitoring has yet been initiated."</i> However, page 3-1 states that: <i>"Echo Pit pre-stripping continued."</i> It is unclear to CIRNAC if the pre-stripping material from Echo Pit was stockpiled and/or used for other purposes, or how any contact water was captured and managed.</p> <p>Section 5.2.2 in the Water Management Plan states that: <i>"Overburden will be removed from the surface footprint of the four open pits (quantities as shown in Table 5.2-4). A majority of the overburden materials will be co-disposed with waste rock in the WRSAs. Depending on the physical characteristics of the overburden material, a portion may be used for the</i></p>



Comment Number:	CIRNAC #6
	<p><i>construction of site infrastructure, kept for future revegetation studies/efforts, or used for WRSA cover material."</i></p> <p>Additionally, Section 5.2.3 of the 2023 Annual Geotechnical Inspection (the Report, Appendix E) notes that an overburden stockpile is used to store overburden material mined from the Echo Pit. The Report also describes that ponding water was observed in areas near the toe of the stockpiles, and that: <i>"It would be suggested collect water samples from the ponded water around this area to better characterize (in terms of water quality, e.g. TSS, salinity, ammonia etc.)... SRK was informed that site has an overburden stockpile monitoring program and corresponding that is in place and should address this comment. This overburden monitoring program was not reviewed as part of the 2023 AGI."</i> CIRNAC did not identify any results corresponding to the overburden stockpile monitoring program in its review of the 2023 Annual Report.</p> <p>The Annual Report and associated monitoring did not describe how contact water is captured and managed. Annual reporting on the management of contact water is required to verify FEIS predictions and to fulfill the requirements of Term & Condition 22.</p>
Recommendation:	<p>CIRNAC recommends that B2Gold:</p> <ol style="list-style-type: none"> Confirm the total amount of pre-stripping material from Echo Pit that was stockpiled and/or used for other purposes at the site, along with supporting geochemical analysis demonstrating eco-systemic protection, as applicable; and, Confirm how all contact water is captured and managed and provide the results of monitoring in future Annual Reports, including the results of the overburden stockpile monitoring program.

Comment Number:	CIRNAC #7
Subject:	Monitoring Employee Relocation within Nunavut
References:	<ul style="list-style-type: none"> NIRB Project Certificate No. 007, Term & Condition 77 and 84 Back River Project 2023 Annual Report: Sections 4.6.4 and 4.6.8, Appendix C
Background/Rationale:	<p>Term & Condition 77 of the Project Certificate provides for the collection and sharing of information that is consistent with and not limited by any Inuit Impact Benefit Agreement with the Kitikmeot Inuit Association, B2Gold is required to provide project-specific data concerning employee community of residence and the number of employees that relocated from the previous year. This data should include the number of employees who relocate to and from communities within the Kitikmeot Region (i.e., Cambridge Bay, Kugluktuk, Taloyoak, Gjoa Haven, and Kugaaruk).</p>



Comment Number:	CIRNAC #7
	<p>Both the 2023 Annual Report (page 4-168) and the 2023 Socio-Economic Monitoring Report (Appendix C, Section 3.1.3) present data on employee relocation. Both reports communicate that there were no employee relocations into or out of Nunavut in 2023. No information is provided on employee relocations that may have occurred within the Kitikmeot Region or other communities in the territory.</p> <p>The 2023 Annual Report (page 4-182) and the 2023 Socio-Economic Monitoring Report (Appendix C, Section 8.1.6) present data concerning employee housing pursuant to the requirements of Term & Condition 84 of the Project Certificate. According to the most recent Inuit Personnel Survey that was conducted in 2022, 13% of survey respondents planned to move to a new community within the next 12 months for various reasons. Of this amount, half (3 respondents) indicated they planned to move from within the Kitikmeot Region to outside the Kitikmeot Region.</p> <p>Due to the employee relocation monitoring requirements specified in Term & Condition 77 of the Project Certificate and the motivations of some Inuit employees to relocate to other communities in Nunavut as evidenced in the 2022 Inuit Personnel Survey, it is reasonable for B2Gold to expand its monitoring of employee relocation to include the relocation of employees within the territory, provided there are no privacy concerns and the sharing of this information is consistent with and not limited by any Inuit Impact Benefit Agreement with the Kitikmeot Inuit Association.</p>
Recommendation:	<p>CIRNAC requests that B2Gold monitor and provide status updates on the relocation of employees within Nunavut in all future Annual Reports, provided there are no privacy concerns and the sharing of this information is consistent with and not limited by any Inuit Impact Benefit Agreement with the Kitikmeot Inuit Association. This information would strengthen B2Gold's compliance with Term & Condition 77 of the Project Certificate.</p>

2. Compliance Monitoring

CIRNAC has a broad mandate for the co-management of water resources and the management of Crown land in Nunavut under the following applicable acts and regulations:

- The *Department of Crown-Indigenous Relations and Northern Affairs Act*;
- The *Nunavut Land Claims Agreement Act* and the Nunavut Agreement;
- The *Arctic Waters Pollution Prevention Act and Regulations*;
- The *Nunavut Waters and Nunavut Surface Rights Tribunal Act and Regulations*; and
- The *Territorial Lands Act and Regulations*.

CIRNAC's monitoring responsibilities are fulfilled by reviewing and providing expert advice and comments to the NIRB and the Nunavut Water Board on Annual Reports and conducting site inspections. CIRNAC Inspectors conduct site inspections to ensure project activities are compliant with terms and conditions in



any water licence(s), land use authorization(s), such as land use permits and leases, and the Project Certificate. Inspectors prepare site inspection reports with observations and recommendations, and they have the authority to issue and enforce directions with a timeline for implementing corrective measures.

The NIRB requested that regulatory authorities provide comments and/or information associated with their mandates and jurisdictions with respect to the following:

a. Provide a summary of any compliance monitoring and/or site inspections undertaken in association with the Project, including specifically:

- i. Identify the terms and conditions from the Project Certificate which have been incorporated into any permits, certificates, licences or other approvals issued for the Project, where applicable, and report annually to the NIRB on the status of those incorporated terms and conditions.**

A concordance table is presented in Appendix A outlining terms and conditions from Project Certificate No. 007 that have been incorporated into applicable permits, certificates, and licences issued for the Back River Project.

ii. A summary of any inspections conducted during the 2023 reporting period, and the results of these inspections.

In 2023, inspections were conducted under the Type A Water Licence [2AM-BRP1831](#). An overview of the inspections is presented below, and a detailed summary can be accessed using the hyperlink above.

Inspection 1	
Area:	Goose Lake Camp
Inspection Date:	March 22, 2023
Observations:	<p>The Water Resource Officer identified several issues related to waste storage:</p> <ul style="list-style-type: none"> • Totes and drums of hazardous materials were outside of containment during the inspection of the temporary waste storage facility; • The Licensee removed most of the historical waste pile and transported it off-site, and the remaining waste was stored near the runway, to be flown off-site. However, there were multiple barrels of the historical waste pushed into a snow pile; • Fifty-eight (58) totes of CAT transmission fluid were outside of containment, behind the bulk fuel storage area; • The fuel tank for the portal shop was not placed in secondary containment; and • Two (2) pallets of used batteries were outside of containment, and some of the batteries were not stored upright.
Result:	<p>The Water Resource Officer noted that there are recurring issues related to the storage of hazardous materials and wastes at the site.</p> <p>The Water Resource Officer asked that the Licensee remove the barrels of historical waste from the snow pile near the runway and ensure all hazardous waste and hazardous materials are stored in a manner</p>



	consistent with the approved licence and management plans, to prevent waste from entering water.
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Inspection 2	Licence No. 2AM-BRP1831
Area:	Goose Lake Camp
Inspection Date:	September 28, 2023
Observations:	<p>The Water Resource Officer identified several issues related to waste storage and a sump:</p> <ul style="list-style-type: none"> Hazardous materials, including brake cleaner, oil, batteries, waste grease, and fire foam were outside of containment during the inspection, but the Licensee has since moved these materials into a lined area; The Licensee constructed a lined and partially bermed area to contain the totes of CAT transmission fluid that were outside of containment during the inspection in March 22, 2023. However, the Licensee did not submit required plans for this construction, as per Part D, Item 2 of 2AM-BRP1831; Many parked vehicles did not have drip trays installed; and A sump near the Major Drilling Laydown was not operating as intended to control surface drainage and prevent erosion.
Result:	<p>The Water Resource Officer asked that the Licensee:</p> <ul style="list-style-type: none"> Provide the required submissions, as described in Part D, Item 2 of 2AM-BRP1831, for the construction of the hazardous waste containment cell near the bulk fuel storage berms; Stop using the sump until it is constructed in a manner that is consistent with 2AM-BRP1831; and Ensure that hazardous waste is stored in an approved manner.

Inspection 2	Licence No. 2AM-BRP1831
Area:	Marine Laydown Area Camp
Inspection Date:	September 28, 2023
Observations:	<ul style="list-style-type: none"> The Licensee installed secondary containment for fuel tanks used by diesel heaters, which were outside of containment in an earlier inspection; and It was noted that the Licensee installed two waste containment facilities, one for hazardous waste, and another for the truck wash area. However, required plans and submissions for the construction of the waste management structures were not found.
Result:	The Water Resource Officer asked that the Licensee provide the required submissions, as described in Part D, Item 2 of 2AM-BRP1831, for the



	construction of the hazardous waste containment cell near the Marine Laydown Area accommodations and the truck wash berms.
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iii. A summary of B2Gold's compliance status with regard to authorizations that have been issued for the Project.

In 2023, B2Gold responded to some instances of non-compliance related to its Type A Water Licence No. 2AM-BRP1831. B2Gold is considering options for new hazardous waste storage facilities and intends to develop and submit construction plans for review, as per the requirements of 2AM-BRP1831. CIRNAC Inspectors will continue to work with B2Gold to resolve outstanding issues and ensure compliance with all applicable water licence conditions associated with the Back River Project.

Appendix A. Project Certificate Terms and Conditions incorporated into licenses or other approvals issued for the Project.

Project Certificate No. 007 Term & Condition		Licence No. 2AM-BRP1831
4	The Proponent shall develop and implement an Incineration Management Plan that demonstrates consideration for the recommendations provided in Environment and Climate Change Canada's Technical Document for Batch Waste Incineration (2010).	Part B: Item 13 (f)
7	<p>The Proponent shall maintain a Mine Closure and Reclamation Plan designed to: identify the processes that may act upon the mine components after closure and reclamation so that they can be factored within the design and operation of the mine; ensure physical and chemical stability of mine components that remain after closure; ensure mine components that remain after closure will not require long-term active care; and consider future use and aesthetics of the area with the surrounding lands. This plan should include:</p> <ul style="list-style-type: none"> a. an adaptive management component that documents monitoring and mitigation measures to ensure long-term containment of the Tailings Storage Facility and Waste Rock Storage Areas; b. details for monitoring the thermal condition and stability of storage facilities; c. details on the triggers for implementing alternative mitigation options; d. details pertaining to ongoing monitoring and research being conducted to supplement the adaptive management protocols; e. details on the plans to maintain the integrity of groundwater quality within and adjacent to the Project, and; f. details as to how the Proponent will carry out continued analyses over time to confirm or update the approximate fill time for the mine pits. 	Part B: Item 13 (g)



Project Certificate No. 007 Term & Condition		Licence No. 2AM-BRP1831
12	The Proponent shall monitor the effects of the Project on permafrost conditions relative to project infrastructure, including associated roads, waste rock stockpiles, trails, and quarries. Should permafrost degradation be observed, the Proponent shall report on measures implemented to restore and promote permafrost integrity.	Part I, Item 10
13	The Proponent shall undertake additional geotechnical investigations as required to identify sensitive landforms, modify engineering designs for project infrastructure (e.g., tailings storage facilities, waste rock piles, and landfill), and develop and implement mitigation and monitoring measures to prevent or minimize the impacts of the Project's activities and infrastructure on sensitive landforms. Plans for the investigations, mitigation, and monitoring measures are to be included within appropriate management plans.	Part I, Item 10
15	<p>The Proponent shall have a plan in place for the progressive reclamation of project components, areas, and infrastructure throughout the life of the Project. The plan shall detail:</p> <ul style="list-style-type: none"> a. projected timelines for the reclamation of project features, methodologies for undertaking such activities, and monitoring measures to ensure the effectiveness of reclamation methods employed; b. specific measures for adaptive management and triggers for their application, should monitoring results reveal trends that could affect reclamation and closure objectives; and, c. how Inuit Qaujimajatuqangit and Traditional Knowledge was collected, and used to inform closure plans and the design of project components. 	Part B, Item 13 (g)
17	The Proponent shall conduct tests of the tailings and treatment sludges as they are produced to evaluate the potential for remobilization of arsenic from these materials.	Part B, Item 13 (o)
18	The Proponent shall undertake an infill geotechnical characterization program to determine the extent of the fractured bedrock contact zone and apply proposed mitigation measures as necessary. The program should include permeability testing, seepage analysis and planning for thermal monitoring of the western ridge, where appropriate.	Part D, Item 4



Project Certificate No. 007 Term & Condition		Licence No. 2AM-BRP1831
19	The Proponent shall, reflecting any direction from the Nunavut Water Board, maintain a saline water management plan which includes monitoring of thermal conditions, monitoring of saline water at the Goose site, and mitigation measures designed to address the potential for higher-than-predicted volumes of saline water inflows into the open pits and the underground mine, treatment and disposal methods. The plan should include accurate characterization of saline water inflows into the underground mine workings.	Part E, Item 2
21	<p>The Proponent shall, reflecting any direction from the Nunavut Water Board, maintain an Aquatic Effects Monitoring Plan (AEMP) designed to:</p> <ul style="list-style-type: none"> • determine the short and long-term effects in the aquatic environment resulting from the Project; • evaluate the accuracy of Project effects predictions; • assess the effectiveness of mitigation and management measures on Project effects; • identify additional mitigation measures to avert or reduce environmental effects due to Project activities; and • comply with Metal Mining Effluent Regulations requirements, should an Environmental Effects Monitoring program be triggered. <p>The AEMP should include sufficient sampling and monitoring programs to appropriately characterize the receiving environment to ensure that adequate data is available to assess impact predictions made within the Final Environmental Impact Statement.</p>	Part E, Item 15 Part I, Item 2
22	The Proponent shall, reflecting any direction from the Nunavut Water Board, maintain a Site Water Monitoring and Management Plan designed to: minimize the amount of water that comes into contact with mine ore and wastes; appropriately manage all contact water and discharges to protect local aquatic resources; and, implement water conservation and recycling to maximize water reuse and minimize the use of natural waters. The plan should include monitoring that demonstrates contact water (runoff and shallow groundwater) from the ore storage and waste rock storage areas is adequately captured and managed, as per the Mine Waste Rock Management Plan.	Part B, Item 13 (q)
23	The Proponent shall maintain an appropriate setback distance between project quarries and fish-bearing or permanent waterbodies, or implement appropriate mitigation measures, as required to prevent acid rock drainage or metal leaching into such waterbodies.	Part B, Item 13 (b) Part D, Item 1



Project Certificate No. 007 Term & Condition		Licence No. 2AM-BRP1831
27	The Proponent shall provide bathymetry, depth, and location of proposed water withdrawal sites, volumes to be extracted, anticipated water level decreases, and fish habitat features within each waterbody proposed to be used for winter water withdrawal in support of the annual construction of the winter ice roads. If additional waterbodies are required the Proponent shall provide all required information on the additional proposed lakes prior to the use of the waterbodies.	Part E, Item 5
28	The Proponent shall implement all applicable Fisheries and Oceans Canada best management practices to avoid and mitigate serious harm to fish as a result of the construction, operation, and decommissioning of winter ice roads, and from under ice water withdrawals. This includes adequately screening the water intake pipes to prevent impingement and entrapment of fish.	Part E, Item 7
62	The Proponent shall maintain a marine monitoring program at the Marine Laydown Area to enable the identification of potential impacts on the marine environment and to inform adaptive management actions. The monitoring program shall be in line with the proposed monitoring within the Aquatic Effects Monitoring Program, or as required by applicable regulatory authorities. At a minimum, water sampling should include end of pipe and control area samples, collected on a regular basis to confirm salinity levels of the discharge and the receiving environment.	Part B, Item 13 (q)

