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Qikiqtani Inuit Association

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July 4, 2024

Cory Barker
Manager, Project Monitoring
Nunavut Impact Review Board

RE: **Comment Request for Baffinland Iron Mines Corporation's Mary River Project, 2023 Annual Monitoring Report**

Dear Mr. Barker,

The Qikiqtani Inuit Association (QIA) appreciates the opportunity to provide our comments on the Mary River Project ("the Project") 2023 Annual Monitoring Report ("the Report") submitted by Baffinland Iron Mines Corporation (BIMC, "Baffinland," or "The Proponent") to the Nunavut Impact Review Board (NIRB). Please find attached our detailed comments in Appendix A. Comments have been categorized according to the following themes:

1. General (QIA 2023 NIRB GC#X)
2. Dustfall (QIA 2023 NIRB DF#X)
3. Meteorology and Climate (QIA 2023 NIRB MC#X)
4. Water Quality (QIA 2023 NIRB WQ#X)
5. Terrestrial Environment (QIA 2023 NIRB TE#X)
6. Marine and Aquatic Environment (QIA 2023 NIRB MAE#X)
7. Socioeconomic Environment (QIA 2023 NIRB SE#X)
8. Inuit Knowledge, Culture, Land and Resource Use and Inuit Qaujimajatuqangit (QIA 2023 NIRB CRLU/IQ#X)

The goal of the comments we have provided here is to support the Proponent in fulfilling both the spirit and intent of the NIRB Project Certificate and associated Conditions.

Outcome of Review

QIA's comments include multiple requests for increased data collection, analysis, monitoring, refinement of management plans and detailed description of Inuit involvement and use of Inuit



Qaujimajatuqangit throughout project management and monitoring. Many of the concerns identified by QIA have been raised during reviews of previous annual monitoring reports, though the requests have yet to be fulfilled. To QIA these concerns are related to both the adequacy of measuring and mitigating effects as well as Baffinland's compliance with specific Project Certificate (PC) Conditions.

In summary, some of QIA's ongoing concerns (not in order of priority) are regarding:

- Mitigation of Effects on the Aquatic Environment
- Marine Environment Monitoring
- Fish Passage
- Caribou Monitoring
- Wildlife Monitoring Related to the Southern Railway and Steensby Port
- Dustfall and Dustfall Monitoring
- Methodology and Reporting Issues
- Inadequate Reporting on Use of Inuit Qaujimajatuqangit

Mitigation of Effects on the Aquatic Environment

Overall, the 2023 Annual Monitoring Report does not appear to achieve the goal of identifying project-related effects on the aquatic environment and mitigating them in a timely manner. This is due to several overarching issues which include:

- Ongoing issues in identifying project effects and in implementing the defined monitoring programs. This includes both the Aquatic Effects Monitoring Plan (AEMP) and Core Receiving Environment Monitoring Program (CREMP). Specific examples include:
 - Failure to collect samples or usable data that could be used to characterize project interactions with the environment after neglecting to account for weather delays and/or failing to implement methodologies (e.g., groundwater monitoring wells) correctly;
 - Components of the study design and analytical approach have not been adjusted to account for habitat conditions on the ground, including overall number of fish captured between exposure and reference locations;
 - Failure to investigate the source of trending influences (e.g., increasing chlorophyll-a concentrations in waterbodies proximal to the project.) in the aquatic environment; and
 - Damaged thermistor beads in the Waste Rock Facility (WRF) have not been promptly replaced or repaired making it challenging to identify effects therein.



- Angles and distances of photographs intended to provide for 3rd party review of culverts have insufficient perspective to achieve that objective.
- The snow management plan does not contain sufficient detail to function as a stand-alone document nor are the indicated placement of snow stockpiles sufficient to avoid interactions with the aquatic environment in all cases (e.g., near Sheardown and Camp Lakes).
- The Trigger Action Response Plans (TARP) developed for the aquatic environment include an over-reliance on professional judgement and analytical approaches that have precluded attributing identified impacts to project activities and the resulting implementation of management and mitigation measures. This approach to TARP implementation has permitted the Project to have unnecessarily large impacts on the aquatic environment.
- A variety of general concerns with the Waste Rock Facility (WRF) were identified including ensuring the associated management plan effectively adapts lift thickness to account for climate change, clearly outlining the approach to prevent interactions with the shallow groundwater regime as the facility is expanded, and appropriately responding to and/or investigating sporadic instances of warming zones detected within the facility.

Marine Environment Monitoring

Narwhal Monitoring and Impact Mitigation

Baffinland's assertions that vessel traffic has not affected narwhal abundance and distribution are not convincing. Factors such as climate change and predator abundance undoubtedly affect narwhal, but they do so in concert with shipping-related impacts. It is likely that the main factor in recent increases in narwhal abundance in the Regional Study Area (RSA) is the introduction of key mitigations such as icebreaking prohibitions and convoys. Late breakup of sea ice may have also influenced narwhal migration timing and influenced survey results.

Monitoring of narwhal abundance and distribution is not grounded in an appropriate baseline. The Department of Fisheries and Oceans (DFO) has questioned Baffinland's use of 2013 as the baseline year for narwhal abundance, and QIA, along with other parties to the Marine Environment Working Group (MEWG), also questions this. DFO conducted aerial surveys of the Eclipse Sound narwhal summer stock in 2004 and 2013. Baseline data are a Proponent responsibility, but Baffinland did not conduct a systematic aerial survey to estimate narwhal abundance in the RSA, and they are therefore relying on DFO results. Construction at Milne Port



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Methodology and Reporting Issues

In several areas of the Report, the Proponent has provided insufficient information regarding their assessment and monitoring methods thus undermining QIA's ability to assess the accuracy and validity of the results. Examples of this include:

- Avian mortality (QIA 2023 NIRB TE#8)
- Snowbank compliance (QIA 2023 NIRB TE#6)
- Incidental caribou observations (QIA 2023 NIRB TE#14)
- Dustfall concentration (QIA DF#10)

As the comments make clear, these are not abnormalities in the Report, but rather part of a consistent pattern of Baffinland leaving out key methodological details. This undermines any assertion derived from these methodologies.

Inadequate Reporting on Use of Inuit Qaujimajatuqangit

For several years, QIA has requested that BIMC describe if and how Inuit Qaujimajatuqangit has informed terrestrial environment monitoring design, analysis and interpretation of results, as well as conclusions. In Baffinland's response to QIA comments respecting the 2021 Annual Monitoring Report, Baffinland identified that "as part of the Phase 2 submission, Baffinland summarized how Inuit Qaujimajatuqangit has been incorporated throughout the project, including monitoring programs" (Baffinland Response to Comments Received for the 2021 Annual Monitoring Report PDF p. 27). This response suggests that Inuit Qaujimajatuqangit has been incorporated into monitoring programs; however, the inclusion of Inuit Qaujimajatuqangit is not evident from the 2022 or 2023 Annual Monitoring Reports. BIMC provided no response to QIA's comments regarding the inclusion of Inuit Qaujimajatuqangit in 2023.

QIA has also previously requested that Baffinland involve Inuit and use Inuit Qaujimajatuqangit to inform reclamation pilot research, including defining reclamation goals, end land uses, reclamation techniques, and criteria/measurements to determine success. However, in Baffinland's reports on compliance with PC Conditions 39 and 40, there is no indication that they made any effort to involve Inuit or consider Inuit Qaujimajatuqangit in the 2023 revegetation surveying and reclamation pilot work.

Baffinland has highlighted its efforts to engage with communities and notes the importance of local knowledge to understand community perspectives and priorities and "ensure the Company



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Appendix A: QIA comments on Baffinland 2023 Annual Monitoring Report

General - GC

Comment #	QIA 2023 NWB GC#1
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report Section: Appendix B Habitat Assessment Sheets (Part 3) Pages: 6 and 13 of 56
QIA Comment	Description of site conditions for CV-021 and CV-030 both refer to site CV-001. Most likely a clerical error.
QIA Request	Please revise report to remove reference to site CV-001 while discussing sites CV-021 and CV-030.

Comment #	QIA 2023 NWB GC#2
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report Section: Appendix B Habitat Assessment Sheets (Part 5) Pages: 37 of 54
QIA Comment	Description of site conditions for CV-104 refer to site CV-102. Most likely a clerical error.
QIA Request	Please revise report to remove reference to site CV-102 while discussing sites CV-104.

Comment #	QIA 2023 NWB GC#3
References	Document Name: Baffinland NIRB Annual Report, Appendix G.8.8 Snow Management Plan Section: Figures 1-11 Page: 23, 24, 27, 28, 33-38, 43
QIA Comment	Figures provided on pages 23, 24, 27, 28, 33-38, and 43 of the Snow Management Plan are of low resolution and are difficult to read and review.
QIA Request	QIA requests that the figures provided in the Snow Management Plan be replaced with higher-resolution figures.



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Comment #	QIA 2023 NIRB DF#3
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.2 Air quality, PCC 10 Page: 82 (PDF p. 100 of 641)</p>



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Comment #	QIA 2023 NIRB DF#4
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")



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	<p>Section: 4.6.5 Groundwater & Surface Water, PCC 21 Page: 125 (PDF p. 143 of 641)</p> <p>Document Name: 2023 NIRB AMR, App. G.4.2 Lake Sedimentation Monitoring Program [240503-08MN053-2023 Annual Report-App G-Lake Sed-IMRE.pdf]</p> <p>Section: 4 Page: 22 (PDF p. 26 of 57)</p> <p>Section: Appendix A, Figure A.1 Pages: PDF p. 30 to 32 of 57</p> <p>Section: Appendix A, Figure A.10 Pages: PDF p. 50 of 57</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to QIA and NWB on Operations [NWB Registry: 240331 - 2023 QIA-NWB Annual Report for Ops - Appendix E.5.3 (AEMP) - As Sent.pdf]</p> <p>Section: 3.8.1 Lake Sedimentation Monitoring Program Page: 38 (PDF p. 57 of 78)</p>
QIA Comment	<p>The purpose of PCC 21 is to mitigate potential impacts to surface and ground waters and in it Baffinland is directed <i>"To facilitate comparison with existing guidelines and potentially with thresholds to be established using studies of Arctic char egg survival and/or other studies recommended by the Terrestrial Environment Working Group (TEWG)"</i> (PCC 21.a.iii, p. 125). To meet this condition, sediment deposition on the bottom of Sheardown Lake is being monitored as part of the Aquatic Effects Monitoring Program (AEMP) (2023 QIA-NWB Ann. Rep., App. E.5.3, s.3.8.1, PDF p. 57 of 78).</p> <p><i>"The mean sediment accumulation thickness estimated for the 2022 to 2023 arctic charr egg incubation/larval pre-emergence period at Sheardown Lake NW (0.15 mm, 0.08 mm, and 0.10 mm at SHAL-1, SHAL-2, and DEEP-1, respectively) was at or below, but did not exceed, the draft AEMP Rev. 2 TARP Low Action threshold of 0.15 mm, and approximately 8 to 15% of the threshold level of 1 mm of sediment accumulation thickness purported to affect egg incubation success."</i> (App. G.4.2, s.4, p. 22)</p> <p>When interpreting these sediment data, one must keep in mind that sediment risk thresholds in the draft Aquatic Effects Monitoring Plan (AEMP) are not based on studies of Arctic char or Project-generated sediment. This is a concern as the threshold may underestimate the effects of Project sediment on char eggs.</p> <p>Sediments entering Sheardown Lake can settle on char eggs that are laid in the fall and hatch in the spring. While the effects of different thicknesses of</p>



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Comment #	QIA 2023 NIRB DF#5
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.5 Groundwater & Surface Water, PCC 21 Page: 125 (PDF p. 143 of 641)</p> <p>Document Name: Baffinland. 2023. Baffinland Response to Comments Received for Baffinland's 2022 NIRB Annual Report (NIRB Registry: 230814-08MN053-BIM Rsp to Comments 2022 NIRB Annual Report-IT4E.pdf)</p> <p>Section: Table A.1, Response to QIA comments on Baffinland's 2022 Annual Report to the NIRB, Comment # 19 (QIA 2022 NIRB M&AE# 8</p> <p>Page: 12 (PDF p. 15 of 222)</p> <p>Document Name: Nunavut Impact Review Board [NIRB]. 2022. NIRB Project Certificate [No. 005] (221103-08MN053-NIRB Project Certificate No 005 Amendment 4-OT4E.pdf)</p> <p>Section: Appendix B. Commitments Page: 124 (PDF p. 124 of 129)</p>
QIA Comment	PC Condition 21 relates to Groundwater/Surface Waters – Aquatic Effects Monitoring Plan (AEMP) and dustfall monitoring



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Comment #	QIA 2023 NIRB DF#6
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board;</p> <p>Section: Section 7.1 Dustfall Suppression and Mitigation</p> <p>Page: p. 44</p>
QIA Comment	<p>In Section 7.1, Baffinland states that they "...conducted a detailed evaluation of the efficacy of calcium chloride and DUST/BLOKR® from July 15 to August 31, 2023. ... results of this focused evaluation determined that DUST/BLOKR® ... is not suitable for use on the Tote Road..." (p. 44). Baffinland provides limited details of the evaluation methods, analyses, results or conclusions.</p> <p>Similarly, Baffinland describes trials of the application of DusTreat at the crusher and ore stockpiles, but provides limited details on the evaluation methods, analyses, results or conclusions.</p>
QIA Request	<p>QIA requests that Baffinland provide a copy of their evaluation of the efficacy of calcium chloride and DUST/BLOKR® and trial methods and results of their applications of DusTreat at the crusher and ore stockpiles. QIA expects that Baffinland's detailed evaluation/ trial methods and results will include:</p> <ul style="list-style-type: none"> • Time periods of trials; • Weather conditions during trials; • Application methods, amounts and locations; • Observation/data recording;



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	<ul style="list-style-type: none">• Data analysis;• Results;• Comparisons of results with dustfall passive monitoring and satellite imagery data; and• Conclusions / next steps.
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Comment #	QIA 2023 NIRB DF#7
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1; Section: Section 7.3.1.3, Page: p. 57
QIA Comment	Baffinland used mixed effects models to test the relationship between distance from Project infrastructure and daily dustfall. These models appear to have included both distance from mine site and distance from road as variables, but Baffinland does not mention whether the collinearity of variables were assessed (e.g., via Spearman rank correlations).
QIA Request	QIA requests Baffinland confirm whether they tested for collinearity of variables used in their mixed effects models.

Comment #	QIA 2023 NIRB DF#8
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1; Section: Section 7.3.2.3 Page: p. 72
QIA Comment	Within section 7.3.2.3, Baffinland notes that “The annual dustfall values were compared with the annual EIS predictions, however, this modelling was updated in 2023, and presented as part of the Sustaining Operations Proposal (SOP) Air Quality Assessment (Nunami Stantec Ltd. 2023). As this proposal was approved in late 2023, the annual dustfall data for 2024 will be compared with the updated dustfall predictions.” (p. 72). Baffinland notes that the 2024 dustfall data will be compared with this new modelling, but does not note whether there will still be a comparison to the FEIS predictions.
QIA Request	QIA requests that Baffinland include a comparison to both the FEIS predictions and the updated dustfall model as part of the 2024 TEAMR. This will help to ensure that any dustfall impacts above those predicted in the FEIS are noted, and that Baffinland efforts to improve the current understanding of dust dispersion and impacts are shown.



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Comment #	QIA 2023 NIRB DF#9
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1; Section: Section 7.3.2.3; Table 7-4; Section 7.4.2; Table 7-8; 7-10 Page: p. 72-73; p. 102
QIA Comment	<p>Within Table 7-4, Baffinland shows the annual dustfall accumulation for monitoring sites in 2023, which includes dustfall deposition above the FEIS predictions at 24 of the 43 dustfall monitoring sites.</p> <p>Continued dustfall deposition above the levels predicted within the FEIS continues to be a significant concern for QIA. QIA acknowledges that Baffinland has undertaken actions to improve dust mitigations and limit dustfall deposition, but notes that more actions can still be undertaken reduce dustfall deposition.</p> <p>As well in Tables 7-8 and 7-10, Baffinland notes the mean dustfall concentrations in areas of community concern based on satellite imagery analysis with Quarnak showing elevated dustfall concentrations relative to baseline and reference site concentrations.</p>
QIA Request	<p>QIA requests that Baffinland commit to the following:</p> <ol style="list-style-type: none">1. QIA requests that Baffinland continue to monitor lichen-metal concentrations more frequently than currently scheduled, annually, so that if thresholds noted in the Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) are exceeded that suitable responses can be undertaken. QIA notes that they are still working with Baffinland on requested changes to the current draft of the TEMMP to address outstanding concerns which are related to thresholds and responses.2. Committing to undertaking a meeting with the QIA before September 2024 to resolve outstanding issues related to the isopleth modelling for the Project since February 2023.3. Baffinland to provide a review of operational and infrastructure controls that can be implemented throughout the ore handling chain to minimize dustfall by August 2024.4. Baffinland to commit to having a meeting with QIA to discuss proposed responses to threshold exceedances for dustfall before September 2024.

Comment #	QIA 2023 NIRB DF#10
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1;



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Comment #	QIA 2023 NIRB DF#12
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board;</p> <p>Section: Section 4.6.2; Project Certificate Term and Condition No. 10</p> <p>Page: p. 84</p>
QIA Comment	As part of the recommendations / lessons learned PC Term and Condition no. 10, Baffinland notes that they will be "...trialing different early notification methods to identify increasing dust levels on the Tote Road. Examples include establishing a communication protocol between drivers and Site



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Comment #	QIA 2023 NIRB DF#13
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Section: Section 4.6.2; Project Certificate Term and Condition No. 10 Page: p. 85</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.3 Section: Table 1 Page: NA</p>
QIA Comment	<p>With regards to PC Term and Condition no. 10, Baffinland states it has“...provided a program to identify high risk conditions for dust dispersion, based on numerous site conditions, including weather. ...Baffinland worked jointly working with QIA to establish a program to identify high risk conditions for dust dispersal and plan for additional mitigation measures in order to satisfy the requirements of PC Term and Condition No. 188.” (p. 85).</p> <p>QIA and Baffinland have had three meetings between September 2023 and January 2024 regarding thresholds for dust dispersion. QIA notes that this work is still on-going and that there are still outstanding concerns related to</p>



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	the establishment of thresholds for dust dispersion that need to be addressed by Baffinland.
QIA Request	<ol style="list-style-type: none"> QIA requests that Baffinland update the wording to accurately reflect the work that has been completed related to identifying high risk conditions for dust dispersion, specifically to note that: “Baffinland has been working jointly with QIA to establish a program to identify high risk conditions for dust dispersal and plan for additional mitigation measures in order to satisfy the requirements of PC Term and Condition No. 188, and this work is still ongoing.” QIA requests that Baffinland provide the following details related to the program for identifying conditions with high risk for dust dispersion: <ol style="list-style-type: none"> Literature review and meteorological data used to develop the proposed thresholds of <50 km/h, 50-80 km/h, and >80 km/h; Thresholds for other conditions (e.g. time since last precipitation event) that will also be used to inform conditions where there is a high risk for dust dispersion; Monitoring methods that will be used to assess when triggers are reached including: <ol style="list-style-type: none"> Staff involved; Frequency and timing of monitoring; Locations of monitoring relative to project activities / infrastructure (e.g. monitoring location relative to proposed blasting activities, monitoring location relative to the crusher); Equipment used in monitoring (e.g. anemometer); Details of the different visual cues that will be used including training / reference materials staff will use to reduce the subjectivity of the TARP table content (i.e. dust generally contained with work area vs. dust mostly contained within work areas); Communication pathways to between monitoring and operational staff; and Data recording details.



Meteorology and Climate – MC

Comment #	QIA 2023 NIRB MC#1
References	Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.5.8.1 5 of 5. 2023 Water Balance Update. Baffinland Iron Mines Mary River Project. December 15, 2023. December 18, 2023 Page 50 of 92
QIA Comment	<p>The conclusions in the report state that “<i>the mitigation strategy defined for the prevention of acid generation and metal leaching from the pile is predicated on freezing of the PAG waste rock during winter, with deposition of additional rock in summer to keep the frozen rock isolated from the active zone, which is subject to seasonal freeze and thaw.</i>”</p> <p>This strategy appears to be effective, but QIA questions whether any accommodation for climate change has been incorporated into the model. Given the imminent temperature changes associated with climate change, particularly in the north, consideration should be given to the point at which rising temperatures result in less freezing and an increase in the depth of the active layer. When less freezing occurs and water infiltrating the WRF does not freeze, deeper seepage may occur. For example, is it possible for a portion of the waste rock pile to remain unfrozen, leading to an exothermic reaction and subsequent thawing?</p>
QIA Request	QIA requests that consideration be given in the model to the potential impacts of climate change or that rationale be provided for why such consideration need not be included.

Comment #	QIA 2023 NIRB MC#2
References	Project Certificate Term and Condition No. 1, No. 2, No. 17, No. 23, and No. 28 (Section 4.6.1, 4.6.4, and 4.6.5)
Comment	<p>In PC No. 1 and PC No. 2, Baffinland discussed the impacts of the project on climate change. However, Baffinland did not discuss the potential impacts of climate change on the project and how these impacts may affect the existing environmental impacts of the project (e.g., permafrost degradation and seepage into the environment). It is unclear whether Baffinland has assessed potential climate change impacts on the project and whether Baffinland has considered mitigation measures and an adaptive management framework to manage climate change impacts on the project.</p> <p>For example, ongoing seepage has been identified at the KM 105 water management pond and discussed further in PC No. 17. However, the</p>



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	potential impacts of climate change on seepage at KM 105 water management plan are not discussed. In PC No. 23, Baffinland discussed groundwater monitoring and referred to the 2023 Groundwater Monitoring Program Memorandum, which indicated that leachate is being generated at the landfill. Baffinland did not discuss the potential impacts of climate change on leaching at the landfill or mitigative measures that may be implemented to manage climate change impacts on leaching. In PC No. 28, Baffinland discussed permafrost impacts along the Tote Road; however, Baffinland did not discuss the potential impacts of climate change on permafrost integrity and how this may impact preventative measures for the project. It is unclear how Baffinland has considered potential impacts from climate change in the development of preventative measures to maintain the integrity of environmental conditions (e.g., groundwater, permafrost) at the project area.
QIA Request	<ol style="list-style-type: none">1. Discuss the potential impacts of climate change on the project and the integrity of the environment (e.g., groundwater, permafrost).2. Discuss any mitigative and adaptive management measures that will be implemented for the project that are influenced by climate change (i.e., a warming climate) to manage environmental impacts.

Water Quality - WQ

Comment #	QIA 2023 NIRB WQ#1
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3.1.3 Phytoplankton Page: 79
QIA Comment	At several stations it was observed that there were occurrences of elevated chlorophyll-a at Camp Lake, Sheardown Lake Tributary 12, and the Sheardown Lake NE and SW stations. While these concentrations were below the AEMP benchmark of 3.7 µg/L, they were elevated compared to 2023 seasonal samples from the same site reference and/or background. It does not appear that any further investigations were completed to identify the source or reason for the elevated chlorophyll-a concentrations.
QIA Request	Baffinland should include discussion in the report on chlorophyll-a samples that are approaching the AEMP benchmark. This discussion should include potential reasons for the elevated results and any follow up investigations that are being considered. Sites where chlorophyll-a are trending upward should also be flagged for future monitoring.



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Comment #	QIA 2023 NIRB WQ#2
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 4.2.3 Sheardown Lake Tributary (SDLT12) - Phytoplankton</p> <p>Page: 152-153</p>
QIA Comment	<p>The report states, “<i>Chlorophyll-a concentrations at SDLT12 in the spring in 2023 were higher than concurrent concentrations observed at reference streams however, the spring SDLT12 concentration was the highest observed at any of the Sheardown Lake Tributaries or the reference streams since the initiation of sampling in the baseline period (Figure 4.3) suggesting that it may be an anomaly.</i>”</p> <p>Chlorophyll-a concentrations at SDLT12 in the spring of 2023 were higher than concurrent concentrations observed at reference streams. Additionally, the spring concentration at SDLT12 was the highest recorded at any of the Sheardown Lake Tributaries or the reference streams since the baseline period began. Follow up studies or investigations completed should be completed to determine what factors might contribute to the elevated chlorophyll-a levels at SDLT12?</p>
QIA Request	What statistical analysis or criteria were used to assess the data for outliers?

Comment #	QIA 2023 NIRB WQ#3
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 4.2.3 Sheardown Lake Tributary (SDLT12) - Phytoplankton</p> <p>Page: 152-153</p>
QIA Comment	<p>The report states, “<i>Chlorophyll-a concentrations at Sheardown Lake SE showed no spatial gradients with distance from the lake outlet during summer, fall, and winter sampling events in 2023 (Figure 4.8). Chlorophyll-a concentrations at Sheardown Lake SE in 2023 did not differ significantly between the summer and fall or winter and fall sampling events, <u>but concentrations in winter were significantly higher than concentrations in summer</u> (Figure 4.8; Appendix Tables E.6 and E.12).</i>”</p>



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Comment #	QIA 2023 NIRB WQ#5
References	<p>Document Name: Baffinland NIRB Annual Report, Appendix G.3 Groundwater Monitoring Reports</p> <p>Section: 4.2 – Well Installation Issues</p> <p>Page: 18-19</p>
QIA Comment	<p>Several limitations and concerns with the 2023 Groundwater Monitoring Program were identified, including QA/QC concerns (contaminated blank samples), groundwater monitoring well installation errors, and missing data in a key downgradient monitoring well. Groundwater quality data collected in 2023 was therefore deemed to be misrepresentative of groundwater conditions, and was not discussed further in Appendix E.11.1. Thus, there is no reliable groundwater monitoring data from 2023.</p> <p>Groundwater monitoring wells installed in 2023 did not have a bentonite clay cap, allowing for surface water infiltration and water from depths outside the screened well interval to enter the well, contaminating groundwater and preventing evaluation of in-situ groundwater conditions. Additionally, some standpipes installed in 2022 were installed in reworked test pits, which are not representative of native sub-surface conditions. These standpipes, and all wells installed in 2023, are not usable for future monitoring periods.</p> <p>In addition to conclusions and recommendations provided by Knight Piesold Consulting, new monitoring wells should be installed as part of the 2024 monitoring program to replace 2023 wells (and standpipes in reworked sediment from 2022), as previously installed wells are vulnerable to surface water infiltration and are not representative of actual groundwater conditions on-site. Environmental borehole drilling and monitoring well installation should be conducted by a licensed professional. A concrete action plan should be developed to demonstrate Baffinland's commitment to providing a successful groundwater monitoring program in 2024.</p>



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QIA Request	QIA requests that Baffinland provide a concrete action plan and timeline for the correct installation of new wells to replace the incorrectly-installed wells from 2023, and the 2022 standpipes installed in reworked material. QIA also requests that a schedule be provided for implementing each of the recommendations provided by Knight Piesold Consulting (2023), regarding the future groundwater monitoring program.
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Comment #	QIA 2023 NIRB WQ#6
References	Document Name: Baffinland NIRB Annual Report, Appendix G.3 Groundwater Monitoring Reports Section: 5.0: Conclusion and Recommendations Page: 19
QIA Comment	<p>Several limitations and concerns with the 2023 Groundwater Monitoring Program were identified, including QA/QC concerns (contaminated blank samples), groundwater monitoring well installation errors, and missing data in a key downgradient monitoring well. This rendered the September 2023 data unreliable. Given that groundwater monitoring is only conducted annually at the site, there is no usable data from 2023. QA/QC protocols should be strictly adhered to in the 2024 monitoring program, and a concrete action plan including improvements to the groundwater monitoring program should be developed in advance of the 2024 monitoring period to ensure that future groundwater samples are collected following best management practices, such that samples are representative of on-site groundwater conditions. Sampling should be conducted by an environmental professional to a high standard of care.</p> <p>Going forward, it is also suggested that the 2024 groundwater monitoring be conducted bi-annually (e.g., freshet and fall monitoring), to eliminate the possibility of an incomplete dataset (i.e., missing annual data) if an error occurs during a future monitoring event. This is especially important given that leachate is likely being generated at the landfill site, and that concerns were previously raised regarding a potential liner leak at the northwest Hazardous Waste Berm. These concerns were unable to be evaluated during 2023 groundwater monitoring due to the program limitations.</p>
QIA Request	QIA requests that the proponent provide a concrete action plan for improving QA/QC practices during groundwater sampling, following best management practices to ensure that the 2024 groundwater monitoring program is successful. QIA also requests that the proponent conduct bi-annual groundwater monitoring in future programs, to bolster the dataset, should



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Comment #	QIA 2023 NIRB WQ#8
References	Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.5.8.1 5 of 5. 2023 Water Balance Update. Baffinland Iron Mines Mary River Project. December 15, 2023. Pages 8 and 29 of 92
QIA Comment	Water Balance Objectives for the Baffinland Water Balance model are stated as simulation of the following: <ol style="list-style-type: none"> 1. The current and future water accumulation in the WRF Pond and water transfers 2. Climate/hydrologic variability to understand the risks to current and planned water management strategies at the WRF Pond 3. Potential site water quantity overflow to the receiving environment (if applicable)



	<p>4. Input to the WRF water quality model</p> <p>And yet, not all of these objectives are discussed in the report as follows: For objective 1, flows are discussed but not accumulation. For 2, variability is incorporated but risks are not stated. For 3, is site water quantity overflow the to receiving environment applicable? This should be stated.</p>
QIA Request	Baffinland to provide documentation to demonstrate that all objectives have been completed, and ensure future iterations of the water balance continue to address all stated objectives.

Comment #	QIA 2023 NIRB WQ#9
References	Document Name: Appendix G.8.4 Aquatic Effects Monitoring Plan (AEMP) Section: 3, 4 and 5 Page: 69
QIA Comment	<p>In the TARP of the AEMP (see Table 5.2 below), low and moderate risk thresholds indicate “<i>concentration(s) observed during baseline and at an applicable reference area</i>”. However, not all stations have baseline data (sediment quality in lotic systems) or the reference sites were not sampled for all seasons. How these sites and parameters are managed is not discussed in the AEMP and review of the CREMP suggests these sites and parameters are excused from adaptive management because of this data gap. The AEMP and CREMP should be updated to detail how these sites and parameters will be evaluated and managed as part of the AEMP.</p> <p>An example of this includes discussions of sediment quality at CLT1 north branch in the CREMP in Section 3.1.5.1 where the proponent states, “<i>Metal concentrations in sediments from CLT1 north branch were generally elevated compared to those measured at lotic reference areas, but the source of elevated sediment metal concentrations at CLT1 north branch compared to reference in 2023 is unclear. Given that concentrations of metals besides iron in sediments were well below SQG and no adverse effects to phytoplankton and benthic invertebrate communities were indicated as a result of these metal concentrations in 2023, further investigation is not recommended.</i>”</p> <p>Reference sites are used to tease apart natural versus mine related impacts. Natural localized changes in chemistry should be reflected at both mine and reference sites. If reference sites are not reflecting natural changes in sediment chemistry that are being observed at mine sites than reference sites</p>



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	them management. If the proponent does not believe the reference sites are representing natural localized changes in chemistry (acting as traditional reference sites) than the proponent should defend the use of the sites.
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Comment #	QIA 2023 NIRB WQ#10
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 2.5.1.1 Page: 62 of 307
QIA Comment	<p>Within the CREMP discussing effects determination the Proponent states, <i>“Determination of a mine related influence on water or sediment quality for a waterbody depended on water or sediment quality parameters that were consistently elevated at mine-exposed areas in all sampling seasons in 2023 compared to both reference conditions in 2023 and baseline conditions.”</i></p> <p>The anticipated variability in water quality due to seasonal influences and associated pathways underscores the complexity of assessing the mine's impact. For example, contaminants associated with fugitive dust are expected to have elevated concentrations in the spring associated with freshet or during a storm event due to overland runoff. Parameters associated with effluent discharge are expected to have elevated concentrations in the summer during low flow conditions when the dilution capacity of creeks and rivers are minimal. Expecting consistently elevated contaminant concentrations in every sample event over the year might be unreasonable given the various contaminant pathways and interplay with seasonality (e.g., freshet). Instead, a nuanced approach involving seasonal trend analysis is crucial. This method would better elucidate the mine's influence on water and sediment quality over time, providing more accurate insights than qualitative comparisons.</p>
QIA Request	The QIA requests the Proponent update the effects determination of the CREMP to remove the requirement to have parameter concentrations to be elevated consistently elevated at mine-exposed areas and to complete seasonal trend analysis.

Comment #	QIA 2023 NIRB WQ#11
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3.1.1.2 and 3.1.1.3 Page: 72 and 74 of 307



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Comment #	QIA 2023 NIRB WQ#12
References	<p>Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 3.1.5.2</p> <p>Page: 89</p>
QIA Comment	In several sections of the CREMP elevated parameter concentrations have met the definitive objectives of the AEMP TARP but management actions have not been implemented leaving the receiving environment and the valued



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ecosystem components associated with them at risk of degradation. The following are examples of such situations.

With regards to total aluminum concentrations at the CLT1 upper main stem the proponent states, *“Elevation of total aluminum concentrations above the AEMP water quality benchmark at the upper main stem in 2023 was likely related to suspended mineral material in the water column as reflected by high turbidity in samples from this station. Aluminum concentrations at the CLT1 upper main stem in 2023 were moderately elevated compared to the reference stream and to concentrations at the upper main stem during baseline only during spring, and the relative elevation of total aluminum was greater than dissolved aluminum, therefore the source of aluminum to the CLT1 main stem was likely related to background minerology of material entering the system during spring runoff events. Although aluminium concentrations were above the AEMP benchmark in 2023, because they are not related to mine operations no management response is required under the AEMP Management Response Framework (Figure 2.7).”*

The greater elevation of total aluminum concentrations compared to dissolved aluminum does not indicate the source is related to background minerology. It is always anticipated that total parameter concentrations are greater than their dissolved fractions. The fraction of aluminum anticipated to be released from the mine is predominantly particulate. This is because the aluminum is expected to be associated with fugitive dust that settles on snowpack and on land and is associated with snow melt during spring freshet or overland runoff during storm events. This demonstrates the importance of using definitive objectives for management and removing ambiguity introduced by professional judgement. The moderate risk threshold has been triggered with the exceeded of the total aluminum AEMP benchmark, and elevated concentrations compared to baseline and reference site concentrations. Therefore, the response from the proponents Environmental Department includes using weight of evidence evaluation / risk assessment; evaluating the need for and specifics of increased monitoring as required to further assess mine contribution; evaluate and implement most appropriate action(s) from the AEMP Action Toolkit if trend analysis suggests continued increase; develop high risk response threshold as part of annual reporting.

In section 3.2.1.2 the proponent notes total phosphorus concentration at CLT2 exceeded the WQG and were elevated compared to both reference and baseline concentrations in the summer. These patterns indicate a seasonal impact during low flow conditions when dilution in the tributary is



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	low. Elevated concentrations compared to both reference and baseline concentrations meets the low risk thresholds; the proponent should therefore complete temporal trend analysis as per the TARP and determine next steps as part of the annual reporting.
QIA Request	QIA requests the proponent follow up with the appropriate AEMP TARP actions when the objective thresholds have been met.

Comment #	QIA 2023 NIRB WQ#13
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3.2.1.1 Page: 91
QIA Comment	When discussing in situ parameters the proponent does not compare values to baseline values for any of the lakes or tributaries. In Appendix E.12 Response to 2022 Annual Report Comments the proponent states, “ <i>Field measurements of specific conductance during the time of biological monitoring in August 2022 were significantly greater at CLT2 than at the reference creek. In addition, specific conductance at CLT2 in August 2022 was significantly higher than during baseline for measures taken in August (t-test p-value <0.001).</i> ” Indicating baseline values are available for in situ parameters, however these values are not discussed in the annual report. While in situ parameters do not have AEMP benchmarks they are essential for aquatic biota and an indicator of ecosystem health. Moving forward please compare all water quality parameters including in situ values to baseline as outlined in the AEMP.
QIA Request	QIA requests the proponent provide baseline values for in situ parameters for all tributary and lake sites and compare current values to baseline as required by the AEMP TARP.

Comment #	QIA 2023 NIRB WQ#14
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3.3.2 Page: 111 to 118 of 307
QIA Comment	When discussing metal concentrations in sediment of Camp Lake the proponent states, “ <i>Mean metal concentrations in sediment collected from Camp Lake littoral and profundal stations in 2023 were comparable to concentrations measured during the baseline period (2005 to 2013) except for boron which was highly elevated compared to baseline at both littoral and</i>



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	<p><i>profundal stations (18.5- and 11-times greater, respectively; Figure 3.9; Appendix Table D.17)20...20 Boron concentrations in sediment from 2015 to 2023 were considerably higher (i.e., 10- to 70-times) than those reported during both the baseline and 2014 studies at all mine-exposed lakes. The lack of any distinct gradient in the magnitude of the elevation in boron concentrations among stations within each lake and among study lakes suggested that the stark contrast in boron concentrations between recent data and data collected prior to 2015 was likely due to laboratory-based analytical differences.”</i></p> <p>The Figure the proponent directs the reader to (Figure 3.9) does not include Boron. This figure should be updated to include the metal of interest. The proponent suggests the difference in Boron concentration is due to laboratory-based analytical differences. No data was provided to support this rationale. The reviewer contact ALS laboratories and they indicated that there was no change in analytical techniques for either total boron by ICPMS or hot water soluble boron in 2014. They also indicated that last method change occurred in 2009 for digestion (Gayle Braun, Senior Project Manager, Environmental, ALS, May 7, 2024).</p>
QIA Request	QIA requests the proponent provide data to support the theory that boron concentrations in Camp Lake are higher during operation than baseline due to analytical changes at the laboratory.

Comment #	QIA 2023 NIRB WQ#15
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3 and 5 Page: 135 to 253
QIA Comment	Specific conductivity was significantly greater at Camp Lake Tributary 1, Camp Lake Tributary 2, Camp Lake and Sheardown Lake Tributary 1 compared to associated reference sites. As noted in a previous comment in situ values were not compared to baseline values. The source of the significantly greater specific conductivity at mine sites compared to the reference sites was not discussed for any mine exposed locations. Based on the proponents response to QIA’s comment AEMP#2 found in Appendix E.12 we know that Specific Conductivity measured at CLT2 was significantly greater compared to background values in 2022. The proponent acknowledges that the elevated conductivity is associated with the mine. However, elevated conductivity values noted in 2023 for the aforementioned sites and the potential influence of the mine was not discussed in the text of



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Comment #	QIA 2023 NIRB WQ#16
References	<p>Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 4.1.1.2</p> <p>Page: 139</p>
QIA Comment	<p>With regards to turbidity and copper concentrations in water sampled at Sheardown Lake Tributary 1 the proponent states, "<i>The greater turbidity observed in all 2023 seasons compared to baseline likely reflects natural conditions related to high flow observed at site in 2023. Special investigation into copper concentrations above the AEMP benchmark at SDLT1 in 2021 involved spatially expanded sampling that did not indicate any distinct source of copper to SDLT1, suggesting a naturally occurring (not mine-related) source of copper to the system (Minnow 2022).</i>"</p> <p>While higher flows could explain higher turbidity in 2023 compared to baseline, the proponent does not provide flow values for either 2023 or baseline studies. To support this hypothesis flow information for each season for each study (2023 and all baseline studies) would need to be provided. The proponent also indicates that the expanded sampling program did not find a distinct source of elevated copper concentrations. While a distinct source may not have been identified this line of reasoning does not eliminate the potential of a mine impact, but simply indicates that the proponent was not be able to identify the source based on the data collected. Given that concentrations of copper exceeded the AEMP benchmark in 2023 and concentrations were higher than background this triggers the low level threshold of the AEMP TARP. Therefore, the appropriate studies should be conducted.</p>
QIA Request	QIA requests the proponent:



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	<ol style="list-style-type: none"> 1. Provide data to back up the hypothesis presented, and 2. Complete temporal trend analysis for copper at the Sheardown Lake Tributary 1 site given concentrations exceeded the AEMP benchmark in 2023 and were elevated compared to background concentrations.
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Comment #	QIA 2023 NIRB WQ#17
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 4.1.5 Page: 149
QIA Comment	<p>With regards to total cadmium concentrations at Sheardown Lake Tributary 1, “A temporal trend analysis also found a significant increasing trend in total cadmium at both SDLT1 sampling stations over the years of mine operation (2015 to 2023), as well as a significant increasing trend in dissolved cadmium at the downstream station (D1-00) since the baseline period. Similar temporal trends were not found at the reference streams. The temporal trend analysis suggested that, for cadmium, an increasing mine-related influence has occurred over time but has only recently resulted in exceedances of the AEMP benchmark (i.e., beginning in 2022).”</p> <p>Given that the actions associated with a moderate level threshold have indicated that there has been a mine related impact on water quality, with an increasing trend which has resulted in the exceedance of an AEMP benchmark in two consecutive years it suggests a high risk threshold, “moderate risk condition status is reached.” Has been achieved. Therefore, environment department should complete the high level risk tasks, “Conduct further investigation to confirm cause is consistent with results of investigation conducted under the moderate risk response action; evaluate and implement most appropriate action(s) from the AEMP Action Level Toolkit.”</p>
QIA Request	QIA requests the proponent complete the tasks associated with the high level risks for total cadmium in Sheardown Lake Tributary 1.

Comment #	QIA 2023 NIRB WQ#18
References	Document Name: G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report



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	Section: 5.2.5 Page: 253 and 254 of 307
QIA Comment	<p>When providing recommendations for follow up studies in Mary River the proponent states, “<i>Based on this effluent monitoring, and because nitrate and sulphate concentrations have consistently remained below AEMP benchmarks within MRTF, as a Low Action Response within the AEMP Management Response Framework associated with increasing trends in nitrate and sulphate at MRTF, the following action is recommended:</i></p> <ul style="list-style-type: none"> • <i>Baffinland will continue to closely monitor effluent quality and MRTF water quality and evaluate for any continually increasing trends in nitrate and/or sulphate concentrations that indicate the need for development of additional mitigation measures.</i>” <p>The proponent has established a mine related impact on a valued ecosystem component. They have also established an increasing trend in concentrations of parameters of concern. The recommendation provided is vague leaving room for continued degradation of the valued ecosystem component, water quality. To provide useful management guidance, quantitative management targets need to be established to determine exactly when increasing trends in nitrate and/or sulphate concentrations need mitigation measures developed. It is recommended that Minnow (or another consultant) establish quantitative targets to provide to Baffinland to indicate when mitigation measures are required for nitrate and sulphate concentrations in Mary River Tributary F.</p>
QIA Request	<p>QIA requests the Proponent establish quantitative targets to provide to Baffinland to indicate when mitigation measures for nitrate and sulphate in Mary River Tributary F are required.</p>

Comment #	QIA 2023 NIRB WQ#19
References	Document Name: Baffinland NIRB Annual Report, Appendix G.8.8 Snow Management Plan Section: Table 5 Page: 13
QIA Comment	<p>Table 5 of the Snow Management Plan provides information on the monitoring that will be conducted regarding the potential impacts of snow stockpiling. Snow stockpiling from project roadways and infrastructure will “<i>avoid or minimize the release of sediment and other contaminants from melting snow stockpiles</i>” (P12), which will be indicated by concentrations of ammonia, nitrate, pH, conductivity, TSS, and oil and grease, as monitored by the Surveillance Network Program (SNP). The specific triggers (i.e., concentration levels, physical indicators, etc.) and mitigative actions for low,</p>



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Comment #	QIA 2023 NIRB WQ#20
References	<p>Document Name: Baffinland NIRB Annual Report, Appendix G.8.8 Snow Management Plan</p> <p>Section: Figure 1 and 2: Snow Management – Mine Site</p> <p>Page: 23-24</p>
QIA Comment	<p>Figure 1 of the Snow Management Plan shows a snow stockpile location ~220 m upgradient (northeast) of Camp Lake, and a stockpile ~40 m upgradient (north) of Sheardown Lake. Figure 2 shows another snow stockpile ~150 m upgradient (northeast) of Sheardown Lake. Although these three stockpile locations maintain the 31 m setback from the ordinary high water mark, these upgradient locations may present problems during snowmelt, where potentially contaminated and sediment-laden meltwater will preferentially flow to downgradient Camp and Sheardown Lakes. Given ongoing concerns with meltwater inputs at Camp and Sheardown Lakes, snow stockpiling in upgradient locations should be more strictly managed and eliminated (if possible), and topographic considerations should be included in snow stockpile site selection.</p>



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QIA Request	QIA requests that the proponent provide the rationale for positioning snow stockpiles in upgradient areas near Camp Lake and Sheardown Lake, where contaminant/sediment-laden meltwater may preferentially flow downgradient to the lakes and may be difficult to contain and mitigate. Topographic considerations should be implemented into snow stockpile siting.
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Comment #	QIA 2023 NIRB WQ#21
References	Document Name: 2023 Annual Report to the Nunavut Impact Review Board Section: 3.1 Page: 55 of 641
QIA Comment	The proponent states, “ <i>No Project activities were undertaken related to the development of the Steensby Railway or at Steensby Port in 2023, with the exception of physical and archaeological surveys, and studies to update baseline information on fish and fish habitat along the Steensby Railway and at Steensby Port to support additional permitting activities.</i> ” Based on the information provided it is unclear if additional water and sediment quality studies have been completed along the Railway and at Port. A lack of baseline sediment quality data at lotic systems at the main camp has interfered with AEMP and CREMP management initiatives. It would be prudent for the Proponent to learn from these limitations and improve management initiatives moving forward.
QIA Request	It is recommended that the proponent initiate sediment and water quality studies related to the development of the Steensby Railway and Port to update the existing baseline characterization if they have not yet been initiated.

Comment #	QIA 2023 NIRB WQ#22
References	Document Name: Appendix G.4.2 2023 Lake Sedimentation Monitoring Report Section: 3.1.1 Page: 18 of 57
QIA Comment	The proponent states, “ <i>These annual rates were generally within the range of those observed at other Canadian arctic lakes (e.g., 7 to 50 mg/cm²/year; Lockhart et al. 1998) including the relatively higher annual sedimentation rates at SHAL-1 within one standard deviation (63 ± 24.2 mg/cm²/year).</i> ” It is unclear if the “Canadian arctic lakes” being referenced are natural or impacted by mines. Please clarify if the qualifying statement is in reference to natural or impacted or a combination of the two.



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QIA Request	It is recommended the proponent clarify if the Canadian arctic lakes used to qualify the annual rates of sediment accumulation are natural lakes or those that have been impacted by mines or a combination of the two.
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Comment #	QIA 2023 NIRB WQ#23
References	Document Name: Appendix G.4.2 2023 Lake Sedimentation Monitoring Report Section: 3.2.2 Page: 23 of 57
QIA Comment	<p>The proponent states, “Sediment accumulation thickness for the 2023 open water period in Sheardown Lake NW at the littoral and profundal areas (i.e., SHAL-1, SHAL-2, and DEEP-1) was significantly higher in 2023 than in 2015, 2019, and 2020 (Appendix Table A.13). The sediment accumulation thickness in 2023 was not statistically different than the 2018, 2021, and 2022 open water periods for all monitoring areas (Appendix Table A.13). During the open water period, there was an increase in sediment accumulation thickness with time at Sheardown Lake NW indicated by the significant, positive Spearman’s correlation at the littoral SHAL-1 and SHAL-2 areas (Spearman’s ρ of 0.64 to 0.65, $p < 0.05$; Appendix Figure A.3). At the profundal DEEP-1 area, there was a moderate positive correlation of open water sediment accumulation thickness (Spearman’s ρ of 0.45, $p < 0.05$; Appendix Figure A.3). These results indicated that there was an increase in sediment accumulation at Sheardown Lake NW with year since mine operation.” While the proponent discusses the lack of implications for arctic char eggs due to the location and timing of the accumulation they do not discuss the implications of the increase in sediment accumulation to benthic invertebrate communities, which serve as food for arctic char and are used as a rationale for monitoring locations: “Shallow Depositional Area (SL-SHAL-1): Silt-loam represents the dominant substrate type in Sheardown Lake NW, and therefore increased sedimentation on habitat characterized by this substrate has the greatest potential to affect overall lake benthic invertebrate density and/or community structure. In turn, changes in habitat of this type could affect benthic invertebrate productivity and/or community composition and thereby change food resources available for the arctic charr population of Sheardown Lake. Silt substrate in the lake littoral zone was targeted for placement of this area to represent a potentially high sediment deposition habitat. Because this area is located near the outlet from SDLT1, information acquired from this area also serves to evaluate the extent to which sediment releases from key lake tributaries affect sedimentation at Sheardown Lake NW.” The implications of the increase in sediment accumulation over the mine operation period in</p>



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Comment #	QIA 2023 NIRB WQ#25
References	Project Certificate Term and Condition No. 22 and No. 26 (Section 4.6.5)
Comment	Baffinland noted that a comprehensive sediment and erosion management plan has been incorporated into Baffinland's Surface Water and Aquatic Ecosystem Management Plan. However, in 2023, the DFO issued a Corrective Measures Order regarding sediment and erosion control. As an



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Comment #	QIA 2023 NIRB WQ#26
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.10 Marine Environment, PCC 76 Page: 277-280 (PDF p. 2304-305 of 641)</p> <p>Section: 4.6.10 Marine Environment, PCC 83a Page: 296 (PDF p. 314 of 641)</p> <p>Section: 4.6.10 Marine Environment, PCC 85 Page: 303 (PDF p. 321 of 641)</p>
QIA Comment	Under the Marine Environmental Effects Monitoring Program (MEEMP (PCC 76, p. 277), " <i>Baffinland has committed to a frequency of annual sampling of the newly implemented Capesize monitoring stations for three years following the initial use of Babycape and Capesize vessels.</i> " (PCC 76, p. 279; PCC 85, p. 303). Given that the 2023 sampling of sediment and benthic invertebrates at the eight (8) sites occurred prior to the arrival of these vessels at Milne Port and that Baffinland considers the 2023 sampling to form part of the pre-Capesize " <i>baseline</i> " (PCC83a, p. 296), the three years of sampling identified above should include 2024, 2025, and 2026.



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Comment #	QIA 2023 NIRB WQ#27
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.8.1 Phase I Waste Rock Management Plan (WRMP)</p> <p>Section: 8 (Deposition Strategy and Guidelines)</p> <p>Page: 11-12</p>
QIA Comment	<p>The WRMP states that placement strategies for lifts (of waste rock) may be revised as the thermal performance of the WRF becomes better understood. Further, the management plan states that <i>“In the event that waste rock deposition following the above guidelines is not possible, Baffinland will document short-term deviations from the above waste rock deposition strategies and develop corrective action plans to return to the long-term objectives”</i> (p.12). A log of changes that have been made to the waste rock deposition method should be provided in the WRMP, to track what has been learned about thermal performance over the operations phase, and how corrective actions have been implemented into the deposition strategy. Additionally, a record of instances where the deposition guidelines in the WRMP have not been able to be implemented (as mentioned on page 12) should be appended in this document, to assist reviewers in determining the frequency of deviations from the WRMP and evaluating any associated concerns .</p> <p>Further, it is understood that the WRF has been receiving waste rock throughout the life of the mine, and an estimated 640 MT of waste rock and 32 MT of overburden will require management from mining Deposit 1. Reference to (or inclusion of) the waste placement records to date, including depths and composition (PAG or non-PAG), should be included, to evaluate progress and the volume of material in the WRF. Additionally, estimates of when the current WRF footprint will require expansion should be included/referenced, for context and document completeness.</p>
QIA Request	QIA requests that the proponent provide a log of learned information/strategies for waste rock deposition both in line with the WRMP and when deviations have occurred, that have evolved over the course of mine operations, and waste placement records to-date. The proponent is also requested to provide the current WRF capacity and an estimate of when the footprint will require expansion.



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Comment #	QIA 2023 NIRB WQ#29
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.8.1 Phase I Waste Rock Management Plan (WRMP), Part 4/5</p> <p>Section: 3.8: Summary of Instrumental Trends</p> <p>Page: 42-43</p>
QIA Comment	<p>The WRMP states that <i>“The 2021 assessment based on a shorter temperature dataset suggested that local sudden increases in waste rock temperature, like the event observed at BH1 in July 2020, were possibly related to localized warmer airflow with increases in air temperature at the same period.”</i>, and, <i>“It is unlikely that migration of warmer air alone would be sufficient to sustain higher temperatures in that zone for several months and other factors, like a localized internal heat generation, were likely in play”</i> (p.43) It appears that a temperature increase extended for a period of 9 months. An extended period of warming is a concern, and suggests that waste rock must have thawed and produced a reaction to sustain elevated temperatures for such an extended period. Although the WRMP states that <i>“the existence of possible localized internal heat could generate temporary changes in waste rock temperature patterns”</i> (p. 43), 9 months is a rather extended time for thawing to occur, and should be addressed further in the WRMP, to show that steps have been taken to prevent this from occurring in the future.</p>
QIA Request	QIA requests that the proponent provide additional information regarding the circumstances/details surrounding the 9-month temperature increase



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Comment #	QIA 2023 NIRB WQ#31
References	Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.5.8.1 5 of 5. 2023 Water Balance Update. Baffinland Iron Mines Mary River Project. December 15, 2023. December 18, 2023 Appendix B: Waste Rock Facility QA/QC Monitoring Plan Page 89 of 92
QIA Comment	In Appendix A of the document, the Trigger Action Response Plan (TARP) is presented. Condition Status/Threshold is presented for various Project Activities and Objectives along with associated Performance Indicators. QIA questions how the thresholds for each Performance Indicator were



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Comment #	QIA 2023 NIRB WQ#33
References	Project Certificate Term and Condition No. 16 (Section 4.6.4)
Comment	Baffinland identified PC No. 16 as “in compliance”; however, it noted that seepage is occurring at the KM 105 water management pond. As such, remedial works are ongoing for the KM 105 water management pond. As the KM 105 water management pond is not functioning as intended, and additional remedial work is needed for this structure, it is unclear how this term and condition has been assessed as in compliance.
QIA Request	It is recommended that the status of compliance for PC No. 16 be updated to “non-compliant” until such a time that seepage has been mitigated and controlled for all water infrastructure.



Terrestrial Environment – TE

Comment #	QIA 2023 NWB TE#1
References	Project Certificate Term and Condition No. 25 (Section 4.6.5)
Comment	Baffinland indicated that a third-party consultant has been engaged to conduct a full review of the status of all historic borrow sources along the Tote Road. Assessments of borrow sources have been completed in 2009, 2014, and 2019, indicating a trend of assessments occurring every five years. It is unclear whether the scope of the assessment to be completed will be the same as that of the 2009, 2014, and 2019 assessments. It is unclear whether Baffinland intends to complete assessments of borrow sources every five years to understand and document impacts from the historic borrow sources and how these assessments are expected to contribute towards minimizing impacts from the project activities and infrastructure on sensitive landforms (i.e. permafrost).
QIA Request	<ol style="list-style-type: none"> 1. Provide details regarding the scope of the assessment that will be completed by the third-party consultant and clarify whether this assessment will be a continuation of the work that was completed by Tetra Tech in 2014 and 2019 to better understand the ongoing impacts from the Tote Road borrow sources on the road and permafrost. 2. Confirm whether assessments of borrow sources are to occur every five years. 3. Describe how these assessments are intended to contribute towards minimizing impacts from the project activities and infrastructure on sensitive landforms.

Comment #	QIA 2023 NWB TE#2
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Main Body</p> <p>Section: 4.6.8, PC Condition 59</p> <p>Page: 228-234</p>
QIA Comment	In an effort to address QIA's concerns regarding 2022 reporting, Baffinland has split 2023 reporting data into two categories: "(1) data within the Snow Geese are during the moulting season (July and August) in relation to the 1,100 magl cruising altitude and 1,500 m horizontal distance requirement; and (2) data outside the Snow Geese area during the moulting season, and in all areas during all other months, in relation to the 650 magl cruising altitude requirement" (229). QIA appreciates Baffinland's efforts to introduce greater



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	clarity into their reporting on this matter by separating data during and outside moulting season.
	QIA agrees with Baffinland's assessment of compliance.
QIA Request	No further requests at this time.

Comment #	QIA 2023 NWB TE#3
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1</p> <p>Section: 5.2.2 Compliance Rationale; 5.2.3 Inter-annual Trends</p> <p>Page: p. 31; p. 33</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: Section 4.6.8; Project Certificate Term and Condition No. 59</p> <p>Page: p. 228-234</p>
QIA Comment	<p>Within section 5.2.1, Baffinland notes that “Non-compliant flights were primarily related to transits to Steensby Inlet.” (p. 23). In section 5.2.3, Baffinland notes that “...2023 had more flight hours within the Snow Geese area at 48.04 hours, second only to 2015 at 50.84 hours.” (p. 33). As Steensby Port and southern railway construction are proposed to occur in the near future, this association between non-compliant flights and transit to Steensby Inlet, and increase in flights in the snow goose moulting area are worrying as presumably the number of flights to Steensby Inlet will continue to increase.</p> <p>Within Section 5.2.2, Baffinland notes with regards to the increase in low level flights associated with poor weather days in the snow goose moulting area that “This increase is contrary to the mitigation protocol implemented in 2021 (summarized in EDI Environmental Dynamics Inc. 2022), which requires helicopters to travel around the Snow Geese area during the moulting season on days with poor weather. Further investigation into leading causes is recommended.” (p. 31). Baffinland does not provide any details of the investigative actions that will be undertaken to address this issue.</p> <p>QIA recognizes that health and safety is paramount and that there may not be feasible alternative measures to key project operations (such as slinging), but additional efforts must be made to investigate the impact this is having on breeding migratory birds and moulting Snow Geese. As shown on p. 233,</p>



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	Baffinland has no plans to study migratory bird and snow goose response to helicopter disturbance.
QIA Request	<ol style="list-style-type: none">1. QIA requests that Baffinland undertake proactive awareness training with pilots in advance of the moulting season to address non-compliance from helicopter flights.2. QIA requests that Baffinland provide their proposed investigation methods for review by the TEWG, to ensure that the investigation will identify the root causes of non-compliance.3. QIA requests that Baffinland provide the results of their investigation, and corrective actions they will undertake to determine why their mitigation protocol was not being followed correctly and how they can prevent this from occurring in the future. QIA expects that corrective actions will include:4. Moulting season orientation with pilots to emphasize the need to travel around the Snow Geese area during the moulting season on days with poor weather; and5. Mid-moulting season assessment of pilot compliance and discussions with any pilots that have breached compliance of the 2021 mitigation protocol.6. QIA requests that Baffinland conduct research on the effects of both non-compliance and “compliance with rationale” flights on migratory bird breeding and snow goose moulting. An appropriate study design should be used to avoid additional impacts, particularly during the snow geese moulting season. This commitment to conduct research should be captured in the “Recommendations / Lessons Learned” section of Section 4.6.8, PC Condition 59. Until this research has been conducted and findings demonstrate no significant impact of low-level flying, Baffinland must continue to conservatively assume and disclose that its operations are harmful to breeding migratory birds and snow goose moulting. <p>QIA expects that Baffinland will provide the results of their investigative and corrective measures within the 2024 Terrestrial Environment Annual Monitoring Report.</p>



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Comment #	QIA 2023 NWB TE#4
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 Section: General Comment Page: N/A
QIA Comment	Baffinland has not provided reporting of helicopter flights routes relative to walrus haulout locations. This is concerning to QIA as potential disturbance from aircraft could lead to adverse effects on walrus and details of flight routes relative to these locations should be provided.
QIA Request	QIA requests that Baffinland provide mapping of the helicopter flights routes relative to walrus haulout locations in future annual reports.

Comment #	QIA 2023 NWB TE#5
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 Section: Section 5 Helicopter Overflights Page: p. 22
QIA Comment	Within Section 5, Baffinland notes that "No locations or boundaries of areas prescribed explicitly by the TEWG or areas of observed concentrations of other migratory birds were identified in 2023." (p. 22). It's currently unclear how information of observed concentrations of other migratory birds would be documented by Baffinland and how this documentation would lead to eventual implementation of helicopter avoidance areas.
QIA Request	<ol style="list-style-type: none"> 1. QIA requests that Baffinland provide details on the documentation process that Baffinland will follow when concentrations of other migratory birds are observed. 2. QIA requests that Baffinland provide details on the reporting and mitigation process that would follow this documentation, including details of who reported observations will be sent to, how they will determine if an avoidance area is needed, and the timeline for this process overall.

Comment #	QIA 2023 NWB TE#6
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1; Section: Summary, Table 0 Page: p. xviii



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Comment #	QIA 2023 NWB TE#7
References	<p>Document Name: Baffinland NIRB Annual Report, Appendix G.8.8 Snow Management Plan</p> <p>Section: Table 5</p> <p>Page: 13</p>
QIA Comment	<p>Table 5 of the Snow Management Plan provides information on snow clearing along the Tote Road, and states that snow clearing will “<i>avoid or minimize barrier effects on wildlife movement</i>” (P13). No specific triggers or mitigative actions are provided in the document, although references to snowbank height monitoring (as part of the Terrestrial Environment Mitigation and Monitoring Plan - TEMMP) and the Roads Management Plan are provided. It is difficult to evaluate any potential impacts of the Tote Road snow clearing on wildlife mobility without specific information from the TEMMP snowbank height monitoring and Roads Management Plan. This information should be included in Table 5 of the Snow Management Plan, for ease of review and document completeness, providing a single streamlined document that can be consulted if snowbank height or Tote Road snow clearing are found to be disruptive to wildlife migration.</p>
QIA Request	<p>QIA requests that Baffinland provide a more specific reference to the TEMMP snowbank height monitoring and Roads Management Plan, or provide pertinent information about the specific mitigative actions that will be taken if snowbanks on the Tote Road are found to be high enough to disrupt wildlife migration.</p>



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Comment #	QIA 2023 NWB TE#11
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1;</p> <p>Section: Section 9.1.1.; Section 9.1.2</p> <p>Page: pp. 148-149, pp. 149-152</p>



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Comment #	QIA 2023 NWB TE#12
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1; Section: Section 9.3.1.1 Page: page 160
QIA Comment	Regarding height of land surveys in 2023, Baffinland notes that “Efforts were made to visit all sites a second time but due to helicopters being grounded for safety reasons, a full second round was not able to be completed.” (p. 160). Baffinland does not provide a rationale as to why the full second round was not able to be completed. This is concerning as it would be beneficial to understand why surveys were limited in 2023, so that the same situation can be planned for and avoided during subsequent years.
QIA Request	QIA requests that Baffinland provide more details on the safety reasons that led to helicopter being grounded, which impacted the completion of a second round of height of land surveys. Further to this, QIA request that Baffinland plan for these possible eventualities in the future, so that a second round of surveys can be completed (e.g. planning to have a couple extra/spare days in case of bad weather to ensure staff and equipment are available).



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Comment #	QIA 2023 NWB TE#14
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1;</p> <p>Section: Section 9.6</p> <p>Page: p. 183-184</p>



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Comment #	QIA 2023 NWB TE#15
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1;</p> <p>Section: Section 10; Table 1-1</p> <p>Page: p. 188; p. 2</p>
QIA Comment	<p>Within Section 10, Baffinland notes that as part of activities to address PC 74 “In consultation with the Terrestrial Environment Working Group and Canadian Wildlife Service (CWS), it was resolved that effects monitoring for tundra breeding birds could be discontinued. Instead, Baffinland Iron Mines Corporation (Baffinland) would commit to the following:</p> <ul style="list-style-type: none"> • ...completing coastline nesting surveys of the identified islet near the proposed Steensby Port Site before the construction of the port; • ...continuing monitoring programs for cliff-nesting raptors (annual occupancy and productivity) and inland waterfowl (roadside waterfowl surveys) when qualified biologists are available and on site (paused indefinitely since 2021 since no Project-related trends have been observed).” (p. 188) <p>With the construction of the southern railway and Steensby Port due to commence in the near future, QIA is concerned about potential project-related impacts to cliff nesting raptors and waterfowl, and that important components of the bird monitoring programs are currently not planned in the future. QIA notes that while Baffinland previously completed cliff nesting raptor and roadside waterfowl surveys, these were associated with the Milne Port, Tote Road and Mine site, the construction and operation of the southern</p>



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	<p>railway and Steensby Port may produce different effects on cliff nesting raptors and waterfowl and should be monitored. As it currently stands with no monitoring in place for future years, adverse effects may occur and there would be no mitigative response.</p> <p>Additionally, within Table 1-1, Baffinland notes that no surveys are scheduled but that they “may reassess in future years” (p. 2). QIA notes that the cliff nesting raptor surveys appeared to show a slight declining trend in peregrine falcon nest occupancy before the program was discontinued.</p> <p>As well, QIA notes that the coastline nesting surveys were last completed in 2012 and that conditions may have changed in the past 12 years, which could lead to a mischaracterization of project effects on coastline nesting birds. An updated coastline nesting survey would provide a more robust assessment of current conditions for coastline nesting birds, which future monitoring could compare against to assess potential project effects.</p>
QIA Request	<p>QIA requests that Baffinland undertake the following monitoring in future years:</p> <ul style="list-style-type: none"> • Updated coastline nesting surveys of the identified islet near the proposed Steensby Port Site; • Cliff-nesting raptors (annual occupancy and productivity) surveys around the Mine site, southern railway route, and Steensby Port; • Peregrine nesting (annual occupancy and productivity) surveys around the Tote Road, and Milne Port; and • Roadside/railside waterfowl surveys around the Mine site, southern railway route, and Steensby Port. <p>By undertaking these surveys, Baffinland will help to ensure that potential project related effects on birds are being monitored and that mitigative measures can be implemented if needed.</p>

Comment #	QIA 2023 NWB TE#16
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board;</p> <p>Section: Section 4.6.6, Project Certificate Term and Condition No.</p> <p>Page: p. 147</p>



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	<p>Document Name: Baffinland Iron Mines Corporation Mary River Project 2022 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 – 2022 Final Terrestrial Environment Annual Monitoring Report</p> <p>Section: Table 9-16</p> <p>Page: p. 163</p>
QIA Comment	<p>Within Section 4.6.6, Baffinland provides an overview of the terms and conditions related to vegetation and the associated vegetation monitoring they undertake, including lichen-metal sampling. Baffinland notes that lichen-metal sampling was not undertaken in 2023, but that the next sampling period would be between 2025 and 2027. QIA remains concerned by the statistically significant increases in lichen-metal concentrations relative to baseline levels shown in 2022 (i.e. arsenic, cadmium, copper, lead, selenium), especially with some far sampling sites (e.g. arsenic, cadmium, and selenium at the Mine Site far sampling sites) and one reference sampling site (i.e. selenium at the Tote Road reference sampling site) showing these statistically significant increases for certain contaminants of potential concern.</p> <p>QIA is concerned that, by not having consistent annual monitoring, potential statistically significant increases or increases above lichen indicator values could occur and there would be no timely mitigative response engaged.</p>
QIA Request	<p>QIA requests that Baffinland continue to monitor lichen-metal concentrations more frequently than currently scheduled, annually so if thresholds noted in the Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) are exceeded that suitable responses can be undertaken.</p> <p>QIA notes that they are still working with Baffinland on requested changes to the current draft of the TEMMP to address outstanding concerns which are related to thresholds and responses.</p>

Comment #	QIA 2023 NWB TE#17
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board;</p> <p>Section: Section 4.6.6; Project Certificate Term and Condition No. 35</p> <p>Page: p. 157</p>
QIA Comment	<p>Regarding Term and Condition No. 35, Baffinland notes that, for the potential launch of a caribou tissue sampling program based out of the Mine Site and Milne Port, “Teeth aging would be completed at Matson’s Lab in Montana, USA, as no Canadian facilities currently offer this analysis.” (p. 157). QIA notes that there are Canadian facilities that offer this analysis.</p>



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	As well, Baffinland notes that, regarding compensation for samples, “Baffinland confirms that it does not intend to offer increased compensation for the proposed on site caribou tissue sampling program under discussion, as this may deter participation from other regional monitoring programs.” (p. 157). QIA remains concerned by the low number of samples submitted to the GN and NCP programs, and notes that compensation should be at a minimum on par with those two programs.
QIA Request	<ol style="list-style-type: none"> 1. QIA suggests that Baffinland explore potentially looking at Canadian options for teeth aging such as the Wildlife Analytics Lab at Lethbridge College (led by Dr. Everett Hanna), who offer fee-for-service cementum analysis of wildlife teeth. 2. QIA requests that Baffinland provide at a minimum \$120 for sampling kits submitted through their proposed on site caribou tissue sampling program so it is on par with the compensation for GN and NCP sampling kits.

Comment #	QIA 2023 NWB TE#18
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board;</p> <p>Section: Section 4.6.8; Project Certificate Term and Condition No. 53</p> <p>Page: p. 205-207</p>
QIA Comment	<p>Term and Condition No. 53 stipulates that Baffinland shall consider the “Development of a surveillance system along the railway corridor to identify the presence of caribou in proximity to the train tracks and operational protocols for the train to avoid collisions and enable caribou to cross the train tracks unimpeded.” (p. 205). Baffinland notes that the TEMMP “...will include an updated surveillance system once the railway becomes viable.” (p. 207). Baffinland does not provide details of the timeframe that corresponds with railway viability. As well, Baffinland does not indicate when the operational protocols will be developed.</p> <p>This is concerning to the QIA: to ensure adverse impacts to caribou are avoided, a surveillance program and operational protocols should be developed well in advance of railway operations. The details of the surveillance plan and operational protocols should be provided to the QIA for review and comment in advance of railway operations to ensure that the program is sufficiently robust and protective of caribou.</p>
QIA Request	QIA requests that Baffinland provide details of the planned timing of the development of the surveillance program and operational protocols relative to



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Comment #	QIA 2023 NWB TE#19
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board;</p> <p>Section: Section 4.6.8; Project Certificate Term and Condition No. 53</p> <p>Page: p. 214-215</p>
QIA Comment	<p>Term and Condition No. 55 notes that Baffinland will "...develop an adaptive management plan applicable to wolves and wolf habitat..." (p. 214), and that considers:</p> <p style="padding-left: 40px;">B. "Estimating the available (glacio-fluvial materials) esker habitat within the Regional Study Area/PDA and identifying such habitat as ecologically sensitive;" (p. 214)</p> <p style="padding-left: 40px;">C. "Developing "wolf indices" for presence/abundance of wolves (by conducting studies) to set a baseline pre-construction baseline;" (p. 214)</p> <p>QIA is not aware of the estimation of esker habitat or the development of indices for presence/relative abundance of wolves.</p> <p>With the construction of the southern railway proposed to occur as noted in Sustaining Operations Proposal 2 (SOP2), QIA is concerned by the lack of progress made on estimating the available esker habitat within the RSA and PDA, and development of a wolf indices for presence/abundance of wolves to set a baseline. QIA notes that the results of the 2023 caribou survey showed that caribou numbers have increased to meet the threshold for a potential collaring program; based on this increase it is plausible that wolf numbers have also increased or will increase in the near future.</p>
QIA Request	<p>QIA requests that Baffinland:</p> <ul style="list-style-type: none"> • Provide estimates for the available esker habitats within the RSA and PDA; and • Undertake work to develop baseline information and associated indices for wolf presence / abundance particularly along the southern railway corridor / Steensby Port area.



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Comment #	QIA 2023 NWB TE#20
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Section: Section 4.6.9; Project Certificate Term and Condition No. 74 Page: p. 262-263
QIA Comment	Regarding Term and Condition No. 74, Baffinland notes that “Upon the recommendation of CWS-ECCC, Red Knot monitoring using ARUs will resume before increasing activities in the southern transportation corridor.” (p. 263). Baffinland does not provide details on: <ul style="list-style-type: none">• Number of ARUs that will be deployed;• Length of deployment of the ARUs;• ARU deployment timing; and• Location ARUs will be deployed. Without these details it is difficult to determine how effective the proposed monitoring program will be at detecting red knots.
QIA Request	The QIA requests that Baffinland provide the methods for the proposed ARU deployment for their review and comment in advance of undertaking the program so that their comments and concerns can be addressed before the ARUs are deployed. Specifically, QIA requests that the methods include the following details: <ul style="list-style-type: none">• Number of ARUs that will be deployed;• Length of deployment of the ARUs;• ARU deployment timing;• Location ARUs will be deployed;• Proposed data analysis approach

Comment #	QIA 2023 NWB TE#21
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 Section: Section 4.6.8; Project Certificate Term and Condition No. 53; Section 9.4 Page: p. 205-210; 164-170
QIA Comment	Baffinland continues to avoid sharing information on the directional orientation of the remote cameras selected for this program as well as information on proximity of remote cameras to project components (e.g., X m west of the Tote Road). It would be useful for Baffinland to start reporting on this information to assist with interpreting the results.



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	<p>Using the detection range provided (i.e. 30 meters / 100 feet) as per QIA's request in 2022, it would be useful for Baffinland to quantify the maximum area covered by remote cameras, similar to the viewshed modelling and analysis that has been provided for HOL surveys. This context is necessary to interpret the results of remote camera monitoring, and whether study design is sufficient to maximize the potential for detection of caribou and other wildlife species.</p> <p>QIA notes that this unknown information contributes to QIA's overarching concerns regarding the effectiveness of Baffinland's overall program to monitor the potential effects of the project on caribou, including their avoidance of project components and calving areas. Until this issue and other deficiencies related to the caribou monitoring program are addressed, QIA does not consider Baffinland to be in compliance with Term and Condition 53</p>
QIA Request	<p>To better understand how remote camera monitoring results provide insight on caribou avoidance of the project area and improve compliance with Term and Condition 53, Baffinland Is requested to report on and analyze the following for the 2024 remote camera monitoring program:</p> <ul style="list-style-type: none">• orientation of each remote camera deployed (e.g., north, east south, west);• if relevant, proximity of each remote camera / HOL station to project components, including distance and type of component. QIA notes that project components within at least 500m should be reported; and• use the detection range provided to quantify a maximum total viewshed for each camera and HOL station (a map of each remote camera viewshed, relative to the HOL viewshed would be also ideal) to assist with interpreting the findings of remote camera monitoring, including its spatial limitations.

Comment #	QIA 2023 NWB TE#22
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 – 2023 Final Terrestrial Environment Annual Monitoring Report</p> <p>Section: Section 4.6.8; Project Certificate Term and Condition No. 53; Section 9.4</p> <p>Page: p. 205- 210 of 623; 159-163</p>
QIA Comment	<p>QIA has previously recommended that Baffinland take reasonable measures to prevent field of view obstructions due to blowing snow, ice, or fog. Examples provided to Baffinland in response to the 2021 and 2022 TEAMR</p>



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	<p>included installing a cover or shelf or a protective case, using silica gel packs to prevent moisture build-up in cases, and applying anti-fogging products. There is no indication in Section 9.4 of the 2023 TEAMR that Baffinland attempted any of these measures.</p> <p>In the 2023 TEAMR (Appendix E), Baffinland reasoned that “there are limitations to implementation due to the project setting and climate.” Baffinland has failed to provide explicit rationale for what these limitations are and explain why each of QIA’s provided suggestions would be ineffective. As shown in Table 9-2 (p. 167), cameras positioned at HOL station 6 still incurred a high number of days where the camera field of view was obstructed. Baffinland commented on the high occurrence of view obstruction in Appendix E stating that “...only 2 cameras (Baffin-a, Baffin-5 at HOL 6) were excessively affected by fog and ice crystals suggesting that this issue may be localized.” If the issue is localized, what is Baffinland doing to avoid this issue in the future? What modifications, if any, will be undertaken to ensure cameras at HOL station 6 have less view obstructions in subsequent survey periods?</p> <p>While QIA acknowledges that weather events are beyond Baffinland’s control, Baffinland should at least attempt to implement easy potential solutions or provide rationale and evidence that the proposed solution has not worked in the past in similar contexts. If the measures do not work, then this can be reported on in the following year’s TEAMR. In addition, in Section 9.4.1, it is generally stated that cameras are to be periodically checked (2-4 times annually), but there is not reporting on how frequently each remote camera was checked in Section 9.4.2 or in Table 9-2, making it difficult to assess the level of reasonable effort to minimize non-active days.</p> <p>QIA notes that these issues contribute to the integrity of Baffinland's overall program to monitor the potential effects of the project on caribou, including their avoidance of project components and calving areas. Until this, and other deficiencies related to the caribou monitoring program are addressed, QIA does not consider Baffinland to be in compliance with Term and Condition 53.</p>
<p>QIA Request</p>	<p>To maximize remote camera monitoring data to provide insight on caribou avoidance of the project area and improve compliance with Term and Condition 53, Baffinland is requested to implement measures to minimize field of view obstructions due to snow, ice, or fog, including:</p> <ul style="list-style-type: none"> ● installing a protective case and shade on each deployed camera ● using silica gel packs to prevent moisture build-up within cases ● applying anti-fog products to camera lenses



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Comment #	QIA 2023 NWB TE#23
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 – 2023 Final Terrestrial Environment Annual Monitoring Report</p> <p>Section: Section 4.6.8; Project Certificate Term and Condition No. 53; Section 9.4</p> <p>Page: p. 205-210; 164-170</p>
QIA Comment	<p>In response to the 2021 and 2022 TEAMR, QIA requested that Baffinland deploy remote cameras at all 24 HOL stations (vs. a sample of only 6), or if this was not possible, to select locations based on the best available IQ and western science. Since the purpose of the remote camera monitoring is to capture supplemental data on caribou movement in relation to the Project, locations should be selected based on maximizing the potential for detecting caribou. Baffinland responded that it was not feasible to deploy cameras at all 24 HOL stations due to accessibility considerations, mainly with ongoing maintenance requirements in mind.</p> <p>In the 2023 TEAMR (Appendix E), Baffinland reasoned that that HOL stations 1, 3 ,4, 6,10 and 16 were selected “to provide a regular distribution along/at the Project,” claiming that “Methods/experimental design are appropriate for current regional low-density of caribou.” QIA continues to ask whether Baffinland explicitly verified these locations with MHTO prior to deploying cameras. In addition, are these six HOL stations the only ones that can be accessed as required for maintenance (per Baffinland, 2-4 times per year)? QIA notes that HOL stations 1 – 16 are generally accessed on foot (Section 9.3.1). Has Baffinland considered deploying remote cameras at HOL stations subject to access constraints in an effort to capture at least some data (e.g., during seasons when caribou are known to be calving or migrating)? QIA notes that all HOL stations are at least accessible during some portions of the</p>



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	<p>year (i.e., when HOL monitoring typically occurs in June) and that remote cameras could be deployed at this time with the intention of collecting at least some data.</p> <p>QIA notes that these study design questions regarding remote camera locations contribute to QIA's overarching concerns regarding the effectiveness of Baffinland's overall program to monitor the potential effects of the project on caribou, including their avoidance of project components and calving areas. Until this, and other deficiencies related to the caribou monitoring program are addressed, QIA does not consider Baffinland to be in compliance with Term and Condition 53</p>
QIA Request	<p>To respond to study design concerns regarding remote camera monitoring and improve compliance with PC Condition 53, Baffinland is requested to provide the following information:</p> <ul style="list-style-type: none"> ● Baffinland to confirm whether or not MHTO was asked to comment on the use of HOL stations 1, 3, 4, 6, 10, and 16 prior to remote camera program initiation. ● Baffinland to clarify whether HOL stations 1, 3, 4, 6, 10 and 16 are the only ones that can be accessed 2-4 times a year, as needed for remote camera maintenance. <p>Baffinland is further requested to make additional effort to deploy remote cameras at as many HOL stations as possible, even if this means only collecting data for limited periods of the year (due to maintenance inaccessibility).</p>

Comment #	QIA 2023 NWB TE#24
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 – 2023 Final Terrestrial Environment Annual Monitoring Report</p> <p>Section: Section 4.6.8; Project Certificate Term and Condition No. 53; Section 9.1</p> <p>Page: p. 205-210; 148-154</p>
QIA Comment	As expressed in the past, QIA remains concerned that snow track surveys are insufficient for several reasons. This is a good example of a broader pattern where Baffinland has been dismissive of, or unwilling to implement, reasonable and relatively minor adjustments proposed by QIA. We reiterate



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	<p>the following concerns (and reasonable, minor recommendations), which were not effectively addressed by Baffinland in response to the 2022 TEAMR.</p> <p>First, QIA remains concerned about the study design of snow track surveys. QIA previously requested that Baffinland test the efficacy of these surveys by completing two simultaneously and comparing the results. Baffinland's response to this related to the need to complete surveys around the deposit of fresh snow. However, from QIA's perspective, instructions can be provided to surveyors to ensure they do not disrupt snowfall to the point that tracks are not identifiable. QIA maintains that efficacy testing should be done to assuage concerns related to these results. There is no indication in Section 9.1 that Baffinland completed efficacy testing for snow track surveys.</p> <p>Second, QIA has requested that Baffinland determine species-specific thresholds at which deflections from roads can be considered significant for each species. Again, there is no consideration of significance in Section 9.1.2, which limits the usefulness of these findings.</p> <p>QIA notes that these deficiencies related to snow track surveys contribute to QIA's overarching concerns regarding the effectiveness of Baffinland's overall program to monitor the potential effects of the project on caribou, including their avoidance of project components and calving areas. Until this, and other deficiencies related to the caribou monitoring program are addressed, QIA does not consider Baffinland to be in compliance with Term and Condition 53.</p>
QIA Request	<p>To address concerns regarding snow track survey deficiencies and improve compliance with Term and Condition 53, Baffinland is requested to commit to the following, in relation to snow track surveys for the next monitoring period (i.e., fall 2024):</p> <ul style="list-style-type: none">• test the efficacy of snow track surveys by completing two simultaneously and comparing the results; and• conduct research regarding wildlife road crossings and significance thresholds and analyze survey results relative to these to improve the usefulness of this survey. This emphasizes the need for a <p>These commitments were already proposed to Baffinland by QIA in 2022 and none were acknowledged in the 2023 report.</p>



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Comment #	QIA 2023 NWB TE#26
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.6.8. Project Certificate Term and Condition No. 57</p>



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Comment #	QIA 2023 NWB TE#27
References	Project Certificate Term and Condition No. 28 (Section 4.6.5)
Comment	Baffinland discussed the recommendations and lessons learned for PC No. 28, which include continuance of bi-annual geotechnical inspections and an execution plan for high priority locations along the Tote Road. Baffinland noted that they are currently developing the execution plan; however, Baffinland also noted that the execution plan began implementation in 2019. Thus, the timeline for developing the execution plan is unclear as it is already being implemented.
QIA Request	Clarify the timeline for developing the permafrost execution plan for high priority areas along the Tote Road.

Comment #	QIA 2023 NIRB MAE#1
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: s. 1.3 Existing Project Overview, s.3.2 2023 Highlights and Challenges, 4.6.11 Marine Wildlife (PC Terms and Conditions 99 through 128), 4.8.5 Verification of Project Monitoring and Mitigation for Potential Effects on Marine Mammals (PC Terms and Condition 183 through 189)</p> <p>Page: 4-5, 48-42, 331-424, 578-605</p> <p>Document Name: Appendix G.6.2 - 2023 Marine Mammal Aerial Survey Program Report (2023 Annual Report to NIRB)</p> <p>Section: full document</p>



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	<p>Page: full document</p> <p>Document Name: Appendix G.6.10 - Vessel Source Level Summary, Milne Port Shipping Activities 2015-2023 (2023 Annual Report to NIRB)</p> <p>Section: full document</p> <p>Page: full document</p> <p>Document Name: Appendix G.6.14 - Project Shipping Levels in Regional Study Area (RSA) Prior to 2013 (2023 Annual Report to NIRB)</p> <p>Section: full document</p> <p>Page: full document</p> <p>Document Name: Appendix G.6.15 - Rationale and Methodology for Averaging Abundance Estimates from Aerial Replicate Surveys (2023 Annual Report to NIRB)</p> <p>Section: full document</p> <p>Page: full document</p> <p>Document Name: Appendix G.6.17 - Vessel Characteristics and Annual Voyage Summary (2015-2023) (2023 Annual Report to NIRB)</p> <p>Section: full document</p> <p>Page: full document</p>
QIA Comment	<p>Mitigation measures for marine mammals have evolved over time, and additions and changes implemented via adaptive management have led to improved mitigation. The addition of mitigations like convoys (e.g., s. 1.3, p. 4-5; s.3.2, p. 38; Project Certificate Term and Condition No. 105, s. 4.6.11, p. 361) and spring shipping criteria related to ice concentration (e.g., Project Certificate Term and Condition No. 185; s. 4.8.5, pp. 593-596) have been particularly important. Convoys resulted in a reduction in transits, and acoustic monitoring by both Baffinland (Appendices G.6.10 and G.6.17) and other parties (June 2024 MEWG presentation by Dr. J. Jones, University of California) clearly show the value of convoys in reducing noise exposure. In 2023 there were 39 convoys of 2-5 vessels, with most consisting of two vessels (32 of 39, n = 1 each for convoys of 4 and 5 vessels) (Baffinland update at Dec. 2023 MEWG meeting, Iqaluit, NU). The convoy program is opportunistic (e.g., described as such in s. 1.3, p. 4-5). Voyage scheduling is logistically challenging, but are there opportunities to schedule increased convoys (more convoys and/or more vessels in individual convoys)? QIA notes the importance of maintaining mitigations such as the ice-breaking prohibition, convoys, speed restrictions, and buffer areas (mitigation measures are summarized in Table 4.61. Project Certificate Term and</p>



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Condition No. 183, s. 4.8.5, p. 598), and acknowledges that Baffinland is planning to implement the same measures in 2024 (Project Certificate Term and Condition No. 105, s. 4.6.11, p. 366). Baffinland's assertions that vessel traffic has not affected narwhal abundance and distribution (e.g., Appendix G.6.2, s. 3.6.1, pp. 86-87) are not convincing. Factors such as climate change and predator abundance undoubtedly affect narwhal, but they do so in concert with shipping-related impacts. It is likely that the main factor in recent increases in narwhal abundance in the RSA is the introduction of key mitigations such as icebreaking prohibitions and convoys. It is important that these mitigations be maintained, and augmented if monitoring indicates that additional adaptive management is required (e.g., removal of loudest vessels from fleet, based on existing noise signature data reported in Appendices G.6.10 and G.6.17).

Improved mitigation has possibly led to an increase in Eclipse Sound narwhal abundance after years of significant declines. Leg 2 aerial surveys in August 2023 estimated the Eclipse Sound narwhal summer stock size as 10,492 animals (CV= 0.05; CI = 9,578 - 11,494) (as reported by WSP Canada Inc. in Appendix G.6.2). During review of the Sustaining Operations Proposal (SOP), the Department of Fisheries and Oceans (DFO) recommended taking the average of survey repeats rather than selecting one of several survey replicates as the reported estimate. Baffinland addressed this request in a recent technical memo, which is included in the Annual Report package as Appendix G.6.15 (also see main report regarding Project Certificate Term and Condition No. 183, s. 4.8.4, p. 584, Table 4.59). Using a survey averaging approach for 2023, as recommended by DFO, results in a revised population estimate of 10,015 narwhals (CV = 0.0336, 95% CI = 9,378 - 10,696). This estimate is not significantly different, but is more precise (i.e. lower CV), than the estimate reported in Appendix G.6.2. Appendix G.6.15 provides an informative comparison of population estimates using the two methods for surveys conducted between 2004 and 2023. In all cases where there are survey replicates (i.e., excluding years with only one survey replicate), the DFO averaging method is shown to be more precise (Appendix G.6.15) while showing the same trends in abundance. QIA recommends that repeat survey averaging be employed moving forward, in cases where it is applicable.

DFO has also questioned Baffinland's assertion that 2013 should be considered the baseline year for narwhal abundance (Project Certificate Term and Condition No. 183, s. 4.8.4, p. 584, Table 4.59), and QIA agrees with DFO (as do other parties on the MEWG). DFO conducted aerial surveys of the Eclipse Sound narwhal summer stock in 2004 and 2013. Baseline data



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Aerial surveys have been a key monitoring tool that has tracked significant changes in narwhal abundance and informed adaptive management and mitigation. The loss of this information source will add uncertainty to 2024 adaptive management. Baffinland has introduced a 5-year monitoring program schedule for MEWG consideration and discussion (see Project Certificate Term and Condition No. 105, s. 4.6.11, p. 366). QIA will be providing written comments through the Working Group process, and will point out the need for careful monitoring of narwhal summer stock abundance for effective adaptive management, which should include an aerial survey in 2025, not 2026 as proposed in the 5-year monitoring program schedule.



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QIA Request	<p>QIA requests that Baffin report on opportunities to schedule increased convoys (more convoys and/or more vessels in individual convoys), if possible.</p> <p>QIA requests that repeat survey averaging, as recommended by DFO, be employed for abundance surveys of marine mammals in future.</p> <p>QIA requests that NIRB consider which DFO narwhal survey should be considered baseline (2004 or 2013).</p> <p>QIA requests that Baffinland plan to conduct leg 2 aerial surveys in 2025, not 2026 as proposed in the 5-year monitoring program schedule.</p>
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Comment #	QIA 2023 NIRB MAE#2
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.11 Marine Wildlife (PC Terms and Conditions 99 through 128)</p> <p>Page: 331-424</p> <p>Document Name: Appendix G.6.7 - 2023 Bruce Head Shore-based Monitoring Program Report (2023 Annual Report to NIRB)</p> <p>Section: full document</p> <p>Page: full document</p>
QIA Comment	<p>Baffinland has run the narwhal observation program at Bruce Head (Iluvilik) since 2014 (a pilot program occurred in 2013, and there was no program in 2018 due to safety issues with the observation platform). This program addresses components of two Project Certificate Term and Conditions: no. 99, which requires the collection of additional baseline data in Milne Inlet on narwhal abundance, distribution, ecology and habitat use; and no. 101, which requires shore-based observations of pre-Project narwhal behavior in Milne Inlet, and continue at an appropriate frequency throughout the Proponent's ore shipping operations via Milne Inlet.</p> <p>Data on narwhal relative abundance and distribution are collected in a large Stratified Study Area (SSA), and narwhal behavioural observations (focal follows) are also recorded (in a smaller Behavioural Study Area (BSA) and/or via drone-based follows of narwhal focal groups). The methodology used has largely been consistent across all program years, but the analytical methods (e.g., model specification) have changed to varying degrees over the life of the program to date.</p>



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Examples of these methodological changes, summarized in Appendix G.6.7, include:

1) changes in how small vessels (defined as those < 50 m in length) were included in models (modelled as either total count present during each RAD count or as present/absent in prior years, and omitted from 2023 analyses completely) (Appendix G.6.7, s. 4.2.4, p. 32)

2) changes in how potential effects of vessels were assessed (up to 15 km in 2017, up to 10 km in 2019, 7 km in 2020, and 5 km in 2021) (Appendix G.6.7, s. 4.3.1.1, p. 35). These progressive reductions in spatial extent were intended to reduce unexplained variation in the data and enable better quantification of the effects at closer distances.

These changes to model structure add uncertainty to results and make year to year comparisons difficult. A summary of all the model specification changes over the years should be prepared, with some comparative analyses to show the effects of model changes. A better understanding of model structure changes is needed to assess program value and opportunities for improvement.

The assumptions underlying some of these changes centre on the 120 dB threshold for noise disturbance, and there is evidence (Inuit Qaujimajatuqangit; on-going work by Oceans North, University of California, and the Mittimatalik HTO) to indicate that the 120 dB threshold might not be a precautionary approach for narwhal. Narwhal responses occur at received sound levels between 100 and 150 dB (P. Rouget, WSP Canada Inc., June 2024 MEWG meeting). A detailed memo on received sound levels and associated narwhal responses should be prepared to inform the selection of an appropriate threshold. Baffinland has vessel-specific noise signature data - can this information be integrated into models (as a continuous variable or possibly coded as a categorical variable for different noise output categories)?

Specific to analysis changes for small vessels, s. 4.2.4 of Appendix G.6.7 states that they were omitted from 2023 analysis, as noted above. The 2023 Bruce Head results (Appendix G.6.7, s. 5.4, p. 74), however, state that the "presence of small vessels in the SSA was not significant ($P=0.6$)". Were small vessels included in models or not? Discrepancies such as this make it difficult to assess results.



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Baffinland will not be conducting an aerial survey in August 2024. This potentially has significant implications for the value of the Early Warning Indicator (EWI), namely the proportion of immature narwhal relative to the baseline values. Bruce Head data from 2023 suggested an increase in the annual proportion, but this assessment was limited by a small sample size and the absence of adult narwhal in the Bruce Head area due to an ice blockage in northern Milne Inlet early in the program. The proportion of immature narwhal was therefore also assessed using the 2023 aerial survey photographs (similar to previous years), with different findings (Appendix G.6.7, s. 5.5.1, pp. 82-83). The potential for limited sample sizes at Bruce Head again in 2024 is concerning given that we will not have additional information for an aerial survey to reduce uncertainty. We will be relying entirely on Bruce Head data for EWI information for 2024, and Baffinland should therefore consider ways to increase sample sizes.



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Comment #	QIA 2023 NIRB MAE#3
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: s. 4.6.9 Birds (PC Terms and Conditions 65 through 75); 4.6.11 Marine Wildlife (PC Terms and Conditions 99 through 128)</p> <p>Page: 244-269, 331-424</p> <p>Document Name: Reconsideration Report and Recommendations for Baffinland's Phase 2 Development Proposal. NIRB File No. 08MN053. May 2022.</p> <p>Section: Appendix C - Final Table of Post Phase 2 Approval/Regulatory Phase Commitments.</p> <p>Page: pdf page 370 of 441</p> <p>Document Name: Appendix G.6.3 - 2023 Ship-based Observer (SBO) Program Report (2023 Annual Report to NIRB)</p>



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	<p>Section: full document Page: full document</p> <p>Document Name: Appendix G.6.4 - 2023 Incidental Marine Mammal Sightings (2023 Annual Report to NIRB) Section: full document Page: full document</p> <p>Document Name: Appendix G.6.18 - Marine Mammal Observation Network (MMON) Season 2023 Summary (2023 Annual Report to NIRB) Section: full document Page: full document</p>
QIA Comment	<p>A number of Project Certificate Term and Conditions outline the requirements and expectations for a vessel based marine wildlife observer program (Nos. 103, 106, 107, 108, 122, and 123). Baffinland has run a Shipboard Observer (SBO) program in 2013 to 2015, 2018, 2019, and 2023, and introduced the Marine Mammal Observation Network (MMON) program in 2020, when the coronavirus pandemic precluded running the SBO program. The MMON is a voluntary marine mammal incidental sightings program that in 2023 included participation by the MSV Botnica, MSV Fennica, Nordic Bulk Carriers, Golden Bulk Carriers, and Oldendorff Carriers. In 2023, the SBO program ran during the fall shoulder season, from 21-30 October, on the MSV Botnica and MSV Fennica.</p> <p>Reporting on the 2023 SBO program notes that “additional survey protocol was developed to assess the behavioural responses of marine mammals to icebreaking activities in the RSA” (p. 353, Project Certificate Term and Condition No. 103). During the Phase 2 review process, Baffinland committed (commitment ID 224) to “reporting on observed behavioural responses of ringed seal collected through the Ship-Based Observer Monitoring Program during the shoulder seasons” (see Appendix C of NIRB Phase 2 report, pdf page 370 of 441). The SBO training manual has always included a behavioural observation data element. As such, QIA was under the impression that behavioural response data for all marine wildlife species were available pre-2023, and Baffinland should clarify this (also see below re: marine birds). Baffinland should also clarify its plans for future ship-based monitoring in the Regional Study Area for the northern shipping route. In reporting on Project Certificate Term and Condition No. 106 (p. 368), Baffinland states that “continuation of the program utilizing the MSV Botnica and MSV Fennica will be evaluated for 2024”. When will this evaluation be</p>



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	<p>program, or if the training manual has been followed since program establishment.</p> <ol style="list-style-type: none">2. If the data collection procedures outlined in the SBO training manual have been followed since program establishment, QIA requests that Baffinland report on behavioural response data across all program years.3. QIA requests that Baffinland provide an update on its evaluation of whether to continue the SBO program in 2024 and whether behavioural response data will be collected if it continues.4. QIA requests that Baffinland provide additional details on how estimation accuracy for CPA distances is assessed for estimates made with the naked eye.5. QIA requests that Baffinland address the inconsistencies between the Annual Report text and Appendix G.6.18 regarding the supposed grey seal observations.6. QIA requests that Baffinland summarize all observations from the MMON program from 2020 to 2023 including those outside the RSA, and use those observations to assess potential transboundary effects on migratory marine mammals.7. QIA requests that Baffinland compile, analyze, and report on marine bird behavioural observations collected using the ECSAS standardized protocol.8. QIA requests that Baffinland compile all common eider and king eider observations from all years of SBO program monitoring and analyze these data to determine habitat use, areas and timing of interaction with Project activities, and behavioural responses to vessels.
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Comment #	QIA 2023 NIRB MAE#4
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf") Section: 4.6.11 Marine Wildlife (PC Terms and Conditions 99 through 128)



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	<p>Page: 335-336 (Project Certificate Term and Condition No. 99) and 340-349 (Project Certificate Term and Condition No. 101)</p> <p>Document Name: Appendix C 2023 Working Group Meeting Records and Correspondences</p> <p>Section: December 2023 minutes</p> <p>Page: 24-25 (pdf file pages 413-414 of 507), 28 (pdf file pages 417 of 507)</p>
QIA Comment	<p>Project Certificate Term and Condition No. 99 requires collection of additional baseline data from Steensby Inlet on walrus, beluga, bearded seal, and anadromous Arctic char abundance, distribution, ecology and habitat use; No. 101 requires establishment of a monitoring program that focuses on walrus use of Steensby Inlet and their reaction to disturbance from construction activities, aircraft, and vessels. A monitoring program will need to be established prior to the start of shipping activity in Steensby Inlet, and requires an appropriate baseline to effectively monitor for impacts. The Project Certificate also requires Baffinland to work with the MEWG on these issues.</p> <p>At the December 2023 MEWG meeting in Iqaluit, Baffinland indicated plans to conduct a 2024 winter aerial survey in Hudson Strait, and to conduct walrus haulout surveys in Foxe Basin during the open water season. The walrus program was proposed to occur over a 4-5 week period. Representatives from both QIA and the Sanirajak HTO pointed out issues with Baffinland's preliminary plans, in particular that the program would not be able to accurately account for walrus movements between sites. This would preclude accurate estimations of population size for future comparisons. Baffinland's consultants proposed to follow up with MEWG members to further discuss design elements, but this is yet to occur.</p> <p>In reporting for Certificate Term and Condition No. 99, Baffinland reports that "supplemental baseline assessments are complete (pre-2021)". However, the baseline requirements for Steensby Inlet have not yet been met. Reporting for Certificate Term and Condition No. 101 states that the baseline requirements are "[n]ot applicable in 2023". The collection of additional Steensby Inlet baseline data on marine wildlife, while not explicitly required in 2023, does need to occur over a sufficiently lengthy period to allow the collection of robust data on walrus, beluga, bearded seal, and anadromous Arctic char abundance, distribution, ecology and habitat use, and to use the walrus data to develop an appropriate monitoring plan. QIA recommends that the Proponent provide an update on its plans to meet these Certificate Term and Condition requirements, including anticipated timelines.</p>



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QIA Request	QIA requests that the Proponent provide an update on its plans to meet the Steensby Inlet baseline requirements identified in Project Certificate Term and Condition Nos. 99 and 101, including anticipated timelines.
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Comment #	QIA 2023 NIRB MAE#5
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.8.4 Aquatic Effects Monitoring Plan (AEMP) Section: 3.7.5 Benthic Invertebrates Page: 53-54
QIA Comment	The AEMP discusses the methods for collecting benthic invertebrates from stream and river habitat. The report states that “...of the Mine Site (Figure 3.3). At each stream and river study area, benthic sampling will be conducted at five (5) stations except for Sheardown Lake Tributary 12, where only three stations will be sampled due to limited habitat available for sampling.” There are no further details discussing the habitat limitations or if there are ongoing limitations with this particular site, nor what alternatives are being considered.
QIA Request	QIA requests that the Proponent describe the limitations with Sheardown Lake Tributary 12 site, if this is an ongoing concern that affects sampling efforts and if alternative sites with consistent flow are being considered.

Comment #	QIA 2023 NIRB MAE#6
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 2.4.2.1 General Design Page: 49
QIA Comment	The report states, “In 2022, a new benthic area was sampled at the existing water quality station F0-01 in anticipation of future baseline work; but sampling was not completed at this location in 2023 ⁶ (Table 1.1).” Further footnote #6 states, “In 2022, a benthic invertebrate community study area was included at the existing Mary River Tributary-F water quality station F0-01 (located between Deposits No. 1 and Deposits No. 2 and 3) as part of baseline studies for Deposits No. 2 and 3. Benthic invertebrate and sediment quality sampling was not continued at F0-01 in 2023 but sampling may be reinitiated, as needed, to support future baseline studies.”







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Comment #	QIA 2023 NIRB MAE#7
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 4.24 Benthic Invertebrate Community</p> <p>Page: 153</p>
QIA Comment	<p>There were several sampling programs that either could not be completed or were affected by weather conditions during the fish, sediment and benthic sampling programs. Examples of this include:</p> <ul style="list-style-type: none"> • Sediment and benthic invertebrate sampling BL0-01 in Mary Lake • Gill netting at Reference Lake <p>Given the variable weather conditions in the north and understanding the limited time schedule available for these studies, Baffinland should incorporate contingencies for weather delays to avoid failures to execute components of monitoring programs. This proactive approach will help ensure that the studies are completed thoroughly and accurately, despite potential weather-related disruptions.</p>



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	that may be influenced by the project. Differences in fish metrics and numbers observed between the exposure and reference sites and/or baseline and current results should be considered a significant change requiring low action level responses or higher.
QIA Request	The TARP for fish should be triggered exclusively by differences between exposure and reference, and/or baseline and current results. Statistical approaches such as a BACI analysis should be used to objectively evaluate if there is a mine-related impact. QIA recommends the continued use of the remaining ecosystem components (i.e., water, sediment, benthics) as part of the investigation to identify causes that may have resulted in the observed impacts to fish.

Comment #	QIA 2023 NIRB MAE#9
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3.3.5.1 Camp Lake Fish Community Page: 124
QIA Comment	The report indicates that the higher densities of fish found in Camp Lake, Sheardown Lake NW and Sheardown Lake SE may be linked to greater productivity based on higher chlorophyll-a concentrations in the water compared to reference. However, the report states that chlorophyll-a concentrations in these three lakes are indicative of oligotrophic conditions based on comparison to Wetzel (2001) lake trophic status classification categories (i.e., chlorophyll-a < 4.5 µg/L).
QIA Request	How can the higher densities of fish in Camp Lake, Sheardown Lake NW, and Sheardown Lake SE be explained by greater productivity from higher chlorophyll-a concentrations, despite these lakes being classified as oligotrophic according to Wetzel (2001) with chlorophyll-a concentrations below 4.5 µg/L.

Comment #	QIA 2023 NIRB MAE#10
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report Section: 3.3.5.1 Camp Lake Fish Community Page: N/A



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QIA Comment	<p>There are several instances throughout the CREMP and the EEM where essential information pertinent to the report has been provided in a footnote instead of the body of the report.</p> <p>Examples taken from CREMP:</p> <p><i>9 Nearshore fish were collected from the lake shoreline using a backpack electrofisher. Fish caught using this method were typically small, juvenile, arctic charr individuals (in 2023, fork lengths of nearshore fish ranged from 2.6 cm to 17.2 cm) or small-bodied ninespine stickleback.</i></p> <p><i>10 Littoral/profundal fish were collected from the lake using gill nets with mesh sizes ranging from 38 to 76 mm (1.5" to 3"). Fish caught using this method were large, sub-adult and adult, arctic charr individuals; in 2023, fork lengths of littoral/profundal fish ranged from 20 cm to 78.9 cm.</i></p> <p><i>11 Similar statistical evaluations were not possible in CREMP studies from 2015 to 2017 due to limited sample sizes.</i></p> <p><i>12 The EEM fish survey included aspects of both traditional (lethal) and non-lethal sampling designs to reflect the occurrence of fish in non-reproductive condition (i.e., juveniles) and the consequent inability to visually identify the sex of individuals using either external or internal cues.</i></p> <p><i>21 Caution is warranted around the interpretation of statistical comparisons of fish health between Camp Lake and Reference Lake 3 as a small sample size of fish were captured by gill netting at Reference Lake 3 in 2023 (n = 12), of which one fish was removed from analyses due to measurement error.</i></p>
QIA Request	<p>This information should be included in the body of the text instead of the footnote. Including it in the main text ensures it is not overlooked and is readily available for accurate data interpretation.</p>

Comment #	QIA 2023 NIRB MAE#11
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 3.3.5.1 Camp Lake Fish Community</p> <p>Page: N/A</p>



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Comment #	QIA 2023 NIRB MAE#12
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: Benthic Invertebrate</p> <p>Page: N/A</p>
QIA Comment	<p>There are several instances in the CREMP where benthic invertebrate results are identified as ecologically meaningful as detailed by the Critical Effect Size described in Table 5.2 Trigger Action Response (TARP) Table in the AEMP, but no trigger action responses are initiated. The CREMP performance indicator for benthic invertebrates is the following:</p> <p style="text-align: center;">Benthic Invertebrates</p> <p style="text-align: center;">Critical Effects Sizes: Density: ± 2 SD of baseline or reference mean</p> <p style="text-align: center;">Simpson's Evenness Index: ± 2 SD</p>



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	<p>of baseline or reference mean</p> <p>Taxa Richness: ± 2 SD of baseline or reference mean</p> <p>Further, on page 50 of the pdf, the report states, “<i>The sampling of five stations from each zone at each study area ensured adequate statistical power to detect ecologically meaningful differences in benthic metrics of \pm two standard deviations (SDs) of the comparable reference area mean using an equal α and β of 0.10 (Environment Canada 2012) 8.</i>”</p> <p>Some examples where ecologically meaningful differences were identified in the benthic invertebrate data are as follows:</p> <ul style="list-style-type: none"> • North Branch (CLT1-US) • Upper Main Stem (CLT1-L2) • Camp Lake • SDLT1 <p>Management and mitigation measures must be based on objective triggers / performance indicators to prevent ambiguity in the adaptive management process. Professional judgment should be used as part of the discussion rather than as an objective threshold. It should only be applied after completing evidence-based evaluations, such as trend analysis and the weight of evidence evaluation process, as outlined in the AEMP TARP threshold responses.</p>
QIA Request	QIA requests Baffinland remove professional judgment as part of the AEMP TARP and rely solely on objective thresholds. This action aims to eliminate ambiguity in the adaptive management process, ensuring clarity and consistency in decision-making.

Comment #	QIA 2023 NIRB MAE#13
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: Fish Health Assessment</p> <p>Page: N/A</p>
QIA Comment	There are several instances in the CREMP where benthic invertebrate results are identified as ecologically meaningful as detailed by the Critical Effect Size described in Table 5.2 Trigger Action Response (TARP) Table in the AEMP, but no trigger action responses are initiated. The CREMP performance indicator for benthic invertebrates is the following:



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	<p>Critical Effects Sizes for Arctic char health:</p> <p>Total body weight at age:</p> <ul style="list-style-type: none">• $\pm 25\%$ of reference mean <p>Liver weight at total body weight:</p> <ul style="list-style-type: none">• $\pm 25\%$ of reference mean <p>Total body weight at length (condition):</p> <ul style="list-style-type: none">• $\pm 10\%$ of reference <p>Age:</p> <ul style="list-style-type: none">• $\pm 25\%$ of reference mean <p>Some examples where ecologically meaningful differences were identified in the Arctic Char data are as follows:</p> <ul style="list-style-type: none">• Camp Lake – nearshore Arctic Char• Sheardown Lake NW – Littoral/Profundal Arctic Char• Sheardown Lake SE – Nearshore and Littoral/Profundal Arctic Char <p>Management and mitigation measures must be based on definitive objectives to prevent ambiguity in the adaptive management process. Professional judgment should be used as part of the discussion, not as an objective threshold, and only after evidence such as trend analysis and the weight of evidence evaluation process have been completed, as outlined in the AEMP TARP threshold responses.</p>
QIA Request	QIA requests Baffinland remove professional judgment as part of the AEMP TARP and rely solely on objective thresholds. This action aims to eliminate ambiguity in the adaptive management process, ensuring clarity and consistency in decision-making.

Comment #	QIA 2023 NIRB MAE#14
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the NIRB, Appendix G.4.1 2023 Core Receiving Environment Monitoring Program (CREMP) Report</p> <p>Section: 5.1.5 Fish Population</p> <p>Page: 246-247</p>
QIA Comment	The report states, “ <i>Factors unrelated to effluent exposure are likely to have contributed to significantly smaller size (i.e., length and weight) of arctic charr at the Mary River effluent-exposed area compared to the Angijurjuk Lake Tributary reference area, potentially including fish age. Overall, the absence of any significant differences in EEM effect indicators related to growth and relative liver size in arctic charr captured at the Mary River effluent-exposed area compared to those captured at the Angijurjuk Lake Tributary reference</i>



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	<p>area indicate no adverse effluent influences on health of arctic charr at the Mary River in 2023.”</p> <p>There is no discussion in the report what the factors are that may have contributed to the significantly smaller size of Arctic Charr at the Mary River effluent-exposed areas compared to reference area.</p>
QIA Request	Baffinland to identify what factors may have contributed to the significantly smaller size of Arctic char in the Mary River effluent-exposed areas compared to the reference area.

Comment #	QIA 2023 NIRB MAE#15
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 Main report (NIRB registry file: 240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf) Section: 4.6.7 Freshwater Environment, PCC 45 Page: 177 (PDF p. 195 of 641) Section: 4.6.7 Freshwater Environment, PCC 47 Page: 182 (PDF p. 200 of 641)</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to QIA and NWB on Operations [NWB Registry: 240331 - 2023 QIA-NWB Annual Report for Ops - Main Body - As Sent.pdf] Section: 7.3.8 Page: 36 (62 of 90) Section: 10.1.4 Page: 57 (83 of 90)</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report [NIRB Registry: 240503-08MN053-2023 Annual Report-App G-Tote Road Fish Hab-Pt 1-IA1E.pdf] Section: 3.3 Pages: 7 (12 of 135) Section: Tables 3 through 6 Pages: 63-77 of 135</p> <p>Document Name: Qikiqtani Inuit Association Review of Baffinland’s 2022 Qikiqtani Inuit Association and Nunavut Water Board Annual Report for Operations [NWB Registry: 230706 2AM-MRY1325 2022 Annual Report QIA Comments-IMLE.pdf] Section: Fish Habitat Comment QIA 2022 NWB FH# 2 Pages: 39 to 42 of 42</p>



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Comment #	QIA 2023 NIRB MAE#16
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.7 Freshwater Environment, PCC 48a Pages: 185-187 (PDF p. 203-205 of 641)</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024. Appendix G.4.1 Core Receiving Environment Monitoring Program (CREMP) Report (NIRB Registry: 240503-08MN053-2023 Annual Report-App G-CREMP-Pt 1-IMRE.pdf)</p> <p>Section: s. 3.3.5.2 Pages: 108 (PDF p. 130 of 307)</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024. Appendix G.4.1 Core Receiving Environment Monitoring Program (CREMP) Report (NIRB Registry: 240503-08MN053-2023 Annual Report-App G-CREMP-Pt 3-IMRE.pdf)</p>



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	<p>Section: App. I. Third EEM Biological Study (2023) Results, Table I.2 Pages: 265 of 275.</p> <p>Document Name Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report [NIRB Registry: 240503-08MN053-2023 Annual Report-App G-Tote Road Fish Hab-Pt 1-IA1E.pdf] Section: 3.3 Pages: 7 (12 of 135)</p>
QIA Comment	<p>The objective of PCC 48a is to determine the presence and health of Arctic char in freshwater aquatic habitat (2023 NINB AMR, p. 185). Part of this work involves the comparison of data collected on Arctic char populations in exposed and reference areas under the Core Receiving Environment Monitoring Program (CREMP) and Environmental Effects Monitoring (EEM) studies.</p> <p>In 2023, littoral/profundal gillnet sampling caught at least 100 Arctic char from each Project lake but only 12 from Reference Lake 3 (App. 9.1 (CREMP), s. 3.3.5.2, p. 108 (130 of 307)). The latter small sample limits meaningful comparisons between catches from the Project lakes and Reference Lake 3. The latter were lower than in previous years, perhaps due to weather conditions influencing fish movements and areas of the lake that could be accessed for sampling. Similar issues with environmental conditions may be occurring in Tote Road stream sampling, where the sampling program caught far fewer fish than in past years (BIM 2023 NIRB AMR, s.3.3, p. 7). Both issues may be related to the timing of sampling in relation to environmental conditions, possibly due to constraints in the field sampling schedule(s). During the 2023 EEM Study, the total number of young-of-the-year (YOY) Arctic char caught was similar in the Angijuruk Lake tributary (reference; n=104) and Mary River (effluent-exposed; n=102) (Table I.2, p. 265). The catch-per-unit-effort (CPUE; char caught per minute of electrofishing) reported was also similar (0.53 cf. 0.66). However, the length of reference stream sampled was half that of the effluent stream (200 m cf. 400 m), and the time spent electrofishing each meter of stream reach was 2.5 times greater on average (i.e., Angijuruk reference; 200 m @ 58.8 sec/m; Mary River effluent-exposed; 400 m @ 23.1 sec/m). These differences may alter the area of habitat sampled and the sampling effort in each area</p>
QIA Request	<p>QIA recommends that Baffinland consider increasing the timing flexibility of its field sampling programs for Arctic char in the Project and Reference lakes, and Tote Road streams, to improve their intra- and inter- annual comparability over time.</p>



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Comment #	QIA 2023 NIRB MAE#17
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report</p> <p>Section: Part 1 to Part 8 – General Comment</p>
QIA Comment	<p>The Report outlines that the primary objective of the 2023 monitoring program was to “<i>assess the presence of fish, habitat quality, and upstream accessibility through installed culverts at fish-bearing sites and identify crossings that require remediation to fish habitat or passage through culverts.</i>”</p> <p>While Baffinland did provide photographs of site conditions both upstream and downstream of each of the Tote Road Crossings, the photographs of the culverts themselves did not provide sufficient detail to evaluate potential issues. They were either taken from too far away or at incorrect angles, making it difficult for the reviewer to accurately assess the condition of the culverts and the potential issues related to fish passage. This gap in photographic evidence hinders a comprehensive understanding of the culvert conditions and the necessary remediation measures.</p>
QIA Request	<p>To address this issue, it is recommended that Baffinland ensure photographs of culverts are taken from closer distances and from multiple angles, including directly in front of the culverts from both the upstream and downstream ends. This will provide a clearer and more comprehensive view of the culvert conditions.</p> <p>By enhancing the quality and comprehensiveness of the photographic documentation, Baffinland can improve the effectiveness of the monitoring program and ensure that any necessary remediation</p>



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Comment #	QIA 2023 NIRB MAE#19
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report</p> <p>Section: 3.4 Remediation Works</p> <p>Pages: 13 of 135</p>
QIA Comment	<p>Section 3.4 states, “<i>Crossings BG-01, BG-17, BG-24, BG-30, BG-50, CV-078, CV-079, <u>CV-11</u>, CV-224, CV-225, CV-106, CV-114 and CV-216 are included in the 2024/2025 remediation plan.</i>”</p> <p>The report refers to a CV-11 above which was not in any of the Habitat Assessment sheets and could not be located on Figure 1.</p>



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Comment #	QIA 2023 NIRB MAE#22
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report</p> <p>Section: Appendix B Habitat Assessment Sheets (Part 3)</p>



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	However, there is no further discussion on what remedial actions are being taken and the potential impacts to downstream fish habitat.
QIA Request	Additional information is needed to understand the steps being implemented to mitigate this problem and to assess the implications for fish passage.

Comment #	QIA 2023 NIRB MAE#25
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Appendix G.2.6 Tote Road Fish Habitat Monitoring Annual Report Section: Table 6. Pages: 77 of 135
QIA Comment	Table 6 provides potential project related fish passage or habitat issues related. Crossing CV-186 states “ <i>Some debris had washed into the stream and culverts outlets damaged.</i> ” However, there is no further discussion on what remedial actions are being taken and the potential impacts to downstream fish habitat.
QIA Request	Additional information is needed to understand the steps being implemented to mitigate this problem and to assess the implications for fish passage.

Comment #	QIA 2023 NIRB MAE#26
References	Document Name: 2023 Annual Report to the Nunavut Impact Review Board Section: 4.6.7 Page: 203
QIA Comment	For Project Certificate Term and Condition No. 48 (a) it is stated, “ <i>The Proponent shall develop plans to conduct additional surveys for the presence of Arctic char in freshwater bodies and ongoing monitoring of Arctic char health where applicable, within watersheds proximal to the mine, tote road and Milne Inlet Port project development areas, including but not limited to, Phillips Creek, Tugaat and Qurluktuk. The Proponent shall consult with the MHTO regarding the design, timing, and location of proposed surveys and ongoing monitoring.</i> ” While monitoring was completed for Tugaat and Qurluktuk in 2021 and 2022 and there are plans to continue this sampling in 2024 there was no mention of sampling conducted in Phillips Creek.



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QIA Request	It is recommended the proponent provide a rationale for not sampling Phillips Creek or include sampling progress in this creek in the methodology as per Term and Condition No. 48.
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Comment #	QIA 2023 NIRB MAE#27
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.1 Meteorology and climate, PCC 1 Page: 58 (PDF p. 76 of 641)</p> <p>Section: 4.6.10 Marine environment, PCC 83 Page: 295 (PDF p. 313 of 641)</p> <p>Section: 4.6.10 Marine environment, PCC 83a Page: 301 (PDF p. 314-319 of 641)</p> <p>Section: 4.6.10 Marine environment, PCC 99 Page: 335 (PDF p. 353 of 641)</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024. Appendix G.1 2021-2022 Physical Oceanographic Program [240503-08MN053-2023 Annual Report-App G-Steensby Oceanography-IMRE.pdf]</p> <p>Section: 1.2 Page: 1 (PDF p. 8 of 68)</p> <p>Document Name: WSP 2023 Presentation to the December 13, 2023 meeting of the Marine Environment Working Group (MEWG) entitled "Baffinland 2023 Marine Monitoring Programs – Field Program Summary, 13 December 2023", 66 pp. [WSP_DEC2023_MEWG_ENG_IKT-compressed.pdf]</p>
QIA Comment	<p>Baffinland conducted studies of fish and fish habitat in Steensby Inlet in 2021, 2022, and 2023 to support its <i>Fisheries Act</i> Authorization Application for Steensby Port, and update existing pre-2010 baseline data (App. G.1, p. 1). Additional baseline data are needed from the marine environment for comparison with future monitoring (PCC 1, 83, 83a, 99), and further studies are under consideration for 2024 (WSP 2023, p. 57 of 66). The temporal separation of these sampling programs raises many questions, in particular,</p> <ul style="list-style-type: none">• did the pre-2010 and post-2020 studies collect information on the same parameters, using the same methods, and from the same stations and, if not, how has or will this affect the strength and quality of the pre-Project baseline and its value for future monitoring comparisons; and



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Comment #	QIA 2023 NIRB MAE#28
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.3 Noise & Vibration PCC 13 Page: 91 (PDF p. 109 of 641)</p> <p>Section: 4.6.3 Noise & Vibration PCC 14a Page: 96 (PDF p. 114 of 641)</p> <p>Section: 4.6.7 Freshwater Environment, PCC 44 Page: 176 (PDF p. 194 of 641)</p> <p>Section: 4.6.7 Freshwater Environment, PCC 48 Page: 182 (PDF p. 202 of 641)</p> <p>Section: 4.6.11 Marine Wildlife, PCC 116 Page: 399 (PDF p. 417 of 641)</p> <p>Section: 4.6.11 Marine Wildlife, PCC 117 Page: 400 (PDF p. 418 of 641)</p> <p>Section: 4.6.11 Marine Wildlife, PCC 118 Page: 402 (PDF p. 420 of 641)</p>
QIA Comment	<p>PCC 13 encourages Baffinland to work with DFO at the regulatory phase and to take a precautionary approach when selecting the overpressure threshold to be applied to explosives use for the protection of fish and aquatic life (see also PCCs 14a, 44, 48, 116, 117, 118). Use of explosives in or near water was not required in 2023, but will be required to construct the southern railway and associated infrastructure.</p>



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Comment #	QIA 2023 NIRB MAE#29
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.10 Marine Environment, PCC 76 Page: 277-280 (PDF p. 2304-305 of 641)</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 App. G.6.8 2023 Marine Environmental</p>



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	Effects Monitoring Program Report (NIRB Registry file: Appendix G.6.8 - 2023 Final Marine Environmental Effects Monitoring Program Report – Full.pdf) Section: Exec. Summ., Marine fish community Page: vii (PDF p. 8 of 1778)
QIA Comment	In the 2023 Marine Environmental Effects Monitoring Program (MEEMP) report (PCC 76) Baffinland has expressed concern regarding the ongoing problem of limited statistical power to detect changes, and may consider “ <i>assessing differences between Fishing Areas using effect sizes rather than a strict adherence to statistical significance.</i> ” (App. G.6.8, p. vii).
QIA Request	QIA requests Baffinland report both effect sizes and statistical power.

Comment #	QIA 2023 NIRB MAE#30
References	Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf") Section: 4.6.10 Marine Environment, PCC 78 Page: 286-287 (PDF p. 299-305 of 641)
QIA Comment	<p>In its annual summary for PCC 78, Baffinland cites two recent studies that it has commissioned for the southern route, one on an aerial survey of the sea ice (VIC 2024) and another on a modelling study of sea ice thickness (VIC 2023). Both studies provide useful information and raise important questions related to gaps in the understanding of sea ice conditions along the shipping route.</p> <p>The aerial survey was conducted between 28 June and 1 July 2023, when ice break-up/melting processes were ongoing in a majority of the survey area (VIC 2023). This limited the ability of onboard radar to identify ridge structure in fields of pack ice. No ice ridges were identified visually or using the aircraft's onboard radar. Icebergs were identified visually and using the onboard radar. Reflections (echoes) from other ice features made it difficult to identify icebergs in pack ice, so most were located in open water.</p> <p>The aerial survey did not cover Steensby Inlet or the northern half of Foxe Basin (VIC 2023). However, ice conditions in along this portion of the route, and the presence of old ice (growlers) and ice of land origins (icebergs) from Prince Charles Island to the eastern entrance of Hudson Strait, are expected to define the requirements of marine shipping via the southern route when ice is present.</p>



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Comment #	QIA 2023 NIRB MAE#31
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.10 Marine Environment, PCC 88 Page: 309-311 (PDF p. 327-329)</p>



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Comment #	QIA 2023 NIRB MAE#32
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, May 3, 2024 (Main report, file "240503-08MN053-2023 Annual Report-Main Body-IMRE.pdf")</p> <p>Section: 4.6.10 Marine Environment, PCCs 86-91 Pages: 304-319 (PDF p. 322-337 of 641)</p>
QIA Comment	During the Phase 2 Review, Project Certificate Conditions (PCC) that deal with risks from ship's ballast water (PCC 86-PC 90) and hull fouling (PCC 91) were extensively reworked to meet their intended purposes. When Phase 2 was not approved these improvements were not implemented. although



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Comment #	QIA 2023 NIRB SE#3
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.1, PC Condition 131</p> <p>Page: 431 to 432 (PDF p. 449 to 450 of 641)</p>



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Comment	<p>PC Condition 131 states, “The Qikiqtaaluk Socio-Economic Monitoring Committee is encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effect the Project has on migration.”</p> <p>The data used to monitor in migration of non-Inuit, out-migration of Inuit from the North Baffin LSA has not been updated since 2016. Additionally, Nunavut net migration data has not been updated since 2019.</p>
Request	QIA requests Baffinland tseek more reliable, updated sources on in-migration of Inuit from to the North Baffin LSA, out-migration of Inuit from North Baffin LSA, and Nunavut net migration rather than drawing information from 2016 and 2019 data.

Comment #	QIA 2023 NIRB SE#4
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.1, PC Condition 132</p> <p>Page: 433 to 434 (PDF p. 451 to 452 of 641)</p>
Comment	<p>PC Condition 132 states, “The Proponent is encouraged to partner with other agencies such as Hamlet organizations in the North Baffin region, the Municipal Training Organization, and the Government of Nunavut in order to adapt pre-existing, or to develop new programs which encourage Inuit to continue living in their home communities while seeking ongoing and progressive training and development. Programs may include driver training programs offered within Hamlets, providing upgraded equipment to communities for use in municipal works, providing incentives for small businesses to remain operating out of their community of origin, or supplementing existing recreational facilities and programming in North Baffin communities.”</p> <p>QIA agrees with Baffinland’s assessment of compliance.</p>
Request	QIA requests Baffinland provide additional information regarding how programs such as the Work Ready Program, ABE, PASS or Pre-Trades training were adapted or changed. QIA requests Baffinland provide more



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Comment #	QIA 2023 NIRB SE#6
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.1, PC Condition No. 134</p> <p>Page: 440 to 443 (PDF p. 458 to 461 of 641)</p>



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Comment	<p>PC Condition 134 states, “The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows:</p> <ol style="list-style-type: none"> The number of Inuit and non-Inuit employees hired from each of the North Baffin communities, specifying the number from each. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Kivalliq regions, specifying the number from each. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.” <p>Baffinland does not provide the information required by this PC Condition. Specifically, employee origin information is represented as Full Time Equivalents (FTE) rather than a headcount of employees and contractors hired from different origins. Information on hires from the Kitikmeot region is not provided. Annual levels of employment for various demographics over different geographical areas are not synonymous with predictions of average annual working hours for one employee.</p>
Request	<p>QIA requests Baffinland provide further information on the location of the three international employees. Baffinland to describe why FTEs are reported over headcounts.</p> <p>QIA notes that this is the same request as last year.</p>

Comment #	QIA 2023 NIRB SE#7
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.2, PC Condition No. 135</p> <p>Page: 445 to 447 (PDF p. 463 to 465 of 641)</p>
Comment	<p>PC Condition 135 states, “The Proponent is encouraged to consider offering additional options for work/study programs available to Project employees (in addition to study programs at project sites that would be offered to employees when off-shift).”</p> <p>QIA agrees with Baffinland’s assessment of compliance.</p>



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Request	QIA requests Baffinland continue to provide information on any additional offerings for work/study programs available, including whether participants were hired by the company.
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Comment #	QIA 2023 NIRB SE#8
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.2, PC Condition No. 136</p> <p>Page: 448 to 450 (PDF p. of 641)</p>
Comment	<p>PC Condition 136 states, "The Proponent is encouraged to work with training organizations and/or government departments offering mine-related or other training in order to provide additional opportunities for employees to gain meaningful and transferable skills, credentials and certifications especially where such training of employees offered by the Proponent remains valid only at the Mary River Project sites."</p> <p>QIA agrees with Baffinland's assessment of compliance.</p>
Request	QIA encourages Baffinland to provide credentials and certificates that can be transferrable to other workplaces and the number of employees that take part.

Comment #	QIA 2023 NIRB SE#9
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.2, PC Condition No. 137</p> <p>Page: 451 to 452 (PDF p. 469 to 470 of 641)</p>
Comment	<p>PC Condition 137 states, "Prior to construction, the Proponent shall develop an easily referenced listing of formal certificates and licenses that may be acquired via on-site training or training during employment at Mary River, such listing to indicate which of these certifications and licenses would be transferable to a similar job site within Nunavut. This listing should be updated on an annual basis and is to be provided to the NIRB upon completion and whenever it is revised."</p> <p>QIA agrees with Baffinland's assessment of compliance.</p>



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Request	QIA requests Baffinland clarify where this information is located for easy access to training participants or employees.
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Comment #	QIA 2023 NIRB SE#10
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.2, PC Condition No. 139</p> <p>Page: 455 to 457 (PDF p. 473 to 475 of 641)</p>
Comment	<p>PC Condition 139 states, “Prior to commencing construction, the Proponent is requested to undertake and provide the results of a detailed labour market analysis which provides quantitative predictions of the number of employees that may reasonably need to be sourced from southern Canada and from foreign markets, identifying where applicable, the country of origin for the foreign labour. Within 90 days of the issuance of the Project Certificate, the Proponent is required to submit an updated Labour Market Analysis which considers requirements of the Early Revenue Phase as well as hiring points within Nunavut and outside of the North Baffin region and RSA.”</p> <p>QIA does not agree with Baffinland’s assessment of compliance. Baffinland does not provide the information required by this PC Condition. Baffinland does provide an explanation for the purpose of a Labour Market Analysis and expresses the need to source skilled employees from Southern Canada and foreign countries. However, they do not provide the requested quantitative number of these hires. Baffinland also does not provide which country, if any, from which they hire foreign workers.</p>
Request	QIA requests Baffinland report on the quantitative number of southern/foreign employees as well as directly address the point of hiring foreign labour by indicating the number of employees sourced from foreign markets and the country of origin of foreign labour.

Comment #	QIA 2023 NIRB SE#11
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.2, PC Condition No. 140</p> <p>Page: 458 to 461 (PDF p. 476 to 479 of 641)</p>
Comment	PC Condition 140 states, “The Proponent is encouraged to survey Nunavummiut employees as they are hired and specifically note the level of



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Comment #	QIA 2023 NIRB SE#13
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.3, PC Condition No. 145</p> <p>Page: 472 to 474 (PDF p. 490 to 492 of 641)</p>
Comment	PC Condition 145 states, “The Proponent is encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor the barriers to employment for women, specifically with respect to childcare availability and costs.”



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	Baffinland stated, “Appropriate community-level indicator data are currently unavailable for the topic of childcare availability and costs.” Additionally, Baffinland did not provide any data on how barriers in the employment of women are affected by childcare availability and costs.
Request	QIA requests Baffinland seek community-led indicator data on the topic of barriers to the employment of women with respect to childcare availability and costs.

Comment #	QIA 2023 NIRB SE#14
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.3, PC Condition No. 147</p> <p>Page: 476 to 477 (PDF p. 494 to 495 of 641)</p>
Comment	<p>PC Condition 147 states, “The Proponent is encouraged to work with the Government of Nunavut and the Nunavut Housing Corporation to investigate options and incentives which might enable and provide incentive for employees living in social housing to maintain employment as well as to negotiate for and obtain manageable rental rates.”</p> <p>QIA agrees with Baffinland’s assessment of compliance.</p>
Request	QIA requests Baffinland to detail the efforts and discussions taken place regarding the negotiation for manageable rental rates and potentially emphasize this in the basic financial literacy training currently offered.

Comment #	QIA 2023 NIRB SE#15
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.4, PC Condition No. 148</p> <p>Page: 480 to 486 (PDF p. 498 to 504 of 641)</p>
Comment	PC Condition 148 states, “The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee’s monitoring program which addresses Project harvesting interactions and food security, and which includes broad indicators of dietary habits.”



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Comment #	QIA 2023 NIRB SE#17
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.4, PC Condition No. 150</p> <p>Page: 489 to 492 (PDF p. 507 to 510 of 641)</p>



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Comment #	QIA 2023 NIRB SE#18
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.4, PC Condition No. 151</p> <p>Page: 493 to 495 (PDF p. 511 to 513 of 641)</p>
Comment	<p>PC Condition 151 states, “The Proponent is encouraged to investigate measures and programs designed to assist Project employees with homeownership or access to affordable housing options.”</p> <p>QIA believes the information provided to be insufficient. Baffinland stated “In 2023, Baffinland continued to provide basic financial literacy training, which covered topics such as budgeting that considers rent/housing as well as loans, through the Work Ready Program (WRP).” However, Baffinland has not implemented measures to assist access to affordable housing for their</p>



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Comment #	QIA 2023 NIRB SE#23
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.6, PC Condition No. 158</p> <p>Page: 516 to 518 (PDF p. 530 to 536 of 641)</p>
Comment	<p>PC Condition 158 states, “The Proponent is encouraged to work with the Government of Nunavut and other parties as deemed relevant in order to develop a Human Health Working Group which addresses and establishes monitoring functions relating to pressures upon existing services and costs to the health and social services provided by the Government of Nunavut as such may be impacted by Project-related in-migration of employees, to both the North Baffin region in general, and to the City of Iqaluit in particular.”</p> <p>Baffinland stated, “Baffinland signed an MoU directly related to health care services with the GN Department of Health in 2017 regarding site health services and medevac procedures. More specifically, the MoU describes the health care staff and services Baffinland will provide on-site”. However, Baffinland did not state whether there is currently a plan to develop a Human Health Working Group.</p>
Request	QIA requests Baffinland develop a Human Health Working Group alongside the Government of Nunavut.

Comment #	QIA 2023 NIRB SE#24
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.8, PC Condition No. 167</p> <p>Page: 539 (PDF p. 557 of 641)</p>
Comment	<p>PC Condition 167 states, “The Proponent and the Government of Nunavut are strongly encouraged to, as soon as practical following the issuance of the Project Certificate, enter into discussions to negotiate a Development Partnership Agreement.”</p> <p>Baffinland stated, “a DPA between the GN and Baffinland has not yet been formalized” and “In lieu of a Development Partnership Agreement, Baffinland and the GN signed a Memorandum of Understanding (MoU) in 2019”.</p>



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Comment #	QIA 2023 NIRB SE#25
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.8, PC Condition No. 168</p> <p>Page: 541 to 544 (PDF p. 559 to 562 of 641)</p>
Comment	PC Condition 168 states, "The specific socio-economic variables as set out in Section 8 of the Board's Report, including data regarding population movement into and out of the North Baffin Communities and Nunavut as a whole, barriers to employment for women, project harvesting interactions and food security, and indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates that are relevant to the Project, be included in the monitoring program adopted by the Qikiqtani Socio-Economic Monitoring Committee."
Request	Refer to requests under PC Term and Condition 140, 145, 148 and 154.

Inuit Knowledge, Culture, Land and Resource Use and Inuit
Qaujimajatuqangit – CRLU/IQ

Comment #	QIA 2023 NIRB CRLU/IQ#1
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.7.7, PC Condition No. 164</p> <p>Page: 531 to 532 (PDF p. 549 to 550 of 641)</p>
Comment	<p>PC Condition 164 states, “The Proponent is required to provide notification to communities regarding scheduled ship transits throughout the regional study area including Eclipse Sound and Milne Inlet, real-time data regarding ships in transit and any changes to the proposed shipping schedule to the MEWG and agencies within Pond Inlet on a weekly basis during open water shipping, and to the RSA communities on a monthly basis.”</p> <p>QIA agrees with Baffinland’s assessment of compliance.</p>



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Comment #	QIA 2023 NIRB CRLU/IQ#2
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Main Body</p> <p>Section: 4.7.7, PC Condition 162 & 163</p> <p>Page: 525-530</p>
QIA Comment	<p>The objective of PC Condition 162 is “To ensure the ongoing and consistent involvement of Elders and community members in developing and revising monitoring and mitigation plans” (525).</p> <p>Baffinland has undertaken a number of mechanisms to involve Elders and community members from in-person meetings and call-in radio shows to the hiring of Inuit Knowledge Holders and Community Relation Guides in each of the five North Baffin communities as well as in Kimmirut and Kinngait. Baffinland also continues to provide funding for the development of QIA’s Inuit Stewardship Plan and acknowledges the importance of Inuit Qaujimajatuqangit in its work with Baffin communities.</p> <p>While “Baffinland meets and/or shares Project-related information including monitoring programs implemented annually with various community groups on a regular basis” (526) it is not clear to what extent Baffinland ensures a two-way flow of information between communities and the company. For example, Baffinland has highlighted its efforts to engage with communities and notes the importance of local knowledge to understand community perspectives and priorities and “ensure the Company provides tailored, relevant and culturally appropriate services in their communities” (527). However, it has not provided evidence how and if any of the information and insight received through engagement has impacted Baffinland’s monitoring and mitigation activities. This makes it unclear whether or not Baffinland is meaningfully applying community input. The company indicates that information to this effect has been shared with communities (“Additionally, a workshop was held in the Fall of 2023 to provide an update on the Steensby Component and how Inuit Qaujimajatuqangit (IQ) was integrated into baseline studies, monitoring, design and construction plans” (530). It should therefore not be difficult for Baffinland to integrate this information into its next report.</p>



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Comment #	QIA 2023 NIRB CRLU/IQ#4
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board Main Body</p> <p>Section: 4.7.4, PC Condition 148</p> <p>Page: 479-486</p>



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Comment #	QIA 2023 NIRB CRLU/IQ#5
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board</p> <p>Section: 4.6.8 Project Certificate Term and Condition No. 49 through 64</p> <p>Page: 190-243</p> <p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1</p> <p>Section: Table 0; Section 0; Section 9.3</p> <p>Pages: xv – xix; p. 1.; p. 160</p>



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QIA Comment	<p>Baffinland has designed and is implementing terrestrial environment monitoring programs. For several years, QIA has requested that Baffinland describe if and how IQ has informed terrestrial environment monitoring design, analysis and interpretation of results, as well as conclusions.</p> <p>In Baffinland’s response to QIA comments respecting the 2021 Annual Monitoring Report, Baffinland identified that “as part of the Phase 2 submission, Baffinland summarized how Inuit Qaujimagatuqangit has been incorporated throughout the project, including monitoring programs” (Baffinland Response to Comments Received for the 2021 Annual Monitoring Report PDF p. 27). This response suggests that IQ has been incorporated into monitoring programs; however, the inclusion of IQ is not evident from the 2022 or 2023 Annual Monitoring Reports. Baffinland provided no response to QIA’s comments regarding the inclusion of IQ in 2023.</p> <p>In the 2023 Terrestrial Environment Annual Monitoring Report, Inuit Qaujimagatuqangit is mentioned only two times—</p> <ol style="list-style-type: none">1. “Work completed for the Terrestrial Environment Monitoring Program is guided by Inuit Qaujimagatuqangit and the Terrestrial Environment Mitigation and Monitoring Plan” (Appendix G.5.1, p. 1 of 201),2. “The HOL survey methods were developed in consultation with the TEWG... and incorporated Inuit Qaujimagatuqangit into strategies for detecting caribou” (Appendix G.5.1, p 160 of 201). <p>QIA recognizes that IQ has been used to develop and implement monitoring programs; however, this is repeatedly not reflected in Baffinland’s Annual Monitoring Reports. Most of Baffinland’s discussion is centered on western science integration into terrestrial, freshwater, and marine environment monitoring programs. Given that, as Baffinland states, IQ is a valuable component to the development of these programs, more information on how IQ has been incorporated into them should be included in Annual Monitoring Reports.</p>
QIA Request	<p>As requested numerous times in the past, Baffinland is requested to include in its Annual Monitoring Report indication of which terrestrial, marine, and freshwater monitoring programs are designed with IQ, and which ones utilize IQ for analysis and interpretation of results. An explanation of how IQ shaped the monitoring program and supported interpretation of the results should be included in an overview section as a component of compliance with this requirement, which appears in numerous PCCs. Baffinland should also indicate how IQ is being used, confirm that it meets Inuit expectations re:</p>



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	Ownership, Control, Access and Possession (OCAP) and from where that IQ was obtained.
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Comment #	QIA 2023 NIRB CRLU/IQ#6
References	<p>Document Name: Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board; Appendix G.5.2 (General)</p> <p>Section: Section 4.6.6 Project Certificate Term and Condition No. 39, 40</p> <p>Page: 164-170</p>
QIA Comment	<p>Terms and Conditions 39 and 40 relate to measures that Baffinland should take to develop progressive revegetation of disturbed areas that are no longer required for project operations (e.g., use of test plots, reseeding, replanting, erosion control considerations). While it is not an explicit requirement of PC Conditions 39 or 40, QIA has previously requested that Baffinland involve Inuit and use IQ to inform reclamation pilot research, including defining reclamation goals, end land uses, reclamation techniques, and criteria/measurements to determine success. However, in Baffinland's reports on compliance with PC Conditions 39 and 40, there is no indication that they made any effort to involve Inuit or consider IQ in the 2023 revegetation surveying and reclamation pilot work. Appendix G.5.2. provides more detailed reporting on revegetation survey and preliminary reclamation trial activities completed in 2023, but again, does not include any indication that Inuit involvement or IQ was considered. Within the recommendations / lessons learned sections for these reports, there is no indication that Baffinland intends to do so in the future.</p>
QIA Request	<p>QIA requests Baffinland consider IQ and Inuit involvement in progressive and end of life reclamation planning activities. Baffinland is requested to identify whether and how Inuit will be involved in this work in subsequent years.</p>