



Baffinland Iron Mines Corporation 2022 Production Increase Proposal Renewal

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I. Executive Summary

Baffinland Iron Mines (“Baffinland”) has applied to the Nunavut Impact Review Board (“NIRB”) for an urgent review and approval of a proposal for a production and shipping increase in 2022 (the “2022 PIP Renewal”) for the Mary River Project (“the Project”)¹.

A. QIA’s Conditional Support for Approval of 6 mtpa for 2022 Only

QIA conditionally supports approval of 6.0 mtpa of production, transportation, and shipping for the Project in 2022. If the conditions QIA requests in the Recommendations in Section II are not present, QIA cannot support the 6 mtpa expansion in 2022 as the necessary balance between Inuit rights impacts and accommodation of those impacts will not be reached. These conditions include those imposed through the NIRB process and the Project Certificate, plus those reached outside the NIRB process such as IIBA commitments.

QIA’s conditional support is based on discussions with all five of the most impacted communities (including the Hunters and Trappers Organizations from each community), input from Inuit affected by the Project, review by its internal subject matter experts, and dialogue with Baffinland about what Project changes are technically achievable in 2022. In determining which commitments are necessary for 2022, QIA considered and integrated the concerns of the Inuit communities and harvesters who support, and those who do not support, the 2022 PIP Renewal.

QIA’s conditional support in this submission is specific to the 2022 PIP Renewal, and the current regulatory situation (which includes the current absence of a Minister’s decision on the previous (Phase 2) expansion proposal, as detailed below). QIA will not support any proposal for production and shipping above 4.2 mtpa after 2022 until there is a significant reconsideration of existing Project Certificate Terms and Conditions and a review of adaptive management elements of the current Project, given the evidence now available about issues with the original Project assessment predictions and the adaptive management process currently in place for the Project.

B. Constraints on the Scope of the Review and QIA’s Recommendations

The 2022 PIP Renewal is Baffinland’s seventh application in ten years to increase production, transportation, and shipping for the Project. It is the fifth application for expansion of a Project that is different than the Project Proposal which was originally assessed based on a Final Environmental Impact Statement which studied transportation to, and shipping from, Steensby Inlet.

The impacted Inuit communities and Designated Inuit Organizations (“DIOs”) have struggled to resource and actively participate in ten years of non-stop hearings and reviews of seven different proposals for Project changes or expansions.

None of these reviews has occurred within as short a time frame and on as much of an accelerated basis as the 2022 PIP Renewal.

This is also the first NIRB review of a Baffinland proposal for a production and shipping increase after a detailed NIRB review of the current and any expanded Project in the recently concluded hearings on Baffinland’s Phase 2 Development Proposal. There was only one business day between the release of

¹ Baffinland Production Increase Proposal Renewal, NIRB Application No. 125710 (“2022 PIP Renewal”).

NIRB's *Reconsideration Report and Recommendations for Baffinland's Phase 2 Development Proposal*² (the "Phase 2 Reconsideration Report") on May 13, 2022, recommending against approval of the Phase 2 expansion, and Baffinland's initial request to expand production in 2022.

The scope of QIA's recommendations about appropriate Project Certificate terms and conditions amendments for any 2022 PIP Renewal approval are limited, therefore, by two important factors.

First, there is uncertainty about the status of recent NIRB evidentiary findings and recommendations from the Phase 2 review which are relevant to the 2022 PIP Renewal. The NIRB *Phase 2 Reconsideration Report* makes important evidentiary findings and conclusions about inadequately predicted or unforeseen impacts arising from the current Project, and gaps in the knowledge available for and effectiveness of the current adaptive management system for the Project. NIRB noted the concerns raised that the current Project operations, operating as the "Early Revenue Phase," are resulting in a scale and scope of effects which are "not yet fully understood."³

The Phase 2 evidence and NIRB *Phase 2 Reconsideration Report* conclusions are directly relevant to any expansion proposal, including the 2022 PIP Renewal. There is no final Minister's decision on the Phase 2 Proposal, however. NIRB confirmed in its July 19, 2022 Procedural Guidance for the 2022 PIP Renewal that NIRB "does not consider it appropriate to conduct a broad reconsideration of the Mary River Project's existing effects mitigation and monitoring program" as a decision regarding the Phase 2 Development Proposal is still underway. So the Phase 2 evidence and NIRB's conclusions based on that evidence, while relevant, cannot be fully reflected in proposed terms and conditions for the 2022 PIP Renewal, but must be addressed in the longer term.

Second, the last minute timing of Baffinland's application for the 2022 PIP Renewal means that even with an accelerated review process, there may be only two months or less between a Minister's decision and the end of the shipping season. There is very limited time and operational ability to implement any Project changes in 2022.

QIA therefore constrains its comments and recommendations to only the most urgent areas where immediate changes to the Project Certificate terms and conditions are viable in 2022 to address the most critical concerns about the current Project. QIA discussed this submission's recommendations with the impacted communities, and particularly with the Hunter and Trappers Organizations, to confirm issues of highest urgency where 2022 changes to the Project are possible.

The timelines for this review limits the ability of Inuit to fully engage and meaningfully participate in the NIRB review process in order to identify what terms and conditions should be in place for a renewal of the 6 mtpa expanded production and shipping rate. As noted by the Mittimatilik Hunter and Trappers Organization ("MHTO"), the Ikajutit HTO, and Hamlet of Clyde River, for instance, the very short time windows and the time of year mean that many of the Inuit harvesters and land users whose views are key in this process are unavailable.⁴ In the future, last-minute application for Project changes or expansions

² Nunavut Impact Review Board, *Reconsideration Report and Recommendations for Baffinland's Phase 2 Development Proposal* (the "Phase 2 Reconsideration Report"), released May 13, 2022 ([NIRB ID 339558](#)).

³ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 235.

⁴ The MHTO noted, in its August 8, 2022 motion opposing the 2022 PIP Renewal, that "Adequate and meaningful consultation have not occurred in respect of the PIP renewal application given the shortened assessment period and lack of opportunity for public engagement and Inuit participation. The Hamlet of Clyde River submitted comments on August 2, 2022 indicating that it "is unable to meaningfully participate in the expedited process" as "there was only 14 working days between NIRB's formal announcement of the process and the deadline for written comments" and it was not able to even retain technical consultants on this timeframe, nor do so without intervenor funding in place. Clyde River also notes that the time of year and short notice is particularly problematic as "July and August are ver bus times for Nunavut's communities, in terms of land-based practices.

cannot be repeated as the truncated process seriously limits the ability of affected Inuit communities to identify impacts and address how those should be mitigated or monitored, or for a Proponent to make meaningful changes to the Project to address concerns.

The accelerated review also constrained QIA's ability to engage with the most impacted Inuit communities. This engagement is needed to inform QIA's position on the proposal's impacts on the environment, and on Inuit rights protected by section 35 of the *Constitution* and the *Nunavut Agreement*, and the necessary resulting accommodations to address impacts on Inuit rights. QIA has also not had the opportunity to refine its technical submissions based on discussions with Baffinland, as its priority has been community engagement to inform QIA's submissions.

QIA may, therefore, need to provide an update to NIRB and to the Minister with supplemental comments and confirming QIA's position on the 2022 PIP Renewal following the Community Roundtable, after QIA has had an opportunity to listen to and review the evidence of impacted Inuit. The views of impacted Inuit are relevant to QIA's analysis of both environmental and section 35 rights impacts, and its responsibilities as Inuit land owner and IIBA signatory on behalf of Inuit.

Canada indicated to the Designated Inuit Organizations, in August 2, 2022 correspondence, that Canada is relying on the NIRB process for the procedural aspects of Aboriginal consultation and accommodation, and for the evidence of impacts on section 35 rights and accommodation of those impacts:

The Government of Canada relies upon the Board's assessment process, and associated proceedings, to assist in discharging the Crown's duty to consult with Indigenous peoples. The Board process provides potentially affected Inuit with an opportunity to understand a proposed project and its potential impacts, express their views and any concerns with respect to potential project-related impacts on their asserted or established s.35 rights, consider ways these views and any concerns can be addressed, and ensure those issues are considered both by the Board and the responsible Ministers. ... In order to avoid circumventing or duplicating the Board's process, the Crown does not anticipate the need to carry out separate consultation activities outside the Board's process while the assessment is ongoing, except when the objective is to bring issues back before the Board.... It is our understanding that the views of impacted Inuit who participate in the Hunters & Trappers Organizations, as well as other Inuit whose section 35 rights are affected by the Project, will be reflected in QIA's and NTI's submissions [to NIRB].⁵

QIA cannot complete its analysis of section 35 rights impacts until QIA has been able to hear the views of the most impacted communities, including in the CRT process. This is particularly critical in the constrained timelines of the 2022 PIP review, and QIA may need to provide supplemental comments if necessary to ensure the evidentiary record is complete prior to a NIRB and Minister's decision.

This makes it difficult to consult with Elders and hunters to inform comments..." Clyde River Letter to NIRB, August 2 ([NIRB ID 341179](#)). The Ikajutit Hunter and Trappers Organization, from Arctic Bay, indicated in their comments on the NIRB process that, "The timing of the [last minute] request ... has resulted in creating undue pressure on Ikajutit and the impacted communities more generallyThe request was submitted during prime harvsetng season when many community members are out of twon and taking full advantage of the weather and ice conditions. This is the reality in Arctic Bay and across the territory. The timing of Baffinland's request leaves the impression that Baffinland has a dismissiove attitude and approach towards community engagement and the concerns and issues the HTOs have expressed to date." Ikajutit HTO Comments, July 6, 2022 ([NIRB ID 340631](#)).

⁵ Letter of Lisa Dyer, Northern Projects Management Office, to QIA and NTI, August 2, 2022.

C. Key NIRB Conditions for 2022

The Commitment Table which follows lists the commitments required for QIA to conditionally support the 2022 PIP Renewal for Project production and shipping of 6 mtpa in 2022. These commitments include:

- Commitments which require amendment of the Project Certificate Term and Conditions;
- Commitments which do not require Project Certificate amendments but are relevant to NIRB's oversight of the adaptive management assessment and monitoring for the Project; and
- Commitments outside of NIRB's jurisdiction (such as the specifics of Inuit Impact Benefit Agreement, Commercial Lease, and Water Compensation Agreement amendments).

Of these commitments, QIA draws the attention of NIRB to the most critical commitments necessary for a 2022 PIP Renewal approval. In order to address environmental and Inuit rights impacts, QIA is asking for the following commitments, which are detailed in the Commitment Table and in this submission:

- That immediate and specific changes be made to the Working Groups to require an independent chair, enforceable recommendations, and funding for HTO participation
- That an independent compliance monitoring body be appointed by Canada to oversee compliance with the NIRB and other regulatory commitments
- That Baffinland support and fund the first year of the Inuit Stewardship Plan for Inuit-led monitoring independent of Baffinland's monitoring programs
- That an Inuit-led monitoring program for dustfall be established immediately
- That a program be established immediately to identify days with high risk of dust dispersal, and a plan for additional mitigation measures on days of high risk for dust including reducing truck volume on the Tote Road and the amount of ore handled or moved at the Port and Mine, and use of additional dust suppressants
- That, by April 2024, the adaptive management elements be developed and approved for monitoring programs and Inuit-defined Observations, Indicators, Thresholds, and Responses (OITRs) for narwhal, seal, Arctic char, caribou, dust, and culture, resources, and land use
- That all shipping and icebreaking for the Project cease by October 31, 2022 and that no icebreaking occur when ice is greater than 3/10 coverage unless otherwise supported in writing by the Mittimatalik Hunter and Trappers Organization ("MHTO") and QIA
- That Baffinland pay \$1,000,000 (2020 Dollars) outstanding to MHTO within 5 days of the NIRB Report on the 2022 PIP Renewal and before a Minister's decision on the 2022 PIP Renewal (this amount was due within 5 days of the close of the Phase 2 Public Hearing but remains unpaid, and is relevant to an assessment of whether section 35 accommodation requirements are met).
- That Baffinland pay \$1,000,000 to MHTO for 2022, to offset 2022 impacts on harvesting, within 5 days of a positive NIRB determination recommending approval of the 2022 PIP Renewal
- That Baffinland pay outstanding QIA costs in the amount of \$1,700,000 + GST (2021 Dollars) for engineering and planning costs associated with the Pond Inlet Regional Training Centre by November 15, 2022
- That Baffinland commence payments towards the \$10,000,000 (2018 Dollars) commitment for the Pond Inlet Training Centre, to be paid as follows: *October 15, 2022 - \$1,500,000; November 15, 2022 - \$1,500,000; December 15, 2022 - \$2,000,000; January 15, 2023 - \$1,500,000; February 15, 2023 - \$1,500,000; and March 15, 2023 - \$2,000,000.*

II. QIA's Commitment Table Regarding Required Project Conditions

The following table provides the list of commitments which QIA is looking for, in order to offer its conditional support for approval of the 2022 PIP Renewal. Without these commitments – which include NIRB-related as well as non NIRB-related commitments – QIA will not be able to indicate that impacts on Inuit section 35 rights have been adequately identified, and accommodated, for the 2022 expansion.

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
1	That Baffinland pay \$1,000,000 (2020 Dollars) outstanding to MHTO within 5 days of the NIRB Report on the 2022 PIP Proposal and before a Minister's decision on the 2022 PIP Proposal (this amount was due within 5 days of the close of the Phase 2 Public Hearing but remains unpaid, and is relevant to an assessment of whether section 35 accommodation requirements are met).	Compensation/ Benefits (Outstanding Commitment)	-	Y	Y
2	That Baffinland pay \$1,000,000 to MHTO for 2022, to offset 2022 impacts on harvesting, within 5 days of a positive NIRB determination recommending approval of the 2022 PIP Proposal	Compensation / Benefits	-	Y	Y
3	That Baffinland pay outstanding QIA costs in the amount of \$1,700,000 + GST (2021 Dollars) for engineering and planning costs associated with the Pond Inlet Regional Training Centre by November 15, 2022.	Compensation/ benefits (Outstanding Commitment)	-	Y	Y
4	That Baffinland commence payments towards the \$10,000,000 (2018 Dollars) commitment for the Pond Inlet Training Centre, to be paid as follows: <i>October 15, 2022 - \$1,500,000; November 15, 2022 - \$1,500,000; December 15, 2022 - \$2,000,000; January 15, 2023 - \$1,500,000; February 15, 2023 - \$1,500,000; and March 15, 2023 - \$2,000,000.</i>	Compensation/ benefits (Outstanding Commitment)	-	Y	Y
5	That the Project Certificate Terms and Conditions be amended to require the following amendments to the terms of reference for the Marine Environment Working Group and Terrestrial Environment Working Group, after consulting with existing members of each working group: <ul style="list-style-type: none"> a. That an independent chair be appointed for each of MEWG and TEWG and that this independent Chair be responsible for scheduling and administering meetings including circulating meeting invitations, agendas and documentation. b. That the Working Groups' decision-making process be amended to provide that it must occur on a consensus basis between all working group member parties. with all votes and decisions in writing and recorded by the chair. c. That the WG decisions be recognized as enforceable recommendations, with provision that Baffinland may request not to enforce the recommendation at which point the matter shall go to the Project Monitor for resolution. 	Environmental Working Groups	TC	N	Y

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
	<p>d. That Baffinland fund the involvement of the impacted communities' HTOs in the Working Groups, with funding for 2 members from the MHTO in each Working Group and for participation from the remaining four HTOs (including through the possible participation of the Qikiqtani Wildlife Board) should they elect to participate in Working Groups.</p> <p>e. That Working Group materials and records of decisions become public with the independent chair responsible for keeping and circulating minutes which shall be posted to the Baffinland website all meeting minutes once finalized and provided to Baffinland by the independent chair.</p>				
6	<p>That the Project Certificate Terms and Conditions be amended to require that Canada appoint an independent compliance monitoring body be appointed by December 31, 2022.</p> <p>That QIA and Baffinland request that Canada support the appointment of an independent compliance monitoring body, based on recommended or agreed nominees from QIA and BIM, to:</p> <p>a. oversee the implementation of Project commitments;</p> <p>b. ensure that the interests of impacted Inuit communities are substantially addressed in adaptive management development and implementation and benefit delivery;</p> <p>c. provide a bi-annual (twice yearly) report on the assessment about success of both parties in reaching benchmarks, with the first assessment due by February 15, 2023 about success in achieving initial commitments related to the 2022 PIP Proposal; and</p> <p>d. assist in resolution of dispute between the Parties regarding adaptive management and benefit delivery.</p>	Project Monitoring and Compliance	TC	Y - Resourcing	Y
7	That QIA and Baffinland jointly develop and approve, by April 2024, the adaptive management elements for monitoring programs and Inuit OITRs for the AMP related to narwhal, seal, Arctic char, caribou, dust and culture, resource and land use.	Adaptive Management	TC/C	Y	N
8	That Baffinland support and fund the establishment and first year (from September 15, 2022 – March 31st, 2023) of the Inuit Stewardship Plan. QIA and Baffinland should be required to work together to evaluate the success of the Inuit Stewardship Plan in addressing Inuit concerns after that period. QIA agrees to consider payments received by Baffinland for ICA implementation received to date as partial payment towards this commitment according to a payment reconciliation completed by the Parties not later than September 15, 2022. Baffinland commits to provide additional funds as agreed between Parties following the development of a budget and workplan by not later than September 15, 2022.	Inuit Stewardship	TC/C	Y – Resourcing commitments	N
9	QIA and Baffinland agree that the AMP commitments above require completion of a Culture, Resources and Land Use Assessment (which will be inclusive of a cumulative impact assessment and a freshwater study), the Pond Inlet Country Food Baseline, and the development of the Inuit Stewardship Plan and Baffinland agrees to resource this work according to work plans and budgets	CRLU	TC	Y – Resourcing Commitments	N

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
	prepared on a bi-annual (twice yearly) basis. Recognizing work to collect IQ on these topics has already been completed by QIA and is currently subject to verification, QIA commits to provide Baffinland with its timeline for sharing the information it has gathered to date, and a memo to confirm the scope of remaining work on these topics, on or before September 15, 2022.				
10	That Baffinland agrees that a further reconsideration is required for any further expansions to or amendments of the Project to address the ongoing uncertainty regarding the accuracy of original effects assessment and the incomplete adaptive management plans and process.	Project Impacts	C	Y	N
11	That Baffinland provide, by December 31, 2022, a timeline and plan for development of the monitoring and AMP plans committed to in this Table	Adaptive Management	C	N	N
12	That Baffinland provide data on which indicators within the draft adaptive management plans have been triggered within the low, medium, and high response levels.	Adaptive Management	C	Y – Joint AMP approval	Y
13	That, within 18 months of receipt of approvals for the 2022 PIP, Baffinland provide to the NIRB a copy of both: a. The ongoing Pond Inlet Country Food Baseline Study; and b. A CRLU Assessment that has been verified by QIA and the Project-affected communities; and That these documents must be provided along with an Action Plan for monitoring, mitigation and accommodation of impacts on CRLU, including Inuit food security, with evidence that this has been subject to consultation and verification with QIA and the Project-affected communities.	CRLU/IQ	Y	Y	N
14	That the Project Certificate Terms and Conditions be amended to specifically require that all shipping and icebreaking for the Project cease by October 31, 2022, and icebreaking must not occur when ice is greater than 3/10 coverage, unless otherwise supported in writing by MHTO and QIA.	Marine Shipping	TC	N	Y
15	That Baffinland provide scenario planning exercises to better quantify the costs/benefits of ship convoys. To conduct a study to see assess the simple seasonal average observer data from Bruce Head and the Leg 2 surveys correlates with the photo estimates for all the years to assess whether these metrics could provide an EWI for the year's results that would be applied in future to increase or decrease shipping at the end of summer. To resource Inuit-led monitoring, updated EWIs, Inuit OITRs, etc. To conduct a sampling program to assess cortisol levels in narwhal and morphometric measurements. This would be a systematic program working with harvesters to gather samples, and observations on what they are experiencing and comparing to previous years.	Marine Shipping	TC/C	Y - resourcing	N

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
16	That Baffinland and QIA develop, by September 30, 2022, specific technical plans for 2022 for Early Warning Indicators for narwhal.	Marine Wildlife	C	N	Y
17	That the Project Certificate Terms and Conditions be amended to require that Baffinland immediately establish an Inuit-led monitoring program on dustfall as a pilot program to establish the mechanisms needed to allow Inuit observations to influence mitigation measures and test appropriate AMP structures, which are demonstrably responsive to Inuit OITRs, with the budget and work plan agreed upon by Baffinland and QIA prior to commencement.	Dust	TC	Y - Resourcing	Y
18	That the Project Certificate Terms and Conditions be amended to require Baffinland to establish a program for identification of days with high risk for dust dispersal, and a plan for additional measures to be taken on those days to reduce the volume of trucks using the Tote Road, the amount of ore being handled and transported at the Mine and Port, and the use of additional dust suppressants on the Tote Road and at the Mine and Port on those days; and That the full list of mitigation measures and the approach for identifying high risk days for dust dispersion be developed by the TEWG and implemented by Baffinland.	Dust	TC	N	Y
19	That Baffinland commit to increasing the frequency for application of DustBlok or similar product along the Tote Road as a condition of receiving approval from the NIRB for the PIP Renewal, and document the frequency of use of dust suppressants applied to the road in the 2022 annual report and make a direct comparison to 2021. That Baffinland leave a minimum of a 31 m buffer but ideally a 100 m buffer in the application of dust suppressants along the Tote Road on either side of water crossings.	Dust	TC	N	Y
20	That Baffinland minimize drop distances (i.e., using adjustable stackers) for stockpiling activities. BIMC to further define the drop distances used and provide evidence in subsequent annual reports that they have been applied. That Baffinland provide an evaluation of where wind fencing would limit dust migrating from the ore stockpiles at Milne Port (and at the Mary River site), and construct them within 60 days of the first sealift/resupply ship arriving at Milne Port in 2023 in order to permit the materials to be shipped. That Baffinland define what other operational practice improvements will be made to minimize dust from Milne Port, and clarify how those measures will be implemented. Changes requiring additional infrastructure or materials should be implemented within 60 days of the first sealift/resupply ship arriving at Milne Port in 2023 while operational changes should be implemented immediately.	Dust	C	N	Partial

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
21	<p>That Baffinland adopt the following recommendations outlined within QIA's investigation of the spatial extent dustfall from the Project is impacting the surrounding receiving environment to better characterize the magnitude and extent of those effects:</p> <ol style="list-style-type: none"> 1. Dustfall isopleth modelling should be updated with real project data (including vehicle traffic patterns, point sources, and dust monitoring data), and the spatial extent of the model should be expanded until Project impacts are indistinguishable from background deposition; 2. Snowpack water quality should continue to be monitored annually at the 20 sites sampled in 2021 to determine if there are spatial-temporal trends in water quality guideline exceedances, indicating priority areas of concern for aquatic and terrestrial receptor effects from metals, TDS and TSS; 3. Dustfall and soil/lichen metals monitoring sites should be expanded at a minimum to include locations identified as Areas of Community Concern, and the areas where the highest dustfall was identified in the 2021 assessment (We direct BIMC to Section 5.3 of HESL 2022 for site locations); 4. Seasonally monitored dustfall sites should be compared with FEIS predictions to confirm that they meet their current low isopleth zone ranking, and to determine the spatial extent and magnitude of dust dispersion beyond the project area; 5. Additional dustfall monitoring locations will help in comprehensively evaluating long-distance dust dispersion. The locations of additional sites should be determined based on results of the updated and expanded isopleth modelling recommended above; 6. A snow quality metric (and associated action level triggers) should be developed, integrating traditional knowledge on acceptable snow quality on the land with western science numerical indicators. The metric should be applied to dustfall monitoring to track snow changes related to dust before adverse effects occur. Mitigation strategies to prevent snow quality degradation, based on this metric, should also be developed; 7. Dustfall monitoring sites should be added along Milne Inlet to investigate increasing dust extent documented by satellite imagery from 2014 to 2020; 8. Satellite imagery analysis should be expanded to include areas beyond 20 km of the Project Development, to cover the locations used in our 2021 field monitoring; 9. The potential influence of local topography on wind patterns and dust dispersion should be investigated, and the results used to inform dust dispersion modelling and assumptions; and 10. A desktop study on dust duration on the land should be designed to identify locations likely to experience longer-term dustfall effects. The study should describe the relative role of runoff and wind in dispersing dust from the land, and consider site-specific factors, such as wind, precipitation, topography, snowpack conditions, and vegetation. 	Dust	TC/C	N	Partial

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
	<p>These modelling and monitoring recommendations should be implemented by BIMC as a condition of receiving approval from the NIRB for the PIP Renewal.</p> <p>Further, that Baffinland investigate a “threshold” wind speed associated with mobilizing dust from the Project (Mary River, Tote Road and Milne Port), and implement an operational staged decrease in dust generating site activities once that wind speed is met or exceeded. The staged decrease in activities should be clearly outlined in an appropriate plan (e.g., the Environmental Protection Plan).</p>				
22	<p>That within 3 months of the receipt of the approvals for the 2022 PIP, Baffinland implement all recommendations for improving their dust monitoring programs, including improved locations of monitoring sites to ensure that stations are not in the “lee” of the wind; alignment of dustfall monitoring with existing vegetation monitoring programs so that the two programs can inform each other; use of passive vertical monitoring in addition to the current isopropyl monitors; continuous monitoring of dustfall at PDA boundaries; finalize methods for bi-weekly regional dustfall extent monitoring using satellite imagery; and other recommendations for dust monitoring improvements contained within the final Dust Audit Report. These improved methods will be included in a revised version of the Air Quality and Noise Abatement Management Plan. Dust monitoring will be used to reassess the impacts of dust from the Project on key receptors, determine the efficacy of existing mitigation measures, and determine if additional mitigation measures are needed.</p> <p>That within 3 months of the receipt of approvals for the 2022 PIP, Baffinland will implement all recommendations of the draft Final Dust Audit Report. Furthermore, Baffinland will implement the following additional mitigation measures:</p> <ul style="list-style-type: none"> • Improved dust control at all locations where ore is moving or being handled at the mine and port sites; • Identify high risk days for dust dispersion; • Implement additional mitigation measures for ore movement on high risk days, including reduced truck speed on high risk days; avoiding truck use of the Tote road on the highest risk days, and use of additional dust suppressants as needed. <p>That within 3 months of the receipt of approvals for 2022 PIP, Baffinland initiate a remote sensing monitoring program to investigate the impacts of dust on lichen health in the Project area. This remote sensing monitoring program will be designed with input by the TEWG. This information will be used to inform the zone of influence re-estimation for caribou.</p>	Dust and Terrestrial Wildlife	TC/C	N	N

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
	That within 6 months of the receipt of approvals for 2022 PIP, Baffinland implement all recommendations from the TEWG and/or QIA and the MTHO for improving their vegetation monitoring programs to ensure that metal uptake by vegetation is properly considered.				
23	<p>That within 3 months of receipt of approvals for the 2022 PIP, Baffinland will provide funding to QIA to conduct a full study of caribou on North Baffin based on Inuit Qaujimajatuqangit, to identify areas within the vicinity of the Project that are highly sensitive for caribou (Caribou Protection Zones) and to gather data to support the re-estimation of the Zone of Influence around the Project. This Study will be led by QIA in conjunction with the HTOs. The results will be used by QIA to re-estimate the Zone of Influence around the Project and will inform the enactment of additional mitigation measures for caribou.”</p> <p>That within 12 months of receipt of approvals for the 2022 PIP, Baffinland will work with QIA to re-estimate the Zone of Influence for caribou around the Project, using both Inuit Qaujimajatuqangit and western science to determine the extent of reduced habitat suitability around the mine and the likely impacts to caribou at a regional scale. This re-estimated Zone of Influence will be monitored over time as caribou numbers increase, to assess the effectiveness of mitigation measures.</p> <p>That within 18 months of receipt of approvals for the 2022 PIP, Baffinland will implement all mitigation measures for caribou identified by QIA and the HTOs, to ensure that impacts to North Baffin caribou—which are highly sensitive at low points in their population cycles and must be supported to recover—are reduced to the extent possible. QIA and the HTOs may choose to involve the TEWG as an advisory group for the development of appropriate mitigation measures.</p> <p>That immediately following the receipt of approvals for the 2022 PIP, Baffinland will implement the following additional mitigation measures for caribou: a) no blasting within 5 km of all suitable caribou calving and post-calving habitat during the caribou calving period and immediately post-calving, with these dates to be determined by the MHTO; b) helicopters to maintain a 2 km horizontal distance from all suitable calving and post-calving habitat during the caribou calving period and immediately post-calving, with these dates to be determined by the MHTO; c) when caribou are observed along the Tote road, immediate stoppage of hauling for a suitable period of time to be determined in collaboration with the MHTO and the TEWG.</p>	Terrestrial Wildlife	TC/C	N	N
24	That 2018 NIRB monitoring recommendation 2 related to dust management be stringently applied to fish-bearing streams and lakes along the tote road.	Freshwater Environment	TC/C	N	N

ID	Commitment	Topic/Theme	NIRB in-scope / Commitment (C) or Term & Condition (TC) Amendment	External scope (Y/N)	2022 Implementation Possible (Y/N)
	<p>QIA requests that the Proponent commit to establishing long-term monitoring sites to assess Project impacts on the water quality, sediment deposition, and biota in Phillips Creek.</p> <p>QIA recommends that future DFO permitting for this Project consider the potential impacts of elevated dustfall and eroded sediment from Project activities on juvenile Arctic Char in Tote Road streams, and require studies be conducted should the information prove to be inadequate for impact assessment.</p> <p>QIA recommends that the Proponent establish a meaningful sedimentation threshold based on mortality rates of Arctic Char eggs exposed to Project-generated dust sediment.</p>				
25	That the Project Certificate be amended to require Baffinland to develop and maintain a safe travel route around/across km 13 of the Tote Road, to be finalized upon the MHTO providing GPS coordinates of the desired route. This route will be maintained for life of project or until a time when the MHTO determines it must be modified to meet its intended purpose.	Inuit Travel and Access	TC	N	Y
26	<p>That Baffinland and QIA undertake to, no later than January 31, 2023:</p> <p>a. Amend the IIBA (2018) to include Inuit Certainty Agreement Schedule "C".</p> <p>b. Amend the WCA consistent with ID-17 Section 17.1.5(a), (b), (c), (d) and (f) of the Inuit Certainty Agreement.</p> <p>c. In order to address ongoing concerns regarding difficulties Inuit are experiencing in accessing wildlife compensation funding, Baffinland and QIA will work together to review and address the working and efficacy of the administration of the Wildlife Compensation Fund. The Parties will implement changes to the protocol, including claims procedure and substantive criteria, all intended to improve Inuit access to the Wildlife Compensation Fund.</p>	<p>Compensation/Benefits</p> <p>Adaptive Management</p>	N	Y	N
27	That Baffinland agrees to a process to amend the IIBA and Water Compensation Agreement that are required to implement changes to Project management, AMP, Benefits and oversight.	Compensation/ benefits	N	Y	Y
28	That Baffinland post a \$5,000,000 Project Bond within 30 days of a positive NIRB recommendation for approval of the 2022 PIP Proposal, and QIA to not draw down the Bond until after March 31, 2023, in order to discharge unfulfilled obligations regarding agreed upon Measurable Objectives under the Inuit Certainty Agreement, as this payment is an aspect of considering whether sufficient accommodation has occurred for the 2022 PIP Proposal.	Compensation/ Benefits	N	Y	Y
29	That Baffinland accept QIA proposal on Measurable objectives pertaining to the June 2020 ICA commitments which provides objectives for measuring IIBA implementation performance.	Compensation/ Benefits	N	Y	Y
30	That Baffinland fund a one-time \$1,000,000 benefit to QIA by March 31, 2023 in the event of the Minister approving the 2022 PIP Renewal.	Compensation/ Benefits	N	Y	N

III. Introduction to QIA's Technical Comments

A. QIA's Mandate and Relationship to the Project

The Mary River Project operates on lands owned by Inuit, extracts minerals owned by Inuit, relies on a commercial lease with QIA to use Inuit Owned Lands (IOL), ships iron ore through arctic marine areas that are the backbone of Inuit food security and culture in the region, and is subject to an Inuit Impact Benefit Agreement (IIBA). Almost no aspect of the mine and its operations does not touch in some way on the constitutionally protected rights of Inuit guaranteed through the *Nunavut Agreement* and its structures, including this NIRB review process.

QIA owns and manages, on behalf of Inuit in the region, the lands on which the Mary River Project is located. QIA (in cooperation with Nunavut Tunngavik Incorporated) is responsible for protecting and using the IOL for responsible resource development on behalf of Inuit if Inuit choose to use these lands for mining and ensuring any Project proposal meets the proper balance between impacts and benefits.

QIA is governed by a democratically elected Board of Directors, representing each of the Qikiqtani Communities. QIA's decisions (including its position in this submission) are informed by input from Community Directors, information from community members, the views of community organizations including HTOs, technical and legal advice, and past experiences and organizational knowledge.

When evaluating the 2022 PIP Renewal, QIA looked at:

- The proposal's impacts on Inuit communities, Inuit culture, harvesting, and Inuit rights
- The proposal's effects on environment and wildlife (marine, freshwater, terrestrial) as this necessarily impacts Inuit communities and Inuit rights
- Ensuring Inuit Qaujimajatuqangit (IQ) is properly collected, used, and respected in the proposal's impact assessment and adaptive management
- The proposal's employment, contracting, and economic benefits to Inuit, particularly in the most affected communities
- Other financial and social benefits from the Project
- The Project's overall impact on communities' and Qikiqtani Inuit well-being
- Whether the proposal supports responsible long-term use and respectful stewardship of IOL

B. The Context of the Current Proposal Within the Overall Project

The 2022 PIP Renewal is Baffinland's seventh application in ten years to change or increase production, transportation, and shipping for the Project.

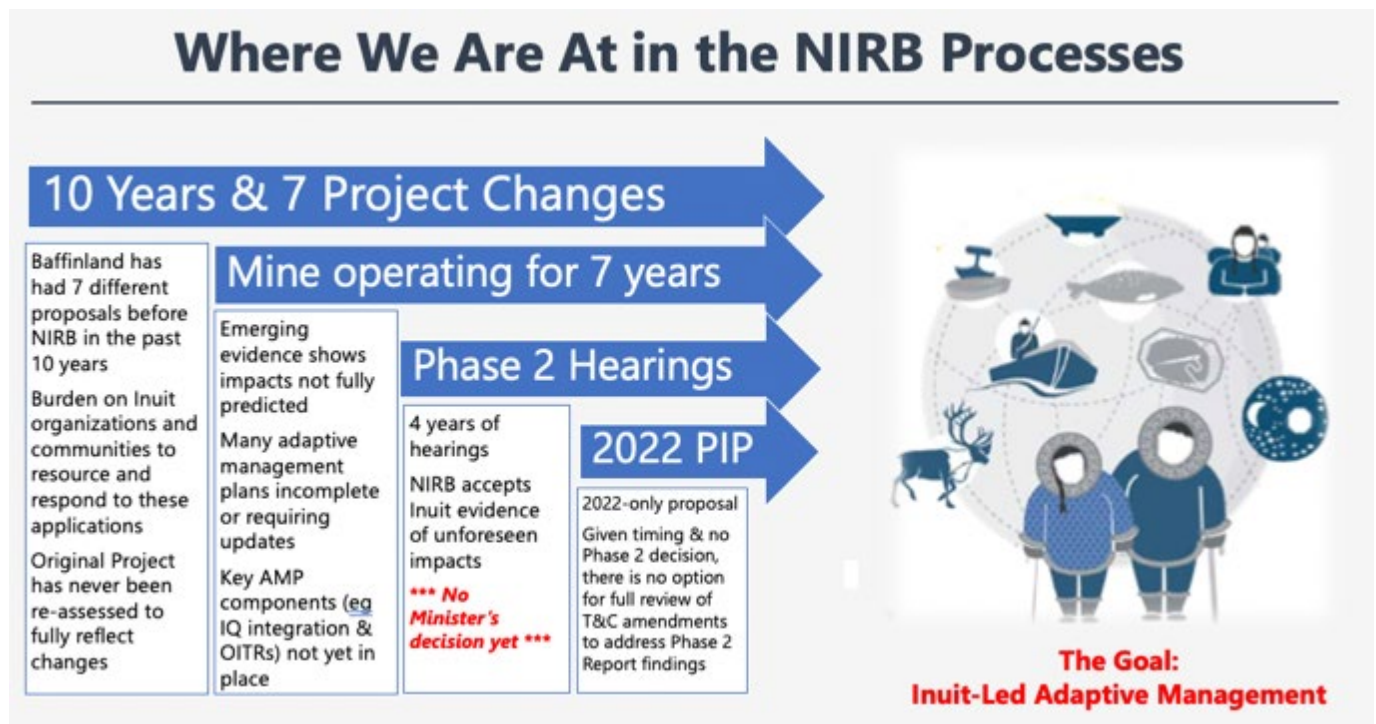
In the past decade, the DIOs and the impacted Inuit communities have participated in seven NIRB reviews, dealing with the original Project assessment plus six requests from Baffinland to change or expand the Project to use different transportation routes, methods, and production rates. Many of these reviews happened concurrently with other reviews underway at the same time for the Project:

1. The Project was originally assessed and approved in 2012 to produce and ship 18 mtpa of iron ore, using a railway to and a port at Steensby Inlet.
2. After this approval, Baffinland applied in 2013 and received approval in 2014 for an "Early Revenue Phase" allowing 3.5 mtpa to be transported via Tote Road, and shipped from Milne Inlet.

3. Baffinland then applied and received approval for a production increase to 4.2 mtpa to allow for “operational flexibility” to add financial stability for the Proponent.
4. In 2014, Baffinland also submitted a proposal for the Phase 2 expansion to allow for a railway to Milne Inlet and an increase to 12 mtpa. The NIRB Phase 2 *Phase 2 Reconsideration Report*, released on May 13, 2022, recommends against approval of this expansion. The Minister’s final decision on the Phase 2 proposal is anticipated in late 2022.
5. During the Phase 2 review, Baffinland applied for and received approval in 2018 to produce and ship 6.0 mtpa until the end of 2020, also to add financial stability for the Proponent.
6. In late 2019, Baffinland applied for an extension of the 2018 approval, and received approval to produce and ship 6.0 mtpa until the end of 2021, to continue to provide financial stability through the end of the Phase 2 reconsideration process.
7. Immediately after the NIRB *Phase 2 Reconsideration Report*, and before the Inuit organizations had an opportunity to respond to the Minister on the section 35 Inuit rights impacts issues raised in NIRB’s *Phase 2 Reconsideration Report*, Baffinland asked the Minister to unilaterally extend the 2020 approval for a production increase which expired at the end of 2021. The Minister directed Baffinland to apply through the appropriate NIRB process instead, resulting in the 2022 PIP Renewal currently under review in this NIRB proceeding.

The four production increases approved since 2013 (for the 3.5 mtpa Early Revenue Phase, 4.2 adjusted Early Revenue Phase, 6.0 Production Increase in 2019, and 6.0 Production in 2020-2021) are all approvals for a different Project than the one originally proposed, and approved in order to provide financial stability to Baffinland (in order to raise the capital to build the originally proposed Project).

NIRB’s review of this 2022-only application occurs immediately after Inuit provided significant evidence over four years of Phase 2 hearings on the impacts of the current and any expanded Project on Inuit and the environment. The 2018 and 2020 approvals of temporary production increases to 6 mtpa occurred before the evidence in the Phase 2 Proposal hearings was complete and before NIRB’s analysis of that evidence.



Baffinland's technical submissions for the 2022 PIP Renewal consists of the same technical information as 2018 and 2020 production increase applications, with a few small modifications provided in a supplemental information package.⁶ The 2022 PIP Renewal does not integrate or respond to the substantial evidence or findings in the *Phase 2 Reconsideration Report*.

NIRB's *Phase 2 Reconsideration Report* accepts the evidence from the impacted Inuit communities and the DIOs that the current Project's impacts were not fully predicted or foreseen at the time of original Project approval in 2013. The Report also concluded that Inuit knowledge is still insufficiently integrated into the adaptive management structures for the Project⁷ and that significant uncertainty remains regarding the adequacy of current Project monitoring and adaptive management.⁸

Inuit are therefore participating in the 2022 PIP Renewal review knowing that 'big picture' issues about the Mary River Project's impacts remain unresolved. On July 19, NIRB issued procedural directions for the 2022 PIP Renewal review, clarifying that NIRB will consider only a limited number of possible changed Project Certificate conditions for the Project in 2022 given time constraints and the lack of a Minister's decision yet on the Phase 2 project.

A 2022 PIP cannot proceed on the assumption of the same evidentiary basis as the previous 2018 and 2020 approvals for production increases, as this would contradict the findings of NIRB and the accepted evidence from the impacted Inuit communities about insufficiently-addressed current Project impacts. However, there is limited time or operational ability to fully identify and implement Project changes that address the concerns canvassed in the NIRB *Phase 2 Reconsideration Report*.

QIA recognizes that, in the short review process for the 2022 PIP Renewal, it is not possible to address the full scope of concerns about the Mary River Project that Inuit have described and NIRB has addressed in its *Phase 2 Reconsideration Report*. Having heard and seen the evidence in the Phase 2 hearing and having observed the actual impacts of the current Project, it is clear that these concerns must be addressed, however. QIA's view is that a significant reconsideration of current Project Certificate Terms and Conditions for the current Project is needed. Inuit share a common goal of ensuring Inuit concerns are addressed in the longer term, regardless of the outcome of this 2022 PIP Renewal review. For this reason, and as indicated earlier, QIA will not support any future expansion proposal until there is a significant reconsideration of existing Project Certificate Terms and Conditions

⁶ Baffinland, Memo to NIRB to Supplement the May 20 2022 Application, submitted June 15, 2022 ("*Baffinland Supplemental Submission for 2022 PIP*") ([NIRB Doc ID: 340177](#)).

⁷ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at pages x, 182, 190, 210, 218, and 245.

⁸ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 52.

IV. QIA's Comments on Specific Issues

A. Adaptive Management and Environmental Oversight

1. *Introductory comments re Adaptive Management Gaps and Issues*

It is clear the current Mary River Project Adaptive Management (AMP) system for the Project remains inadequate. The question is what can be achieved in the remainder of 2022 to address significant AMP issues, should NIRB and the Minister approve Baffinland's 2022 PIP Renewal.

Some AMP issues are larger and longer term concerns which required work beyond what can be achieved in 2022. A number of adaptive management plans remain incomplete, and the intended AMP systems are not adequately functioning, nine years after original Project approval. NIRB's *Phase 2 Reconsideration Report* notes that "the existing TEWG and MEWG have been unable to come to agreement about important components of adaptive management for the current Mary River Project, such as the selection of Early Warning Indicators" and that the "important work of the TEWG and MEWG did not progress during the [7 years of the Phase 2] assessment."⁹

There is still insufficient and inadequate data on Project interactions with key species such as narwhal and caribou (notably, with respect to integration of observations and experience of Inuit which are not yet properly integrated into the AMP process). NIRB has noted, for instance, that "data gaps in the regional monitoring of baseline conditions continue to persist and make the development of thresholds and indicators triggering adaptive management actions challenging."¹⁰

The actual process of triggering Project changes, through current AMP mechanisms for the Project such as the Environmental Working Groups, is not functioning adequately to address emerging unpredicted and unforeseen Project impacts (particularly on narwhal, and arising from dust dispersion). These QIA concerns about issues with the current AMP system (including the adaptive management plans which are still incomplete after nine years of Project approval) were extensively canvassed in the evidence in the Phase 2 hearing.¹¹

QIA proposes that the limited steps which are feasible for improving the Project's adaptive management within the short timeframe of the remainder of 2022 are, as detailed below:

- Requiring some immediate improvements to the functions of the Working Groups
- Appointing an independent project compliance monitoring body to oversee the implementation of AMP and other commitments (this is a new proposal to NIRB, and is consistent with similar positions in mines operating outside of Nunavut, notably the Ekati Diamond Mine in NWT).
- Commencement of the CRLU study (and associated studies) required for proper integration of Inuit IQ and perspectives into AMP.

⁹ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page x.

¹⁰ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 52 – 53.

¹¹ See, for instance, QIA's discussion of AMP concerns in the QIA Final Written Submission to NIRB re the Phase 2 Development Proposal, January 10, 2022 ([NIRB Doc ID: 337611](#)).

2. Improving the Function of the Working Groups

QIA has been vocal for many years that the Marine Environmental Working Group (“MEWG”) and Terrestrial Environment Working Group (“TEWG”) are not functioning as intended. The NIRB *Phase 2 Reconsideration Report* documents the extensive concerns about the Working Groups raised by many parties, including:

- Lack of efficacy, transparency, and responsiveness in the Working Groups’ functions;¹²
- Insufficient funding for full participation by the most impacted communities;¹³
- Decisions and advice provided by the MEWG and TEWG are non-binding, meaning Baffinland does not have to follow direction from them;¹⁴ and
- Baffinland chairs the MEWG and TEWG meetings, causing issues such as:
 - Inability for other Parties to set the agenda for what is discussed
 - Lack of adequate sharing of information for discussion in advance of meetings (as information is often shared at the last minute with not enough time for review)
 - Not producing meeting minutes in a timely and practical way (currently they are included in the Annual Report to NIRB)
 - Baffinland having no obligation to act on advice given by MEWG/TEWG members
 - Lack of information about why Baffinland does not act on MEWG/TEWG members’ advice when that occurs.

In its *Phase 2 Reconsideration Report*, NIRB notes that, “the original vision these Working Groups has not been realized.”¹⁵ NIRB agreed that concerns about the current function of the Working Groups were a serious current challenge, finding that the “Board views the ongoing challenges to the proper functioning of the Working Groups to be a critical gap in the monitoring and mitigation of project effects for the current Mary River Project and urges all parties to work together to address these issues.”¹⁶ NIRB noted the concern that “Baffinland has yet to demonstrate they have considered advice received and made changes to project monitoring, mitigation, and adaptive management practices to reflect the advice of other members of the [Working] Groups.”¹⁷

QIA has been in discussions with the impacted communities, Baffinland, and Canada about which changes could be made immediately and implemented in the remainder of 2022 to ensure that the MEWG and TEWG are better able achieve the intended goals of having input in to environmental decisions for the Project.

Based on these concerns and discussions regarding how they can be addressed, QIA is seeking the following commitment for immediate changes to the Working Groups, as noted in the Commitment Table above:

That the Project Certificate Terms and Conditions be amended to require the following amendments to the terms of reference for the Marine Environment Working Group and Terrestrial Environment Working Group, after consulting with existing members of each working group:

¹² This was concern raised by multiple parties, as evidenced in the NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)), for instance at pages 126, 143, 147, 187, 200 – 203.

¹³ Concern raised by MHTO, see NIRB *Phase 2 Reconsideration Report* at page 128.

¹⁴ Concern raised by multiple parties, see NIRB *Phase 2 Reconsideration Report* at page 187.

¹⁵ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 204.

¹⁶ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 211.

¹⁷ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 187.

- a. That an independent chair be appointed for each of MEWG and TEWG and that this independent Chair be responsible for scheduling and administering meetings including circulating meeting invitations, agendas and documentation.
- b. That the Working Groups' decision-making process be amended to provide that it must occur on a consensus basis between all working group member parties. with all votes and decisions in writing and recorded by the chair.
- c. That the Working Groups' decisions be recognized as enforceable recommendations, with provision that Baffinland may request not to enforce the recommendation at which point the matter shall go to the Project Monitor for resolution.
- d. That Baffinland fund the involvement of the impacted communities' HTOs in the Working Groups, with funding for 2 members from the MHTO in each Working Group and 1 member from each of the remaining four HTOs should they elect to participate in Working Group.
- e. That Working Group materials and records of decisions become public with the independent chair responsible for keeping and circulating minutes which shall be posted to the Baffinland website all meeting minutes once finalized and provided to Baffinland by the independent chair.

QIA believes these changes are necessary to ensure Inuit voices are heard at the Working Group table, and that the Inuit and western science expertise brought to the Working Group tables (by non-Baffinland participants) results in meaningful responses and changes as impacts issues emerge or require further study.

3. Proposal for an Independent Compliance Monitoring Body

Baffinland, NIRB, regulators, and Inuit now have seven years of experience dealing with the complex environmental management issues which arise for Nunavut's largest and most northern mine. Since NIRB first approved the Mary River Project in 2013, and since QIA's Board of Directors first approved the IIBA with Baffinland in 2013, QIA has been advocating for more attention and better enforcement of Baffinland's commitments.

Right now, the Project Certificate Term and Condition 179(c) requires Baffinland to file a bi-annual performance audit of commitments made in the IIBA and in the Project Certificate. Once the audit is done – in any fashion – and filed, the commitment is met, without the requirement or opportunity to assess the actual substance of the compliance with the commitments or whether there is actual measurable success in meeting the spirit and intent of the conditions in question.

The Parties involved in the environmental management of the Mary River Project have learned that project monitoring results can take a long time to receive, understand, and use as the basis to change the project – even when Inuit provide IQ and feedback on what needs to improve. The Phase 2 hearings, and NIRB's *Phase 2 Reconsideration Report*, have highlighted the complex adaptive management issues which exist for a Project with significant marine and terrestrial impacts not only in the Nunavut regions, but in a transboundary context. NIRB has indicated that it will not participate in the Working Groups, for instance, to assess their efficacy and ensure their proper function.¹⁸ Moreover, many Project commitments which require ongoing review, to ensure proper implementation, do not fall within NIRB's jurisdiction (notably, specific benefits commitments).

¹⁸ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 203 – 204.

Thinking about all of these issues QIA believes one way to improve the Mary River Project could be the creation of a “Compliance Monitor.” This would be a new role focused on overseeing the implementation of Baffinland’s commitments for the Mary River Project. The use of independent environmental monitors has become more common in recent years for mining projects in Canada, to assist in oversight of compliance with environmental and Indigenous rights commitments, and is even a requirement in some cases.¹⁹ The creation of independent compliance monitoring body has provided confidence for Indigenous communities, whose traditional lands and rights are affected by mines, that an impartial and independent third party will systematically report back not just to proponents and the Crown, but to affected Indigenous bodies regarding the adequacy of implementation of Project commitments.

QIA has discussed the concept of an independent compliance monitor (whether that is an individual or a monitoring body) with Baffinland and with Canada. The independent compliance monitor could provide more confidence to Inuit that the wide scope of Project commitments, which fall under various regulatory regimes, and in contractual agreements such as the IIBA, Commercial Lease, and Water Compensation Agreement, are being properly implemented.

QIA does not foresee a role for NIRB in direct oversight of the independent compliance monitor, but NIRB has a role in establishing a Project Certificate Term and Condition that ensures that this is in place in the regulatory process. QIA anticipates that the specific details of the role and mandate for this compliance monitor would need to occur in discussion with Baffinland and with Canada, as this position is related to Canada’s regulatory role and responsibility for ensuring matters which it is regulating have proper mechanisms to ensure compliance with regulatory conditions.

QIA is therefore requiring the following commitments as noted in the Commitment Table above, in order to support the 2022 PIP Renewal:

That the Project Certificate Terms and Conditions be amended to require that Canada appoint an independent compliance monitoring body be appointed by December 31, 2022.

That QIA and Baffinland request that Canada support the appointment of an independent compliance monitoring body, based on recommended or agreed nominees from QIA and BIM, to:

- a. oversee the implementation of Project commitments;
- b. ensure that the interests of impacted Inuit communities are substantially addressed in adaptive management development and implementation and benefit delivery;
- c. provide a bi-annual (twice yearly) report on the assessment about success of both parties in reaching benchmarks, with the first assessment due by February 15, 2023 about success in achieving initial commitments related to the 2022 PIP Renewal; and
- d. assist in resolution of dispute between the Parties regarding adaptive management and benefit delivery.

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For example, the Ekati Diamond Mine in the NWT has an Independent Environmental Monitoring Agency which was created to ensure that the concerns of impacted Dene communities regarding implementation of key project commitments which affect the exercise of Aboriginal rights were met through the impartial and independent monitor function. British Columbia has required Independent Environmental Monitors as a condition of project approval for projects undergoing Environmental Assessment since January 1, 2017. See, for instance, the BC report on the use of Independent Environmental Monitors at: <https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/compliance-and-enforcement/eao-em-and-iem-bulletin.pdf>. Canada has also been a party to agreements with proponents and Indigenous bodies to establish independent environmental monitors for other projects, such as the Pacific Northwest LNG Project.

4. *The AMP Matters Which Cannot Be Addressed in Any 2022 PIP Approval*

When NIRB recommended approval of the original Mary River Project in 2013, it relied on adaptive management commitments in doing so, and noted how critical proper adaptive management would be because of the absence of full information on project interactions due to data gaps regarding key wildlife populations:

As noted in preceding sections of this report, the Board feels that the Proponent's analysis of potential impacts to wildlife resulting from project interactions is lacking owing to current data gaps for wildlife populations such as caribou and marine mammals. As such, the Board feels a precautionary approach should be taken wherever such interactions have the potential to adversely impact upon the traditional harvesting or other cultural pursuits of Inuit, and further, that adaptive management will play an important role in implementing additional mitigative actions where monitoring data indicates adverse impacts may be occurring due to Project interactions.²⁰

In order to address this uncertainty, NIRB recommended that “the potential for significant adverse project effects could be limited by BIMC taking appropriate precautions and by ensuring an ongoing, pro-active and robust approach to adaptive management.”²¹

In the *Phase 2 Reconsideration Report*, NIRB found that, despite the terms and conditions in Project Certificate No. 005 directed at addressing uncertainty and data gaps for the Project, “data gaps continue to persist” for the Project.²² NIRB noted that the disagreements and gaps in understanding between Baffinland and the impacted Inuit organizations and communities about adaptive management solutions continues to present a great risk for the Project:

The Board has significant concerns that given the parties' respective positions and a seeming lack of mutual trust and understanding regarding the fundamental causes of the observed decline, relying so heavily on adaptive management to prevent significant adverse effects on this sensitive and vulnerable population that has such importance to Inuit, is risky and inconsistent with the precautionary principle.²³

QIA has consistently advocated that substantially improved adaptive management processes are needed to collect and integrate responses based on Inuit-led baseline information about environmental conditions to resolve these data gaps. The current adaptive management process does not adequately integrate Inuit Qaujimajatuqangit. Many of the individual adaptive management plans still lack the details needed to guide how and when the project will change if impacts are greater than acceptable or predicted, based on Inuit and western science observations.

QIA's view is that a proper adaptive management process for the Project is incomplete without the Inuit Stewardship Plan proposed by QIA during the Phase 2 hearings. The Inuit Stewardship Plan, developed by QIA and the impacted Inuit communities, would provide a framework for Inuit-led monitoring of impacts within communities and on the land, waters, and ice as a result of the Project. This is key in addressing the gaps in the current Project's integration of Inuit knowledge and responsiveness to impacts on Inuit rights.

²⁰ NIRB *Early Revenue Phase Report* ([NIRB ID 291199](#)) at page 142.

²¹ NIRB *Early Revenue Phase Report* ([NIRB ID 291199](#)) at page xii.

²² NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 91.

²³ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page page 179.

To complete the Inuit Stewardship Plan, other work must be finished. This includes the Culture, Resources and Land Use Assessment (to address gaps in the original IQ integration into the Final Environmental Impact Study), the Freshwater Assessment, and the Pond Inlet Country Food Baseline (as presented in detail in QIA's submissions at the Phase 2 hearings).²⁴ There also remains a need to identify Inuit OITRs and ensure Inuit input for the Cumulative Effects Assessments to provide baseline information for the CRLU assessment and AMP mitigations. These important projects will ensure that the Adaptive Management System will better reflect Inuit views on the impacts of the current project. Until these are complete, with the input and participation from Inuit from the most affected communities, the Adaptive Management System will not be able to address the concerns being raised by Inuit about the Project affects they are seeing. It is through this important work led by Inuit that QIA and communities will determine and express Inuit views on impacts for the current project. It is critical that NIRB support the steps necessary

QIA has discussed with the impacted Inuit communities and with Baffinland the steps that can be taken to immediately commence work on the CRLU reassessment. These commitments, required in order for QIA to support the 2022 PIP Renewal, are reflected in the Commitment Table above.

B. Marine Issues

1. *NIRB's Past Reviews of Marine Issues*

At the time of original assessment for the Project, the Board highlighted the importance of rigorous marine monitoring and adaptive management, given the critical marine habitat in the region and the reliance of Inuit communities on marine mammals for food and cultural purposes:

The NIRB believes that monitoring through the life of the Project will remain important to ensure that any observed impacts to marine wildlife can be mitigated, particularly at key times for migration, reproduction and harvesting. Through the terms and conditions of Project Certificate 005 and other regulatory approvals Baffinland will be required to demonstrate that its project activities are not resulting in adverse effects to marine wildlife and marine habitat, while providing the NIRB and regulators with sufficient evidence with which to monitor for project effects and overall compliance.²⁵

Baffinland's submission for the 2022 PIP Renewal provides the same technical submissions as the 2020 Production Increase Proposal which predicts that, "[b]ased on the results of monitoring programs carried out during the increased transportation and shipping activities associated with the Production Increase Proposal in 2018 and 2019, Baffinland concluded that no significant adverse effects would occur as a result of maintaining the 6 Mt/a rate".²⁶

The Ministers introduced new Terms and Conditions No. 183 and 184 in the 2020 Project Increase approvals in response to escalating concerns from Inuit communities about observed impacts of Project shipping on marine mammals. These new Terms and Conditions required Baffinland to collaborate with the MEWG to develop, and implement, impact avoidance and mitigation strategies to protect the marine

²⁴ QIA Final Written Submission to NIRB re the Phase 2 Development Proposal, January 10, 2022 ([NIRB Doc ID: 337611](#)).

²⁵ Nunavut Impact Review Board Public Hearing Report Mary River Project: Early Revenue Phase Proposal, March 2014, p. xii (the "NIRB Early Revenue Phase Report") ([NIRB ID 291199](#)) at page 123.

²⁶ Nunavut Impact Review Board, *Reconsideration Report and Recommendations, [2020] Extension Request to the Production Increase Proposal, Baffinland Iron Mines Corporation*, March 4, 2020 ([NIRB ID 328809](#))

environment, and to collaborate with the MEWG to review compliance with all terms and conditions related to marine environmental protection.²⁷

The Phase 2 hearing heard extensive evidence, however, about continuing concerns about marine mammals impacts of the Project,

Inuit are consistently indicating that they are observing and experiencing impacts from the current Project on the marine environment and have also conveyed to the Board that these ecosystemic effects are directly affecting their cultural practices and harvesting activities. The Proponent's reliance on its adaptive management practices to date have been unable to address these issues as brought forward by community members.²⁸

NIRB's *Phase 2 Reconsideration Report* concluded that the evidence raised questions about the effectiveness of the current marine monitoring programs for the Project, finding:

Baffinland's inability to use the data from their existing monitoring program to infer causes for the decline creates uncertainty as to the effectiveness of the existing programs to identify, prevent, and adaptively manage effects that differ from the Proponent's predictions.²⁹

Meanwhile, the data that is available supports concerns that narwhal populations, particularly, continue to decline significantly in the Project area. The Department of Fisheries and Oceans data shows that the narwhal population decreased from 20,000 to 12,000 between 2004 and 2016. More recent abundance reports show a continued decline to 10,000 narwhal in 2019 and 5,000 in 2020. The recent survey conducted for BIM shows a further significant decline in 2021.³⁰

The successful mitigation of Project-related impacts to marine mammals such as narwhals and seals is needed for a sustainable Project, and the significant declines in narwhal abundance in Eclipse Sound indicates that mitigation employed during the recent years of Production Increases was not successful.

2. Project Amendments, to Protect the Marine Environment, That Can Be Made in 2022

The only suggested changes to Project operations, mitigation plans, or monitoring that Baffinland submits in the 2022 PIP Renewal is to marine shipping plans. Baffinland makes the following new commitments that are different than those made in its 2018 and 2020 production increase applications:

- No icebreaking to commence the 2022 shipping season;
- No more than 80 ore carriers during the 2022 season (6 less than the maximum anticipated and approved in the 2019 and 2020 for 2019 – 2021); and
- Use of convoys to further reduce total sound exposure.³¹

Baffinland also proposed to continue existing marine monitoring including:

- The Marine Mammal Aerial Survey Program

²⁷ Minister's Decision re Extension Request to Production Increase, May 25, 2020 ([NIRB ID: 330105](#)); NIRB Project Certificate No. 005, Amendment 003, June 18, 2020 ([NIRB ID 330476](#)).

²⁸ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 219.

²⁹ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 180.

³⁰ WSP Golder, 2022. Draft 2021 Marine Mammal Aerial Survey Program - Technical Data Report. Prepared by Golder WSP Golder for Baffinland Iron Mines Corporation. Document No. 1663724-R-RevB-49000. 23 March 2022.

³¹ *Baffinland Supplemental Submission for 2022 PIP* ([NIRBID: 340177](#)) at page 5.

- The Bruce Head Shore-Based Monitoring Program
- The Ship-Based Observer Program
- The Passive Acoustic Monitoring Program³²

QIA supports the continued use of the monitoring programs listed above, with input from MEWG on how these can continue to be improved.

QIA notes that Baffinland is not proposing any new or revised marine monitoring programs and explicitly rejects the need for a ringed seal monitoring plan for the Eclipse Sound area based on the 2021 survey results.³³

Baffinland's proposal to use vessel convoys is one of the few new proposed mitigation tools for 2022, but (as detailed in QIA's Technical Comments table below), there has not been enough information provided to assess the likelihood of this being successful.

QIA understands the reality that it is not feasible, in the short review period and implementation period for the remainder of 2022, to significantly amend or put in place most new mitigation or monitoring programs needed to address the scope of marine impacts issues canvassed in the Phase 2 hearings.

QIA sees marine impacts issues as a key concern for the current Project, however, and recommends that NIRB consider the following Project Certificate amendments (listed in the Commitments Table above) could be made in 2022 to enhance environmental protection and adaptive management on the most critical issues:

- That the Project Certificate be amended to specifically require that all shipping and icebreaking for the Project cease by October 31, 2022, and that icebreaking not occur when ice is greater than 3/10 coverage, unless otherwise supported in writing by the MHTO and QIA.
- That Baffinland and QIA develop, by September 30, 2022, specific technical plans for the remainder of 2022 for Early Warning Indicators for narwhal.
- As noted above, that immediate changes occur to the Marine Environment Working Group decision-making and participation processes.

QIA is also seeking the following commitments that would start in 2022 but which will not be complete by the end of the 2022 shipping season:

- That Baffinland conduct a sampling program to assess cortisol levels in narwhal and morphometric measurements. This would be a systematic program working with harvesters to gather samples, and observations on what they are experiencing and comparing to previous years
- That Baffinland provide scenario planning exercises to better quantify the costs/benefits of ship convoys.
- That Baffinland conduct a study to see assess the simple seasonal average observer data from Bruce Head and the Leg 2 surveys correlates with the photo estimates for all the years to assess whether these metrics could provide an EWI for the year's results that would be applied in future to increase or decrease shipping at the end of summer.
- That QIA and Baffinland jointly develop and approve the adaptive management elements for monitoring programs and Inuit OITRs for the AMP related to narwhal, seal, Arctic char, caribou, dust and culture, resource and land use.

³² Baffinland Supplemental Submission for 2022 PIP ([NIRB ID: 340177](#)) at page 8 – 9.

³³ Baffinland Supplemental Submission for 2022 PIP ([NIRB ID: 340177](#)) at page 11.

QIA is also seeking the following commitments from Baffinland for 2022, which are outside of the NIRB mandate but relevant to this review:

- Immediate payment of the \$1,000,000 for wildlife compensation funds which Baffinland committed to paying the MHTO after the completion of the Phase 2 Public Hearing.
- An additional \$1,000,000 compensation to the MHTO for loss of wildlife harvesting opportunities in 2022.

3. Longer Term Marine Environment Priorities

QIA recognizes that not all marine management plans and issues can be addressed in 2022. Some improvements require more time and effort to make sure they are effective. The impacted communities have informed QIA that, in addition to addressing narwhal concerns, there is also a critical need to look at commitments which would better protect ringed seal and Koluktoo Bay char from the impacts of the current Project.

As mentioned elsewhere in this submission, work is needed now but cannot be completed within 2022 on key adaptive management mechanisms for the marine environment, such as the Inuit Stewardship Plan, the CRLU Reassessment, the Pond Inlet Country Food Baseline Study, and the development of better Objectives, Indicators, Thresholds, and Responses (including Inuit-knowledge informed OITRs) to trigger adaptive management responses.

In the longer term, QIA is committed to working with the impacted communities, Baffinland, DFO, and others to advance the following work to continue to strengthen marine monitoring and responses.

With respect to narwhal, QIA is more generally seeking (in 2022 and beyond) that the following work continue:

- confirmation that DFO's sample collection of hunted narwhals will continue;
- confirmation that DFO will continue to monitor cortisol levels in narwhal as long as Baffinland is shipping and during Project closure;
- information from DFO about what baseline data is available to measure narwhal blubber depth as a way to monitor body condition, and confirmation that DFO will work with Inuit harvesters on a program to measure narwhal blubber including measuring blubber depth at different body locations, other standard measures like total length, girth, and fluke width;
- continued work on the Bruce Head survey which has been happening for a number of years and provides valuable information on narwhal presence near Qinnuaq;
- continued aerial surveys, to supplement the surveys completed in 2013, 2016, 2019, 2020, and 2021, as these surveys provide helpful information about the Eclipse Sound narwhal population; and
- continued work to develop clear thresholds and response mechanisms for narwhal, including clear response plans about what will happen if narwhal numbers (for instance, as shown in aerial surveys) do not improve.

With respect to ringed seal, QIA is seeking (in 2022 and beyond):

- The establishment of "early warning indicators" for ringed seals; and
- A plan for improving better baseline information for ringed seals.

With respect to arctic char, QIA is seeking (in 2022 and beyond):

- Sampling of char for contaminants and genetic testing;

- The development of studies that support better understanding of where fish using the port area are overwintering and spawning (i.e. which populations may be more exposed and at greatest risk); and
- Continued work to support the studies being conducted by MHTO and Minnow Environmental Inc. at Koluktoo and Tugaat Lakes on char.

C. Dust Issues

1. Concerns Continue to Emerge Regarding Dust Impacts

In its May 20, 2022 letter requesting NIRB review of the 2022 PIP Renewal, Baffinland submits that, “extensive environmental monitoring of key environmental components (water quality, vegetation health, fish health, etc.) have shown that dust from the Project is not resulting in significant adverse impacts on the environment.”³⁴

Baffinland is not proposing, in its 2022 PIP Renewal, to make any new changes to the ore extraction, processing, ground transportation of ore to Milne Port or stockpiling of ore to address dust issues.³⁵ Baffinland intends to use the existing dust suppression program and did not propose other amendments to project monitoring or operational changes to mitigate dust impacts.³⁶ Baffinland also commits to work with QIA and the communities on dust concerns including through implementation of the recommendations from the yet-to-be-released Interim Dust Audit Report.³⁷ QIA has also been conducting a dust study, and the results of a QIA dust inspection in 2022 will be released shortly.

Baffinland’s continued assertion that “dust from the Project is not resulting in significant adverse impacts on the environment ” is contrary to Inuit observations and the significant body of evidence in the Phase 2 hearing regarding dust impacts of the current Project. NIRB accepted the evidence, in the Phase 2 hearings, that Inuit harvesters are “experiencing difficulties in harvesting wildlife and are worried about and/or no longer consuming country food due to dust pollution, which has a significant and detrimental effect on their food security.”³⁸

NIRB concluded, in the *Phase 2 Reconsideration Report*, that “the successful longer-term implementation of effective adaptive and mitigation strategies has remained difficult for Baffinland” in response to emerging dust issues.³⁹ NIRB concluded that the lack of effectiveness of the current dust monitoring and mitigation programs reduced NIRB’s confidence in the effectiveness of Baffinland’s proposals for adaptive management for dust for the proposed Phase 2 expansion.⁴⁰

Inuit concerns about dust in the environment (areal extent and accumulation locally) are well documented at current production levels. Western science shows dustfall has exceeded the original Final Environmental Impact Statement predictions along the Tote Road in each successive annual report, despite Baffinland’s efforts to mitigate these impacts using different dustfall treatment options. QIA’s specific technical concerns about the sustained exceedances of dustfall is discussed in further detail in QIA’s Technical Comments Table, below.

³⁴ Baffinland Letter to NIRB, *Request for Reconsideration of Term and Condition 179 of Project Certificate No. 005, to Maintain Status Quo Transportation Limits at 6 mtpa*, May 20, 2022, ([NIRB ID 340060](#)) at page 6 and Appendix 5.

³⁵ Baffinland Supplemental Submission for 2022 PIP ([NIRB ID: 340177](#)) at page 4.

³⁶ Baffinland Supplemental Submission for 2022 PIP ([NIRB ID: 340177](#)) at page 4.

³⁷ Baffinland Supplemental Submission for 2022 PIP ([NIRB ID: 340177](#)) at page 21, and Appendix A at page 27.

³⁸ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 221.

³⁹ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 207.

⁴⁰ NIRB *Phase 2 Reconsideration Report* ([NIRB ID 339558](#)) at page 208.

Inuit communities, meanwhile, continue to highlight in discussions with QIA the growing concern about Inuit first hand observations of dust impacts from the Project, and how iron ore dust dispersion from the Project is directly affecting Inuit harvesting, cultural, and land use activities.

The dust issues raised by Inuit in the region, based on first hand observations and experience (including by harvesters in Igloolik more than 200 km from the mine), include:

- concern about eating animals entrained with iron ore dust;
- the need to now carry fresh water for hundreds of kilometres when using the land because snow and freshwater is entrained with dust, which also creates additional logistical difficulty and cost for travel to access country foods; and
- the impact of ore dust in accelerating snow and ice melt, and changing snow and ice conditions in areas used by Inuit for food and cultural purposes.

QIA's key concerns about dust include the following issues:

- Current dust modelling continues to consistently underpredict dust impacts;
- Current dust monitoring techniques are ineffective, and current dust monitoring locations are inappropriate;
- Evidence shows the dust is moving further away from the Mine site and having impacts outside of the originally predicted Project 'zone of influence';
- The definition of "contact snow" is not capturing iron ore dust in the vicinity of mine operations, only snow right on the pads of the Project is defined as "contact snow", and not adjacent snow removed from the pads which is entrained with dust and producing untreated run off.

The amount Project-related dust and sediment entering aquatic environments along the Tote Road directly or in runoff from surrounding areas is also still unknown. The destinations and effects of these materials, and associated dust suppressants and rubber tire particulates on the ecology of fish-bearing streams and lakes along the tote road are unknown. Neither the amount of sediment nor its effects are monitored and both are unlikely to decrease if truck traffic continues at the 6 mtpa level.

2. Project Amendments, to Address Dust Issues, That Can Be Made in 2022

The top priority for addressing dust impacts is covering spots where ore is moving or handled at the mine and port. Current shrouding efforts are insufficient and often shrouds are not in place due to "repairs", lack of shrouding materials, and other reasons. Dust monitoring locations and methods must improve, immediately, to address (1) the iron rich dust at the mine and port; (2) the iron rich dust entrained on trucks; and (3) the impact of plumes of 'regular' road dust which doesn't travel far but which creates vertical plumes (as evidence from other mines shows caribou deflect tens of kilometres away from truck traffic dust plumes).

Baffinland has indicated in direct discussions with QIA that Baffinland is constrained in 2022 from making Project changes to address dust issues (for instance, through additional dust shrouding), because the sealift order season is already passed and monitoring plans are already in place for 2022.

QIA believes that every possible effort must be made to reduce dust dispersion, and some commitments (beyond existing dust suppression efforts) are feasible in 2022. Every effort should be made to cover spots where ore is moving or handled at the mine and port sites (eg onto and while on conveyor belts, when loading onto trucks, or discharging into ship holds). These are the highest risk spots for dust.

Dustfall modelling should be updated and monitoring conducted to assess the effects of dust dispersion including the magnitude, composition, and effects of sediment loading on aquatic receiving environments and inform adaptive management. Validation of a sediment impact threshold for Arctic char egg survival is also needed for this assessment.

QIA is therefore requiring the following commitments for specific actions in 2022 in order to support the 2022 PIP Renewal, and as detailed in the Commitment Table above:

- That the Project Certificate Terms and Conditions be amended to require that Baffinland immediately establish an Inuit-led monitoring program on dustfall as a pilot program to establish the mechanisms needed to allow Inuit observations to influence mitigation measures and test appropriate AMP structures, which are demonstrably responsive to Inuit OITRs, with the budget and work plan agreed upon by Baffinland and QIA prior to commencement.
- That the Project Certificate Terms and Conditions be amended to require Baffinland to establish a program for identification of days with high risk for dust dispersal, and a plan for additional measures to be taken on those days to reduce the volume of trucks using the Tote Road, the amount of ore being handled and transported at the Mine and Port, and the use of additional dust suppressants on the Tote Road and at the Mine and Port on those days.
- That the 2018 NIRB monitoring recommendation 2 related to dust management be stringently applied to fish-bearing streams and lakes along the tote road

In addition, QIA is seeking the following commitments that would start in 2022 but which will not be complete by the end of the 2022 production season, as detailed in the Commitment Table above:

- That Baffinland establish long-term monitoring sites to assess Project impacts on the water quality, sediment deposition, and biota in Phillips Creek.
- That future DFO permitting for this Project consider the potential impacts of elevated dustfall and eroded sediment from Project activities on juvenile Arctic Char in Tote Road streams, and require studies be conducted should the information prove to be inadequate for impact assessment.
- That Baffinland establish a meaningful sedimentation threshold based on mortality rates of Arctic Char eggs exposed to Project-generated dust sediment.
- That, within 3 months of the receipt of the approvals for the 2022 PIP, Baffinland will implement all recommendations for improving their dust monitoring programs, including improved locations of monitoring sites to ensure that stations are not in the “lee” of the wind; alignment of dustfall monitoring with existing vegetation monitoring programs so that the two programs can inform each other; use of passive vertical monitoring in addition to the current isopropyl monitors; continuous monitoring of dustfall at PDA boundaries; finalize methods for bi-weekly regional dustfall extent monitoring using satellite imagery; and other recommendations for dust monitoring improvements contained within the final Dust Audit Report. These improved methods will be included in a revised version of the Air Quality and Noise Abatement Management Plan. Dust monitoring will be used to reassess the impacts of dust from the Project on key receptors, determine the efficacy of existing mitigation measures, and determine if additional mitigation measures are needed.
- That within 3 months of the receipt of approvals for the 2022 PIP, Baffinland will implement all recommendations of the draft Final Dust Audit Report.
- That Baffinland improve dust control at all locations where ore is moving or being handled at the mine and port sites.
- That within 3 months of the receipt of approvals for 2022 PIP, Baffinland will initiate a remote sensing monitoring program to investigate the impacts of dust on lichen health in the Project area.

This remote sensing monitoring program will be designed with input by the TEWG. This information will be used to inform the zone of influence re-estimation for caribou.

- That, within 6 months of the receipt of approvals for 2022 PIP, Baffinland will implement all recommendations from the TEWG and/or QIA and the MTHO for improving their vegetation monitoring programs to ensure that metal uptake by vegetation is properly considered.

D. Caribou

Caribou are critically important for Inuit on North Baffin, and the ability of Inuit from the impacted communities to harvest caribou within the Project area is significantly curtailed at present.

Baffinland has continued to downplay Inuit concerns about Project impacts to caribou, suggesting instead that their monitoring programs have failed to detect caribou because of low population numbers.

At current production levels, impacts to caribou have been higher than predicted in the original assessment of the Project. Inuit continue to report a steady decline in caribou and avoidance of the Project area due to the activity associated with the mine.

Given the importance of the Project area for caribou and concerns raised by Inuit at the current production levels, immediate efforts must be made to properly identify the zone of influence around the Project based on Inuit Qaujimagatugangit and scientific information, conduct a full IQ study of caribou to determine priority areas for Caribou Protection Zones within the Project area, and enact additional mitigation measures based on input from Inuit.

Furthermore, the sensitivity of caribou on North Baffin at low population levels requires that a precautionary approach be taken to reduce the likelihood that caribou will continue to avoid the Project area.

Baffinland's 2022 PIP Renewal application proposes a continued and sustained increase in blastings and explosives use to extract 40% more material from the ground, as well as increased helicopter activity and use of the Tote Road for hauling ore.

Baffinland's memo providing supplemental information for the 2022 PIP Renewal fails to recognize concerns raised by Inuit, upholding instead the efficacy of their existing monitoring programs: "Baffinland remains confident that the results of the caribou monitoring programs are a by-product of the low regional abundance numbers in caribou, and not due to a methodological issue with the programs."⁴¹ The Baffinland 2022 PIP Renewal application makes no reference to Inuit concerns, raised many times in NIRB reviews of the Project, that caribou are avoiding the Project area at the current production level.

Inuit concerns about noise in the environment and impacts of noise on caribou are well documented. Baffinland's noise monitoring study conducted in 2020 suggested noise levels are higher than originally predicted for the Project. Furthermore, sustained and higher than predicted dustfall levels (both in terms of amount and extent of dustfall) have raised concerns that the zone of influence and coefficients of habitat disturbance around the mine have been under-estimated, leading to insufficient mitigation measures. QIA's technical concerns on these matters are detailed in the Technical Comments Table, below.

⁴¹ Baffinland Supplemental Submission for 2022 PIP ([NIRBID: 340177](#)) at page 11.

Given that all of the concerns raised to date related to caribou avoidance of the Project area, QIA is asking for the following commitments, for which more detail is provided in the Commitment Table above and the Technical Comments Table below:

- That immediately following the receipt of approvals for the 2022 PIP, Baffinland will implement the following additional mitigation measures for caribou:
 - a) no blasting within 5 km of all suitable caribou calving and post-calving habitat during the caribou calving period and immediately post-calving, with these dates to be determined by the MHTO;
 - b) helicopters to maintain a 2 km horizontal distance from all suitable calving and post-calving habitat during the caribou calving period and immediately post-calving, with these dates to be determined by the MHTO;
 - c) when caribou are observed along the Tote road, immediate stoppage of hauling for a suitable period of time to be determined in collaboration with the MHTO and the TEWG.
- That within 3 months of receipt of approvals for the 2022 PIP, Baffinland will provide funding to QIA to conduct a full study of caribou on North Baffin based on Inuit Qaujimagatuqangit, to identify areas within the vicinity of the Project that are highly sensitive for caribou (Caribou Protection Zones) and to gather data to support the re-estimation of the Zone of Influence around the Project. This Study will be led by QIA in conjunction with the HTOs. The results will be used by QIA to re-estimate the Zone of Influence around the Project and will inform the enactment of additional mitigation measures for caribou.
- That within 12 months of receipt of approvals for the 2022 PIP, Baffinland will work with QIA to re-estimate the Zone of Influence for caribou around the Project, using both Inuit Qaujimagatuqangit and western science to determine the extent of reduced habitat suitability around the mine and the likely impacts to caribou at a regional scale. This re-estimated Zone of Influence will be monitored over time as caribou numbers increase, to assess the effectiveness of mitigation measures.
- That within 18 months of receipt of approvals for the 2022 PIP, Baffinland will implement all mitigation measures for caribou identified by QIA and the HTOs, to ensure that impacts to North Baffin caribou—which are highly sensitive at low points in their population cycles and must be supported to recover—are reduced to the extent possible. QIA and the HTOs may choose to involve the TEWG as an advisory group for the development of appropriate mitigation measures.

E. Project Reconsideration

Even if the 2022 PIP Renewal is approved based on the limited number of revised or new Terms and Conditions which are feasible to implement in 2022, Inuit will not see in 2022 the scale of changes to the Project and the adaptive management that Inuit know are needed.

The MHTO, in its submission to NIRB on the 2022 PIP, says that “the time has come for a broader reconsideration of the terms and conditions of the Mary River Project.”⁴²

QIA agrees with MHTO’s evaluation shared in its submission to NIRB on July 4, 2022:

⁴² Mittimatalik Hunters and Trappers Organization Response to NIRB Request for Comments on the Baffinland Production Increase Proposal, July 4, 2022 ([NIRB ID 34062](#)), at Page 6.

The existing terms and conditions have not been able to achieve their purpose in preventing, managing or mitigating the significant adverse effects of the Mary River Project on marine mammals and fish, caribou and other terrestrial wildlife, along with vegetation and freshwater, and the socio-economic effects on Inuit harvesting, culture, land use and food security in Nunavut. The significant adverse effects from the Mary River Project as felt by Inuit are significantly different than those anticipated at the time that the certificate was issued and at the time the previous production increases were considered. Further, the difficulties that have arisen in implementing the terms and conditions, including the lack of adequate monitoring, the disfunction of the working groups and the lack of success of adaptive management, were not anticipated at the time the certificate was issued or at the time the previous production increases were considered.⁴³

QIA and Inuit parties have provided volumes of information to NIRB both written and orally, in seven different NIRB reviews, since the original Mary River Project application.

In the nine years since original approval (for a different Steensby-based project), the current Mary River Project has only gone through an impact assessment for 3.5 mtpa. The 4.2 mtpa “Early Revenue Phase” adjustment was approved by NIRB without a reconsideration or assessment process. The 6.0 mtpa Production Increase Proposal in 2018 was approved by NIRB based on Baffinland’s submission of a short FEIS addendum and shortened review process, and initially not approved by NIRB to proceed. The 2020 6.0 mtpa Production Increase Proposal Extension was approved in a shortened review process based on the same information as the 2018 proposal.

Meanwhile, the Phase 2 hearing process, and seven years of experience with the Project as it began and increased production and shipping, meant that Inuit have been providing comments and observations through public review, annual report review, and workshop processes that Inuit in the impacted communities are experiencing impacts that are beyond the FEIS predictions, right now.

NIRB required a very narrow scope for review of the 2022 PIP, which was necessary given the lack of any Minister’s decision yet on the Phase 2 project and the very limited timelines for a NIRB and Minister’s decision on (and Baffinland implementation of) a 2022 production increase. QIA remains of the view, however, that a thorough reconsideration of the Terms and Conditions for the existing Mary River Project is overdue and necessary, although the 2022 PIP is not an opportunity for this.

It is QIA’s view, however, a robust evaluation and update of the current Project’s terms and conditions must occur before any further Project expansion or modification approvals (after this 2022 PIP Renewal review, where a more substantive review is not possible given time constraints).

This is particularly important if Baffinland proposes to return to plans to build the original transportation route to, and port site, at Steensby Inlet. The original Project proposal for the Steensby-based project, which has never been built, is now almost 15 years old. QIA has heard from the Inuit in Igloolik that they are experiencing dustfall concerns, over 200 km from the existing Project (and they are concerned about the impacts when and if the Project moves closer, including the types of marine impacts being reported by Inuit in Pond Inlet and Clyde River). For this reason, the Igloolik HTA has indicated that it supports the 2022 PIP Renewal, “pending the following conditions” which include “We request that BIM do a baseline study in partnership with Igloolik/Hall Beach HTAs for marine, terrestrial and avian wildlife before construction beings for [Steensby] Phase 1.”⁴⁴

⁴³ Mittimatalik Hunters and Trappers Organization Response to NIRB Request for Comments on the Baffinland Production Increase Proposal, July 4, 2022 ([NIRB ID 34062](#)), at Page 5.

⁴⁴ Igloolik HTA Motion and Letter of Support, August 9, 2022 ([NIRB ID: 341281](#)) at page 2.

Inuit and Baffinland have worked together in an effort to “stabilize” the Project’s environmental, Inuit rights, and socio-economic impacts, and to stabilize the Project financially. Inuit, Baffinland, and regulators now have the experience of a decade of non-stop regulatory hearings, escalating Inuit concern about observed impacts of the Project on harvesting and culture, regular threats of job losses due to Project financial challenges, and now-affirmed evidence (in the Phase 2 hearing) that the original Project still faces key issues with adaptive management due to key data gaps (including IQ) to inform the environmental management process.

A key reason for the lengthy, contentious and resource-consuming reviews of the four Baffinland proposals for Project expansions since 2014 is the ongoing uncertainty regarding the accuracy of original effects assessment and the incomplete adaptive management plans and process. Without the foundation of an accurate assessment, fully informed by the best data and information including Inuit knowledge, future NIRB reviews will continue to be enormously time -consuming and impose a significant financial and administrative burden on all Parties without necessarily achieving the goals of protecting and promoting the well-being of Inuit and the environment and Project financial stability.

QIA will therefore not be supporting any further Project expansion or change proposals until a broader reconsideration of the terms and conditions of the current Mary River Project has occurred.

V. Technical Comments on Specific Project Certificate Terms and Conditions

Note that the specific recommendations related to these Technical Comments are in the Commitments Table in Section II above.

Review Comment QIA-01	
Subject: Freshwater Aquatic Environment - Environmental Monitoring	
References:	
<ul style="list-style-type: none"> Baffinland. 2022. MEMO - Production Increase Proposal Renewal June 15, 2022 [NIRB Registry File: "220615-08MN053-PIP Renewal Supp Info Package-IMTE.pdf" (including Appendix B - "Vessel Convoys as a Means of Noise Mitigation")] NIRB Project Certificate Terms and Conditions 10 and 21 Ministers Approval Re Production Increase (181001-08MN053-Ministers Approval Re Production Increase-IA2E.pdf) NIRB 2018 Monitoring Recommendations (181108-08MN053-NIRB Ltr to Baffinland Re 2018 Board Monitoring Recommendations-OT5E.pdf) EDI (Environmental Dynamics Inc.) 2021. Mary River Project terrestrial environment: 2020 annual monitoring report. Prepared for Baffinland Iron Mines Corporation, Oakville, ON April 2021. Draft 533 pp. [Baffinland Kiteworks file: 2020 Terrestrial Environment Annual Monitoring Report Draft for TEWG.pdf] EDI (Environmental Dynamics Inc.) 2022. Mary River Project terrestrial environment: 2021 annual monitoring report. Prepared for Baffinland Iron Mines Corporation, Oakville, ON April 2021. Draft 328 pp. [Baffinland Kiteworks file: 2021_BIM_Terrestrial_AMR Draft for TEWG.pdf] NIRB (Nunavut Impact Review Board). 2022. Reconsideration report and recommendations for Baffinland's Phase 2 development proposal. Baffinland Iron Mines Corporation Project Certificate No. 005. NIRB File No. 08MN053. 441 pp. [NIRB Registry File: 220513-08MN053-Phase 2 Development Reconsideration Report and Recommendations-OCHE.pdf] 	
Summary:	
<p>The amount Project-related dust and sediment entering aquatic environments along the tote road directly or in runoff from surrounding areas is still unknown. The fates and effects of these materials, and associated dust suppressants and rubber tire particulates on the ecology of fish-bearing streams and lakes along the tote road are also unknown. Neither the amount of sediment nor its effects are monitored and both are unlikely to decrease if truck traffic continues at the 6 Mt/year level. Dustfall modelling should be updated and monitoring conducted to assess the magnitude, composition, and effects of sediment loading on aquatic receiving environments and inform adaptive management. Validation of a sediment impact threshold for Arctic char egg survival is also needed for this assessment.</p>	
Importance of Issue:	
<p>The potential impacts on freshwater habitats and biota from dustfall and sediment mobilized by approved and proposed Project activities cannot be assessed based on the current monitoring program.</p>	
Detailed Review Comment:	
<p>1. <i>Gap/Issue</i></p> <p>The Proponent has not adequately assessed the potential impacts on freshwater habitats and biota of dust and sediment mobilized by Project activities under the approved 4.2 Mt/year iron ore production limits or at the proposed 6 Mt/year limit.</p> <p>2. <i>Disagreement with Conclusion</i></p> <p>The Proponent's conclusions cannot be adequately assessed based on the information currently available.</p> <p>3. <i>Reasons for disagreement with conclusion</i></p> <p>NIRB has heard community concerns regarding how long it has taken Baffinland to adopt effective dust mitigations, and community frustration that resolution of their concerns about dust with the existing Project remain unresolved (NIRB 2022). QIA shares these concerns as its efforts to learn from Baffinland how much Project-related sediment is entering tote road streams as dustfall (directly or in runoff) or sediment (from erosion), where it goes, and how it affects the stream ecology and Arctic Char health have been unsuccessful. Resolution of ongoing dustfall concerns and filling of dustfall</p>	

monitoring gaps is an ongoing concern that should be addressed for the approved 4.2 Mt/year ERP and for any higher production rate.

Terrestrial dustfall is measured but the amounts of Project-related dust and sediment that enter tote road waterbodies—particularly Phillips Creek, are still unknown. This is despite the Nunavut Impact Review Board's 2018 Monitoring Recommendation 2, which directed the Proponent "...to implement long-term monitoring programs for dustfall and specifically assess potential sediment deposition, impacts on water quality, impacts to biota at fish-bearing streams and lakes along the tote road (including at Phillips Creek)..." (NIRB 2018 Monitoring Recommendations, p. 2 of 11; delivery 2018 Annu. Rep.). NIRB has not enforced this direction and Fisheries and Oceans Canada (DFO) has not addressed it in its permitting requirements.

Since the 2018 monitoring directive Baffinland has ramped up its dust control measures along the Tote Road but dustfall continues to exceed predictions (e.g., EDI 2021, 2022). In 2021, 17 of the 18 sites along the tote road monitored for dustfall year-round received dustfall above the levels predicted in the ERP FEIS (EDI 2022: Table 7-4, p. 60). This was despite the application of 22,900 kg of calcium chloride (CaCl) and approximately 514,801 L of DustBlockr to suppress road dust dispersal (EDI 2022, Sec. 7.2, p. 37). The environmental costs and benefits of using CaCl and DustBlockr to reduce dust dispersal have not been clearly presented. If the Production Increase Proposal Extension is approved ore transport by truck could increase from the 2021 level by up to 13% (i.e., from 5.3 Mt/yr to 6 Mt/yr).

Fugitive dust is generated by Project activities such as the mining, transport, milling, stockpiling, and transfer of iron ore; disturbance of road surfaces by traffic and for maintenance or realignment; and quarry operations. Other sediments are mobilized by activities such as culvert installation and replacement, roadbed erosion, and snow clearing. Streamflow, particularly associated with rainfall events and the spring freshet, can collect, and transport the terrestrial dustfall and other sediment from these activities downstream until they are deposited on the bottom. Sediment and dustfall from the Project are likely to continue entering these streams at elevated levels for years, perhaps decades. The magnitude and composition of these inputs are unknown but may include metals and rubber particulates released by truck tire wear.

Current Project Certificate Conditions (PCC) 10 and 21 do not adequately address the need to better understand dustfall and sediment effects on stream ecosystems crossed by the Tote Road. In its final closing statement of the Phase 2 review QIA recommended changes to PCC 21 to close this gap (NIRB Registry File: 220110-08MN053-QIA Final Closing Statements-IMTE.pdf, p. 336 of 467).

When approving the Production Increase Application the Ministers added a requirement for implementation to Project Certificate Term and Condition (PCTC) 10: *"The Proponent shall implement its Dust Management and Monitoring Plan, report all monitoring data to the NIRB annually, and take all adaptive management measures described in its Dust Management and Monitoring Plan if monitoring indicates that dust in the ambient air or dust deposition from the increased traffic associated with the increased volume of ore being shipped is greater than initially predicted."* (NIRB Registry File: 181001-08MN053-Ministers Approval Re Production Increase-IA2E. pdf, p. 3 of 7). Adaptive management measures for monitoring effects of increased dustfall, as required under PCTC 10, have not been identified for affected aquatic environments.

Project Certificate Condition 21 requires the Proponent's Aquatic Effects Monitoring Program (AEMP) include measures of dustfall monitoring designed "[t]o assess the seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems...". The potential impacts of dust dispersal on affected aquatic environments are uncertain. They will be determined in large part by the quantity, quality, location, and seasonality of dust deposition during the life of the Project. Sediment deposition could alter benthic communities and reduce productivity, including fish egg survival. Dust in sufficient quantity can reduce light transmission through ice (Light et al. 1998) and thereby reduce biological productivity under the ice. Satellite observations suggest that Project-related dust is advancing the timing of the spring snow melt adjacent to the Tote Road Milne Port and Mine site by about 2 weeks (P. White, NR Can, August 4, 2022 presentation to the MEWG). Contaminants in sufficient quantity could also harm aquatic biota.

Rubber tire residues are not among the substances monitored for potential effects on water quality and aquatic biota. Rubber tires contain chemicals (e.g., antioxidants) that can be acutely toxic to aquatic biota and have caused mass mortality of salmonid fishes in streams when mobilized by runoff (e.g., Tian et al 2021; Hiki and Yamamoto 2022). This is a potential concern due to the magnitude of Project truck traffic along the tote road and unexpectedly high rate of tire wear, both of which are expected to continue. A recent study found Arctic Char were not as acutely sensitive to the chemical as Coho Salmon or Rainbow Trout (Brinkmann et al. 2022), but did not study the chemical's sublethal effects or

char from a broad range of genetic stocks.

Validation of a sediment impact threshold for Arctic Char egg survival is also needed for this assessment. Under Project Certificate Condition 21, measures for dustfall monitoring were to be designed 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 Environmental Working Group (TEWG). The sensitivity of Arctic Char eggs to further increases in dustfall, and thereby sedimentation, is also uncertain. Better information is needed on the effects of local sediment deposition on survival of Arctic Char eggs and larvae.

References

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Review Comment QIA-02

Subject: Marine Environment and Wildlife

References:

Baffinland. 2022. MEMO - Production Increase Proposal Renewal June 15, 2022 [NIRB Registry File: "220615-08MN053-PIP Renewal Supp Info Package-IMTE.pdf" (including Appendix B - "Vessel Convoys as a Means of Noise Mitigation")]

Summary:

The successful mitigation of Project-related impacts to marine mammals such as narwhals and seals is needed for a sustainable mining Project, and the significant declines in narwhal abundance in Eclipse Sound indicates that mitigation employed during the Production Increase was not successful. The Proponent has proposed vessel convoys as a new mitigation tool for 2022, but there has not been enough information provided to assess the likelihood of this being successful.

Importance of Issue:

Impacts to marine mammals, and the mitigation of those impacts, is the single biggest overarching marine issue on the Project.

Detailed Review Comment:

1. Gap/Issue

Impacts to marine mammals, and the successful mitigation of those impacts, remain a key concern for QIA, Inuit harvesters and their communities, and other intervenors. The existing mitigations that have been applied to the Production Increase Proposal have not been successful, as there have been significant declines in abundance of the Eclipse Sound narwhal stock. Inuit Qaujimagatuqangit provides clear evidence that some movement between the Eclipse Sound and Admiralty Inlet summering areas occurs, but does not support the widespread abandonment of one area as a naturally occurring phenomenon. The Early Warning Indicator (EWI) employed failed to provide any advance warning prior to this decline.

The mitigation measures proposed to address marine mammal impacts for the 2022 Production Increase extension, should be it be granted, are mostly limited to existing measures that have been in place for previous shipping seasons.

One exception is the Proponent's plan to use convoys to reduce overall sound exposure. This could be effective at reducing overall exposure, but it is essentially an adaptive management experiment being conducted at a time when the Eclipse Sound narwhal population has already suffered a significant local population decline. Furthermore, the Proponent was not

planning to collect any acoustic data in 2022, and thus would have no way to monitor mitigation effectiveness with respect to sound exposure reductions. The Proponent is now attempting to get a Passive Acoustic Monitoring (PAM) station deployed, but these delays could also impact monitoring effectiveness. The information provided on convoys (Appendix B in June 15, 2022 memo) was not sufficient to comprehensively assess the likelihood of it succeeding as a mitigation tool, which is a concern given the recent significant declines in Eclipse Sound narwhal abundance.

2. Agreement/Disagreement with conclusion

The Proponent has concluded that vessel convoys will provide an effective mitigation tool by reducing overall sound exposure to Eclipse Sound narwhals. This may be correct, but the information provided is insufficient to assess this as a mitigation tool.

3. Reasons for disagreement with conclusion

Aerial surveys to document narwhal abundance in Eclipse Sound have been conducted since 2004, and these surveys have documented a significant decline in the stock:

2004 - ca. 20K (DFO survey)
2013 - ca. 10.5K (Baffinland survey)
2016 - ca. 12K (DFO survey)
2019 - ca. 10K (Baffinland survey)
2020 - ca. 5K (Baffinland survey)
2021 - ca. 2.5K (Baffinland survey)

There has been an 87% decrease in the Eclipse Sound summering population since 2004, and the most significant declines in abundance have occurred during the Production Increase phase of the Project.

These results, coupled with Inuit Qaujimajatuqangit on vessel-related impacts to narwhal and on exchange between Eclipse Sound and Admiralty Inlet, indicate that the mitigation and adaptive management employed throughout the Production Increase has been unsuccessful. The Early Warning Indicator (EWI) used by the Proponent (proportion of calves and juveniles) also failed to provide any warning prior to significant local population declines. Inuit observations were an Early Warning Indicator that did provide warning of impacts, but these warnings were not acted upon. Inuit clearly note that, while some degree of interchange between these two summering areas occurs, there is no historic precedent for the significant one-way interchange observed in 2020 and again in 2021. Inuit have also been describing shipping-related impacts to narwhal and other marine mammals for multiple years of Project shipping.

The only substantial new mitigation proposed for the 2022 Production Increase Proposal extension request is the use of vessel convoys to reduce overall sound exposure. Appendix B - Vessel Convoys as a Means of Noise Mitigation (in the June 15, 2022 MEMO - Production Increase Proposal Renewal) provides some limited information on the potential mitigation value of vessel convoys, but it does not contain enough information for a thorough impact assessment. Additional information is required (e.g., scenario planning exercises, etc.) to determine how effective convoys could be, and how they should be set up (e.g., how many vessels in a convoy to maximize sound exposure reduction benefits).

At the time of document submission, the Proponent also was not planning to deploy additional acoustic recorders for 2022, which would have seriously hampered our ability to measure the effectiveness of convoys as a sound exposure reduction tool. At a recent MEWG conference call (04 August 2022) it was reported that Baffinland will now attempt a deployment this year, but the lack of original plans to collect acoustic data to monitor the effectiveness of convoys is a concern.

There is some scientific literature that has explored the utility of vessel convoys as a tool to mitigate underwater noise exposure, but the sources reviewed by QIA suggest that convoys might offer limited benefit in reducing noise exposure for the current Project. DFO (2017) evaluated a range of mitigation measures for the likelihood of reducing shipping related noise disturbance to Southern Resident Killer Whales in British Columbia waters. The assessment concluded that operation-based measures showing the most potential included ship speed reductions, transit time restrictions, and convoying (DFO 2017). A combination of measures would likely be the most effective solution. However, the Proponent already has a 9-knot speed limit, and further reductions are not feasible. Some shipping lane rerouting has also occurred (mainly to minimize impacts to harvesters), but additional rerouting is unlikely to be an option, and the shipping lane cannot be rerouted out of Milne Inlet.

Williams et al. (2019) reviewed ship noise mitigation approaches, again for Southern Resident Killer Whales, and used an existing ship source level dataset to conclude that "mitigation approaches could readily reduce noise levels by 3–10 dB". This is again based on a combination of mitigation measures, some of which (e.g., speed restrictions) are already employed by Baffinland. Options explored by Williams et al. (2019) included convoys in addition to ship speed reductions, removing the noisiest ships, retrofitting vessels, changing ship design (replacing noisy ships with quieter new ships), and relocating shipping traffic lanes. In their model, speed limits resulted in a 3 dB achievable noise reduction. But again, this is not an option that could be employed as further mitigation for the Mary River Project. Removal of the noisiest vessels and a retrofit for others led to a modeled 6 dB achievable noise reduction, which was similar to the noise reduction achieved via removal/retrofit plus speed limits (Williams et al. 2019). A scenario including removal/retrofit plus a speed limit plus vessel convoys led to a 10 dB achievable noise reduction (Williams et al. 2019). These results suggest that convoys might provide limited benefit without the elimination of the noisiest vessels in the fleet. A small number of vessels are typically responsible for a disproportionate amount of the total noise exposure (e.g., Veirs et al. 2018), and the removal of the noisiest vessels may be required for effective mitigation. The Proponent has not provided any quantitative data to assess this as a potential mitigation tool.

Matthews et al. (2018) also assessed the potential of vessel convoys to mitigate noise-related impacts to Southern Resident Killer Whales, and concluded that convoys would not be particularly beneficial to reduce noise exposure in their British Columbia study area. In their study the removal of the noisiest vessels produced only nominal gains. There are numerous trade-offs that require consideration, and the Proponent has not provided sufficient information to explore these trade-offs.

References

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Matthews, M.-N. R., Z. Alavizadeh, D.E. Hannay, L. Horwich, and H. Frouin-Mouy. 2018. Assessment of Vessel Noise within the Southern Resident Killer Whale Critical Habitat: Final Report. Document number 01618, Version 2.1. Technical report by JASCO Applied Sciences for the Innovation Centre, Transport Canada/Government of Canada. Online: <https://iaac-aeic.gc.ca/050/documents/p80054/129319E.pdf>

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Williams, R., S. Veirs, V. Veirs, E. Ashe, and N. Masticka. 2019. Approaches to reduce noise from ships operating in important killer whale habitats. Marine Pollution Bulletin 139: 459-469

Review Comment QIA-03
Subject: Dustfall along the Tote Road and within the RSA continues to be higher than predicted, both in extent and amount
References:
<ul style="list-style-type: none"> • EDI 2022a. Mary River Project Terrestrial Environment 2021 Annual Monitoring Report. Report prepared for Baffinland Iron Mines Corporation by EDI Environmental Dynamics Inc. • Baffinland Iron Mines Limited, Production Increase Proposal Renewal Memo, June 15, 2022
Summary:
Impacts of dust from the Project have been higher than predicted within the FEIS. Improved monitoring programs and mitigation measures are needed to reduce the effects of dust on culture, rights and land use, and caribou use of vegetation in the Project area.
Importance of Issue:
Dust and its management is a primary concern of Inuit in relation to the Project. QIA believes that NIRB should consider adding detail that describes the required content of the Air Quality and Noise Abatement Management Plan.
Detailed Review Comment:
Inuit concerns about dust in the environment (areal extent and accumulation locally) are well documented at current production levels. Western science shows dustfall has exceeded FEIS predictions along the Tote Road in each successive annual report, despite Baffinland's efforts to mitigate these impacts using different dustfall treatment options. The 2021 report (EDI 2022a) shows that the extent of dustfall is beyond the regional study area (RSA) for the FEIS, suggesting a need

to revise the RSA. With the PIPR would come a sustained increase in explosives use for the Project and a sustained increase in hauling along the Tote road, both of which will contribute to sustained exceedances of dustfall (areal extent and accumulation locally). These sustained exceedances have important implications for Inuit use of the Project area (i.e., culture, rights and land use or CRLU) and for habitat suitability for terrestrial wildlife, notably North Baffin caribou.

Baffinland states in their PIPR memo that they “will consider the proactive implementation of recommendations contained in the Interim Dust Audit Report” including “strategic evaluation and installation of wind fencing; application of additional dust suppressants to the airstrip and other stockpiles; revisions to blasting management plans and practices; continuous dust monitoring at PDA boundaries; ongoing involvement of Inuit in dust management; other operational practice improvements” (Appendix A, p. 5).

Sustained exceedances in dustfall in comparison to FEIS predictions suggest an increased risk in metal concentrations in vegetation and soils. Vegetation monitoring results reported most recently in EDI 2021a suggest that at several sites, lichen have elevated concentrations of contaminants of potential concern (CoPCs) relative to baseline.

A major concern related to dustfall is the ongoing impact of sustained higher dustfall levels on lichen regeneration in the impacted area. In order to increase in numbers, caribou must have access to sufficient lichen load to support increased calving success. Current vegetation monitoring programs conducted by the proponent may not be detecting impacts to lichen, because the percent cover of lichen is low within the existing vegetation monitoring plots.

Given that all of the concerns raised to date related to dustfall are in reference to either the 4.2 mtpa or 6.0 mtpa production limits, it is imperative that additional mitigation measures are included in a revised Project Certificate Condition to reduce these existing impacts at the Production Increase Proposal scale of 6.0 mtpa. QIA recommends that the revised Project Certificate include requirements for the proponent to take immediate steps to cover locations where the ore is moving or being handled at the mine and port sites, that dust monitoring is improved to allow for (1) better monitoring site locations; (2) passive vertical monitoring in addition to the current isopropyl monitors, which depend on dust settling and getting entrained; that the Proponent start a daily process for identifying and addressing times of high risk for dispersion to reduce impacts on those days; that the Proponent initiate a program for monitoring resting dust entrained on snow, to determine whether it meets water testing criteria.

Review Comment QIA-04	
Subject: Impacts of MRP on caribou greater than predicted	
References:	
<ul style="list-style-type: none"> • Nunavut Impact Review Board, Reconsideration Report and Recommendations for Baffinland’s Phase 2 Development Proposal, May 2022, pp. 89, 188 • Baffinland Iron Mines Limited, Production Increase Proposal Renewal Memo, June 15, 2022 • EDI 2022a. Mary River Project Terrestrial Environment 2021 Annual Monitoring Report. Report prepared for Baffinland Iron Mines Corporation by EDI Environmental Dynamics Inc. • EDI 2022b. Mary River Project Caribou Monitoring: Triggers and Recommendations. Report prepared for Baffinland Iron Mines Corporation by EDI Environmental Dynamics Inc. 	
Summary:	
<p>At current production levels, impacts to caribou have been higher than predicted within the FEIS, with Inuit reporting a steady decline in caribou and avoidance of the Project area due to the activity associated with the mine. Given the importance of the Project area for caribou and concerns raised by Inuit at the current production levels, immediate efforts must be made to properly identify the zone of influence around the Project based on Inuit Qaujimagatuqangit and scientific information, conduct a full IQ study of caribou to determine priority areas for Caribou Protection Zones within the Project area, and enact additional mitigation measures based on input from Inuit. Furthermore, the sensitivity of caribou on North Baffin at low population levels requires that a precautionary approach be taken to reduce the likelihood that caribou will continue to avoid the Project area. Under these circumstances, it is imperative that the Proponent be compelled to enact additional mitigation measures to protect caribou until these studies can be completed.</p>	
Importance of Issue:	
<p>Caribou are a critically important value for Inuit on North Baffin, and their ability to access caribou within the Project area is significantly curtailed at present. Baffinland has continued to downplay Inuit concerns about Project impacts to caribou, suggesting instead that their monitoring programs have failed to detect caribou because of low population numbers. Given the current sensitivity of caribou to disturbance, a precautionary approach is critical to reduce the effects of the Project on caribou. The PIPR requires a sustained increase in blastings / explosives use to extract 40% more material from the ground, as well as increased helicopter activity and use of the Tote Road for hauling ore. Inuit concerns about noise in the</p>	

environment and impacts of noise on caribou are well documented. Baffinland's noise monitoring study conducted in 2020 suggested noise levels are higher than predicted within the FEIS (EDI 2021a). Furthermore, sustained and higher than predicted dustfall levels (both in terms of amount and extent of dustfall) have raised concerns that the zone of influence and coefficients of habitat disturbance around the mine have been under-estimated, leading to insufficient mitigation measures.

Detailed Review Comment:

In Section 2.4.4 of their reconsideration report, the Board identifies that Baffinland does not expect the Phase 2 Development Proposal to influence terrestrial wildlife and habitat at the population level due to planned mitigation and the small footprint affected relative to the available habitat in the region (p. 89). In Section 5.1.1.4, the Board summarizes that community members and community level organizations (e.g., HTOs) are consistently describing that they are already observing regional scale impacts from the MRP:

"Ever since mining started, the caribou have steadily declined and sometimes are completely absent, and Kanajjuk doesn't form ice anymore, and it is frequented by caribou. The caribou calve there. The proposed route, we go hunting caribou in May, and there are always caribou there in May. During the spring, during the early spring, caribou always go there. It is like their traditional area. After they give birth, they then begin to leave. We want that area to be protected, as it is our caribou-hunting area."

The Board notes that Baffinland acknowledges these concerns but does not agree about whether the observed effects are being caused by the Project (p. 188). The Board also notes that Baffinland has ignored concerns raised by community-level organizations about impacts of the existing Project, including that "monitoring results from the Proponent did not reflect Inuit knowledge and experience and the observed effects of the affected communities..." (p. 188).

Baffinland's memo on the Production Increase Proposal fails to recognize concerns raised by Inuit, upholding instead the efficacy of their existing monitoring programs: "Baffinland remains confident that the results of the caribou monitoring programs are a by-product of the low regional abundance numbers in caribou, and not due to a methodological issue with the programs" (p. 11). No reference is made to Inuit concerns, raised many times through the public hearing process, that caribou are avoiding the Project area at the current production level.

EDI's 2022 produced a report on the development of a telemetry-based monitoring study to determine whether the existing infrastructure is impacting caribou movement and whether the current Project is resulting in indirect habitat loss. This report identifies that a sample of 35 collared caribou per year would be needed to inform potential Project impacts on caribou, requiring at least 350 caribou to be present in the study area (p. i; note that this calculation assumes an average group size of 10 caribou / group). Since fewer than 350 caribou interacting with the Project, this requirement has not been met, precluding the option of monitoring Project impacts on caribou using collars until the number of caribou interacting with the Project increases.

Appendix A of the Production Increase Proposal memo identifies mitigation measures for caribou, all of which are currently being implemented. Inuit Qaujimagatuqangit tells us that caribou are already avoiding the Project even with these mitigation measures in place. In light of this evidence—which is far stronger than anything the Proponent has been able to produce to the contrary—it would be foolhardy to continue to consider these mitigation measures to be adequate to sufficiently reduce Project impacts to caribou.

The Board's reconsideration report notes that the "current health of the caribou herd indicates a need for the application of the most stringent iteration of the precautionary principle to minimize any potential impacts that could hinder the herd's recovery (p. 210), agreeing with the positions of the GN and QIA regarding the need for "robust mitigation measures to be in place before effects are identified..." (p. 210).

Given that all of the concerns raised to date related to caribou avoidance of the Project area are in reference to either the 4.2 mtpa or 6.0 mtpa production limits, it is imperative that additional mitigation measures are included in a revised Project Certificate Condition to reduce these existing impacts at the Production Increase Proposal scale of 6.0 mtpa. QIA recommends that the revised Project Certificate include requirements for Baffinland to produce a revised estimate of zone of influence for caribou around the mine at the 6.0 mtpa level, based on both Inuit Qaujimagatuqangit and western science. In addition, QIA recommends that Baffinland be required to fund a full study of caribou on North Baffin based on Inuit Qaujimagatuqangit, to identify areas that are highly sensitive for caribou based on Inuit Qaujimagatuqangit and implement caribou protection zones in these area. QIA further recommends that the revised Project Certificate include a requirement for Baffinland to implement mitigation measures within these Project Zones based on input from QIA and the HTOs.

Review Comment QIA-05
Subject: Continuation of greater than predicted adverse effects on Inuit Culture, Resources and Land Use, including food security
References:
<p>Baffinland Iron Mines Limited, NIRB Application for Screening #125710, May 30, 2022, pg. 8 of 12</p> <p>Nunavut Impact Review Board, Reconsideration Report and Recommendations for Baffinland's Phase 2 Development Proposal, May 2022, pgs. viii, 219, 220, 229.</p> <p>Baffinland Iron Mines Limited, Production Increase Proposal Renewal Memo, June 15, 2022, pgs. 8, 18</p>
Summary:
<p>Despite extensive evidence brought forward by Inuit parties of existing serious adverse effects on Inuit Culture, Resources and Land Use (CRLU, including food security), from operations at both 4.2 mtpa and 6.0 mtpa, the Proponent continues to proposed to operate the Mary River Mine without recognizing that these impacts have and are continuing to occur, without the completion of a credible, Inuit-centred and verified assessment of impacts on Inuit food security and overall CRLU, and in the absence of an implemented, meaningful monitoring system for Inuit Culture, Resources and Land Use. This is likely to perpetuate and deepen existing impacts reported by Inuit, unless additional Project Certificate Conditions are adopted that can require and enforce the required improvements.</p>
Importance of Issue:
<p>The PIP reconsideration process should not be limited to whether the description of the project has altered. It also needs to consider whether: a. the receiving environment has altered since the Project was originally proposed, making specific valued components more sensitive to Project effects in the future; b. whether the Project to date has already had serious to significant adverse effects on specific Valued Components; and c. What is necessary to better manage and monitor existing impact loads, given they are highly likely to continue in a 6.0 mtpa production scenario.</p> <p>Impacts on Inuit CRLU, including Inuit food security, are critical elements of any socio-economic impact assessment conducted by the NIRB.</p>
Detailed Review Comment:
<p>Baffinland's NIRB Application for Screening states that "predicted environmental impacts are consistent with those described in the original FEIS (2012), Early Revenue Phase FEIS Addendum (2013), Production Increase Proposal Application (2018) and Production Increase Proposal Extension (2020). The QIA notes that none of those submissions identified potential or likely significant adverse effects on Inuit CRLU, including food security.</p> <p>In contrast, NIRB's 2022 Reconsideration Report for the Phase 2 proposal found that "despite the experience gained with the current version of the Mary River Project since the Board's assessment of the original Mary River Project in 2012 there are still significant gaps in understanding, regional monitoring, and regulatory capacity that lead to high levels of uncertainty with respect to... whether effects predicted during the Board's assessments of the original Mary River Project and modifications under the Early Revenue Phase, the Production Increase Proposal and the Extension of the Production Increase Proposal accurately reflect the effects being seen in the North Baffin Communities".</p> <p>The 2022 Reconsideration Report also found that there was a "disconnection between community members' experiences on the land and Baffinland's assessment" that is "concerning for the Board" (pg. 219), and that this "leaves the Board with a lack of confidence in their [Baffinland's] ability to be able to mitigate the largely unassessed effects on Inuit culture and land use" (pg. 220). In addition, the NIRB noted that "During the Community Roundtables the Board heard high levels of concern from communities that Baffinland's current monitoring and mitigation efforts are not receptive and responsive to communities when they have identified negative effects in terms of displacement and disruption of wildlife and experienced adverse effects on their abilities to harvest and consume country food" (pg. 229).</p> <p>Overall, the NIRB Reconsideration Report indicates that significant effects on Inuit CRLU and food security may <u>already</u> be in place with the 4.2 and 6.0 MTPA production system that has been built up over the past several years. The NIRB Report also indicates that Baffinland has not adequately characterized these existing impacts, and that is a major cause of uncertainty about existing operational effects.</p> <p>The QIA notes that all of these concerns and findings relayed by the NIRB in its 2022 Reconsideration Report are related to existing impacts since Project inception, all of which has been at 4.2 mtpa or 6.0 mtpa production limits. Thus, the NIRB has found that Baffinland's existing monitoring and management system for Inuit CRLU, including food security, is: a. out of alignment with what Inuit are reporting; and b. lacking adequate sensitivity to determine whether significant adverse effects are actually occurring, or defined thresholds and responses supporting mitigative or accommodative actions if and when impacts are encountered. By extension, it is reasonable to assert, as QIA and other parties like the MHTO have, that impacts on Inuit CRLU may well already be significant from the existing Mary River Project, with Inuit parties recognizing this but Baffinland not.</p>

As a result, QIA considers it dangerous and myopic to continue with a same or similar approach to Project management and monitoring (that existing biophysical focused monitoring driven primarily to exclusively by western science is adequate, that the findings of the original FEIS and subsequent amendments – which found no likely significant adverse effects on Inuit CRLU or food security – have never been “proven wrong”, that there need not be any additional Project Certificate Conditions to bridge the gap between Inuit understandings and Baffinland’s predictions).

More work needs to be done to complete credible baseline and change-over-time analyses of Inuit CRLU and food security in Project-impacted areas, more control needs to be given through Project Conditions to Inuit having a key role in defining “how much change is too much” (significance thresholds), and in conducting those assessments, Inuit need to be more directly involved in monitoring using Inuit Qaujimagatuqangit (IQ), and Inuit need to be more directly involved in identifying required responses to adverse Project-related changes to CRLU and Inuit food security when they do occur.

In the PIPR Application Supplement, Baffinland identifies some commitments that it is willing to work with Inuit communities and QIA on, but these commitments need to be enshrined in new Project Certificate Conditions and be subject to annual auditing and enforcement and compliance mechanisms to have a strong chance of protecting Inuit CRLU and food security. It is time that comprehensive human environmental monitoring with a strong Inuit component and IQ-enrichment starts in earnest for the Mary River Project and that this be tied directly into a co-approved Adaptive Management Plan that includes Inuit Objectives, Indicators, Thresholds and Responses; without improved Project Certificate Conditions this is much less likely to happen. PC Conditions are required to ensure development and implementation of a credible, Inuit-led monitoring system for culture, resources and land use, with special emphasis on changes (and their causes) to Inuit harvesting success per unit of effort, enjoyment of the land, perception of risk, and other factors that influence the practice of Inuit rights. And PC Conditions are required to tie that monitoring system into an Inuit-Baffinland co-approved Adaptive Management Plan for the Mary River Project, including Inuit thresholds and responses for impacts on Inuit CRLU and food security.

Review Comment QIA-06

Subject: Insufficient Proposed Mitigation for Ore Processing

References:

PIP Renewal Supplemental Memo, Description of 2022 Activities and Mitigations;
Mary River Project Terrestrial Environment 2021 Annual Monitoring Report;
2021 CREMP Report Section 4.3.6 Effects Assessment and Recommendations

Summary:

BIMC has not proposed any additional mitigations for the crushing facility, one of the primary sources of fugitive dust at the Mary River Site, despite fugitive dust predictions presented within the Final Environmental Impact Statement (FEIS) being routinely exceeded as recently as 2021.

Importance of Issue:

The proposed PIP renewal suggests a status quo for impacts associated with ore processing activities despite those activities resulting in routine exceedances of FEIS predictions for fugitive dust resulting from Project activities.

Detailed Review Comment:

On P2/61 of the supplemental PIP memo, BIMC states that *“On June 7, 2022 the NPC issued a positive conformity determination for the PIPR Proposal and referred the proposal to NIRB. In their conformity determination (consistent with previous determinations in 2018 and 2019), the NPC confirmed that the PIPR Proposal continues to not be considered a significant modification of the Mary River Project under NuPPAA”*. We agree that the proposed activities reviewed by the NPC are within the scope of that which is currently permitted. However, the actual impacts of those activities were not assessed by the NPC and do not conform to those presented within the FEIS.

We note that the 2021 terrestrial annual report indicates the fugitive dust generated from the Mary River Mine Site has *“extended beyond the modelled isopleths [in both distance and concentration], as it did in 2019”* (P100/328), and the report concludes that *“dustfall levels have been consistently higher than FEIS predictions”* (P113/328). While the report goes on to suggest that *“dustfall associated with the Project... remains primarily an aesthetic effect, rather than a biophysical concern”*, this conclusion does not consider deflection of land use practices by local Inuit, nor does it consider the cumulative effects of successive excess dust deposition on the tundra over time. Further, current monitoring efforts do not appear to be sufficient to characterize the full extent of dust related effects to the tundra.

Fugitive dust may also be impacting water and sediment quality despite the conclusion of the terrestrial monitoring report. The 2021 CREMP report (P161/209) indicates that water and sediment quality has increased above Aquatic Effects Monitoring Program (AEMP) benchmarks in both project area lakes as well as the reference lake. We disagree with the proponent’s conclusion that this suggests the effects are not Project related as the reference lake is downwind of the project and may have been influenced by fugitive dust; we suggest that an alternate conclusion is that both the Project lakes and

the reference lakes may have been influenced by the Project activities at the Mary River site.

We are therefore concerned BIMC indicates that there will be “no change” to the mitigation measures proposed for Ore Extraction and Processing following approval of the PIP by the NIRB. BIMC suggests that “*Specific actions that have been implemented, or could be further implemented [underline for emphasis] by Baffinland for dust management at the crushing facility include... Moving and enclosing secondary crushing facilities to Milne Port.*” (p27/61).

Enclosing crushing facilities would be a significant reduction in the dust generated but has not been completed at this time; this activity has been proposed for Phase 2 and only at the Port. The proposed enclosing of crushing facilities does however indicate that BIMC is able to enclose crushing facilities.

Review Comment QIA-07

Subject: Insufficient Proposed Mitigation for Tote Road Dust

References:

PIP Renewal Supplemental Memo ;
Mary River Project Terrestrial Environment 2021 Annual Monitoring Report 7.3.2.3 2021 Annual Dustfall, Table 7-4. 2021 annual dustfall accumulation at all sites.

Summary:

BIMC has not proposed any additional mitigations for the Tote Road despite the fugitive dust predictions presented within the FEIS being routinely exceeded as recently as 2021 at the majority of Tote Road dustfall monitoring stations.

Importance of Issue:

The proposed PIP renewal suggests a status quo for impacts associated with the Tote Road despite those activities resulting in routine exceedances of FEIS predictions for fugitive dust resulting from project activities.

Detailed Review Comment:

On P2/61 of the supplemental PIP memo, BIMC notes that “On June 7, 2022 the NPC issued a positive conformity determination for the PIPR Proposal and referred the proposal to NIRB. In their conformity determination (consistent with previous determinations in 2018 and 2019), the NPC confirmed that the PIPR Proposal continues to not be considered a significant modification of the Mary River Project under NuPPAA”. We agree that the proposed activities reviewed by the NPC are within the scope of that which is currently permitted. However, the actual impacts of those activities were not assessed by the NPC and do not conform to those presented within the FEIS.

We note that the 2021 terrestrial annual report presented annual dustfall data demonstrating that 90% of Tote Road dustfall monitoring sites had more dust than predicted in the FEIS. Despite this divergence from the FEIS, BIMC has not indicated they will implement any additional mitigations “for dust management for vehicle traffic” (P27/61). While operational improvements have been implemented in 2021 relative to previous years, specifically applying “new dust suppression products with increased durability and longevity for site infrastructure and approved for use in Nunavut on unpaved roads (DustBlok)”, the approach as not been successful in constraining project effects to those presented in the FEIS

Review Comment QIA-08

Subject: Insufficient stockpile mitigations for dust

References:

PIP Renewal Supplemental Memo Appendix A;
Mary River Project Terrestrial Environment 2021 Annual Monitoring Report Section 7.3.2.3 2021 Annual Dustfall

Summary:

Fugitive dust migrating from the Milne Port facility continues to routinely exceed FEIS predictions despite the application of additional mitigations in 2021. It is unclear from PIP Renewal memo and supporting documentation how existing measures are currently being applied, and whether the proposed mitigation measures will be implemented.

Importance of Issue:

BIMC has not provided sufficient evidence with the PIP Renewal application nor within the supporting documentation to provide reviewers confidence that BIMC will implement additional mitigation measures to constrain fugitive dust associated with the ore stockpile at Milne Port from continuing to mobilize at concentrations and at a distance in excess of FEIS predictions.

Detailed Review Comment:

BIMC has proposed to formally add the “application of a specialized crusting agent (DusTreat®) to the ore stockpile to reduce wind erosion and mobilization of fine iron ore particles” in the list of mitigation measures in the PIP memo. This mitigation

was initially applied in 2021 and has resulted in an improvement in the volume and geographic extent fugitive dust is mobilized from the project via wind; the 2021 annual report states that “*dustfall extents decreased from 2019 to 2021 in both datasets and may reflect the application of DustBlockr®, on the ore stockpiles*” (P100/328). However, we also note the dustfall measured around Milne Port continues to exceed FEIS predictions despite the addition of this new measure suggesting it may not be sufficient to constrain project effects to those predictions (as documented in the 2021 terrestrial annual monitoring report).

BIMC indicates it “*will consider [underline added for emphasis] the proactive implementation of recommendations contained in the Interim Dust Audit Report*” but makes no firm commitments. Further, the remainder of the mitigations outlined in the PIP memo for dust generated at the Milne Port facility either “*have been implemented*” or “*could be further implemented*”, but no indication has been provided either within the PIP Renewal application nor within the recently submitted plans the extent to which they have been implemented. We therefore provide recommendations for BIMC to further constrain dust related Project effects to those presented within the FEIS.

Review Comment QIA-09

Subject: Dustfall monitoring

References:

PIP Renewal Supplemental Memo;
Mary River Project Terrestrial Environment 2021 Annual Monitoring Report 7.3.2.3 2021 Annual Dustfall;
2021 CREMP Monitoring Report Section 4.3.6
HESL, 2022. 2021 Dust Investigation – Mary River Project, as prepared for QIA.

Summary:

The monitoring currently in place and proposed within the PIP Memo is insufficient to characterize the extent and magnitude of dustfall associated with the Project. Current monitoring in place is only sufficient to indicate that dustfall within the project area and in its vicinity is routinely exceeding predictions as outlined in the FEIS.

Importance of Issue:

Until additional investigations are put in place, the geographic extent and magnitude of effects associated with Project fugitive dust will remain unknown. It is therefore unclear whether additional management or mitigation options may be required.

Detailed Review Comment:

The terrestrial annual monitoring report indicates that dustfall is exceeding predicted isopleths as presented in the FEIS at most continuous monitoring stations around the Project. While BIMC has indicated they will “*consider*” implementing “*Continuous dust monitoring at PDA boundaries*”, snowpack monitoring conducted by the QIA in 2020 and 2021 in combination with potential Project related changes in sediment chemistry within the Reference Lake (as presented in Section 4.3.6 of the 2021 CREMP report – see QIA-PIP-TC1 for more details) indicates that dust is migrating beyond the PDA boundaries. It is therefore unlikely that the additional continuous dust monitoring proposed by BIMC will be sufficient to characterize the extent of dustfall impacts associated with Project activities. Additional effort is therefore required to characterize the extent of dust impacts associated with the Project.

Review Comment QIA-10

Subject: Adaptive Management

References:

File Name: 220615-08MN053-PIP Renewal Supp Info Package-IMTE
Part D vi. “Proposed Modifications to Existing Management Strategies”

Summary:

Baffinland stated that to alleviate concerns with existing approaches towards Baffinland’s adaptive management framework and administration of the environmental working groups, an interim version of the Adaptive Management Plan developed through the Phase 2 Proposal review process will be applied to the remainder of 2022.

Importance of Issue:

The Adaptive Management Plan was revised through the Phase 2 proceedings to help ensure Project impacts do not exceed the FEIS, both from a western science and IQ lens. Thus, Adaptive Management is a critical component of future management of the Project.

Detailed Review Comment:

The Adaptive Management Plan drafted through the Phase 2 process was integral in creating a management structure that incorporates IQ and ensures the Project does not exceed impacts stated in the FEIS. However, QIA is uncertain how this Adaptive Management Plan can be implemented without the inclusion of the Inuit Stewardship Plan and Inuit Committee.

Further, QIA is concerned that Baffinland has not committed to such an interim plan extending beyond 2022.

Recommendation/Request in Addition to QIA Commitment Table:

QIA requests clarity on if the full Phase 2 Adaptive Management Plan will be implemented in 2022 or if it will only be implemented in part. If in part, QIA requests details on which provisions may be omitted. Further, QIA requests Baffinland's commitment that this plan will proceed beyond 2022.

QIA requests Baffinland confirm which, if any, indicators within their DRAFT Adaptive Management plans have been triggered with the low, medium or high impact area. Specifically, QIA requests Baffinland complete the below table

Species	Monitoring Program	Range of Results to Date	BIMC Response
Narwhal	IQ CRLU Assessment		
	Bruce Head Program		
	Aerial Surveys		
	Passive Acoustic Monitoring		
	Shipboard Observer Program		
	Narwhal Tagging Program		

Review Comment QIA-11

Subject: Closure

References:

Interim Closure and Reclamation Plan BAF-PH1-830-P16-0012-Revised Draft-Rev. 5. October 19, 2018.

Summary:

Given Baffinland's statement that 4.2 mtpa is not financially viable and the need for continuing PIP renewals or project expansions should this application proceed, QIA requests the Interim Closure and Reclamation Plan (ICRP) be progressed to a more final state. Specifically, development of a "DRAFT" final grading plan alongside creation of the Mine Closure Working Group, which is described in Section 2.3 of the ICRP as being created two to three years prior to closure.

Importance of Issue:

The long-term impact of the Project is associated with its closure criteria, which requires engagement by Inuit. Currently, the ICRP reflects a more final state of the Project, which is not necessarily representative of the current Project state (such as Deposit 1). Thus, parties need to work together to advance closure planning due to uncertainties with the longevity of the Project and ability to proceed without subsequent approvals.

Detailed Review Comment:

Baffinland will need to enter Temporary Care and Maintenance should the proposal not be approved. Given Baffinland has stated the approved project of 4.2 mtpa per year is not financially viable, it is assumed Baffinland will need to rely on continued project approvals/PIP extensions to avoid a closure scenario as outlined in the Interim Closure and Reclamation Plan (ICRP). However, closure criteria – and more concerningly, development of a final grading plan has not commenced. QIA is requesting Baffinland commence discussions to develop a "DRAFT" final grading plan alongside creation of the Mine Closure Working Group, which is described in Section 2.3 of the ICRP as being created two to three years prior to closure. Implementation of this request is not an acknowledgement of a closure scenario but rather a proactive step given the realities of the situation. Should the financial situation of Baffinland improve this work could be postponed.