



January 6, 2020

Tara Arko
Director of Technical Services
Nunavut Impact Review Board
PO Box 1360
Cambridge Bay, Nunavut, X0B 0C0

Re: Additional Information to Support Further Modification of Conditions 179(a) and 179(b) of Mary River Project Certificate No. 005

Dear Tara Arko,

Further to your correspondence of December 16, 2019, Baffinland Iron Mines Corporation (Baffinland) is writing to provide additional information to the Nunavut Impact Review Board (NIRB or the Board) to support its request of December 6, 2019 for the NIRB to consider further modification of Conditions 179(a) and 179(b) of Project Certificate No. 005 (the Extension Request to the Production Increase Proposal or the Extension Request).

1 INTRODUCTION

In the NIRB Reconsideration Report and Recommendations on the Production Increase Proposal (PIP) dated August 31, 2018 (the NIRB Reconsideration Report), the NIRB recommended that certain aspects of the PIP should be permitted to proceed, but did not recommend that Project Certificate No. 005 be amended to increase permitted trucking and shipping from 4.2 million tonnes (Mt) per year to 6 million tonnes per year. The NIRB Reconsideration Report identified that in the NIRBs view, the PIP was lacking in information regarding the potential long term impacts of increased shipping, primarily to marine mammals, and how these impacts could be effectively monitored for, avoided, mitigated and managed. NIRB also identified that in their view, Baffinland did not fully demonstrate how dust generated from increased traffic on the Tote Road could be minimized, in order to limit potential effects on the receiving environment, how dispersal toward communities can be prevented, and what mitigations would be employed if effects are greater than anticipated.

Taking into consideration the NIRBs Reconsideration Report as well as submissions by the Qikiqtani Inuit Association (QIA), Hamlet of Pond Inlet and the Government of Nunavut, on September 30, 2018, the Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade and the Minister of Crown-Indigenous Relations (the Responsible Ministers) directed NIRB to amend Project Certificate No. 005 to increase Baffinland's permitted trucking and shipping operations from 4.2 million tonnes per year to 6 million tonnes per year until December 31, 2019, subject to the conditions described in the Responsible Ministers' Decision (the Ministers' Decision).

As set out in the Extension Request, the original expiry date put forth in the Ministers' Decision was intended to allow sufficient time for the completion of Baffinland's Phase 2 Development Proposal process to be completed. Conditions 179 (a) and 179(b) currently read as follows:

179(a) Until December 31, 2019, the total volume of ore shipped via Milne Inlet may exceed 4.2 million tonnes per year, but must not exceed 6.0 million tonnes in any calendar year. After December 31, 2019, the maximum total volume of ore shipped via Milne Inlet in a calendar year returns to 4.2 million tonnes per year, unless this condition has been further modified under section 112 of the Act.

179(b) Until December 31, 2019, the total volume of ore transported by truck on the Milne Inlet Tote Road may exceed 4.2 million tonnes per year, but must not exceed 6.0 million tonnes in any calendar year. After December 31, 2019, the maximum total volume of ore transported by truck on the Milne Inlet Tote Road in a calendar year returns to 4.2 million tonnes per year, unless this condition has been further modified under section 112 of the Act.

The Phase 2 Development Proposal process has since unexpectedly extended past December 31, 2019. Therefore, Baffinland submits that the circumstances relating to the Mary River Project are significantly different from those anticipated at the time the amended Conditions 179(a) and 179(b) were issued by NIRB in October 2018.

As per the Extension Request, Baffinland is accordingly requesting that the NIRB modify Conditions 179(a) and 179 (b) as follows:

179(a) Until December 31, ~~2019~~2020, the total volume of ore shipped via Milne Inlet may exceed 4.2 million tonnes per year, but must not exceed 6.0 million tonnes in any calendar year. After December 31, ~~2019~~2020, the maximum total volume of ore shipped via Milne Inlet in a calendar year returns to 4.2 million tonnes per year, ~~unless this condition has been further modified under section 112 of the Act~~, otherwise directed.

179(b) Until December 31, ~~2019~~2020, the total volume of ore transported by truck on the Milne Inlet Tote Road may exceed 4.2 million tonnes per year, but must not exceed 6.0 million tonnes in any calendar year. After December 31, ~~2019~~2020, the maximum total volume of ore transported by truck on the Milne Inlet Tote Road in a calendar year returns to 4.2 million tonnes per year, ~~unless this condition has been further modified under section 112 of the Act~~ otherwise directed.

The PIP Extension Request is intended to apply through to December 31, 2020 unless otherwise directed (i.e. in the unlikely event the completion of the Phase 2 NIRB reconsideration process extends past December 31, 2020). Operations under the Extension Request would be subject to all of the current Project Certificate No. 005 terms and conditions, commitments and mitigations. Baffinland has also made several new commitments to the communities in relation to the Extension Request, as outlined in the letter provided by Baffinland to the NIRB on December 6, 2019:

- Baffinland confirms that it will continue to support those workers and their families affected by the demobilization of contractors to the extent possible under the present circumstances;
- Baffinland will continue to prioritize Inuit employment at the Mary River Mine and commits not to lay off its Inuit employees while it maintains production at 6 million tonnes per year during the extension period; and
- Should Phase 2 be approved, Baffinland is further committed to continue the upward trend in the number of Inuit employed at the Mary River Mine, as has been experienced steadily since 2017.

Since October 2018, Baffinland has ensured the Conditions identified in the Ministers' Decision, which were designed to address the information gaps identified in the NIRB Reconsidered Report have been fulfilled. In addition, since the time of the Ministers' Decision, Baffinland has introduced a number of new mitigation measures related to shipping operations and dust suppression that will remain in place during the extension period, should it be granted.

Given the significant volume of relevant new monitoring and technical information that has become available to NIRB and reviewers since October 2018, the additional dust and shipping mitigations that have been implemented at the Mary River Project and the support for the Extension Request expressed by the Hamlets of Arctic Bay, Clyde River, Hall Beach, Igloolik and Pond Inlet, Baffinland believes that it is reasonable for NIRB to recommend the approval of the Extension Request.

The enclosed information package supports the view that the increase in production to 6 million tonnes per year (Mtpa) during 2018 and 2019 has not had any significant adverse environmental or socioeconomic effects.

In support of the Extension Request, the enclosed materials provide further information on the following specific items, as directed by NIRB on December 16, 2019:

- a summary of the current status of the items outlined in the Ministers' Decision (provided for within this covering letter)
- a Supporting Information Summary Report that systematically address the views, conclusions and recommendations contained in the NIRB's Reconsideration Report (Attachment 1 and 2). This includes:
 - o the purpose and need for the Extension Request
 - o a description of the Extension Request Proposal
 - o a summary of relevant 2018 and preliminary 2019 monitoring results;
 - o a summary of Inuit participation in the PIP
- a Memo that provides confirmation that the commitments associated with the generally referenced "Project Stabilization Approach" would continue to apply to ongoing Extension Request activities (Attachment 3).

Each of these topics are further addressed under the headings below and in the attached materials. In providing these responses, Baffinland has included summaries of various technical and other materials that have been previously provided to NIRB. Where appropriate, Baffinland has included references to these documents should the NIRB or intervenors wish to review the additional detail.

2 CURRENT STATUS OF ITEMS LISTED IN MINISTERS' LETTER

- (a) Need for Production Increase from 4.2 million tonnes of ore per year to 6 million tonnes of ore per year

As noted in the Ministers' Decision, the increase from the current limit of 4.2 Mtpa to 6 Mtpa was required to prevent negative impacts to workers and the socio-economic impacts that annual stoppages in mining operations would have each year once Baffinland reaches its production limit. The Ministers were also concerned about long-term viability of the Mary River Project and were cognizant of the concern expressed by QIA and the GN (among others) that its economic viability depended on the PIP.

Baffinland confirms that these factors continue to apply to its current request to extend the 6 Mtpa limits through to December 31, 2020 unless otherwise directed (i.e. in the unlikely event the completion of the Phase 2 NIRB reconsideration process extends past December 31, 2020).

Allowing the Extension Request to continue through 2020 will allow Inuit the opportunity to continue realizing the economic and other benefits of the mine and the QIA's agreements with Baffinland. Further details related to the need and purpose for the Extension Request is included in Section 1.3 of Attachment 1.

- (b) Air Quality - Dust Management and Monitoring Plan

In the Ministers' Decision, the Ministers added the following paragraph to the existing Term and Condition No. 10 (Air Quality - Dust Management and Monitoring Plan):

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 increased traffic associated with the increased volume of ore being shipped is greater than initially predicted.

For context, dust management and monitoring was incorporated into the Air Quality and Noise Abatement Management Plan and the Roads Management Plan prior to the start of construction. Implementation and mitigation measures continued in 2018 including new crusher shrouding and enclosed chutes, road resurfacing, limiting speed and volume of vehicles on all roads, application of water and dust suppression substances, continued implementation of redesigned stockpile activities and layout at the Port, retrofitting existing dust suppressant equipment, and the removal of dust impacted snow at strategic locations at the Project. Additional shrouds were also installed at the Mine Site crusher in 2019 and Baffinland is actively considering and/or implementing new methods through reengineering of equipment designs to minimize dust generation.

Monitoring showed that although dustfall deposition has exceeded FEIS predictions at select locations throughout Project operations, overall the level of exceedances decreased in 2018 as compared to 2017. The decrease of 2018 dustfall values as compared to 2017 demonstrate progress in effectively reducing dust generation from crushing and Tote Road traffic, despite increases in the production level at the Project and the volume of Tote Road traffic. A description of these mitigation measures is included in Section 5.2.3 of Attachment 1.

Results of the 2018 dustfall monitoring program were reported to the NIRB on March 31, 2019 in the 2018 Annual Report. Results of the 2019 dustfall monitoring program will be reported to the NIRB in the forthcoming 2019 Annual Report.

(c) Third Party Verification Process

In the Ministers' Decision, the Ministers included a new condition 179(c) in NIRB Certificate No. 005:

Condition: The proponent shall be required to resource and support a third party to conduct performance audits of commitments made by the proponent in relation to both the IIBA and every proponent commitment and every term or condition of the Project Certificate relating to environmental management of the tote road component or environmental management related to shipping.

Reporting Requirement: On a bi-annual basis, the proponent shall file a Performance Audit Report with NIRB. This report shall include the findings of the third-party auditor, and Baffinland's commitment to addressing the findings of the auditor. This term and condition will remain in force for the duration of the Mary River project, unless it is modified under the Nunavut Planning and Project Assessment Act.

In November, 2018, Baffinland hired a consultant to design an audit template that would meet the specific objectives of the terms and conditions of PC 179c. The audit template was shared with the QIA to confirm scope. Baffinland also prepared a Scope of Service to share with potential third party consulting firms who may have the relevant qualifications and resources to conduct the audit. After some delay (resulting primarily from its ultimately unsuccessful efforts to retain a qualifying Inuit firm to undertake the audit), Baffinland subsequently retained BDO Canada LLP as its third party auditor.

On October 1, 2019, Baffinland filed with NIRB the Commitments Audit Protocol Report produced by the third party auditor, BDO Canada LLP for the period ending June 30, 2019. For the Project Certificate No. 005 section, Baffinland

had a 92% completion rate, which is consistent with the 92% self-assessment compliance rate that Baffinland identified in its 2018 Annual Report to NIRB. Baffinland is committed to addressing the findings of the Commitments Audit Protocol Report and will be working towards 100% compliance during 2020.

A second Commitments Audit Protocol Report will be prepared by a third party auditor for the period from June 30, 2019 to December 31, 2019. Subject to confirmation from the third party auditor, Baffinland anticipates filing this report with NIRB on or before March 31, 2020.

Baffinland proposes that the biannual third party audits would continue during the period of the Extension Request (though Baffinland continues to maintain the view that this requirement is duplicative and should be removed as part of the Phase 2 reconsideration process). Therefore, subject to confirmation from the third party auditor additional Commitments Audit Protocol Reports would be filed with NIRB on or about September 30, 2020 and March 31, 2021.

(d) Marine Mammals

To address concerns respecting potential impacts to marine mammals, the Ministers' Decision added the Term and Condition No. 183 and 184:

183: The proponent shall collaborate with the Marine Environment Working Group to develop impact avoidance or mitigation strategies for the protection of the marine environment. The proponent shall implement any direction from the Department of Fisheries and Oceans for any avoidance or mitigation measures including cessation of any activity, for the protection of the marine environment.

184: The proponent shall collaborate with the Marine Environment Working Group to review the status of compliance with, and implementation of, all of the Terms and Conditions in Project Certificate No. 005 related to marine environmental protection.

Several opportunities have been made available to the MEWG since October 2018 to discuss the status of Baffinland's compliance with Terms and Conditions in Project Certificate No. 005 related to marine environmental protection. MEWG feedback on the status of compliance is sought through the operation of several MEWG meetings throughout the year, the opportunity to provide comments on all draft marine monitoring reports, and the opportunity to provide comments on the NIRB Annual Report. In addition, as the marine monitoring programs for the Project are designed to meet the terms and conditions of Project Certificate No. 005, the MEWG's involvement in the design and assessment of these programs inherently supports compliance and the identification of additional mitigation and adaptive management strategies, as required.

The Ministers' Decision required that results of the monitoring programs were to be provided in the Annual Report to NIRB, and that Baffinland report annually all data it generates from the implementation of the marine monitoring programs. Baffinland confirms that this information was included in its 2018 Annual Report to NIRB and in the Preliminary Summary of 2019 Marine Monitoring Results (submitted as Appendix N-Attachment 4 of Baffinland's Response to Final Written Submissions). Results of 2019 monitoring will be included in the forthcoming 2019 Annual Report to NIRB.

The Ministers also encouraged the NIRB to host an annual marine monitoring and mitigation workshop in the community of Pond Inlet, and noted that ideally such a workshop would be scheduled at a time which best aligns with the availability of monitoring results and review of the Annual Monitoring Report, yet prior to the commencement of the shipping season such that additional mitigations can be applied if warranted. This workshop (the NIRB Workshop) was held by NIRB in Pond Inlet from May 1-2, 2019 and included subsequent recommendations

from NIRB. On July 16, 2019 Baffinland filed its detailed response to NIRB's recommendations. Baffinland wishes to thank the NIRB for facilitating a successful workshop and confirms it would be open to participating in another similar workshop in advance of the 2020 shipping season, should NIRB determine this is appropriate.

A further description of marine mammal monitoring and mitigation measures is included in Section 5.3.4 of Attachment 1.

(e) Examination of Impacts of Production Increase during Phase 2 Reconsideration

The Ministers' Decision emphasized that the impacts of the PIP would need to be more broadly examined during the Phase 2 reconsideration process, and that it would be important to integrate the experience, knowledge and data gained during the PIP into that process.

Baffinland has made great efforts to integrate its operational experience, knowledge and data obtained during 2018 and 2019 in its responses filed with the NIRB as part of the Phase 2 reconsideration process. As an example, during summer 2019 Baffinland developed and implemented additional conservative shipping mitigations in response to community concerns. As this information is also relevant to Phase 2, Baffinland summarized and described the effective operationalization of these measures in the 2019 Shipping Mitigation Memo submitted to NIRB on October 15, 2019 (submitted as Appendix N-Attachment 5 of Baffinland's Response to Final Written Submissions).

Ongoing operational experience during 2018 and 2019 continues to support Baffinland's view that moving from a trucking to a rail operation will have significant environmental benefits. Although dust suppression efforts are improving and this is demonstrated by lower dustfall in 2018, dust generation from transportation continues to be a community concern and further highlights the importance of moving from a trucking to a rail operation to reduce dustfall in the transportation corridor.

3 BAFFINLAND CONFIRMATION RE "PROJECT STABILIZATION" APPROACH

As described in the Ministers' Decision during September 2018 the QIA and Baffinland developed mitigations and environmental management strategies which were part of what was collectively referred to by the QIA and Baffinland as the "Project Stabilization Approach".

Baffinland wishes to acknowledge the support the QIA showed for the Mary River Project in advocating for the approval of a permanent 6 Mtpa limit in 2018. Baffinland confirms its view that the criteria associated with the Project Stabilization Approach would continue to apply to ongoing Extension Request activities, and requests that QIA confirm to NIRB in separate correspondence that it remains committed to tracking this approach. Baffinland has provided a summary update of the Project Stabilization Approach and actions taken by Baffinland in Attachment 3.

4 UPDATE RE NIRB RECONSIDERATION REPORT AND RECOMMENDATIONS ON THE PRODUCTION INCREASE PROPOSAL DATED AUGUST 31, 2018

Since the NIRB Reconsideration Report's release on August 31, 2018, Baffinland has made significant efforts to address the information gaps, concerns and uncertainties identified by NIRB with respect to the PIP at that time. Baffinland is hopeful that the additional technical information provided to NIRB by Baffinland during 2018 and 2019 (through ongoing project monitoring, adaptive management and the Phase 2 reconsideration process) has addressed the NIRB's initial uncertainties respecting the PIP.

The attached Supporting Information Summary Report (Summary Report) is a summary of what already exists on the NIRB's public registry or Baffinland's document portal. Limited additional analysis is provided only to outline the linkages between the Boards views in the Reconsideration Report with more recent information, including:

- Mitigation and monitoring commitments made in relation to the PIP approval;
- Assessments carried out in support of the Phase 2 Proposal, a more intensive iteration of the PIP with twice the amount of ore transportation (12 Mtpa) and added infrastructure; and
- Results of monitoring programs carried out during the execution of the PIP in 2018 and 2019.

5 SUMMARY OF 2018 AND 2019 MONITORING RESULTS

Understanding that the activities associated with the original PIP application have occurred through 2018 and 2019 it is important to monitoring results from those years are a critical component of the PIP Extension Request. The following provides a high level summary of key 2018 and preliminary 2019 (where available) monitoring results of particular relevance to the Extension Request. Additional details on 2018 and preliminary 2019 monitoring results are described in detail in Section 5 of Attachment 1. An overview of the results of the implementation of Baffinland's adaptive management process during 2018 is presented in Table 2 of Attachment 3.

Baffinland invested significant efforts during 2018 and 2019 to further enhance our understanding of the QIA and local community member's concerns related to the Mary River Project as well as their specific concerns with respect to Phase 2. While Baffinland maintains the monitoring program results to date have confirmed that the Mary River Project is not having a significant adverse effect on the environment, it is acknowledged that there remains some ongoing concerns amongst community members and QIA about the Project and uncertainty in the results in the monitoring programs. Therefore, in 2018 and 2019, prominent attention was given by Baffinland to develop additional mitigations and monitoring that meaningfully responds to QIA and Pond Inlet community member's concerns related to shipping operations, marine mammals and dust fall.

Baffinland's 2018 Annual Report to the NIRB includes a comprehensive review of 2018 terrestrial and marine monitoring results. In addition, all program-specific monitoring reports are publically available on the Baffinland Document Portal ([www. https://www.baffinland.com/media-centre/document-portal/](https://www.baffinland.com/media-centre/document-portal/)).

(a) 2018 and 2019 Marine Monitoring Results

As has been discussed during multiple community meetings, the NIRB Marine Workshop and the Phase 2 reconsideration process, in 2018 community members shared with Baffinland that they had observed changes in narwhal abundance and distribution in the operating area since shipping began.

Despite relative abundance and distribution monitoring results from Baffinland's marine monitoring programs between 2014-2017 not indicating any changes, Baffinland scaled up its marine mammal monitoring programs in 2019. Preliminary findings from 2019 continue to confirm predictions with the FEIS that narwhal will experience temporary and localized disturbance as a result of Project shipping, but that Project shipping will not result in large-scale displacement or abandonment of the Project area. This is discussed in detail in Section 5.3.3 of Attachment 1.

(b) Terrestrial Environment

In 2018, dust along the Tote Road decreased both in terms of total volume and distance of deposition (see Section 2.2 of the 2018 Terrestrial Environment Annual Monitoring Report). Further, Baffinland implemented a formalized Tote Road Monitoring Program to assess the potential for project sedimentation impacts on surface

water across a representative number of water crossings in the Tote Road corridor, selected in consultation with QIA in 2018.

A preliminary review of data from the 2019 Tote Road Monitoring Program indicate no observed Project-related increases to TSS in surface water in the Tote Road corridor, despite the increase in vehicle traffic on the Tote Road in 2019. In comparison to prior years, Baffinland reported a total of fifteen (15) spill events related to elevated TSS in 2017, one (1) spill related to elevated TSS in 2018, and no reportable spills for elevated TSS levels in surface water in the Tote Road corridor in 2019.

These results suggest that dust management and mitigations are functioning as intended to manage impacts as a result of the potential increase of Project-generated dust deposition associated with the PIP. This is discussed in detail in 5.2.2 of Attachment 1.

(c) Conclusion

In summary, based on the 2018 and preliminary 2019 monitoring data, Baffinland is confident that the effects on the terrestrial and marine environments arising from the production increase to 6 Mtpa are consistent with effects predictions in the FEIS and FEIS Addendums. Should continued monitoring identify that effects are greater than predicted, or identify unanticipated effects on the environment, Baffinland will address this through implementation of additional mitigations or adaptive management measures as required.

6 CONCLUSION

As described above and in the supporting documents enclosed or referenced documents previously submitted to NIRB Baffinland confirms that it has met the conditions included in the Minister's Decision and will continue to meet these conditions during 2020, should the Extension Request be granted. The final monitoring data from 2018 and preliminary monitoring data from 2019 suggest that no significant adverse effects have occurred as a result of the PIP. Given the unexpected delays in the Phase 2 Proposal NIRB review process, Baffinland is requesting a moderate temporal extension of the 6 Mtpa limits, which expired on December 31, 2019. This request is consistent with the Ministers' intent at the time of the original Ministers' Decision, which was to support financial stability of the Mary River Mine while providing sufficient time for the NIRBs Phase 2 Reconsideration process to conclude. The modifications to the Project Certificate identified in the Extension request is solely related to terms and conditions 179(a) and 179(b), and are necessary in order to support continuing positive socio-economic impacts from the Mary River Project.

Baffinland wishes to thank the intervenors, the NIRB and NIRB staff for their expedited consideration of the Extension Request. Given the importance of the Extension Request to the Mary River Project, and to ongoing delivery of the employment and other benefits secured by the QIA for Inuit, Baffinland is committed to meeting the timelines and information requirements set by NIRB and is available to meet with any intervenor in advance of or following NIRB comment periods in order to support their participation in this process.

Regards,

A handwritten signature in black ink that reads "Megan Lord Hoyle". The script is cursive and fluid.

Megan Lord Hoyle
Vice President, Sustainable Development
Baffinland Iron Mines Corporation

Cc: Ryan Barry, Solomon Amuno, Cory Barker (NIRB)
Jared Ottenhof (QIA)
Lou Kamermans, Udlu Hanson (Baffinland)

Attachments:

- Attachment 1 – Supporting Information Summary Report
- Attachment 2 – Issue Resolution Concordance to the NIRB Reconsideration Report
- Attachment 3 – Project Stabilization Approach Summary Update Memo
- Attachment 4 – December 5 Letter from Mayors
- Attachment 5 – September 21 Letter from QIA and Pond
- Attachment 6 – August 3 Letter from QIA to NIRB

ATTACHMENT 1

PRODUCTION INCREASE PROPOSAL – EXTENSION REQUEST
SUPPORTING INFORMATION SUMMARY REPORT

Baffinland Iron Mines Corporation

PRODUCTION INCREASE PROPOSAL – EXTENSION REQUEST SUPPORTING INFORMATION SUMMARY REPORT

TABLE OF CONTENTS

1 INTRODUCTION.....	1
1.1 BACKGROUND.....	1
1.2 SCOPE OF INFORMATION PACKAGE	1
1.3 PURPOSE AND NEED	1
1.4 ECONOMIC FEASIBILITY	2
1.5 MINE LIFE.....	2
2 DESCRIPTION OF THE PROPOSED MODIFICATION	4
2.1 TEMPORAL AND SPATIAL SCOPE	4
2.2 ORE EXTRACTION AND PROCESSING	5
2.3 GROUND TRANSPORTATION OF ORE TO MILNE PORT	5
2.4 STOCKPILING OF ORE AT MILNE PORT.....	5
2.5 MARINE SHIPPING OF ORE FROM MILNE PORT	5
3 ASSESSMENT.....	6
3.1 POTENTIAL INTERACTION AND ENVIRONMENTAL EFFECTS.....	6
4 INUIT PARTICIPATION	7
4.1 INTEGRATION OF INUIT QAUJIMANINGIT (IQ)	7
4.2 CONSULTATION WITH INUIT ON PIP EXTENSION REQUEST	8
4.3 INUIT PARTICIPATION IN ENVIRONMENTAL MONITORING.....	8
5 PROJECT MONITORING	10
5.1 GENERAL	10
5.2 DUSTFALL.....	12
5.2.1 Assessment	12
5.2.2 Monitoring Results.....	13
5.2.3 Mitigation and Adaptive Management.....	17
5.2.4 Management Plans	18
5.3 MARINE MAMMALS AND BIOTA	18
5.3.1 Assessment	18
5.3.2 Marine Mammal Monitoring Methods.....	19
5.3.3 Monitoring Results.....	20
5.3.4 Mitigation and Adaptive Management.....	21
5.3.5 Management Plans	22
5.3.6 Consistency with Phase 2 Assessment.....	23
5.4 OTHER.....	23
5.4.1 Climate Change Action Plan	23
5.4.2 Acid Rock Drainage / Metal Leaching	23
5.4.3 Caribou	24
5.4.4 Decommissioning of Weatherhaven Camp at Milne Port	25
5.4.5 Effects of the Project on Inuit Land Use and Harvesting	25
6 CONCLUSION	28

7 REFERENCES.....	29
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LIST OF TABLES

Table 1.1:	Impact to Mine Life of the Extension Request.....	3
Table 2.1:	Average Daily Trucking Round Trips.....	5
Table 2.2:	Annual Shipping Voyages.....	5
Table 5.1:	2018 Marine Monitoring Report Submissions.....	10
Table 5.2:	Multiple Comparisons of Percent Fines between Years, within Distance/Transect Combinations (Table 4-4, 2018 MEEMP Report).....	16
Table 5.3:	Baffinland Inter-Annual Marine Monitoring Programs.....	19
Table 5.4:	Relative Abundance and Disturbed (RAD) Surveys at Bruce Head (2014 – 2017) (Table 4, Appendix N Attachment 4 of Baffinland Written Submission October 15, 2019).....	21

LIST OF FIGURES

Figure 2.1:	Project Development Area.....	4
Figure 5.1:	Inter-Annual Differences in Dust Fall at the North Road Sites in Summer and Winter (Figure 15, 2018 Terrestrial Environment Monitoring Report).....	13
Figure 5.2:	Inter-Annual Differences in Dust Fall at the South Road Sites in Summer and Winter (Figure 16, 2018 Terrestrial Environment Monitoring Report).....	14
Figure 5.3:	Estimated Iron Content in Sediment Relative to Sampling Distance along Transects at Minimum and Maximum Transect-Specific Fines Context, 2014 to 2018 (Figure 4-14, 2018 MEEMP Report).....	17

ABBREVIATIONS

AIS	Aquatic Invasive Species
ARD	Acid Rock Drainage
Baffinland	Baffinland Iron Mines Corporation
dB	Decibel
ERP	Early Revenue Phase
EWI	Early Warning Indicators
FEIS	Final Environmental Impact Statement
GN	Government of Nunavut
HOL	Height-of-land
IIBA	Inuit Impact and Benefit Agreement
IQ	Inuit Qaujimaningit
MDMER	Metal Diamond Mining Effluent Regulations
MEEMP	Marine Environmental Effects Monitoring Program
MEWG	Marine Environment Working Group
MHTO	Mayukalik Hunters and Trappers Association
ML	Metal Leaching
MOU	Memorandum of Understanding
MSC	Mine Site Complex
Mt	Million Tonnes
Mtpa	Million Tonnes Per Annum
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claim Agreement
NPRI	National Pollutant Release Inventory
NWB	Nunavut Water Board
PAG	Potentially Acid Generating
PIP	Production Increase Proposal
PSC	Port Site Complex
RSA	Regional Study Area
SEMWG	Mary River Socio-Economic Working Group
SBO	Ship Based Observer
SITM	Standing Instructions to Masters
TEWG	Terrestrial Environment Working Group
the Project	Mary River Project
TRMP	Tote Road Monitoring Program
TSD	Technical Supporting Document
TSS	Total Suspended Solids
VEC	Valued Ecosystem Component
VSEC	Valued Socio-Economic Component
WRF	Waste Rock Facility
QIA	Qikiqtani Inuit Association

1 INTRODUCTION

1.1 BACKGROUND

Baffinland Iron Mines Corporation (Baffinland) is seeking to amend Project Certificate 005 for the Mary River Project (the Project), Terms and Conditions 179(a) and 179(b) to maintain the temporary increase in the quantity of ore Baffinland is allowed to transport by truck and ship, respectively, at 6 Million Tonnes Per Annum (Mtpa) which expired on Dec. 31, 2019 until Dec. 31, 2020 (or as needed in order to complete the Phase 2 reconsideration process) (the Extension Request). No new activities are being proposed as part of the Extension Request - Baffinland is only requesting to continue all activities permitted in 2018 and 2019 during 2020.

1.2 SCOPE OF INFORMATION PACKAGE

Baffinland acknowledges that the Nunavut Impact Review Board (NIRB or the Board) recommended in the Reconsideration Report and Recommendations for the Production Increase Proposal (Reconsideration Report), issued August 31, 2018 that Baffinland should not be permitted to increase production to 6 Mtpa, and that although the Ministers varied the NIRB's decision and permitted a temporally limited increase to 6 Mtpa on September 30, 2018, the NIRB may have outstanding questions about the Production Increase Proposal (PIP) which may relate to this Extension Request.

The following information package is intended to address the views, conclusions and recommendations of the Nunavut Impact Review Board (NIRB or the Board) provided in Section 5 of the B. The information provided herein is a summary of relevant documents that have previously been submitted to the NIRB's public registry for public comment or to Baffinland's document portal. Limited additional commentary is provided only to outline the linkages between the Board's views in the Reconsideration Report with more recent information, including:

- Mitigation and monitoring commitments made in relation to the PIP approval;
- Assessments carried out in support of the Phase 2 Proposal, which proposes a permanent ore transportation increase of 12 Mtpa and added railway and other related infrastructure; and
- Results of monitoring programs carried out during the execution of the PIP in 2018 and 2019.

This information supports Baffinland's view that no significant adverse effects have occurred through 2018 and 2019 as a result of the increase in production to 6 Mtpa and that the potential for adverse environmental or socio-economic effects as a result of the temporary extension through 2020 remain not significant.

1.3 PURPOSE AND NEED

The need for the PIP was first identified to the NIRB on December 8, 2017, when Baffinland provided correspondence to the NIRB that explained the Company had achieved higher levels of production than anticipated, and that ceasing hauling operations to remain under the 4.2Mtpa cap would result in a temporary shutdown of the Project due to the limited surge capacity. On December 12, 2017, the NIRB responded and advised Baffinland that they would need to apply for a reconsideration of these terms and conditions if the Company foresaw an ongoing inability to maintain compliance with PC Conditions No. 179a and 179b.

Subsequently, Baffinland provided rationale for the PIP in written correspondence to the NIRB on June 6, 2018, titled 'Proposed approach to assessment of Mary River Modification Application – Production Increase, Fuel Storage and Milne Port Accommodations' (Baffinland, 2018a). In this correspondence Baffinland identified that over time its

existing workforce had achieved efficiencies in operation such that in 2018, without an increase in its permitting ore haulage limits, Baffinland would be required to idle operations until the activity limits reset in the new year.

To deliver the permitted quantities of iron ore to markets for the Early Revenue Phase (ERP), Baffinland has developed a strong and committed workforce. As of 2017 this workforce demonstrated its growing efficiency by producing and delivering more iron ore to Milne Port than was initially planned for. At this point in time it is clear Baffinland can produce and deliver up to 6 Mtpa of iron ore through the established transportation corridor by increasing the frequency and capacity of existing activities and infrastructure, respectively. Unfortunately, without the flexibility in Project Certificate 005 to transfer more than 4.2 Mtpa of iron ore from the mine site to global markets, Baffinland now finds itself in a position of having to idle operations and reduce its workforce for a portion of each year starting in 2018.

In the responsible Ministers decision to amend Project Certificate 005, dated September 30, 2018, the relevant socio-economic considerations and mitigation efforts the Ministers relied on in making their determinations in 2018 were provide, and included:

- the need to take into account the interest of workers, and the socio-economic impacts that annual stoppages in mining operations would have once Baffinland reaches the 4.2Mtpa limit; and
- the long-term viability of the Mary River Mine, and concerns that the economic viability of the Project depends on the Production Increase Proposal.

Baffinland submits that the same rationale and factors outlined by Baffinland and the Ministers apply to the current Extension Request.

Maintaining production at a rate of 6.0 Mtpa during 2020 provides the company with the additional financial flexibility its needs to continue to fund the existing operation at a sustainable loss, raise capital to pursue the 12 Mtpa Phase 2 Expansion, and secure the Project workforce in the short term. The Extension Request became necessary as a result of the unexpected delays that Baffinland has encountered in respect of its Phase 2 Project Proposal, which also were not anticipated when the Ministers made their decision on September 30, 2018. Higher volumes of production transported via the Northern Transportation Corridor in the short term remains the only economically viable way the Company can continue production activities until the Phase 2 Proposal is reviewed and limit potential for significant negative socioeconomic effects to the Qikiqtani region, Nunavut and Canada.

1.4 ECONOMIC FEASIBILITY

Prior to the PIP, the NIRB approved the Early Revenue Phase with a 4.2 Mtpa limit. Since operations began in 2015, however, operating costs have proven to significantly exceed original projections, and given the current and reasonably foreseeable iron ore prices a 4.2 Mtpa trucking operation is not economically feasible in the short, medium or long term. Baffinland believes it has concurrently established that the existing hauling and shipping limits are affecting the economic viability of the Mary River Project (as amended) through the Phase 2 Reconsideration Process, and that this relevant information should be considered as part of NIRB's consideration of the Extension Request.

1.5 MINE LIFE

The Extension Request proposes a single additional year of increased ore production and transportation at 6Mtpa. This temporary increase represents an additional 1.8 Mtpa of iron ore to be mined over what is otherwise approved for 2020. As of January 1, 2018 Deposit 1 contained 383.7 million dry metric tonnes of proven and probable reserves. Assuming Baffinland were to commence full production at its permitted level of 22.2 Mtpa in the near future, a

reduction of 1.8 Mt in ore reserves would ultimately reduce the mine life of the Mary River Mine by less than a month. This is an objectively small reduction in the mine life that would not have a meaningful impact on the delivery of benefits (i.e. long-term employment opportunities for Inuit) associated with the life of the Project. It is worth noting that through continued exploration at Deposit No. 1 and other promising deposits in the area, the Mary River mine life will likely only grow for the foreseeable future.

Table 1.1: Impact to Mine Life of the Extension Request

	Years to Mine Deposit No. 1 at current reserve estimate	Years to Mine Deposit No. 1 at current reserve estimate - 1.8 Mt	Marginal Impact to Mine Life
22.2 Mtpa (ERP + Steensby)	17.28 years	17.20 years	.08 (approx. 1 month)

2 DESCRIPTION OF THE PROPOSED MODIFICATION

2.1 TEMPORAL AND SPATIAL SCOPE

The PIP Extension Request is intended to apply through to December 31, 2020 unless otherwise directed (i.e. in the unlikely event the completion of the Phase 2 NIRB reconsideration process extends past December 31, 2020).

The spatial scale of the proposed activities remains the same as those approved for the current Mary River Mine.

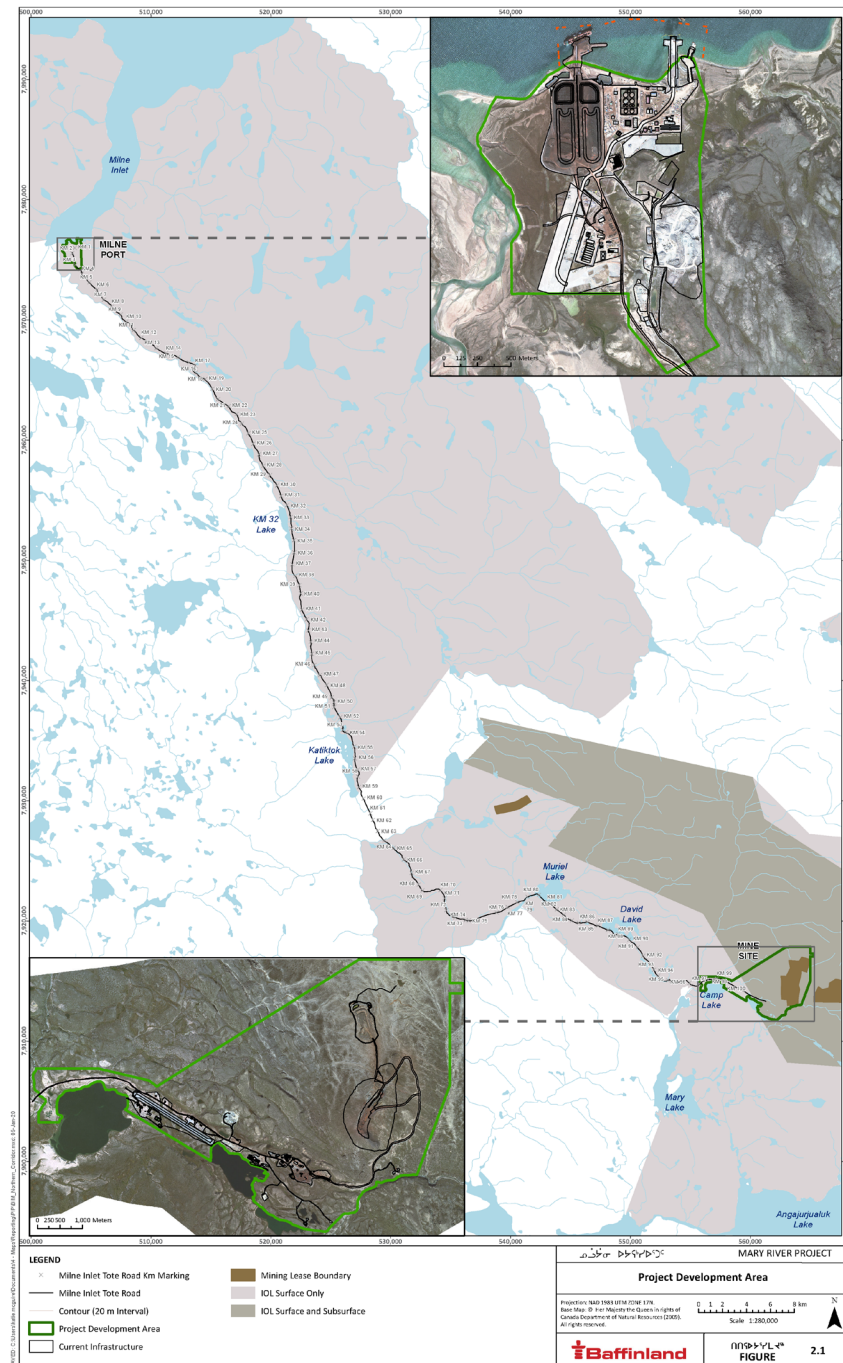


Figure 2.1: Project Development Area

2.2 ORE EXTRACTION AND PROCESSING

Ore extraction would continue from Deposit No. 1 at a rate of 6 Mtpa for the purposes of transportation through the Northern Transportation Corridor. This additional 1.8 Mt (i.e., an increase from 4.2 Mtpa to 6 Mtpa) will require crushing and screening using existing facilities at the Mine Site.

2.3 GROUND TRANSPORTATION OF ORE TO MILNE PORT

Ground transportation of iron ore by truck would continue at a rate of 6 Mtpa. The additional 1.8 Mtpa increase in the amount of ore transported (i.e., an increase from 4.2 Mtpa to 6 Mtpa) will require an additional 42 round trips by truck (84 one way transits) above what was assessed during the ERP.

Table 2.1: Average Daily Trucking Round Trips

	ERP	PIP Extension Request
Daily Round Trips, Average (one way transits, average)	76 round trips (152 one way transits)	118 round trips (236 one way transits)

2.4 STOCKPILING OF ORE AT MILNE PORT

Existing stockpile pads are sufficient to move 6 Mtpa between the Mine and the ship loader. No additional stockpile space is required to support the PIP Extension Request.

2.5 MARINE SHIPPING OF ORE FROM MILNE PORT

Marine shipping of iron ore would continue at a rate of 6 Mtpa. The additional 1.8 Mtpa increase in the amount of ore shipped (i.e., an increase from 4.2 Mtpa to 6 Mtpa) will require up to 28 voyages or round trips (56 one way transits) above what was assessed during the ERP. The 2019 operating experience required an additional 24 voyages (48 one way transits) to ship approximately 5.9 Mt.

Table 2.2: Annual Shipping Voyages

	ERP	PIP Extension Request
Seasonal Voyages (one way transits)	58 voyages (116 one way transits)	86 voyages (172 one way transits)

3 ASSESSMENT

3.1 POTENTIAL INTERACTION AND ENVIRONMENTAL EFFECTS

Aspects of the Extension Request that have potential to result in interactions and environmental effects beyond those previously assessed for the Approved Project include increased handling, truck transportation, and marine shipping of extracted ore, as well as supporting activities. Baffinland maintains that the potential interactions outlined in Table 8 of the Modification Application remain unchanged for the Extension Request with the exception that interactions will be limited to the time period it takes to complete the Phase 2 reconsideration process.

4 INUIT PARTICIPATION

The QIA issued two letters during the PIP process in 2018, which confirmed the resolution of their outstanding concerns, and support for approval of a permanent production increase. These letters were issued on August 3, 2018 and September 21, 2018, respectively, and are included as Attachment 4 and 6 to this Extension Request. The latter letter was also signed by representatives from the MHTO and Hamlet of Pond Inlet.

Most recently, the Hamlets of the five North Baffin communities – Arctic Bay, Clyde River, Hall Beach, Igloolik and Pond Inlet – have also provided a letter of support for the Extension Request (see Section 4.2 below and Attachment 5 of the Extension Request).

4.1 INTEGRATION OF INUIT QAUJIMANINGIT (IQ)

Baffinland relies on IQ and community feedback to shape its understanding of potential Project effects, and carry out its annual monitoring obligations. This is accomplished through regular community engagements (i.e. opening and closing shipping meetings), the provision of financial support for the Mittimatalik Hunters and Trappers Association (MHTO) participation in the Terrestrial and Marine Environment Working Groups, ongoing dialogue with the Qikiqtani Inuit Association (QIA) regarding Project operations, and Inuit Impact and Benefit Agreement (IIBA) implementation and the participation of Inuit in Baffinland monitoring programs.

In relation to the PIP specifically, Baffinland currently provides \$200,000 to the MHTO annually in support of a community based monitoring program. This support would continue during 2020, if the Extension Request is granted. Other specific examples of how IQ and community feedback have shaped operations and environmental management systems at Mary River as they relate to the PIP activities, include, but are not limited to:

- Reduction of speed of Project vessels from 7-10 knots to a maximum speed of 9 knots to address community concerns about the potential for vessel noise on marine mammals;
- Identification of community-preferred drifting locations for Project vessels near Ragged Island;
- Commitment to a limit of three Project-vessels anchored and/or drifting at Ragged Island at any given time;
- Establishment of a buffer zone away from the floe edge to minimize disturbances to staging narwhal;
- Commitment to confirm with the MHTO that the floe edge has been closed for hunting prior to the start of the shipping season;
- Installation of 6 additional dust fall monitor stations in 2018 at locations confirmed by MHTO representatives to address community concerns regarding dust dispersion along the Tote Road;
- Expansion of monitoring programs to address community concerns, for example expansion of the Aquatic Invasive Species to Ragged Island and inclusion of additional fish for tissue sampling; and
- Participation of the MHTO in the caribou height-of-land monitoring programs to provide insights on program design, including information on caribou behaviour and how to look for caribou on the North Baffin landscape.

The integration of Inuit Qaujimaningit (IQ) into Baffinland's environmental management system has also been a key theme throughout the ongoing Phase 2 Review process. The following documents contain information relevant to the Board's concern in this area:

- Baffinland response to MHTO final written submission (specifically 3a, 4a, and 5d) (Baffinland, 2019q);
- Appendix 13 (IQ Memo) of Baffinland responses to Technical Comments (March 25, 2019) (Baffinland, 2019f); and
- Draft IQ Management Framework (Baffinland, 2019q).

Baffinland will continue to work with Inuit to ensure Inuit views and perspectives inform decision making regarding operational activities.

4.2 CONSULTATION WITH INUIT ON PIP EXTENSION REQUEST

The support letter for the PIP provided by the QIA, MHTO, and Hamlet of Pond Inlet on September 21, 2018 recognized the importance of the continuation of the Mary River Mine, the Project Stabilization Approach, and the renegotiated IIBA and concluded that a permanent increase in iron ore transportation from Milne Inlet should be allowed to proceed.

Prior to providing formal notification to the NIRB of Baffinland's intentions towards the Extension Request, Baffinland directly engaged community representatives:

- November 26-27, 2019 - Met with the Hamlet of Pond Inlet and the MHTO to discuss general issues related to the Mary River Mine and the ongoing reconsideration processes for expansion (Phase 2 and the Extension Request).
- November 25-29, 2019, Baffinland staff contacted Hamlet representatives of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet to provide information about Baffinland's intention to proceed with the submission of an application to NIRB to extend the then-current production levels of 6 Mtpa through 2020, among other topics.
- November 29, 2019, Baffinland issued a letter to the MHTO providing a formal update on the intention to submit the Extension Request and requested their continued support.

On December 5, 2019 Baffinland received a letter from the Mayors of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet supporting the PIP Extension Request (Attachment 5).

On December 6, 2019 Baffinland issued its formal request to the NIRB to modify Terms and Conditions 179(a) and 179(b) of Project Certificate No. 005. In this letter Baffinland described the Extension Request and summarized the meetings that had taken place with community representatives and its response to the Mayors support letter, issued December 5, 2019 (See Attachment 5).

4.3 INUIT PARTICIPATION IN ENVIRONMENTAL MONITORING

As described in response to the MHTOs Final Written Submissions on the Phase 2 Proposal (Baffinland response to Final Written Submissions Appendix B) Baffinland believes that consultation with Inuit and incorporation of Inuit in field monitoring programs is critically important and that is why we have strived to ensure this become a standard practice. Efforts to demonstrate this include

- hiring and training Inuit to take part in all marine and terrestrial monitoring programs;
- formal biannual meetings with the MHTO to discuss shipping operations and marine mammal monitoring;
- supporting participation of the MHTO in the Marine Environment Working Group (MEWG) and Terrestrial Environment Working Group (TEWG);
- funding for 2 full-time shipping monitors to act as liaisons between the community of Pond Inlet and the Company in relation to shipping activities;
- funding for 2 full-time on-site (cross-shifts at both Milne Port and Mine Site) Environmental Monitors to be appointed and solely employed by QIA in accordance with Article 15.8 of the IIBA; and
- the implementation of a community based monitoring program through the Mary River IIBA.

Baffinland also conducts multiple meetings throughout the year to discuss all topics related to the Project either by invitation from the community or by request to meet on specific items. All of these mediums serve to guide information gathering and sharing, which influences Baffinland's monitoring programs, Project operations and a greater understanding of the environment.

In 2019 Baffinland had 50% participation from Inuit in the caribou height-of-land surveys, and 40% Inuit participation in the vegetation monitoring program. Summer 2019's Mary River site terrestrial monitoring programs provided 372 hours of employment for two Inuit Technicians in the vegetation monitoring program and 168 hours of employment for 1 Inuk Technician in the Height of Land Caribou monitoring program. 18 Inuit were employed as part of Baffinland's marine monitoring programs, compared to the 11-member team from Golder Associates. Inuit form the majority (60%) of researchers hired to run Baffinland's marine monitoring programs. In 2019, these marine monitoring programs included the aerial survey program, Bruce Head monitoring program, Marine Environment Effects Monitoring Program and Ship Board Observer program. Together these programs resulted in 71 days (710 hours) in training and 566 days (5,660 hours) of employment for Inuit employees. Inclusion of Inuit in the marine monitoring programs bolsters Baffinland's ability to further integrate Inuit perspectives in program implementation and data collection, and influences how results of the program will be interpreted.

The marine and terrestrial monitoring programs also provide training opportunities for Inuit participants, such as Personal Survival Techniques training course (10 Inuit from Pond Inlet travelled to Dartmouth, Nova Scotia to participate in), several employment opportunities throughout the summer, and local procurement opportunities for small businesses (e.g. Tagak Outfitters and Inuarak Outfitting) who supply personnel, equipment and other resources to Golder and Baffinland throughout the summer in support of monitoring program implementation. Baffinland provides hard copies of the terrestrial and marine monitoring reports to the MHTO each year and translates executive summaries of these reports to increase accessibility of the results.

As part of the 2019 marine monitoring programs, Baffinland introduced an additional component to data collection to seek specific feedback from Inuit who have been trained for and worked on the marine monitoring programs. Participants were asked about their overall experience participating in the program, their input on study design and data analysis approach, interpretation of the results of data collected, and suggestions on how best to communicate results of the monitoring programs to community members. Preliminary results of their feedback, observations on the monitoring programs and feedback has been included in the 2019 Marine Monitoring Memo (Baffinland, 2019q Appendix N-Attachment 4). Baffinland has also committed to increase training provided to Inuit who participate in the programs to undertake data analysis. In 2019 one individual will receive training at the Golder Associates Limited (Golder) office in Calgary, AB to conduct photographic analysis for 2019 aerial survey monitoring program report and will be listed as a co-author on the aerial survey monitoring report.

Baffinland will continue to seek further means to better integrate Inuit researcher's knowledge into the monitoring programs throughout the life of the Project. It is Baffinland's aspiration to have individuals who participate in marine and terrestrial environmental monitoring programs eventually lead reporting initiatives with the community themselves. In 2018, as part of updates to the Inuit Impact Benefit Agreement (IIBA) (QIA & Baffinland, 2018) for the Mary River Project, Baffinland established the Wildlife Monitoring Program (Article 17.8 of the IIBA), which is a community-based monitoring program, specific to the research interests of the community of Pond Inlet. To that end, Baffinland provided the MHTO with \$205,000.00 in 2019 to conduct community-based monitoring programs, which the MHTO elected to use to study fish health and narwhal harvesting efforts. The results and associated reporting of these programs rests entirely with the MHTO.

5 PROJECT MONITORING

5.1 GENERAL

In the NIRBs Reconsideration Report, the Board described their concerns that the information provided by Baffinland in support of the PIP was lacking in detail and that there existed several significant gaps in Baffinland’s monitoring for the approved Project.

Baffinland wishes to clarify that monitoring is conducted for each valued ecosystemic component (VEC) and valued socio-economic component (VSEC) identified in the Mary River Project Environmental Impact Statement Guidelines, in a manner consistent with the NIRB’s draft Post-Environmental Assessment Monitoring Plan. This has resulted in a substantive monitoring dataset on Project effects. The results of this Project monitoring are available to the NIRB and other interested parties via the submission of approximately 50 monitoring reports throughout the year to various regulatory agencies. For example, in 2018 alone, Baffinland submitted each of the monitoring reports shown in Table 5.1.

Table 5.1: 2018 Marine Monitoring Report Submissions

2018 Monitoring Report Description
2014-2017 Bruce Head Shore Based Monitoring Integrated Data Report
AEMP Hydrometric Monitoring Program
Bruce Head Vessel-Based Monitoring Program Field Summary Report
Core Receiving Environment Monitoring Report
DFO Milne Ore Dock Fish Offset Monitoring Report
DFO Tote Road Authorization Annual Report
Freshet Monitoring Report
Freshet Monitoring Report No. 1
Freshet Monitoring Report No. 2
Geotechnical Inspection Report No. 1
Geotechnical Inspection Report No. 2
GHG Reporting
IIBA Annual Implementation Report
Lake Sedimentation Monitoring Report
Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Annual Monitoring report
MDMER Annual Report
Monthly Water Licence Report - Type A Water Licence
NIRB Annual Report
NPRI Reporting
Passive Acoustic Monitoring Program

2018 Monitoring Report Description
Q1, Q2, Q3, and Q4 IIBA Implementation Report
Q1, Q2, Q3 and Q4 MERS Report
Q1, Q2, Q3 and Q4 Waste and Quarry/Borrow Reports
QIA and NWB Annual Report - Type A Water Licence
QIA and NWB Annual Reports - Type B Water Licence
SBO Program Report
Socio-Economic Annual Monitoring Report
Streamflow Data for the Type 'A' Water Licence Monitoring Locations
Terrestrial Environment Annual Monitoring Report
Waste Management Program Report

To further enhance annual monitoring, Baffinland also coordinates three VEC/VSEC specific working groups, including the:

- Marine Environment Working Group (MEWG);
- Terrestrial Environment Working Group (TEWG); and
- Mary River Socio-Economic Working Group (SEMWG).

The following example is provided to explain the interaction between annual reporting and the working groups. In 2019, marine mammal monitoring will result in the submission of 4 comprehensive draft technical reports to the MEWG, namely the 2019 Ship-Based Observer Monitoring Program Report, the 2019 Marine Mammal Aerial Survey Report, the 2019 Bruce-Head Shore-based Monitoring Report and the 2019 Passive Acoustic Monitoring Report. Each of these draft reports will be subject to review and comment from the MEWG before the reports are finalized and posted to Baffinland's Document Portal¹. The same process is followed for the terrestrial environment annual monitoring report with the TEWG. This review process provides greater certainty to working group members in the robustness of the monitoring programs and influences future year program designs as relevant. The results of these monitoring programs are also summarized in Baffinland's Annual Reports to the NIRB.

Project effects identified through monitoring programs are compared against predictions made within the Final Environmental Impact Statement (FEIS) a summary of which is included in Sections 4.5 through 4.7 of Baffinland's Annual Report to the NIRB. Where necessary, additional mitigations and adaptive management measures have been adopted to offset these effects.

To further ensure compliance with monitoring requirements stipulated in Baffinland's operating approvals, annual recommendations made by the Board in the NIRBs Annual Monitoring Reports result in meaningful corrective actions

¹ The Baffinland Annual Report to the NIRB took on a new format in 2016 in consultation with NIRB staff. The revised format resulted in the posting of environmental monitoring reports used to substantiate summary of conclusions in the Annual Report to NIRB on Baffinland's Document Portal, rather than being appended to the Annual Report (meaning they are not submitted to the NIRB registry).

being undertaken by Baffinland, a few of which from the NIRBs 2016-2017 Monitoring Report (Baffinland, 2017) have been summarized below to illustrate the effectiveness of this process:

- Board Recommendation No. 1 (2016-2017): Baffinland must reinstall the tidal gauge at Milne Port in accordance with PC Condition No. 1 and 83. Subsequent Action: Baffinland reinstalled the tidal gauge at Milne Port in 2017.
- Board Recommendation No. 20 (2016-2017): Baffinland should exceed requirements of PC Condition No. 12, and commence regular stack testing at incinerators. Subsequent Action: Baffinland committed to exceeding requirement of PC Condition No. 12 by agreeing to perform stack testing every five years on the incinerators at Milne Port and the Mine Site.
- Board Recommendation No. 11 (2016-2017): Baffinland should increase sediment sampling for the MEEMP program, specifically to better evaluate sediment transport from Phillips Creek. Subsequent Action: Baffinland expanded the sediment sampling program in 2019 and also committed to performing a desktop review to evaluate the sediment transport regime at Milne Port.
- Board Recommendation No. 16 (2016-2017): Baffinland must develop an action plan for monitoring fouling on the hulls of Project vessels. Subsequent Action: Baffinland implemented a remote operated vehicle monitoring program in 2018 to survey hulls of Project vessels for evidence of biofouling.

Baffinland includes a concordance table with the Board Recommendations as Appendix E in each of its Annual Report to the NIRB to ensure transparency with other reviewers.

5.2 DUSTFALL

In the NIRBs Reconsideration Report, the Board noted several concerns with respect to the potential for increased trucking associated with the PIP to increase dustfall deposition and effects on the receiving freshwater and marine environments. The Board indicated they did not feel Baffinland had adequately demonstrated how dustfall levels would be maintained relative to the ERP, and that there were gaps in the assessment on effects of dustfall on the receiving environments. The Board also indicated that Baffinland had not adequately described mitigations and monitoring of these effects within the PIP application.

The following provides a summary of additional assessment work undertaken by Baffinland on dustfall dispersion and effects on the receiving environment since the time of the submission of the PIP, results of Project-monitoring under the 6Mtpa operating scenario, mitigations for managing dustfall and which management plans for the Project capture these commitments.

A summary of the status of resolution with interveners at the time of the Board's decision has also been provided.

5.2.1 Assessment

The Phase 2 Proposal, submitted October 2018 (Baffinland, 2018b), includes trucking of 6Mtpa of iron ore between the Mine Site and Milne Port for the duration of the construction period. For a period of up to two (2) years trucking of 12 Mtpa between the Mine Site and a Temporary Ore Transfer is also proposed as part of the North Railway commissioning. This modification to Project traffic along the Tote Road was accurately described in the Project Description (TSD-2), and further considered in the following assessments and supporting modelling:

- Atmospheric Assessment (TSD-7),
- Terrestrial Wildlife Baseline and Impact Assessment (TSD-10),
- Evaluation of Exposure Potential from Ore Dusting Events in Selected VECs (TSD-11),
- Surface Water Assessment (TSD-13)

- Freshwater Biota and Habitat Assessment (TSD-14).

Each assessments conclusion was that no significant adverse residual effects were anticipated, consistent with the findings of related VEC/VSEC assessments from the original PIP application. Baffinland maintains that the conclusions of the Phase 2 FEIS Addendum are accurate and well supported. Understanding that the activities proposed under the PIP Extension Request are significantly smaller in scope than the Phase 2 Proposal, it is Baffinland's position that the Phase 2 FEIS Addendum conclusions are overly conservative and provide a reasonable level of certainty that no significant adverse effects should be anticipated if the Extension Request proceeds.

5.2.2 Monitoring Results

The following sections provide a summary of monitoring results during 2018 and 2019 commenced. Monitoring results show that Project effects are generally consistent with previous years (i.e. when the Project was operating at a maximum capacity of 4.2 Mtpa), despite an increase from 195 ore haul truck transits per day recorded in 2017 to 219.5 ore haul truck transits per day recorded in 2018 required to haul 6 Mtpa.

5.2.2.1 Dustfall Deposition and Dispersion

As part of commitments made through the PIP review process, in 2018 Baffinland completed installation of six (6) new dustfall collection stations, the locations of which were determined in direct consultation with the MHTO and the QIA. These new locations were added to assess the geographic extent of fugitive dust within the Tote Road corridor.

As described in Section 2.3.1 of the 2018 Terrestrial Environment Annual Monitoring Report (EDI, 2019), dustfall at the Tote Road north crossing remained generally consistent with 2017 during both summer and winter, while dustfall at the Tote Road south crossing saw a decrease in both the summer and winter months.

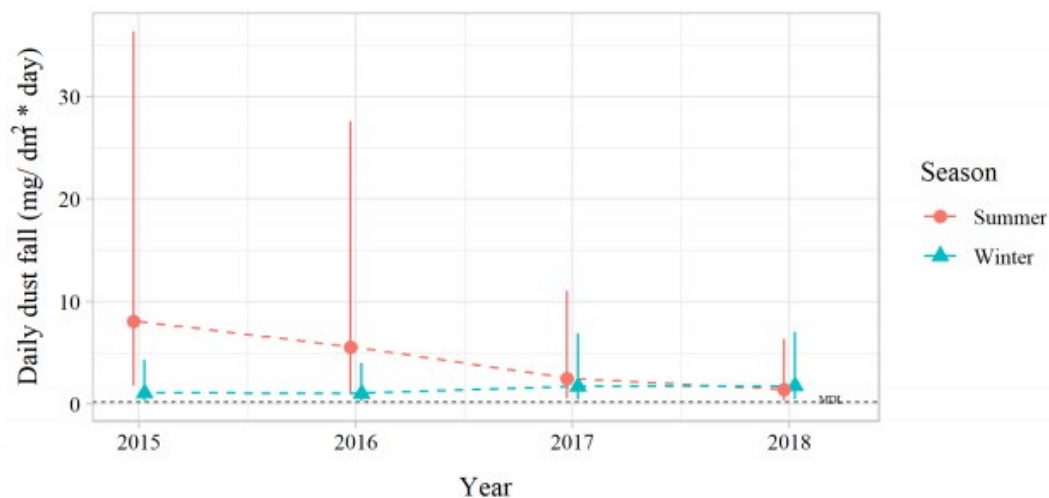


Figure 15 Inter-annual differences in dust fall at the North Road sites in summer and winter. Points represent median dust fall, and vertical error bars are 95% confidence intervals. The dashed lines highlight changes in seasonal dust fall across years. Medians and confidence intervals were calculated on a log scale; therefore, the confidence intervals are asymmetrical on the linear scale shown in this graph.

Figure 5.1: Inter-Annual Differences in Dust Fall at the North Road Sites in Summer and Winter (Figure 15,2018 Terrestrial Environment Monitoring Report)

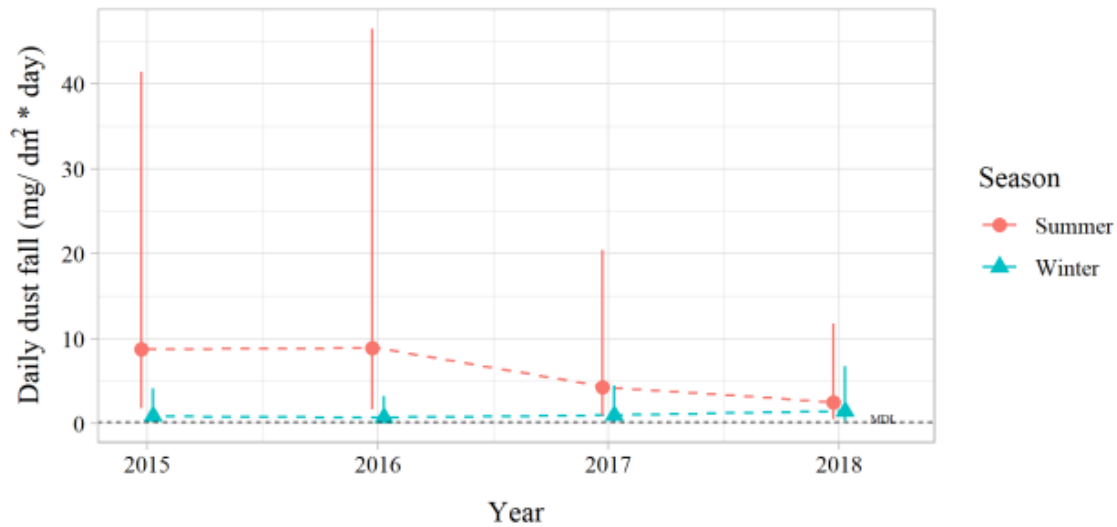


Figure 16 Inter-annual differences in dust fall at the South Road sites in summer and winter. Points represent median dust fall, and vertical error bars are 95% confidence intervals. The dashed lines highlight changes in seasonal dust fall across years. Medians and confidence intervals were calculated on a log scale; therefore, the confidence intervals are asymmetrical on the linear scale shown in this graph.

Figure 5.2: Inter-Annual Differences in Dust Fall at the South Road Sites in Summer and Winter (Figure 16, 2018 Terrestrial Environment Monitoring Report)

5.2.2.2 Effects of Dustfall on the Freshwater Environment

Baffinland also implemented a formalized Tote Road Monitoring Program (TRMP) (see Appendix D of Baffinland's Roads Management Plan), which was developed to monitor the water quality of surface water flows at select water crossings along the Milne Inlet Tote Road with a primary focus on monitoring total suspended solids (TSS) concentrations upstream and downstream of Tote Road crossings. The objective of the program is to assess potential for project sedimentation impacts (i.e. as a result of dustfall) on surface water across a representative number of water crossings in the Tote Road corridor, selected in consultation with QIA in 2018.

Monitoring data collected through the TRMP will be used to:

- Inform Project operations of potential water quality impacts from Project activities at water crossings along the Tote Road.
- Guide and prioritize Tote Road maintenance work, corrective actions and improvement projects for surface water management infrastructure.
- Adjust mitigations measures and management strategies for Project activities along the Tote Road.
- Deepen understanding of natural water quality conditions along the Tote Road (upstream) and the natural factors that contribute to changes in surface water quality.

A preliminary analysis of the results of the Tote Road Monitoring Program from 2019 indicate no observed Project-related increases to TSS in surface water in the Tote Road corridor, despite the increase in vehicle traffic on the Tote Road in 2019. A comprehensive analysis will be provided in the forthcoming Freshet Monitoring Report and QIA/NWB Monitoring Report scheduled for submission on March 31, 2019.

Over the past three monitoring years Baffinland has observed a downward trend in reportable spill events related to elevated TSS. A total of fifteen (15) spill events related to elevated TSS occurred in 2017 (Baffinland, 2018c), one (1) spill related to elevated TSS in occurred in 2018 (Baffinland, 2019y), and no reportable spills for elevated TSS levels in surface water in the Tote Road corridor in 2019.

5.2.2.3 Effects of Dustfall on the Marine Environment

As part of the Marine Environmental Effects Monitoring Program, the presence of fines in sediment is monitored as an indicator to assess the extent of dustfall in the marine environment as a result of Project activities. Results from 2018 monitoring are discussed in detail in Section 4.1.2.1 of the 2018 Marine Environmental Effects Monitoring Program Report (Golder, 2019b).

Fines content remained stable between the five years of sampling on the West and East transects. On the Coastal Transect, there was an estimated increase in percent fines at the 1,000-m and 1,500-m distances between 2014 and 2016, although the 2018 estimates showed no change from 2014 indicating no consistent trend between years. On the North Transect, a significant increase in percent fines was estimated at transect origin between 2014 and 2015, followed by a small decline in 2016 and no further changes throughout 2017-2018. Overall, there were no significant changes in percent fines between 2014 and 2018 on any of the four transects, despite the year over year increases in stockpiling and loading at Milne Port, including the increases associated with the PIP (Table 4-4 from the 2018 MEEMP Report).

Content of iron in sediment samples are also monitored on an annual basis as part of the Marine Environmental Effects Monitoring Program at Milne Port. Increases in iron content over time would be interpreted as a Project-related effect. Results detailed in Section 4.1.2.2 of the 2018 MEEMP Report show that iron concentrations showed inter-annual changes at some locations on the West and East transects during the five study years, while no significant changes in iron concentrations were observed on the Coastal or North Transects. Between 2014 and 2018, significant increases in iron concentrations, based on observed fines content, were observed at 500 m and 1,500 m from the ore dock on the West Transect and at 500 m and 1,000 m on the East Transect. When iron concentrations were corrected to minimum or maximum transect-specific fines content, significant increases between 2014 and 2018 were estimated only at 50 and 1,000 m from the ore dock on the East Transect (no corrected estimates were done for 0 m). Although not significant, gradual annual increases were estimated at 500 m and 1,000 m on the West Transect between 2015 and 2018, at 50 m and 500 m on the East Transect between 2016 and 2018, and at 1,000 m on the East Transect between 2016 and 2018. No significant changes in the same direction were observed in two consecutive years over the 2014-2018 period (Figure 4-14 from Golder, 2019b).

Table 5.2: Multiple Comparisons of Percent Fines between Years, within Distance/Transect Combinations (Table 4-4, 2018 MEEMP Report)

Table 4-4: Multiple Comparisons of Percent Fines between Years, within Distance/Transect Combinations

Transect and Distance from Origin (m)	Sampling Year				
	2014	2015	2016	2017	2018
West Transect					
0	ab	ab	<u>b</u>	<u>a</u>	a
500	a	a	a	a	a
1,000	a	a	a	a	a
1,500	a	a	a	a	a
East Transect					
0	a	<u>b</u>	<u>a</u>	<u>b</u>	<u>a</u>
500	a	a	a	a	a
1,000	a	a	a	a	a
1,500	a	a	a	a	a
Coastal Transect					
500	a	a	a	a	a
1,000	a	ab	b	ab	ab
1,500	a	ab	b	b	ab
4,000	a	a	a	a	a
North Transect					
0	a	b	ab	ab	ab
500	a	a	a	a	a
1,000	a	a	a	a	a
1,500	a	a	a	a	a

Notes: Years that do not share letters (within every distance in each transect) are significantly different from each other. Increasing letters represent an increase in values: "a" is the lowest estimated fines value, "b" representing is the second lowest, and so on. Grey shading depicts significant, increasing trends between consecutive years, and underlined letters represent significant, decreasing trends between consecutive years.

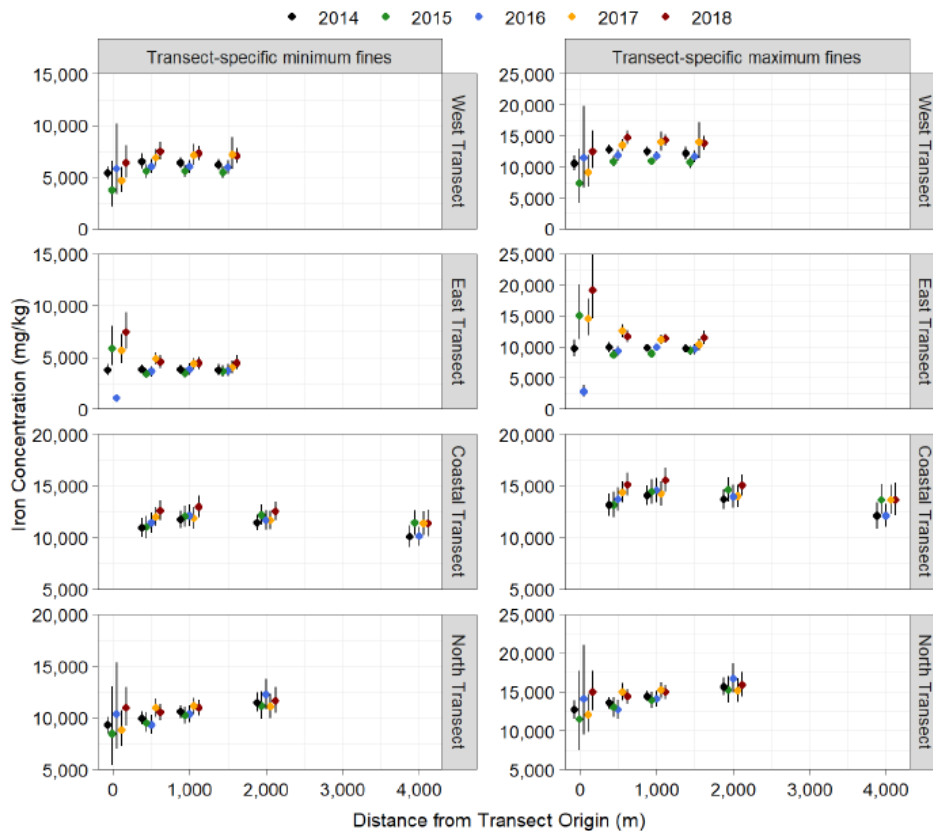


Figure 4-14: Estimated Iron Content in Sediment Relative to Sampling Distance along Transects at Minimum and Maximum Transect-Specific Fines Content, 2014 to 2018. Grey Ribbons are 95% Confidence Intervals.

Figure 5.3: Estimated Iron Content in Sediment Relative to Sampling Distance along Transects at Minimum and Maximum Transect-Specific Fines Context, 2014 to 2018 (Figure 4-14, 2018 MEEMP Report)

5.2.3 Mitigation and Adaptive Management

The following is a summary of mitigations and adaptive managements undertaken by Baffinland to manage dustfall at the Project. This summary is taken from the update to the NIRB in response to Board Recommendation No. 4 from the NIRBs 2018-2019 Annual Monitoring Report and the Baffinland's 2018 Annual Report to the NIRB.

Baffinland is committed to controlling dust sources at the Project. Implementation and mitigation measures continued in 2018 including new crusher shrouding and enclosed chutes, road resurfacing, limiting speed and volume of vehicles on all roads, application of water and dust suppression substances, continued implementation of redesigned stockpile activities and layout at the Port, retrofitting existing dust suppressant equipment, and the removal of dust impacted snow at strategic locations at the Project. Additional shrouds were also installed at the Mine Site crusher in 2019 and Baffinland is actively considering and/or implementing new methods through reengineering of equipment designs to minimize dust generation.

Calcium chloride and water has also been applied on road surfaces throughout operations to mitigate dust emissions. Based on feedback received from communities, the QIA and other regulators, in 2019 Baffinland also actioned a trial of Dust Stop®. Results of the micro-trial indicate that Dust Stop® is a successful and feasible alternative for dust management along Project roads. Baffinland has an available 720 totes (1,000 L) of Dust Stop® on site, which will be applied in spring of 2020 with fresh gravel. Results show that it will remain in place for most of the summer season,

assuming routine maintenance after initial application. An additional order will be made for resupply on the 2020 sealift pending ongoing review of effectiveness.

The most recent monitoring results suggest that dust management and mitigations are functioning as intended to manage potential increases in dust deposition into the receiving environment associated with the PIP.

5.2.4 Management Plans

Mitigations to manage dust fall deposition and dispersion, and subsequent effects of dustfall on the environment are captured in the following management plans for the Project:

1. Air Quality and Noise Abatement Management Plan Rev. 7 (Draft)
2. Aquatic Effects Monitoring Plan Rev. 3 (Draft)
3. Marine Monitoring Plan Rev. 1 (Draft)
4. Terrestrial Environment Mitigation and Monitoring Plan Rev. 4 (Draft)
5. Roads Management Plan Rev. 7

5.2.4.1 Consistency with Phase 2 Assessment

The above monitoring results are consistent with the assessment conclusions in the PIP and the Phase 2 FEIS Addendum, specifically that increased ore haulage will not cause significant impacts on the atmospheric (TSD 7), terrestrial (TSD 9-12), surface water (TSD 13) or marine environments (TSD 17). Note that the level of ore haulage reaches 12 Mtpa during railway commissioning, and the shipping activity proposed under Phase 2 is greater than twice the level included in the PIP.

5.3 MARINE MAMMALS AND BIOTA

In the NIRBs Reconsideration Report, the Board noted several concerns with respect to the potential for increased shipping associated with the PIP to increase Project effects on marine mammals. Specifically, the Board indicated they did not feel Baffinland had adequately demonstrated how effects on marine mammals would be maintained relative to the ERP, and that there were gaps in the assessment on potential effects to marine mammals associated with the PIP. The Board also indicated that Baffinland had not adequately described mitigations and monitoring of these effects within the PIP application.

The following provides a summary of additional assessment work undertaken by Baffinland on marine mammals since the time of the submission of the PIP, results of Project-monitoring under the 6 Mtpa operating scenario, mitigations for managing effects on marine mammals and the management plans for the Project which capture these commitments.

5.3.1 Assessment

The Phase 2 Proposal (Baffinland, 2018b), submitted October 2018, includes up to 176 ore carriers calling on Milne Port in a given season. This modification to Project shipping along the established Northern Shipping Corridor (Baffin Bay-Eclipse Sound-Milne Inlet) was accurately described in the Project Description (TSD-2), and further considered in the following assessments and supporting modelling reports:

- Ice Study (TSD-16),
- Marine Environmental Effects Assessment (TSD-17)
- Ballast Water Dispersion Modelling Report (TSD-18)

- Fuel Spill Modelling Report (TSD-19)
- Hydrodynamic Modelling Report (TSD-20)
- Risk Assessment for Aquatic Invasive Species Report (TSD-21)
- Ship-Wake and Propeller Wash Assessment (TSD-22)
- Conceptual Marine Offsetting Plan (TSD-23)
- Marine Mammals Assessment (TSD-24), and
- Ice-Breaking Assessment.

Each assessments conclusion was that no significant adverse residual effects were anticipated, consistent with the findings of related VEC/VSEC assessments from the original PIP application. Baffinland maintains that the conclusions of the Phase 2 FEIS Addendum are accurate and well supported. Understanding that the activities proposed under the PIP Extension Request are significantly smaller in scope than the Phase 2 Proposal, it is Baffinland’s position that the Phase 2 FEIS Addendum conclusions are overly conservative and provide a reasonable level of certainty that no significant adverse effects should be anticipated in the case of the PIP Extension Request.

5.3.2 Marine Mammal Monitoring Methods

To meet the requirements of PC Condition No. 109, namely that Baffinland “conduct a monitoring program to confirm the predictions in the FEIS with respect to disturbance effects from ships noise on the distribution and occurrence of marine mammals, and that the survey be designed to address effects during the shipping seasons, and include locations in Milne Inlet, Eclipse Sound and Pond Inlet”, Baffinland has conducted at varying frequencies (see Table 5.3) the following marine mammal monitoring programs: marine mammal aerial survey program; Bruce Head shore-based monitoring program; the narwhal tagging program’ the Passive Acoustic Monitoring Program; and, the Ship-based Observer (SBO) program.

Table 5.3: Baffinland Inter-Annual Marine Monitoring Programs

Survey Method	Year									
	2006	2007	2008	2013	2014	2015	2016	2017	2018	2019
Aerial Surveys	✓	✓	✓	✓	✓	✓	✓			✓
Bruce Head Shore-based Monitoring				✓	✓	✓	✓	✓	✓	✓
Narwhal Tagging Program								✓	✓	
Ship-based Observer Program				✓	✓	✓			✓	✓
Acoustic Monitoring Program				✓	✓			✓	✓	✓
Marine Ecological Effects Monitoring Program	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

5.3.2.1 Early Warning Indicators

As described in Baffinland's response to Board Recommendation No. 4 of the NIRBs 2018-2019 Annual Monitoring Report (Baffinland, 2019s), through the marine mammal monitoring programs described in Section 5.3.3, the following indicator data is being tracked for narwhals as a key indicator species:

- Relative abundance and distribution
- Group composition (e.g. gender ration, mother/calf pairs to infer calving rates)
- Change in behaviour (e.g. travel speed, change in direction, distance from shore, etc.)
- Mortality
- Underwater noise levels
- Narwhal vocal behaviour (e.g. call rate, proportional call use, call frequency)
- Narwhal abundance, distribution and density in the RSA
- Dive behaviour
- Surface Movement

Long-term datasets on these indicators will allow Baffinland to develop reasonable thresholds, which will complement trend analysis and inform the implementation of additional adaptive management measures. This information will be used to finalize Early-Warning Indicators for marine mammal monitoring as required by PC Conditions No. 110 and 111. A timeline for finalizing this work with the MEWG and a summary of all activities undertaken by Baffinland and the MEWG with respect to the development of the EWIs to-date was provided in response to Board Recommendation No. 4 from the NIRBs 2018-2019 Annual Report.

5.3.3 Monitoring Results

As part of its response to Final Written Submission for the Phase 2 process, on October 15, 2019, Baffinland submitted the 2019 Marine Monitoring Memo (Baffinland, 2019q Appendix N-Attachment 4). Key highlights from that memo are summarized in Section 5.3.3.1 below, the findings of which are consistent with previous years monitoring results described in Section 4.6 of Baffinland's 2018 Annual Report to NIRB (Baffinland, 2019e), substantiating predictions made in the ERP FEIS and PIP that the Project will have temporary and localized disturbances on narwhal, but that long-term displacement and abandonment of the area will not occur as a result of Project operations. This is in light of a continuous year-to-year increase in ship traffic in the area since the start of Project operations, including under the 6 Mtpa Project scenario.

5.3.3.1 Narwhal Relative Abundance and Distribution

A preliminary summary of 2019 relative abundance and distribution data collected from the Bruce Head Shore-Based Monitoring Program compared to that collected from 2014 to 2017 is shown in Table 5.4. Data shows that the total number of narwhal sightings collected for effort in 2019 was shown to be comparable to that reported in previous survey years, including from baseline monitoring conducted in 2014 prior to the start of Project-shipping activities. Additional details are available in the 2019 Marine Monitoring Memo (Baffinland, 2019q Appendix N-Attachment 4).

Table 5.4: Relative Abundance and Disturbed (RAD) Surveys at Bruce Head (2014 – 2017) (Table 4, Appendix N Attachment 4 of Baffinland Written Submission October 15, 2019)

Table 4. Relative Abundance and Distribution (RAD) Surveys at Bruce Head (2014–2017).

Statistic	Survey year				
	2014	2015	2016	2017	2019
Survey dates	3 Aug–5 Sept	29 July–5 Sept	30 July–30 Aug	31 July–29 Aug	6 Aug–1 Sept
No. of active survey days	23	29	27	26	26
No. of survey days lost to weather	14	9	11	2	0
No. of observer hours (total)	103.2	148.7	159.3	97.3	139.3
Average daily survey effort (No. of RAD surveys)	7.8	10.8	11.9	6.2	11.0
No. of attempted RAD surveys	179	314	321	160 ⁽¹⁾	289
No. of complete RAD surveys	166	313	311	109	285
Number of RAD surveys with zero narwhal counts	74	164	127	35	88
No. of narwhal sightings (total)	10,463	14,599	28,309	11,862	14,690
No. of narwhal excluding 'impossible' sightability	10,463	14,599	28,309	11,831	14,680
No. of narwhal excluding 'impossible' sightability, standardized by effort (narwhal / h)	101.4	98.2	178.0	121.8	107.6
No. of large vessel transits during RAD effort	5	12	23	22	46

(1) = one survey out of the total 160 surveys was omitted from due to high chance of double-counting animals. All other values shown for 2017 in this table exclude this survey.

5.3.3.2 Marine Biota

Fishing effort in 2018 yielded greater sampling sizes than in previous years, both in terms of total catch and gill net catch per unit of effort. Concentrations of metals in Arctic char tissue analysed for body burden in 2018 was consistent with those reported in previous year (2010-2017) (see Section 4.1.5 of the 2018 MEEMP/AIS Report (Golder, 2019b)). No aquatic invasive species were identified through Project monitoring in 2018, which is consistent with previous years (see Section 4.2 of the 2018 MEEMP/AIS Report).

5.3.3.3 Summary of Monitoring Results

The Extension Request currently before the Board proposes a single additional year of increased ore production and transportation at 6Mtpa. If the 2019 experience is replicated in 2020, this temporary increase will require approximately 82 ore carriers to call on Milne Port in 2020, representing an increase of 24 ships over what's otherwise required under the ERP (Up to 86 ships could be required, representing an additional 28 over what's approved under the ERP). Baffinland has provided ample evidence from its 2019 marine monitoring programs that demonstrate the increased shipping associated with the PIP has not affected narwhal distribution or abundance, a key indicator species in the marine RSA.

5.3.4 Mitigation and Adaptive Management

Baffinland implemented several key vessel management mitigation measures in 2019 that were designed to minimize effects of shipping on the marine environment and local land users. A detailed description of the implementation of these mitigations was included in the 2019 Shipping Mitigation Memo (Baffinland, 2019q).

Appendix N-Attachment 5). A high-level summary of all relevant mitigations committed to by Baffinland to minimize effects on marine mammals are as follows:

- Defined shipping lane throughout RSA.
- Maintain constant speed and course when possible.
- No breaking of landfast ice.
- Between the period of 01 July and 30 July, a maximum of one icebreaker transit (with escorted vessels) will occur per 24-hour period where ice concentrations of 6/10 or greater cannot be avoided along the shipping route.
- Between the period of 01 July and 30 July, a maximum of two icebreaker transits (with escorted vessels) will occur per 24-hour period where ice concentrations of 3/10 or greater cannot be avoided along the shipping route.
- All Project vessels will reduce speeds to a voluntary maximum of 9 knots when travelling within the RSA
- Establishment of 40km buffer zone at floe-edge.
- All ice breaking activities will be conducted outside of the period of ringed seal parturition, nursing and breeding periods.
- When marine mammals appear to be trapped or disturbed by Project vessel movements, the vessel will implement appropriate measures to mitigate disturbance, including stoppage of movement until wildlife move away from the immediate area (as safe navigation allows).
- All Project vessels will be provided with standard instructions to not approach within 300m of a walrus or polar bear observed on sea ice.
- All Project vessels will be provided with standard instructions to operate their vessel in a manner that avoids separating an individual member(s) of a group of marine mammals from other members of the group.
- Baffinland will place Marine Wildlife Observers (via the SBO program) on ice breaking vessels during the shoulder season that will be responsible for recording relative abundance, group composition and behavior of marine mammals, and if relevant any incidences of marine mammal strike or near misses with Project vessels.
- Posting of ice analyst on board ice breaking vessels.
- Project aircrafts (helicopter and air planes) will maintain an altitude of 450m over marine waters when possible.
- Establishment of restricted “no-go” zones to avoid key sensitive areas (Koluktoo Bay, Tremblay Sound, Bruce Head shore).
- No drifting in Eclipse Sound.
- Maximum of 3 vessels anchored at Ragged Island.
- Limit vessel idling.

It is important to note that several of these mitigation measures have been implemented on a voluntary basis by Baffinland, exceed regulatory requirements, and are representative of a more conservative vessel traffic management approach than is executed by all other operators in the RSA.

5.3.5 Management Plans

Baffinland wishes to direct the Board and other interested parties to the following plans that have been developed specifically to address shipping-related effects of the Project. Each of these clearly stipulate Baffinland's

commitments to responsible shipping operations in the area that minimize potential effects of the Project on the environment and local land users:

1. Shipping and Marine Wildlife Management Plan
2. Spill at Sea Response Plan
3. Milne Port Oil Pollution Prevention Plan
4. Ballast Water Management Plan
5. Draft Shipping Communication Standard Operating Procedure
6. Draft Early Shipping Season – Operation Guide
7. Marine Monitoring Plan

5.3.6 Consistency with Phase 2 Assessment

The Phase 2 FEIS Addendum (Baffinland, 2018b) provides a robust marine environment (TSD 17) and marine mammal effects assessment (TSD 24), which includes a marine mammal baseline report current to 2017 and an underwater acoustic modelling report. The assessment considers up to 176 ore carrier voyages (352 transits), compared to the 82 ore carrier voyages (164 transits) considered in the PIP. TSD 24 arrives at the same conclusion as the PIP FEIS Addendum, which is that no significant effects are anticipated to marine mammals with the application of proposed mitigation measures.

5.4 OTHER

5.4.1 Climate Change Action Plan

Baffinland provided NIRB with a copy of its Climate Change Strategy on February 8, 2019 as well as initiatives being undertaken to reduce greenhouse gas emissions (Baffinland, 2019a).

The climate change strategy communicates overall environmental and social expectations, and lists a number of activities to support management of measures that mitigate and/or that respond to the Project's potential effects on climate change. To ensure effective implementation through time, Baffinland has retained the services of a third-party expert to further refine and elaborate on Baffinland's existing Climate Change Strategy. Implementation is a multi-step process and can be broken down into two main stages:

1. Development of an elaborated draft strategy, informed by both an external scan and internal baseline review, that provides goals, objectives and priority action areas and approaches, with specific questions and options; and
2. Refinement of the strategy based on external engagement and development of a staged implementation plan.

Baffinland is currently working through the various tasks of Phase 1 and is planning to complete by the end of the first quarter (Q1) 2020. Subject to the completion of Phase 1, external engagement processes will begin in either Q1 or Q2 of 2020 with external stakeholders to ensure acceptance of strategy and subsequent implementation actions. Consideration of IQ and Inuit perspectives will occur throughout both stages. Baffinland remains committed to informing the QIA on the progress of its efforts in developing an impactful and achievable Climate Change Strategy.

5.4.2 Acid Rock Drainage / Metal Leaching

Baffinland maintains that the presence of ARD at the Waste Rock Facility (WRF) is unrelated to production increase, and that FEIS predictions were based on the full scale of the project as described in the FEIS. Baffinland will continue to monitor and evaluate the potential for ARD/ML at the Waste Rock Facility through on-going water quality

monitoring, as well as evaluating the management strategies for the Waste Rock Facility through thermal monitoring to assess permafrost aggradation and freeze back, as well as water treatment methodologies in the event that water quality monitoring demonstrates results in exceedance of the relevant Type A Water Licence and MDMER criteria.

The December 31, 2019 Waste Rock Management Plan (Baffinland, 2019v) utilized updated geochemistry data, thermal monitoring and water quality monitoring to update modelling for the WRF. Golder's review of the 2019 geochemistry data (Baffinland, 2019v – Appendix A) confirmed that the overall existing waste rock pile design and placement remains valid to reduce the potential for ARD/ML. However, low sulphur waste rock may contain stored acidity in the form of soluble sulphates, which may contribute to ARD generation where non-acid generating (Non-AG) material containing soluble sulphates is exposed. To reduce the potential contribution from soluble sulphates, Baffinland is implementing the analysis of paste pH which will reduce uncertainty in classification of waste rock. Additionally, based on the mining plan through 2021, the potential for stored acidity particularly in Non-AG material in Deposit 1 is significantly reduced based on the waste rock sampling to date.

Thermal monitoring completed in 2019 confirmed that the WRF is almost completely frozen, with the exception of a 2-3m thick active zone subject to seasonal freeze/thaw. To calibrate the thermal model, an internal heat source was added as a conservative assumption based on the current monitoring data. This model confirmed that 3-5m lift thicknesses of waste rock placed in summer and winter are appropriate and would result in freeze back of the material, however ongoing thermal monitoring of the WRF will be employed to validate these modelling results over time and inform future iterations of the Waste Rock Management Plan.

Results of the water quality monitoring in 2019 continue to demonstrate water reporting to the WRF pond below the applicable Type A Water Licence and MDMER discharge criteria. The use of the WRF Water Treatment Plant was successful in adjusting pH and metals parameters to within acceptable levels for discharge to the receiving environment. Modelling of the water quality utilized an updated water balance that considered the expanded footprint of the WRF and climatic conditions. The model predicts runoff from the surface of the pile will demonstrate mildly acidic pH values, as well as concentrations of nickel above criteria. However, these values are not necessarily representative of concentrations in the WRF pond, and do not consider equilibration or precipitation of saturated mineral phases, and assume PAG material is exposed at the surface of the WRF prior to freshet. Reducing the exposed quantity of PAG prior to freshet in the model demonstrated decreases in nickel concentrations, and increasing pH.

Baffinland utilized the results of the monitoring and modelling completed in 2018/2019, and the recommendations of Golder (Baffinland, 2019v) to update the WRF management, classification and deposition strategy. Specifically, Baffinland will place material in lifts no thicker than 5m, and will to the extent practicable cap PAG waste rock placed in winter prior to freshet. Material will be placed in a manner to reduce segregation and the development of preferential air flow pathways. Baffinland will incorporate the use of paste pH analysis to decrease the potential for material with stored acidity being classified as Non-AG. The results of the updated monitoring and modelling demonstrate that the current waste rock strategy remains valid to mitigate the potential for ARD/ML. On-going thermal, geochemical and water quality monitoring will further inform the management of the WRF and future versions of the Waste Rock Management Plan.

5.4.3 Caribou

As described in Section 4.4 of the 2018 Terrestrial Environment Annual Monitoring Report, the Height-of-land (HOL) surveys were initiated in 2013 to study caribou land use near the Project area, and their behavioural reactions to human activities near the Project footprint, particularly during the calving season. The focus of the HOL surveys is to

examine if and/or how caribou respond to Project activities and infrastructure. HOL surveys allow for long-term monitoring and observation of caribou behaviour throughout the life of the Project, providing information to verify and monitor predicted effects on caribou movement and use. Moreover, the HOL survey methods were refined based on IQ provided by an MHTO member in 2017, as described in Section 4.3.2.1 of the 2017 Terrestrial Environment Annual Monitoring Report (EDI, 2017). Further review of the program design by the MHTO is planned for 2020. The HOL surveys meet the requirements of PC Condition 53b, 54b and 58b, which require Baffinland to monitor for caribou behaviour and displacements (if any) and caribou response to the crossing of Project infrastructure.

As noted in Section 4.7 of the 2018 Terrestrial Environment Annual Monitoring Report (EDI, 2019), Project monitoring suggests a stronger correlation between a low regional population of caribou, as reported by the Government of Nunavut (GN), and a lack of caribou observations at Mary River. Baffinland has consistently supported regional monitoring by the GN recognizing the importance of regional data influencing project specific monitoring activities and understanding the need for refinement of caribou behaviour and response monitoring within the Project area. Throughout 2019 Baffinland and the Government of Nunavut have been working to finalize a formal Memorandum of Understanding (MOU) for the continued support of regional caribou monitoring in the RSA. The most recent draft MOU currently sits with the GN and Baffinland looks forward to finalizing it in the near future.

5.4.4 Decommissioning of Weatherhaven Camp at Milne Port

Baffinland agrees with the Board that all potential effects associated with the construction and operation of the 380-person camp at Milne Port are able to be managed through pre-existing requirements for the Project (see Section 3.2.2.1 of PIP application).

In the reconsideration report, the Board requested clarity on Baffinland's plans for decommissioning existing camp facilities (e.g. the Weatherhaven). As described in Section 3.1.2 of the PIP (Baffinland, 2018a), the need for the Milne Port Camp Modification was three-fold:

1. To upgrade camp facilities and improve the condition of accommodations at Milne Port
2. To address Project personnel needs at Milne Port (e.g. number of beds)
3. To ensure Port-based personnel are able to stay at Milne Port and not work remotely from the Mine Site.

Since the time of approval of the PIP, the 380-person camp has been used to meet peak occupancy requirements of the Project. The construction of the camp has also allowed for Baffinland to discontinue use of the relocated temporary accommodations from the Steensby Port camp (Steensby Camp) and continues to assess and evaluate the maintenance of the Milne Port Weatherhaven complex (Matrix Camp). Baffinland has proposed an expansion of the hardwall accommodations facilities at Milne Port as part of the Phase 2 proposal by relocating wings of the Mine Site Complex (MSC) to the Port Site Complex (PSC), which would result in final decommissioning of the Matrix Camp. Until such a time that additional accommodation facilities proposed under Phase 2 are approved, Baffinland will continue to maintain the Weatherhaven facilities to ensure any further unanticipated shortage of beds does not occur.

5.4.5 Effects of the Project on Inuit Land Use and Harvesting

Baffinland would like to clarify that the assessments within the PIP and Phase 2 FEIS Addendums do not anticipate significant effects on the natural environment, wildlife, marine mammals or Inuit culture, resources and land use. These conclusions are based on the results of current monitoring, informed predictions, and the application of

mitigation and monitoring programs developed in consultation with regulators and communities. Baffinland is open to discussing additional mechanisms for compensation in relation to Phase 2 beyond what is currently provided for in the Mary River IIBA, and is actively planning for this in its community engagement plans. Baffinland's first priority in environmental management, however, is to prevent disruptions to the environment that would require compensation from occurring.

Baffinland has developed several mitigation and management measures to directly minimize the effects of the Project on Inuit hunting and harvesting activities and to ensure land user safety in the presence of Project activities.

Mitigation measures include:

- Waiting for confirmation from the MHTO that the floe edge has been closed for hunting prior to the start of the shipping season
- Development of an extensive Shipping Communications Standard Operating Procedure for the Project, that includes the hiring of two full time shipping monitors within Pond Inlet who provide community updates on vessel traffic both over community radio and VHF throughout the shipping season.
- Limiting the number of vessels anchored or drifting at Ragged Island to a maximum of three vessels at any time throughout the shipping season.
- Establishment of voluntary speed restrictions (9 knots) for all Project vessels travelling along the Northern Shipping Route to minimize ship wake and disturbance to marine mammal harvesting activities.
- Establishment of a nominal shipping route for all Project-vessels to follow to increase predictability and safe passage for hunters while Project-vessels are present in the Northern shipping corridor
- Establishment of 'no-go zones', specifically along the shoreline of Bruce Head which has been identified as an important hunting area and Koluktoo Bay.
- Development of bowhead hunt management plans with the community of Pond Inlet for years where tags are provided to minimize interference with the community hunt.
- Providing fuel to hunters who visit the Project site.
- Providing food, water and shelter at the Project site.
- Support Inuit in identifying, communicating and using safe routes in or around the Project infrastructure.

5.4.5.1 Project Benefits to Inuit

Consistent with Article 12.5.5 (e) of the Nunavut Agreement (NTI and INAC, 2013), Baffinland has also made the following commitments to compensate for Project-effects on Inuit land use that were predicted within the ERP FEIS and have since been reported by community members since the start of the Project.

When Project activities began in 2013, Inuit and the Company acknowledged that impacts to harvesting may occur from the Project. Specifically, Article 13.1 of the IIBA (QIA & Baffinland, 2018) notes the following:

"The objective of Article 13 hereof is to ensure that any potential incompatibility of the rights of Inuit to free and unrestricted travel and access for harvesting to all lands, water and marine areas within the Nunavut Settlement Area with the Company's land use activities and rights of navigation in marine areas may be reduced....The QIA recognizes that the Company's right to operate and manage their activity within the Project area including the rail and shipping corridor, subject to the provisions of this Agreement and QIA recognizes the restriction on Inuit right of access under Sections 5.7.18 and 5.7.25 of the NLCA..."

More specifically, as described in Article 13.5.1, through the IIBA it was acknowledged that there would be restrictions on the Inuit hunters discharge of firearms within the Project area:

“Inuit travelling in or accessing the Project lands shall not discharge firearms or otherwise pursue access for harvesting, within one (1) mile of a Project building, structure or facility, in conformity with Clause 5.7.17 (b) of the NLCA, subject to wider safety or where the access for harvesting, including the discharge of firearms is incompatible with ongoing land use activity of the Company.”

In consideration of these effects, Article 5 (Financial Participation) ensures that Inuit receive a minimum of \$1,250,000 quarterly, or \$5,000,000 annually, in the form of resource royalties.

Baffinland also provides funding for the Wildlife Compensation Fund (Article 17.6 of the IIBA); with distribution of this fund managed directly by the QIA. One of the stated purposes of IIBA Article 17 is to establish a wildlife compensation fund that QIA, an HTO, or an Inuk may apply to, as an additional remedy to an NLCA claim for wildlife compensation.

The amended IIBA, which was signed after the QIA provided support for the PIP, also included the establishment of

- Hunters Enabling Fund which provides 300 Liters of fuel to Inuit over the age of 12 residing in Pond Inlet. (IIBA 17.7, 2018),
- Marine Research Equipment which will provide each North Baffin Community with a marine vessel beginning in 2021 (IIBA 17.9, 2018), and the
- Wildlife Monitoring Program which provides \$200,000 annually to the MHTO to conduct community based research (IIBA 17.8, 2018).

The Marine Research Equipment (IIBA 17.9) and Wildlife Monitoring Program (IIBA 17.8) were developed in part due to the concerns expressed by harvesters and the desire for more community based monitoring that is planned, led, and carried out by Inuit in the North Baffin Communities. This allows for topics of greatest concern to be actively monitored by Inuit.

Moreover, in response to concerns raised during the PIP, Baffinland, the Mittimatalik Hunter and Trappers Organization, and the Hamlet of Pond Inlet signed the, “Agreement to Establish the Pond Inlet Committee”². This agreement recognized the desire for improvements to the way in which Project benefits were being distributed to communities. The agreement commits Baffinland to providing \$10,000.00 to the Tasiuqtiit Working Group for every ore carrier required to ship in excess of 4.2 MTPA. Since its signing, this Agreement had led to the direct disbursement of \$370,000 to the community of Pond Inlet (\$130,000.00 in 2018 and \$240,000.00 in 2019). Baffinland has also committed to funding for a coordinator position for this group to support the functioning and disbursement of funds. This agreement will remain in place should the Project continue to be approved to ship above 4.2Mtpa.

² This agreement led to the creation of Tasiuqtiit Working Group

6 CONCLUSION

Baffinland believes that it has provided ample evidence in this Supporting Information Summary Report that demonstrates that a single additional year (e.g. during 2020) of increased shipping and road haulage of 1.8 Mt of iron ore does not pose significant adverse ecosystemic or socio-economic effects beyond what was predicted for the ERP of the Project.

Recognizing that 1) the results of Baffinland's ongoing monitoring programs indicate that shipping and road haulage above 4.2 Mt has not caused significant adverse ecosystemic and socio-economic effects 2) that additional comprehensive assessments provided to the NIRB in relation to Phase 2, which is a substantially more intensive version of the PIP, do not anticipate significant adverse ecosystemic and socio-economic effects, and 3) that Baffinland has attempted to provide the NIRB a fulsome explanation of the Mary River projects economic feasibility through a motion during the Phase 2 Public Hearing, Baffinland submits that the Board does have sufficient reason not to make a positive recommendation towards the Extension Request.

7 REFERENCES

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ATTACHMENT 2

Issue Resolution Concordance to the Summary of Conclusions and
Recommendations of the Board

Table 1: Issue Resolution Concordance to the Summary of Conclusions and Recommendations of the Board

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
1	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Monitoring Gaps	Although the FEIS Addendum submitted by Baffinland largely conformed to the guidance previously issued by the NIRB, the information provided was at times lacking in detail and data gaps created some uncertainty with respect to the adequacy of the impact predictions for the Production Increase Proposal. As a result, the NIRB echoes the concerns of intervenors that there are unanswered questions and outstanding concerns regarding impact predictions and mitigation measures that are yet to be fully addressed by the Proponent. Through the NIRB’s ongoing monitoring of project related impacts for the approved Mary River Project, several significant gaps have not yet been addressed by Baffinland leading to uncertainty in understanding of how the project is currently affecting the environment ¹ .	Section 5.1	<p>Baffinland (Baffinland Iron Mines Corporation). 2018b. Addendum to the Final Environmental Impact Statement Mary River Project – Phase 2 Proposal. August 2018. Public Registry Identification: 320619.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019d. Baffinland Iron Mines 2018 Annual Report to the Nunavut Impact Review Board. March 2019. Public Registry Identification: 324120</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019e. Baffinland Iron Mines 2018 Annual Report to the Nunavut Impact Review Board. March 2019. Public Registry Identification: 324121</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019i. Re: Baffinland Response to Comments on the 2018 NIRB Annual Report. July, 12 2019. Correspondence with Nunavut Impact Review Board. Public Registry Identification: 325930</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019j. RE: 2019 Marine Monitoring and Marine Mitigation Summary Report for the Mary River Project and NIRB’s Recommendations. Correspondence with Nunavut Impact Review Board. July 16 2019. Public Registry Identification: 325953.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019o. Re: Follow up to NIRB 2019 Summer and Winter Site Visits, Findings and Recommendations. September, 27, 2019.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019s. Re: Baffinland Response to Board Recommendations on the NIRBs 2018-2019 Annual Monitoring Report and Board Recommendations for Project Certificate No. 005 for the Mary River Project. Correspondence with Nunavut Impact Review Board. November 25, 2019. Public Registry Identification: 327575.</p> <p>Baffinland (Baffinland Iron Mines Corporation) 2019y. 2018 Qikiqtani Inuit Association (QIA) and Nunavut Water Board (NWB) Annual Report for Operations. March 2019. Available from: https://www.baffinland.com/resources/document_portal/190331---2018-qia-nwb-annual-report-for-ops---report-body---as-sent_2019-18-48-53.pdf</p>

¹ *Nunavut Impact Review Board, November 27, 2017. 2016-2017 Annual Monitoring Report for Baffinland Iron Mines Corp.’s Mary River Project, Sections 2.3.1, 2.3.2, 2.3.8, Public Registry ID 31437912 2016-2017 NIRB Annual Monitoring Report for the Mary River Project noted: Section 2.3.1 discontinued sea level monitoring, 2.3.2 no study conducted in 2016 to validate climate change predictions, 2.3.4 equipment failure leading to no data collection on air quality monitoring which also caused issues for 2.3.6 lack of data for noise and vibration monitoring, and 2.3.7 marine mammal surveys not completed as committed to due to cost and safety considerations and yet without alternatives.

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
2	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Monitoring Gaps	Concerns raised by community members through the NIRB’s monitoring process, as well as during the July 12, 2018 Community Information Session in Pond Inlet suggest that adverse effects from project operations may be occurring (see Appendix B Community Information Session of this report); however, given limited monitoring data having been produced on various environmental components through Baffinland’s project monitoring efforts to date, it is unclear whether the mitigation and adaptive management strategies for the project are effective.	Section 5.1	<p>Baffinland (Baffinland Iron Mines Corporation). 2018b. Addendum to the Final Environmental Impact Statement Mary River Project – Phase 2 Proposal. August 2018. Public Registry Identification: 320619.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019d. Baffinland Iron Mines 2018 Annual Report to the Nunavut Impact Review Board. March 2019. Public Registry Identification: 324120</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019e. Baffinland Iron Mines 2018 Annual Report to the Nunavut Impact Review Board. March 2019. Public Registry Identification: 324121</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019i. Re: Baffinland Response to Comments on the 2018 NIRB Annual Report. July, 12 2019. Correspondence with Nunavut Impact Review Board. Public Registry Identification: 325930</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019j. RE: 2019 Marine Monitoring and Marine Mitigation Summary Report for the Mary River Project and NIRB’s Recommendations. Correspondence with Nunavut Impact Review Board. July 16 2019. Public Registry Identification: 325953.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019o. Re: Follow up to NIRB 2019 Summer and Winter Site Visits, Findings and Recommendations. September, 27, 2019.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019s. Re: Baffinland Response to Board Recommendations on the NIRBs 2018-2019 Annual Monitoring Report and Board Recommendations for Project Certificate No. 005 for the Mary River Project. Correspondence with Nunavut Impact Review Board. November 25, 2019. Public Registry Identification: 327575.</p> <p>Baffinland (Baffinland Iron Mines Corporation) 2019y. 2018 Qikiqtani Inuit Association (QIA) and Nunavut Water Board (NWB) Annual Report for Operations. March 2019. Available from: https://www.baffinland.com/resources/document_portal/190331---2018-qia-nwb-annual-report-for-ops---report-body---as-sent_2019-18-48-53.pdf</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
3	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Gaps in Impact Assessment	<p>NIRB Summary of Comments from QIA:</p> <ul style="list-style-type: none"> o Gaps in assessment of impacts to freshwater and marine environment leading to uncertainty of impacts from fugitive dust, species introductions, and disturbances to marine mammals; and o Climate Change Plan not yet available to address possible climate change issues from greenhouse gas emissions being generated from the project currently. 	<p>Section 5.2.2</p> <p>Section 5.4.1</p>	<p>QIA (Qikiqtani Inuit Association). 2018a. Re: UPDATE NIRB Review Process, Baffinland’s 2018 Production Application. Correspondence with Nunavut Impact Review Board, August 3, 2018.</p> <p>QIA (Qikiqtani Inuit Association). 2018b. Re: Nunavut Impact Review Board, 2018 Production Increase Application (August 31, 2018). Correspondence with Honorable Minister LeBlanc, September 21, 2018.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019a. Climate Change Strategy. February 2019. Public Registry Identification: 322786.</p> <p>Baffinland (Baffinland Iron Mines Corporation) 2019y. 2018 Qikiqtani Inuit Association (QIA) and Nunavut Water Board (NWB) Annual Report for Operations. March 2019. Available from: https://www.baffinland.com/resources/document_portal/190331---2018-qia-nwb-annual-report-for-ops---report-body---as-sent_2019-18-48-53.pdf</p> <p>EDI. 2019. 2018 Mary River Project Terrestrial Environment Annual Monitoring Report. Prepared by: EDI Environmental Dynamics Inc. March 2019. Available from: https://www.baffinland.com/downloadocs/terrestrial-annual-reportcombined_2019-23-42-14.pdf</p> <p>QIA (Qikiqtani Inuit Association). 2018a. Re: UPDATE NIRB Review Process, Baffinland’s 2018 Production Application. Correspondence with Nunavut Impact Review Board, August 3, 2018.</p> <p>QIA (Qikiqtani Inuit Association). 2018b. Re: Nunavut Impact Review Board, 2018 Production Increase Application (August 31, 2018). Correspondence with Honorable Minister LeBlanc, September 21, 2018.</p>
4	Ecosystemic Effects – Views of the Board: Section 5.1.1	Terrestrial	<p>NIRB Summary of Comments from GN:</p> <ul style="list-style-type: none"> o Baffinland’s application stated mitigation measures resulted in a decrease of dust fall in 2017 compared to 2016 but does not outline if 2016 and 2017 dust deposition have already caused significant effects; although commitments are made to mitigating the dust fall effects, the success of the proposed measures in bringing dust fall deposition level to the predicted threshold has not yet been demonstrated. o The current study design for caribou monitoring in the Terrestrial Monitoring plan will not be able to detect project effects. 	<p>Section 5.2.2</p> <p>Section 5.4.3</p>	<p>Baffinland (Baffinland Iron Mines Corporation). 2019i. Re: Baffinland Response to Comments on the 2018 NIRB Annual Report. July, 12 2019. Correspondence with Nunavut Impact Review Board. Public Registry Identification: 325930</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019s. Re: Baffinland Response to Board Recommendations on the NIRBs 2018-2019 Annual Monitoring Report and Board Recommendations for Project Certificate No. 005 for the Mary River Project. Correspondence with Nunavut Impact Review Board. November 25, 2019. Public Registry Identification: 327575.</p> <p>EDI. 2019. 2018 Mary River Project Terrestrial Environment Annual Monitoring Report. Prepared by: EDI Environmental Dynamics Inc. March 2019. Available from: https://www.baffinland.com/downloadocs/terrestrial-annual-reportcombined_2019-23-42-14.pdf</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019w. Draft Terrestrial Environment Mitigation and Monitoring Plan. May 2019. Public Registry Identification: 324939.</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
5	Ecosystemic Effects – Views of the Board: Section 5.1.1	ARD Modelling and Waste Rock Management	NIRB Summary of Comments from CIRNAC: Models for Acid Rock Drainage and Metals Leaching presented in original FEIS have been proven inadequate as a result of monitoring data; updated modelling required.	Section 5.4.2	Baffinland (Baffinland Iron Mines Corporation) 2019v. Phase 1 Waste Rock Management Plan. Rev 2. December 2019. Ref. No. BAF-PH1-830-P16-0029
6	Ecosystemic Effects – Views of the Board: Section 5.1.1	Marine	NIRB Summary of Comments from DFO: Unclear as to what additional data or references were used to support the conclusion of no change in narwhal abundance and distribution during the 2014-2017 period as the marine mammal observer program has been discontinued, especially as the additional traffic could have whales experiencing noise from multiple ships at the same time.	Section 5.3.2 Section 5.3.3	<p>Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146.</p> <p>Golder. 2019. 2017 Narwhal Tagging Study – Technical Data Report. May 2019. Available from: https://www.baffinland.com/resources/document_portal/2017-narwhal-tagging-study---final-technical-data-report_2019-23-00-12.pdf</p> <p>Golder. 2019a. Bruce Head Shore-based Monitoring Program – 2014-2017 Integrated Report. May 2019. Available from: https://www.baffinland.com/resources/document_portal/2014-2017-data-integration-bruce-head-monitoring-reportfinal_2019-23-22-57.pdf</p> <p>Golder. 2019b. 2018 Milne Inlet Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program. May 2019. Available from: https://www.baffinland.com/downloadocs/2018-milne-inlet-marine-environmental-effects-monitoring-program-and-aquatic-invasive-species-monitoring-final-report_2019-23-10-39.pdf</p> <p>Golder. 2019c. 2018 Ship-Based Observer Program. May 2019. Available from: https://www.baffinland.com/resources/document_portal/2018-ship-based-observer-monitoring-program-final-report_2019-23-18-47.pdf</p> <p>JASCO (JASCO Applied Sciences Ltd.). 2019. 2018 Passive Acoustic Monitoring Program. May 2019. Available from: https://www.baffinland.com/downloadocs/2018-passive-acoustic-monitoring-programfinal-report_2019-23-13-08.pdf</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
7	Ecosystemic Effects – Views of the Board: Section 5.1.1	Marine	PC: Given the concerns with procedures for managing the current shipping maximum, there is uncertainty that greater shipping traffic can be properly managed to mitigate impacts to valued components. These concerns about shipping related activity are linked to potential significant impacts to the marine environment, as well as visitor and public use, public safety and navigation.	Section 5.3.3 Section 5.4.5	Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144. Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146. Baffinland (Baffinland Iron Mines Corporation). 2019g. Ballast Water Management Plan. March 2019. Public Registry Identification: 324940 Baffinland (Baffinland Iron Mines Corporation). 2019h. Marine Monitoring Plan. June 2019. Public Registry Identification: 325375 Baffinland (Baffinland Iron Mines Corporation). 2019j. RE: 2019 Marine Monitoring and Marine Mitigation Summary Report for the Mary River Project and NIRB’s Recommendations. Correspondence with Nunavut Impact Review Board. July 16 2019. Public Registry Identification: 325953. Baffinland (Baffinland Iron Mines Corporation). 2019k. Draft Communications Protocol for Shipping Activities. August 2019. Public Registry Identification: 326507 Baffinland (Baffinland Iron Mines Corporation). 2019l. Draft Baffinland Early Shipping Season – Operational Guide. August 2019. Public Registry Identification: 326508 Baffinland (Baffinland Iron Mines Corporation). 2019x. Draft Shipping and Marine Wildlife Management Plan. May 2019. Public Registry Identification:325032.

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
8	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Monitoring Gaps	In the absence of holistic monitoring results related to the effects of shipping and trucking for the approved Project, the Board is concerned that the aspect of the Production Increase Proposal involving increases to the intensity of hauling ore along the Tote Road and shipping via Milne Inlet could result in adverse ecosystemic effects beyond what was previously considered by the NIRB during the Board’s Review of the original Mary River Project and the associated Early Revenue Phase Proposal. In particular, the Board has concerns that the effects related to the proposed increase to levels of road traffic and marine vessel traffic in support of increased ore transport are not well understood at present.	Section 5.2 Section 5.3	<p>Baffinland (Baffinland Iron Mines Corporation). 2019d. Baffinland Iron Mines 2018 Annual Report to the Nunavut Impact Review Board. March 2019. Public Registry Identification: 324120</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019i. Re: Baffinland Response to Comments on the 2018 NIRB Annual Report. July, 12 2019. Correspondence with Nunavut Impact Review Board. Public Registry Identification: 325930</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019s. Re: Baffinland Response to Board Recommendations on the NIRBs 2018-2019 Annual Monitoring Report and Board Recommendations for Project Certificate No. 005 for the Mary River Project. Correspondence with Nunavut Impact Review Board. November 25, 2019. Public Registry Identification: 327575.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146.</p> <p>EDI. 2019. 2018 Mary River Project Terrestrial Environment Annual Monitoring Report. Prepared by: EDI Environmental Dynamics Inc. March 2019. Available from: https://www.baffinland.com/downloadocs/terrestrial-annual-reportcombined_2019-23-42-14.pdf</p> <p>Golder. 2019. 2017 Narwhal Tagging Study – Technical Data Report. May 2019. Available from: https://www.baffinland.com/resources/document_portal/2017-narwhal-tagging-study---final-technical-data-report_2019-23-00-12.pdf</p> <p>Golder. 2019a. Bruce Head Shore-based Monitoring Program – 2014-2017 Integrated Report. May 2019. Available from: https://www.baffinland.com/resources/document_portal/2014-2017-data-integration-bruce-head-monitoring-reportfinal_2019-23-22-57.pdf</p> <p>Golder. 2019b. 2018 Milne Inlet Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program. May 2019. Available from: https://www.baffinland.com/downloadocs/2018-milne-inlet-marine-environmental-effects-monitoring-program-and-aquatic-invasive-species-monitoring-final-report_2019-23-10-39.pdf</p> <p>Golder. 2019c. 2018 Ship-Based Observer Program. May 2019. Available from: https://www.baffinland.com/resources/document_portal/2018-ship-based-observer-monitoring-program-final-report_2019-23-18-47.pdf</p> <p>JASCO (JASCO Applied Sciences Ltd.). 2019. 2018 Passive Acoustic Monitoring Program. May 2019. Available from: https://www.baffinland.com/downloadocs/2018-passive-acoustic-monitoring-programfinal-report_2019-23-13-08.pdf</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
9	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Integration of Inuit Qaujimajatuqangit	The FEIS Addendum does not provide any clear evidence of how public consultation and Inuit Qaujimaningit/Qaujimajatuqangit, local knowledge and community knowledge have influenced the planning and design of the proposed activities and associated management plan updates.	Section 4	Baffinland (Baffinland Iron Mines Corporation). 2019t. Public Consultation and Inuit Qaujimanituqangit (IQ) Presentation, Final Hearing Iqaluit and Pond Inlet. Presented at November 2019 Final Hearing. November 2019. Public Registry Identification: 327402 Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144. Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146. Baffinland (Baffinland Iron Mines Corporation). 2019m. Inuit Qaujimanituqangit Management Framework – Phase 2 Proposal – Mary River. September 2019n. Public Registry Identification: 326802 Baffinland (Baffinland Iron Mines Corporation). 2019j. RE: 2019 Marine Monitoring and Marine Mitigation Summary Report for the Mary River Project and NIRB’s Recommendations. Correspondence with Nunavut Impact Review Board. July 16 2019. Public Registry Identification: 325953.
10	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Gaps in Impact Assessment	At the public and community level, significant concerns were expressed regarding the potential effect of the both the existing Mary River Project and the potential for increased effects associated with the Production Increase Proposal on the marine and terrestrial environments.	Section 5.2 Section 5.3 Section 5.4.3	See references relevant to Items 8 and 9.
11	Ecosystemic Effects – Views of the Board: Section 5.1.1	Socio-Economic	There is a perceived lack of benefits from the existing Mary River Project accruing to residents of Pond Inlet, which is the community experiencing the most direct adverse ecosystemic and socio-economic effects of the existing Project.	Section 5.4.5	QIA (Qikiqtani Inuit Association) & Baffinland (Baffinland Iron Mines). 2018. The Mary River Project Inuit Impact and Benefit Agreement. October 2018. Available from: https://www.qia.ca/wp-content/uploads/2018/10/Mary-River-IIBA-Signed.-October-22-2018.pdf
12	Ecosystemic Effects – Views of the Board: Section 5.1.1	General - Mitigation and Management	The FEIS Addendum and other information provided in support of the Production Increase Proposal does not address in a direct manner how Baffinland proposes to better mitigate/manage the ecosystemic and socio-economic effects that have been identified by the community of Pond Inlet and associated with the Mary River Project to date, particularly in relation to the impacts of increased shipping, potential disturbance to marine mammals, birds and fish populations.	Section 5.3.4 Section 5.3.5	See references for Item 7 and 8.

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
13	Ecosystemic Effects – Views of the Board: Section 5.1.1	Marine	To date, Intervenor and community members have indicated that the Proponent has not produced credible, clear or effective plans to address the shipping-related effects of the Mary River Project.	Section 5.3.5	See references for Item 7.
14	Ecosystemic Effects – Views of the Board: Section 5.1.1	Marine	Based on information supplied in the FEIS Addendum, the Board is not confident that the effects on marine wildlife associated with shipping activities in Milne Inlet, Eclipse Sound and around the vicinity of Pond Inlet could be appropriately mitigated and managed and would be insignificant as predicted by Baffinland. The Board notes that the Proponent has still not developed a clear threshold for determining if negative impacts as a result of vessel noise are occurring in the marine areas adjacent to the project site pursuant to the existing requirements of Term and Condition 111 of Project Certificate No. 005. In the absence of such indicators and thresholds as required under Condition 111, the Board has concerns that the potential for effects on marine wildlife as a result of increased vessel noise may not be well mitigated and management measures may not be triggered in sufficient time to prevent the occurrence of adverse effects.	Section 5.3.2.1	Baffinland (Baffinland Iron Mines Corporation). 2019s. Re: Baffinland Response to Board Recommendations on the NIRBs 2018-2019 Annual Monitoring Report and Board Recommendations for Project Certificate No. 005 for the Mary River Project. Correspondence with Nunavut Impact Review Board. November 25, 2019. Public Registry Identification: 327575.
15	Ecosystemic Effects – Views of the Board: Section 5.1.1	Marine	Similarly, the Board notes that Project Certificate No. 005, Conditions 99, 110, 111, and 112 all require the development of indicators and/or thresholds to guide the mitigation, monitoring, and adaptive management that is to be applied throughout the approved Mary River Project, particularly in response to shipping activities. The Proponent has yet to fully meet these conditions and satisfy these monitoring requirements. In the absence of these indicators and thresholds, the Board is not confident that the potential for additional effects related to the additional shipping under the proposed Production Increase Proposal can be adequately monitored, mitigated or managed.	Section 5.3.2.1	Baffinland (Baffinland Iron Mines Corporation). 2019s. Re: Baffinland Response to Board Recommendations on the NIRBs 2018-2019 Annual Monitoring Report and Board Recommendations for Project Certificate No. 005 for the Mary River Project. Correspondence with Nunavut Impact Review Board. November 25, 2019. Public Registry Identification: 327575.

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
16	Ecosystemic Effects – Views of the Board: Section 5.1.1	Freshwater	The FEIS Addendum has not made clear how dust generated from the proposed increase in vehicular traffic along the Tote Road would affect the quality of adjacent freshwater/marine area/sea ice or the terrestrial environment, how dispersal towards communities would be prevented, and if there is any mitigation strategy that could be employed to address these effects.	Section 5.2	<p>Baffinland (Baffinland Iron Mines Corporation). 2019o. Re: Follow up to NIRB 2019 Summer and Winter Site Visits, Findings and Recommendations. September, 27, 2019.</p> <p>Baffinland (Baffinland Iron Mines Corporation) 2019y. 2018 Qikiqtani Inuit Association (QIA) and Nunavut Water Board (NWB) Annual Report for Operations. March 2019. Available from: https://www.baffinland.com/resources/document_portal/190331---2018-qia-nwb-annual-report-for-ops---report-body---as-sent_2019-18-48-53.pdf</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019w. Draft Terrestrial Environment Mitigation and Monitoring Plan. May 2019. Public Registry Identification: 324939.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019i. Re: Baffinland Response to Comments on the 2018 NIRB Annual Report. July, 12 2019. Correspondence with Nunavut Impact Review Board. Public Registry Identification: 325930</p> <p>EDI. 2019. 2018 Mary River Project Terrestrial Environment Annual Monitoring Report. Prepared by: EDI Environmental Dynamics Inc. March 2019. Available from: https://www.baffinland.com/downloadocs/terrestrial-annual-reportcombined_2019-23-42-14.pdf</p> <p>Golder. 2019b. 2018 Milne Inlet Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program. May 2019. Available from: https://www.baffinland.com/downloadocs/2018-milne-inlet-marine-environmental-effects-monitoring-program-and-aquatic-invasive-species-monitoring-final-report_2019-23-10-39.pdf</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
17	Ecosystemic Effects – Conclusions and Recommendations of the Board: Section 5.1.2	General - Gaps in Impact Assessment	Baffinland’s FEIS Addendum indicates that the potential impacts occurring to the Marine and Terrestrial Environment, including caribou associated with the Production Increase Proposal, will be non-significant after existing mitigation measures are employed; however, as outlined in the Board’s views in Section 5.1 the NIRB is concerned that such conclusions of non-significance have not been supported with empirical data in respect of the increased intensity of road haulage and shipping in the marine environment associated with this proposal. Specifically, based on Intervenor’s comments, the information provided by community members and considering the monitoring, mitigation and management information supplied to the NIRB in fulfilment of the Board’s Mary River Project monitoring functions, the Board does not agree with the Proponent’s conclusion that the proposed increase in the number of ships transporting ore and carrying fuel supply shipments during the open water season would not result in any significant environmental impacts. The Board also has concerns that the effects predictions with respect to the conclusions of non-significance of dust emissions associated with the increased road transport of ore do not address questions about the efficacy of existing dust control mitigation measures.	Section 5.2 Section 5.3 Section 5.4.3	<p>EDI. 2019. 2018 Mary River Project Terrestrial Environment Annual Monitoring Report. Prepared by: EDI Environmental Dynamics Inc. March 2019. Available from: https://www.baffinland.com/downloadocs/terrestrial-annual-reportcombined_2019-23-42-14.pdf</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2018b. Addendum to the Final Environmental Impact Statement Mary River Project – Phase 2 Proposal. August 2018. Public Registry Identification: 320619.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146.</p> <p>EDI. 2019. 2018 Mary River Project Terrestrial Environment Annual Monitoring Report. Prepared by: EDI Environmental Dynamics Inc. March 2019. Available from: https://www.baffinland.com/downloadocs/terrestrial-annual-reportcombined_2019-23-42-14.pdf</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
18	Ecosystemic Effects – Conclusions and Recommendations of the Board: Section 5.1.2	Closure	Having considered all aspects of the Production Increase Proposal, the Board has concluded that the potential effects associated with proposed installation of new camp accommodations at Milne Inlet and a new 15 ML fuel tank at Milne Port can be adequately managed through existing requirements for the approved Project; the Board is recommending that these activities be approved to proceed to licensing. The NIRB noted inconsistency in plans communicated by Baffinland for the proposed decommissioning of existing camp facilities deemed unsuitable for continued use by project personnel, particularly with the anticipated timing of decommissioning and maximum occupancy while in use. The Board expects additional clarity regarding this issue can be obtained through the course of its ongoing monitoring program for the Project moving forward.	Section 5.4.4	N/A
19	Ecosystemic Effects – Conclusions and Recommendations of the Board: Section 5.1.2	General - Gaps in Impact Assessment	The Board concluded that the increased trucking and shipping aspects of the Production Increase Proposal should not be approved to proceed as these activities could result in adverse ecosystemic effects beyond what was previously considered by the NIRB during the Board’s Review of the original Mary River Project (2012) and the subsequent Early Revenue Phase Proposal (2014). The Board lacks confidence in both the impact predictions prepared by Baffinland for these components of the Production Increase Proposal and the effectiveness of how mitigation and adaptive management strategies for the approved Project are currently being employed to manage trucking and shipping related effects.	Section 5.2 Section 5.3	See reference to Item 4 and 7.

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
20	Socio-Economic Effects – Views of the Board: Section 5.2.1	Socio-Economic	The Board acknowledges Baffinland’s conclusion that an interruption to employment and other benefits and interruptions in associated business relationships may have detrimental socioeconomic effects on the overall Mary River Project if the Production Increase Proposal is not approved by the Board to proceed to the permitting stage. However, the Board also notes that during its previous assessment of the Early Revenue Phase Baffinland asked for, and was granted, operational flexibility in terms of the amount of ore hauled on the Tote Road and shipped via Milne Inlet, as the assessment of the Early Revenue Phase was based on original projections of 3.5 Mt/a being economically and technically feasible. The 4.2 Mt/a limit imposed by the Board under Term and Condition #179 (a) and (b) reflected a 20% operational flexibility which, during the Board’s public hearing for the Early Revenue Phase Proposal in 2014, Baffinland indicated was necessary for the successful implementation of that Project.	Section 1.3	N/A
21	Socio-Economic Effects – Views of the Board: Section 5.2.1	Socio-Economic	Within its March 17, 2014 Public Hearing Report and recommendations associated with the Early Revenue Phase Proposal, ¹⁴ the NIRB communicated its serious reservations regarding the potential for increased effects on marine mammals and the life of the mine that could be associated with Baffinland extracting, shipping and transporting this additional 20% when the increased volume was added to the volumes already authorized by the Board to be mined, transported and shipped under the original Mary River Project Proposal when the railway and all season shipping from Steensby Port would commence. The information provided by Baffinland in support of the Production Increase Proposal does not assuage the Board’s concerns in this regard.	Section 5.3	N/A

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
22	Socio-Economic Effects – Views of the Board: Section 5.2.1	Socio-Economic	The rationale for why Baffinland’s production rates as proposed under the Early Revenue Phase should now be increased to 6 Mt/a was not fully supported in the FEIS Addendum, especially in light of the concerns of the interested parties and the Board in respect of the potential for adverse ecosystemic effects associated with the increased road haulage and marine shipping. The FEIS Addendum does not address how the economic viability of the Mary River Project (as modified by the Early Revenue Proposal) is limited by the current hauling and shipping limits. As the Board has considered subsequent amendment proposals for the Mary River Project, it remains the responsibility of the Proponent to establish the economic viability of each proposal, especially where updates to the economic feasibility of project components or the overall project may have changed. However due to the information gaps resulting from limited available monitoring data from Baffinland on several valued ecosystemic components of specific concern to communities closest to the project, the Board is not satisfied that the increased impacts associated with increased hauling and shipping can be fully managed by current mitigation and monitoring plans for the site.	Section 1.3 Section 5	See references to Items 1, 4 and 7.

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
23	Socio-Economic Effects – Views of the Board: Section 5.2.1	Socio-Economic	The Board heard that Inuit harvesters in the areas surrounding Pond Inlet have directly observed declines in the populations and distribution of marine mammals along the approved Mary River Project’s shipping routes. Community members also noted that limits on their ability to discharge firearms in proximity to ore ships waiting to enter Milne Inlet or Eclipse Sound is also adversely impacting their ability to harvest in traditional areas. These effects appear to already be adversely impacting the harvest of marine mammals in the area, and this, in turn, appears to be affecting local harvesters in terms of the quantity and quality of marine wildlife that can be harvested. The Board has concluded that the potential for these types of adverse effects to increase with the additional marine shipping associated with the Production Increase Proposal has not been adequately addressed through the FEIS Addendum.	Section 5.4.5	<p>Baffinland (Baffinland Iron Mines Corporation). 2018b. Addendum to the Final Environmental Impact Statement Mary River Project – Phase 2 Proposal. August 2018. Public Registry Identification: 320619.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144.</p> <p>Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146.</p> <p>QIA (Qikiqtani Inuit Association) & Baffinland (Baffinland Iron Mines). 2018. The Mary River Project Inuit Impact and Benefit Agreement. October 2018. Available from: https://www.qia.ca/wp-content/uploads/2018/10/Mary-River-IIBA-Signed.-October-22-2018.pdf</p>

No.	NIRB Reconsideration Report Section Reference	Topic	NIRB Reconsideration Report – Conclusion and Recommendations	Baffinland Supporting Information Summary Report Section Reference	Supporting Document Reference
24	Socio-Economic Effects – Conclusions and Recommendations of the Board: Section 5.2.2	Socio-Economic	The Board recognizes the desire of Baffinland to avoid detrimental socio-economic effects associated with a suspension of ore hauling and shipping when the existing 4.2 Mt/a limit is reached. However, in the face of potential significant ecosystemic effects associated with marine shipping and road haulage, the Board has concerns that there is significant potential for adverse socio-economic effects associated with declines in the harvest of marine mammals for the residents of Pond Inlet that have not been adequately addressed by Baffinland in the FEIS Addendum. As the Board has concluded that the information in the FEIS Addendum has not established that the existing hauling and shipping limits are affecting the economic viability of the Mary River Project (as amended) the Board has determined that the Proponent has not met the onus of establishing the socio-economic need for the proposed increase to hauling and shipping as presented in the Production Increase Proposal. Further, the Board has concerns that the adverse socio-economic effects associated with declining sea mammal harvesting are likely to be exacerbated with increased shipping, and these effects have not been adequately addressed through the FEIS Addendum. On this basis, the Board recommends that due to the potential for significant adverse socio-economic effects associated with the increase to marine shipping, the aspect of the Production Increase Proposal involving increases to the amount of ore trucked and shipped out of Milne Inlet not be approved to proceed at this time.	Section 5.3 Section 5.4.5	Baffinland (Baffinland Iron Mines Corporation). 2019p. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327140, 327141, 327144. Baffinland (Baffinland Iron Mines Corporation). 2019q. Final Written Comment Responses Phase 2 Proposal – Mary River Project. October 2019. Public Registry Identification: 327146.

ATTACHMENT 3

Project Stabilization Approach

MEMO

Project Stabilization Approach

Background

Baffinland Iron Mines Corporation (Baffinland) and the Qikiqtani Inuit Association (QIA) jointly developed the 'Project Stabilization Approach' to support the review of Production Increase Proposal (PIP) submitted by Baffinland to the NIRB on April 30 2018. In April 2018, QIA and Baffinland met in Pond Inlet and initiated a process to actively address community concerns in relation to the ongoing operations of the Mary River Project (the Project) and the PIP specifically.

On July 10th the QIA informed the NIRB of the steps being taken by QIA internally with respect to the PIP. Of particular note is that in addition to participation in the NIRB's technical review, QIA planned to submit a second submission detailing the commitments secured with Baffinland relative to the PIP through a separate process. QIA noted the joint submission with Baffinland would address concerns raised by the communities and technical matters requiring resolution.

On July 11th the QIA, the Hamlet of Pond Inlet, the Mittimatalik Hunters and Trappers Organization (MHTO), and the Mary River Community Group issued a joint letter to the NIRB with an attached list of commitments actively being pursued with Baffinland.

Subsequently, on July 18, 2018 QIA provided to Baffinland a list of 33 concerns and a suggested resolution for each of those concerns. In response, on July 20, 2018 Baffinland provided to QIA a list of commitments and actions to be undertaken to advance resolution on these commitments and further committed to partner with the QIA to engage a third party, independent body to audit Baffinland's compliance with those commitments on a bi-annual basis. Many of the concerns raised by QIA were successfully resolved by undertaking the agreed upon actions – Marine Shipping Issues No. 1-10; Dust Issues No. 11-13; Management Plans Issue No. 14; Inuit Owned Lease Issues No. 20-23; Roads Management Plan Issue No. 24; Inuit Impact and Benefit Agreement (IIBA) Implementation Issue No 25-29; and IIBA Re-Negotiation Issue No 30-33. Some items related to the Water Compensation Agreement Issues No 15-19 have been completed, and on-going discussion with QIA is required for more thorough resolution on other items.

In accordance with the above, Baffinland completed a third party audit of Baffinland's compliance with the Project Stabilization commitments. The results of this component of the audit were provided to QIA on September 13, 2019, while the audit items related to compliance with terms and conditions and articles of the IIBA related to management of the environmental management of the Tote Road and shipping were submitted to NIRB on October 1, 2019 (Baffinland, 2019u). Baffinland acknowledges that several topics will remain as items of on-going discussion between the parties and that QIA will continue to monitor and report to Baffinland any on-going concerns.

To accompany the commitments made by Baffinland in resolution of the Project Stabilization Approach, the QIA requested that Baffinland describe and outline its approach to adaptive management and monitoring relative to the marine environment and dustfall (see Attachment 4). This document informed the basis of on-going work to formalize Baffinland's approach to adaptive management through the Phase 2 review process.

Summary Update

The following provides a summary of the issues identified by QIA during the Project Stabilization Approach process and a summary of actions undertaken by Baffinland to resolve these concerns either prior to approval of the PIP or subsequent to receiving approval from the responsible Ministers. As noted in the QIA's letter to NIRB on August 3, 2018, at that time there were a total of 33 concerns across a range of eight (8) key topics identified in their July 26th Final Written Submissions for the PIP to the NIRB, and provided an update to NIRB that QIA and Baffinland had come to resolution on the 33 concerns. As described in the QIA letter to Minister LeBlanc on September 21, 2018 (included as Attachment 4 of the PIP Extension Request) these commitments addressed specific issues of concern that were brought forward by the QIA on behalf of the Qikiqtani Inuit and led to the re-negotiation of the IIBA in 2018 which further stabilized and expanded Project benefits for Inuit in the Qikiqtani region.

Topic No. 1: Marine Shipping – Issue No. 1-10

QIA noted the need for an improved communication protocol and procedures regarding Baffinland's shipping activities with the community of Pond Inlet. Namely, they expressed the need for enhanced communication regarding Baffinland's annual vessel traffic management plans, the provision of special-purpose communication materials related to Baffinland shipping, and clarity on Baffinland's use of VHF radio for communicating with hunters on the water.

Issues related to improved communications for the shipping season and vessel traffic were addressed by Baffinland through the submission of the Draft Shipping Season Communication Standard Operating Procedure (SOP) that was submitted by Baffinland to the NIRB on August 23 as part of the Phase 2 review process. The SOP reflects the commitments Baffinland has made to the Mittimatalik Hunter and Trappers Organization and the community of Pond Inlet, more generally, to enhance communications between the Company and the community both prior to the start of each shipping season, during the shipping season, and at the end of each shipping season. In addition, in 2018 Baffinland developed in collaboration with the MHTO a plain language summary on shipping related information in both Inuktitut and English which was distributed within the community of Pond Inlet. This document was updated and distributed in 2019 and will continue to be updated and distributed in future years.

QIA expressed the need for clarity on the use of ship-based observers, confirmation that Baffinland was adhering to the nominal shipping route, use of approved anchorage locations and self-imposed speed limits, clarity on Baffinland's ballast water management approach and the ongoing implementation of the Bruce Head Shore-Based Monitoring Program. QIA also requested further clarity on what additional marine monitoring programs, if any, will Baffinland run in the future.

Baffinland addressed these concerns by the following:

1. Re-instatement of the Ship Based Observer program in 2018
2. Enhancements to the Shipping Instructions to Masters (SITM) to provide further clarity to vessel captains on waypoints associated with nominal shipping route, implementation on restriction to vessels drifting and anchoring at Ragged Island and improved rates of compliance with Baffinland's voluntary speed restrictions
3. Re-instatement of the Shore-Based Bruce Head Monitoring Program in 2019

4. Development and execution of the Ballast Water Management Plan
5. Baffinland scaled up its marine mammal monitoring programs in 2019, as well as increasing Inuit participation in the program
6. Baffinland has held several discussions around alternative anchorage locations throughout 2018 and 2019 and this will continue to be an on-going discussion item on the agenda for the planned end- and start-of-shipping season meetings in 2020s.

QIA also expressed the need for improved awareness related to the Wildlife Compensation Fund (WCF) and clarification on the use of the fund for damaged equipment. Baffinland notes that in accordance with Article 17.6.4, 17.6.5 and 17.6.6 the management of, communications related to, and reporting on the WCF rests with the QIA. Baffinland trusts that the QIA remains able to effectively implement the WCF and to address the concerns they raised within the Project Stabilization Approach discussions. In order to address concerns raised by community members to Baffinland regarding access to the WCF, the QIA committed to increasing awareness around the WCF so that Inuit understand how to apply for compensation regarding damaged equipment and the information QIA requires to complete the application. See also Topic No. 7: IIBA Implementation - Issue No. 28.

Topic No. 2: Dust – Issue No. 11-13

QIA requested additional dustfall monitoring stations be installed along the Tote Road, and requested confirmation on what other monitoring programs related to potential effects associated with increased Project activities) would be expanded to address the potential increase in dust generation as a result of the PIP. The QIA also expressed the need for ongoing application of dust management mitigations and enhancement to these mitigations as necessary.

Baffinland responded by installing six (6) new dustfall collection stations, the locations of which were determined in direct consultation with the MHTO¹ and the QIA. These new locations were added to further refine an understanding of the geographic extent of fugitive dust along the Tote Road corridor. Results of Project-wide dustfall monitoring since approval of the PIP demonstrate that despite an increase in the mining and hauling of ore, generally dustfall levels have either decreased or remained consistent with years where the Project was operating under the Early Revenue Phase. These results suggest that dust management and mitigations are functioning as intended to manage the potential increase for dustfall deposition associated with the PIP.

Baffinland and the QIA also held a series of meetings in July of 2018 to establish the Tote Road Monitoring Program, which was designed to monitor for potential Project sedimentation impacts on surface water. In consultation with the QIA a number of representative water crossings in the Tote Road corridor were selected to monitor for total suspended solids (TSS). The Tote Road Monitoring Program was implemented in 2018 and 2019. A preliminary review of data from the 2019 program indicate no observed Project-related increases to TSS in surface water in the Tote Road corridor, despite the increase in vehicle traffic on the Tote Road in 2019. Over the past three years Baffinland has observed a downward trend in reportable spill events related to elevated TSS; in 2017 Baffinland reported a total of fifteen (15) spill events related to elevated TSS, one (1) spill related to elevated TSS in 2018, and no reportable spills for elevated TSS levels in surface water in the Tote Road corridor in 2019. These results suggest that dust management and mitigations are functioning as intended to manage Project sedimentation impacts on surface water as a result of the potential increase of Project-generated dust deposition associated with the PIP.

Baffinland also continued investigating and implementing additional dust suppression alternatives at Milne Port in 2018-2019, including ore pad redesign to position fines in the centre and lump ore around the margins, installation

¹ During the August 31 2018 Site Visit

of downwind fencing and proper positioning of the conveyors to minimize distances when stock piling. Additional shrouds were also installed at the Mine Site crusher in 2019 and Baffinland is actively considering and/or implementing new methods through reengineering of equipment designs to minimize dust generation. Calcium chloride and water has also been applied on road surfaces throughout operations to mitigate dust emissions. Based on feedback received from communities, the QIA and other regulators, in 2019 Baffinland also actioned a trial of Dust Stop®. Results of the micro-trial indicate that Dust Stop® is a successful and feasible alternative for dust management along Project roads. Baffinland has an available 720 totes (1000 L) of Dust Stop® on site, which will be applied in spring of 2020 with fresh gravel. Results show that it will remain in place for most of the summer season, assuming routine maintenance after initial application. An additional order will be made for resupply on the 2020 sealift pending a review of the ongoing effectiveness of its application.

Although monitoring data suggests that dust levels have generally decreased from or remain consistent with those observed in the ERP, Baffinland continues to make efforts to minimize Project-generated dust.

Topic No. 3: Management Plans – Issue No. 14

The QIA requested Baffinland update its Management Plans for the Project to reflect changes in Project scope and operational requirements associated with the PIP.

To address this request, Baffinland updated the following Management Plans specific to operational requirements associated with the PIP:

1. The Spill Contingency Plan was updated to account for additional fuel capacity at Milne Port
2. The Freshwater, Sewage and Wastewater Management Plan was updated to include new camp and associated infrastructure at Milne Port, including the new potable water treatment plant and the sewage treatment plant
3. The Waste Management Plan was updated to include the additional Project infrastructure at Milne Port
4. The Milne Port Oil Pollution Emergency Plan was update to account for additional fuel capacity at Milne Port

Relevant figures contained within the Waste Management Plan, and the Freshwater, Sewage and Wastewater Management Plan were also updated as need to account for infrastructure and activities associated with the PIP.

Throughout 2018 and 2019, Baffinland also undertook extensive revisions to other management plans relevant to the PIP as part of the Phase 2 regulatory process. This included updates to:

1. The Surface Water and Aquatic Effects Monitoring Plan (SWAEMP)
2. The Aquatic Effects Monitoring Plan (AEMP)
3. The Shipping and Marine Wildlife Management Plan (SMWMP)
4. The Marine Monitoring Plan (MMP)
5. The Terrestrial Environment Mitigation and Monitoring Plan (TEMMP)
6. The Spill at Sea Response Plan (SSRP)
7. The Air Quality and Noise Abatement Management Plan (AQNAMP)

These updates reflected inclusion of information relative to the PIP and Phase 2 such as, emergency preparedness associated with increased shipping (SMWMP, SSRP, MMP), inclusion of 6 additional dust fall monitors (TEMMP), and a description of adaptive management measures and mitigations for dust management and air quality (AQNAMP).

A list of Baffinland's management plans that are currently operational is included in Section 6 of Baffinland's Annual Report to NIRB, and are also available on the Company's Document Portal at: <https://www.baffinland.com/media-centre/document-portal/>

Topic No. 4: Water Compensation Agreement – Issue No. 15-19

Through the Project Stabilization Approach, the QIA noted outstanding concerns related to the implementation of the Water Compensation Agreement (WCA), as required to satisfy Section 4.3 of the Commercial Lease No. Q13C301 and Section 20.3.1 of the Nunavut Agreement. The QIA's concerns were primarily related to the delivery of an outstanding response from Baffinland on the "Environmental Information Review" document provided by QIA related to the WCA, agreement on the definition of "Natural Variation and Significant Impacts" for the purpose of use in the WCA, a commitment from Baffinland to amend the WCA to address changes to the scope of the Project associated with the PIP and the delivery of an implementation framework for the agreement.

To address these concerns, Baffinland met with QIA throughout 2018 on the topic of WCA implementation, and submitted a draft Implementation Guide as well as a response to the QIA's Environmental Information review to the QIA on November 9, 2018. Following review by QIA and in person meetings on December 12, 2018, the "Response to Qikiqtani Inuit Association Assessment of Environmental Information and Substantial Effects" was finalized and submitted to QIA on January 11, 2019. Baffinland and QIA were to meet on March 4, 2019 regarding the WCA and ICRP, however QIA postponed this meeting until October 2-3, 2019. Baffinland and QIA remain engaged in discussion on the implementation of the WCA, specifically regarding the integration of Inuit Qaujimagatuqangit.

Topic No. 5: Inuit Owned Lease – Issue No. 20-23

The QIA raised a number of concerns related to compliance with the Commercial Lease. Generally, these were related to submission of an updated Interim Closure and Reclamation Plan, the provision of as-built plans and drawings for site infrastructure, and confirmation that the Tote Road has been constructed as outlined in the prescribed boundaries of the land lease. The QIA also requested confirmation of an action plan from Baffinland to address seepage issues associated with the collection ponds at the Waste Rock Facility.

Baffinland subsequently provided the QIA with Version 5 of the Interim Closure and Reclamation Plan that was approved by QIA on October 31, 2018, subject to conditions, and has presented Version 6 for QIA review and comment.

Baffinland confirmed with the QIA that there are areas of the Tote Road that were built outside of the lease boundaries, resulting in the submission of the 2018 Land Classification Amendment (Option Exercise Notice) to QIA in 2018. Following approval of this amendment, Baffinland confirms that the Tote Road is contained within the revised boundaries. As agreed to with QIA, Baffinland acquired Photostat data to supplement this request and to be used as as-built documentation for the Tote Road.

With respect to the QIA's concerns related to the Waste Rock Facility, Baffinland has been actively working with the QIA and other relevant regulatory agencies throughout 2018 and 2019 on this issue. As part of the development of a long-term Waste Rock Management Plan, Baffinland developed an Interim Waste Rock Management Plan in March 2019. As committed to in the Interim Waste Rock Management Plan, a final version of the Waste Rock Management Plan was submitted to the QIA and other agencies on December 31, 2019. Additionally, Baffinland completed investigations on the integrity of the Waste Rock Facility sedimentation pond, and implemented remedial measures in 2019 to replace and repair the liner of the pond.

Topic No. 6: Roads Management Plan – Issue No. 24

QIA requested confirmation that Baffinland intended to submit an updated Roads Management Plan (RMP) to QIA for approval that addresses comments on the RMP previously provided by QIA.

To address this, Baffinland provided the QIA with an updated RMP (Revision 6) on September 28, 2018 and (Revision 7) on March 31, 2019, that incorporated and addressed all comments and concerns submitted by QIA on Revision 5 of the Plan, including the addition of a construction monitoring framework and the Tote Road Monitoring Program (as Appendix D of the RMP).

A copy of this RMP is available on Baffinland's Document Portal:

https://www.baffinland.com/_resources/document_portal/baf-ph1-830-p16-0023-r7---roads-management-plan_2019-20-12-43.pdf

Topic No. 7: IIBA Implementation – Issue No. 25-29

During 2018, QIA presented Baffinland with a notice of non-compliance related to the 2017 Minimum Inuit Employment Goals (MIEG). Determination for developing a path-forward on this issue was deferred to the respective Presidents of QIA and Baffinland for resolution. This issue was resolved on June 28, 2018 following a June 26-27, 2018 IIBA renegotiation session. Development of a revised approach to the establishment of the annual MIEGs was captured in the Agreement-in-principle, and later the final revised IIBA under Article 7.16.

The QIA relayed concerns to Baffinland that had been raised by hunters, related to the condition and location of crossings at the Tote Road, which required remediation by Baffinland to prevent damage to equipment used by hunters while crossing the Tote Road. Baffinland hosted a site visit with representatives from the Mittimatalik Hunter and Trappers Organization on August 30-31, 2018. The agenda for this site visit included time to discuss the Tote Road crossings and remedial actions being requested of Baffinland to address hunter concerns. This issue was discussed during field-reviews of the crossings on August 30 and 31 2018. Immediately after the site visit Baffinland's Road Maintenance department completed grading and restoration work at the Tote Road crossings identified during the site visit. These improvements have made crossing the Tote Road safer and easier for hunters in the area.

Similar to issues raised on the Wildlife Compensation Fund under Topic No. 1: Shipping – Issue No. 8, QIA expressed the need for improved awareness raising related to the Wildlife Compensation Fund. Specifically, the QIA stated a commitment that it would host workshops with the HTOs and community members of the five North Baffin communities to increase awareness of the Fund and its function. QIA noted it may consider amendments to the WCF in the future based on the outcomes of these workshops. Baffinland trusts that the QIA remains able to effectively implement the WCF and to address the concerns they raised within the Project Stabilization Approach discussions. During the time the Project Stabilization Approach was being developed, Baffinland and the QIA were in the process of finalizing the 2018 IIBA Work Plan. The 2018 Work Plan was finalized and agreed upon, and included focus on the delivery of the Skills and Partnership Fund Project (Q-Step) and the implementation of the Inuit Human Resource Strategy.

Topic No. 8: IIBA Renegotiation – Issue No. 30-33

During the time the Project Stabilization Approach was being developed, Baffinland and the QIA were concurrently renegotiating the Mary River Inuit Impact and Benefit Agreement (IIBA). Given that the renegotiations were not yet final, as part of the Project Stabilization Approach process, the QIA requested that Baffinland commit to signing an Agreement-in-principle, that would ultimately serve to inform final drafting of the revised IIBA.

The items of the Agreement-in-principle that were identified as issues of importance in the Project Stabilization Approach included revisions to Article 5 of the IIBA (Financial Participation) and revisions to commitments on Inuit employment and training (Article 7 – Employment, Article 8 – Inuit Education and Training). The QIA noted the successful renegotiation of these substantial benefits agreed upon within the IIBA in Annex A of their support letter to Minister LeBlanc for the PIP, dated September 21, 2018.

Similarly, Baffinland considered these issues resolved following the successful renegotiation and signing of the IIBA on October 22, 2018.