Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

Indian and Northern Affairs Canada's Information Request Submission to the Nunavut Impact Review Board on the Draft Environmental Impact Statement for the Baffinland Mary River Iron Ore Project

March, 2011

Canada

INFORMATION REQUEST TABLE OF CONTENTS

LIST OF ABBREVIATIONS

ARD	Acid Rock Drainage
CEA	Cumulative Effects Assessment
DEIS	Draft Environmental Impact Statement
EPP	Environmental Protection Plan
INAC	Indian and Northern Affairs Canada
IR	Information Request
ML	Metal Leaching
NAG	Non-Acid Generating
NIRB	Nunavut Impact Review Board
NWB	Nunavut Water Board
NWT	Northwest Territories
PAG	Potentially Acid Generating
TSS	Total Suspended Solids

1.0 DEIS METHODOLOGIES

1.1 General DEIS comments

Information Request #1.

Issue:

Significant information gaps are not explicitly addressed in most volumes of the DEIS including the steps to address these gaps.

As per Section 2.6 of NIRB's Guidelines, INAC requires the Proponent to identify all significant gaps of knowledge as well as the steps taken to address these gaps.

Reference:

DEIS Vol. 1 Appendix 1C, Table 1C-1.1

Concern:

Section 2.6 of NIRB's Guidelines requires the Proponent to identify all significant gaps of knowledge as well as the steps taken by the Proponent to address these gaps. DEIS Vol. 1 Appendix 1C: Table 1C-1.1- Concordance indicates that this is addressed in Section 3.0 of Volume 2 as well as Volumes 4 to 9. Page 39 of Section 3.0 of Volume 2 of the DEIS simply states that for each effects assessment, data collection limitations are provided in the respective volume. However, data gaps or limitations either appear to not be explicitly addressed or appear to be only partially addressed in most volumes. As an example, there does not appear to be a discussion on data gaps for vegetation in Volume 6, Appendix 6C.

Rationale:

Impact assessment can be undermined by significant data gaps and limitations which increase uncertainties in identifying, predicting and quantifying impacts. Data gaps can range from a number of issues, including lack of seasonal data, lack of historical data showing trends through time and/or lack of site-specific data. For a transparent impact assessment, it is important that significant data gaps and/or limitations be identified, including the steps undertaken by the Proponent to reduce uncertainties resulting from these data gaps and limitations, including assumptions and additional safeguards.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #2.

Issue:

The DEIS concordance table does not provide page numbers and often the references in the concordance table are too generic, which can impede the review, including determining if and where specific issues and directions from the Guidelines have been addressed.

INAC requests the Proponent to provide specific references in the concordance table, including page or section references, as appropriate.

Reference:

DEIS Appendix 1C, Table 1C-1.1

Concern:

Section 4.2 of NIRB's Guidelines requires the Proponent to provide specific references where issues or directions described in the Guidelines are addressed to make these easily identifiable in the EIS, including providing a concordance table directing reviewers to the location (document, section, and page number). Such a table has been provided (DEIS Appendix 1C: Table 1C-1.1) however page number references are not included and often section numbers are also omitted. Entire volume(s) are identified sometimes when it would be more appropriate to refer to section numbers. As a result, it is often not readily identifiable where in the DEIS issues or directions from the Guidelines have been addressed. This can impede the review.

Rationale:

The concordance table reference entries need to be more specific to facilitate reviewers in readily finding the required information.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #3.

Issue:

As per Section 5.1 of NIRB's Guidelines, INAC requests that the Proponent describe its record. This description take into account the current ownership of the project.

INAC requests the Proponent to describe its record (or otherwise lack of record) related to past experience, compliance, etc. as per Section 5.1 of NIRB's Guidelines.

Reference:

DEIS Vol. 1, Sect. 1.2

Concern:

Information regarding the Proponent's record is not provided in Section 1.2 of Volume 1 as indicated in the DEIS Appendix 1C: Table 1C-1.1- Concordance of EIS Guidelines. This includes:

- Past experience in exploration, mining, railway and shipping operations;
- Record of compliance with governmental policies and regulations pertaining to environmental and socio-economic issues in past operations;
- Operation safety, major accidents, spills, emergencies, and corresponding responses;
- Honouring environmental and socio-economic commitments in the event of planned of premature (temporary or permanent) mine closure or changing ownership;
- Relations with aboriginal peoples, including impact and benefits agreements if appropriate;
- Operations in arctic and sub-arctic regions;
- Record in incorporating environmental and socio-economic considerations into construction, operations, temporary closure, final closure, and post-closure; and
- Corrective actions undertaken in the past, distinguishing between those taken voluntarily and those taken at the insistence of a third party

Rationale:

This information is important to demonstrate that the Proponent has the relevant experience and furthermore, based on its track record, can be expected to follow through with its commitments. Ultimately, this is a consideration in determining the level of need for financial assurances and safeguards for the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #4.

Issue:

The DEIS does not address security provisions to ensure payment of compensation and proper mitigation and remediation of potential adverse environmental effects in the event of accidents or premature or planned closure.

As per Section 5.1 of NIRB's Guidelines, INAC requests the Proponent identify and describe any obligations or requirements that it must meet to post a bond or other form of financial security to ensure payment of compensation and to ensure proper mitigation

and remediation can be carried out in the event of accidents that directly or indirectly result in major damage by the Project to the environment, as well as to cover the cost of planned or premature closure, whether temporary or permanent.

Reference:

DEIS Vol. 1, Sect. 1.2

Concern:

Information on the provision of security is not provided in Section 1.2 of Volume 1 as indicated in DEIS Appendix 1C: Table 1C-1.1- Concordance of EIS Guidelines.

Rationale:

Financial assurance is required to ensure payment of compensation and proper mitigation and remediation can occur in the event of an accident adversely affecting the environment as well as for temporary or permanent closure.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #5.

Issue:

The DEIS does not address safeguards which have been or which would be put in place by the Proponent to compensate for any lack of experience in exploration projects or mining projects in the same region or similar type northern environments.

As per Section 5.1 of NIRB's Guidelines, INAC requests the Proponent to identify the safeguards that it will be putting in place to compensate for any lack of experience in similar environments.

Reference:

DEIS Vol. 1, Sect. 1.2

Concern:

Information on safeguards is not provided in Section 1.2 of Volume 1 as indicated in Appendix 1C: Table 1C-1.1- Concordance of EIS Guidelines.

Rationale:

If depending on response to the above IRs, it is determined that the Proponent does not have prior experience in exploration, or mining, particularly in the region, information should be provided regarding additional safeguards that the Proponent intends to put in place to compensate for this lack of experience to protect the environment.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #6.

Issue:

NIRB EIS Guidelines on sustainable development.

INAC requests that the Proponent provide clarification on why the concordance table indicates that sustainable development issues are not applicable to the DEIS.

Reference:

DEIS Vol. 1, Appendix 1C-1, Table 1C-1.1, NIRB Guideline Sect. 2.4

Concern:

A notation of "N/A" is provided in lieu of a reference citation in Table 1C-1.1 under Section 2.4 of the NIRB Guidelines concerning sustainable development issues such as impacts on biodiversity, renewable and non-renewable resources and the precautionary principle. The Proponent should indicate where and how these issues have been covered in the DEIS so that a technical review of the documents can be completed.

Rationale:

The NIRB Guideline 4.2 requires that a concordance table be prepared directing the reviewer to the location within the DEIS where specific information addressing the NIRB Guidelines is presented. Cross-referencing of information related to the Project application of sustainable development issues is not provided (a "N/A" notation is provided instead).

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #7.

Issue:

The discussion on regulatory regime does not include closure.

As per Section 5.2 of the NIRB Guidelines, INAC requests that Proponent's discussion on the regulatory regime include a discussion on mine closure. This should include a discussion of how the design has been developed to meet the regulatory requirements.

Reference:

DEIS Vol. 2, Sect. 2.2 and Sect. 2.3

Concern:

The discussion of closure as part of the regulatory regime is not provided in Sections 2.2 and 2.3 of DEIS Vol. 2 as indicated in Appendix 1C: Table 1C-1.1- Concordance of EIS Guidelines.

Rationale:

Designing for closure is important, particularly for sensitive Arctic environments. This includes addressing the regulatory requirements for closure. INAC recognizes that Appendix B of Appendix 10.G of Volume 10 lists some of the regulatory requirements in tabular form, however this information is not discussed in Sections 2.2 and 2.3 as indicated in the DEIS Appendix 1C: Table 1C-1.1- Concordance of EIS Guidelines and furthermore it is not evident in the DEIS how closure has been considered.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #8.

Issue:

A rationale is required for the temporal boundaries (5 years) for post-closure which appear insufficient in that potential impacts may occur after 5 years post-closure.

INAC requests that the Proponent provide rationale for the temporal boundary only extending five years post-closure. Also required, are the mechanisms and/or measures which will be used to determine that the post-closure phase has been completed.

Reference:

DEIS Vol. 2, Sect. 3.2 and Vol. 10, Appendix 10G (Mine Closure and Monitoring Plan)

Concern:

Section 5.4.2 of NIRB's Guidelines notes that the temporal boundaries of the post-closure period may encompass many years, depending on the site and on the methods of closure.

Rationale:

The Proponent has identified the temporal boundaries for post-closure phase as a minimum five years (2041 to 2045). 5 years would appear to be an insufficient timeframe given that pit filling, according to the DEIS Vol. 1, Sect. 13.0, is expected to take decades (85 to 150 years). A realistic estimate of the duration of the post closure phase is required to understand the long term impacts of the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #9.

Issue:

Information on land tenure is insufficient.

INAC requests that the Proponent provide additional information on land tenure, including summary information on land tenure by component as well as back-up detail.

Reference:

Vol. 2, Sect. 2.1

Concern:

NIRB Guideline 5.5 regarding Land Tenure requires the Proponent to "*delineate on a map of suitable scale the legal boundaries of any areas to which it will acquire rights through lease or other tenure arrangements, to include Crown land, Inuit Owned Land, and Commissioner's land as well as provide detail on those areas, including file numbers, start and end dates, fees, name of right holder, renewals, etc.*" Although referenced in the Concordance Table, Section 2.1 of Volume 2 does not provide the detail identified in the guideline. The Proponent should clearly identify, by major component footprint including the mine site, the ports and linear corridors, how much of the Project lies within: the mineral claims area; the exploration area; Inuit owned land - surface only excluding minerals; Inuit owned land - surface and subsurface including minerals; Crown land; and Crown mineral claims. For linear corridors, the width of the new right of way or widened right of way should be provided. Information on land tenure for temporary construction laydown areas or quarries should also be provided. Back-up detail should also be provided as per NIRB's Guidelines. See also Information Request #58.

Rationale:

NIRB Guideline 5.5 is not satisfied as the Proponent has not provided the information on land tenure in sufficient detail.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #10.

Issue: The information required to conduct a joint NIRB- NWB review process is not provided in the DEIS.

INAC requests that the proponent cross-reference those sections of the DEIS which are relevant to the draft water license application and any supporting documentation.

DEIS Reference: Volume 2, Subsections 2.2.7

Concern:

According to a letter dated March 14, 2008 to the NPC, NIRB and NWB, Baffinland requested coordination of the regulatory processes required by the NWB and the NIRB Part 5 review process. Baffinland re-confirmed their commitment to a coordinated review process between NIRB and the NWB in a letter to NIRB dated February 14, 2011.

Rationale:

The lack of a draft water license application, supporting plans and other documentation does not allow for a concurrent NWB Type 'A' water license review, as requested by the proponent.

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #11.

Issue:

Spatial boundaries - Interaction matrix and traditional land use and harvesting activities are not addressed.

INAC requests the Proponent provide a clear indication of the extent of traditional land use and harvesting in the interaction matrix presented in Vol. 2, App. 2C or provide alternative reference citation in Table 1C-1.1- Concordance of EIS Guidelines.

Reference:

DEIS Vol. 2, Appendix 2C

Concern:

The interaction matrix provided in Vol. 2, App. 2C of the DEIS as referenced in the concordance table does not address traditional land use and harvesting extent.

Rationale:

NIRB Guideline 5.4.1 on Spatial Boundaries requires that special boundaries for the project shall be determined by, amongst others, the extent to which traditional land use and Inuit harvesting could potentially be affected by the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #12.

Issue:

Although follow-up and mitigation requirements are identified, areas of scientific uncertainty are not explicitly identified or discussed in Section 7.0 of Volume 10 as referenced in the concordance table; this information is required to determine the need for and/or adequacy of planned follow-up and mitigation.

INAC requests that the Proponent provide a discussion of scientific uncertainty, including uncertainty regarding baseline data, modeling and impact predictions, including how this uncertainty is to be addressed, for example, by follow-up and monitoring activities.

Reference:

DEIS Vol. 10, Sect. 7.0

DEIS Appendices 10D-10G

Concern:

As per NIRB Guideline 2.3 with respect to the precautionary principle, in areas where scientific uncertainty exists, follow-up and monitoring activities should be planned. Although mitigation and follow-up requirements have been identified in the referenced section of the DEIS, uncertainty is not addressed in that section and furthermore it is not explained if and how the mitigation and follow-up programs have been designed to address such uncertainty in the context of the precautionary principle. It is recognized that uncertainty is addressed in some other areas of the DEIS, however a comprehensive discussion of uncertainty is required, to rationalize the proposed mitigation and follow-up programs.

Rationale:

The proposed Project is to be located in a remote area, characterized by a sensitive Arctic environment and continuous permafrost and subject to the uncertain effects resulting from climate change over the long term. Uncertainty must be clearly identified, including the management of uncertainty through the proposed follow-up and monitoring programs.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #13.

Issue:

Identification of monitoring during the different project phases is missing.

INAC requests that the Proponent clarify all associated monitoring and/or mitigation plans to be implemented in each phase to eliminate or minimize adverse effects that might occur at various project stages for each Project element.

Reference:

DEIS Vol. 3 Sect. 2.0; 3.0; 4.0; Table 3-1.1; Figure 3-1.3

Concern:

Figure 3.1.3 provides an overall life of project schedule. However monitoring, with the exception of closure/post closure is not identified in the figure or discussed in the referenced sections of the DEIS.

Rationale:

Section 6.3 Project Phases of the NIRB Guidelines requires that the Proponent present an overall development plan which describes the Project development phases, relevant timeframes, works and undertakings associated with each phase. The Proponent should also clarify all associated monitoring and/or mitigation plans to be implemented in each phase to eliminate or minimize adverse effects that might occur at various project stages for each Project element.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

1.2 Environmental impact identification

Refer to Information Request #14 below regarding difficulty in distinguishing impacts associated with the Project with and without the implementation of the road haul alternative.

1.3 Alternatives assessment

See also Information Requests #53 and #66.

Information Request #14.

Issue:

It is unclear whether the 3Mt/a road haul option to Milne Port is an alternative or part of the Project description. In any case, the two possible alternatives, one that does not include haulage of ore by road and one that does are not described and assessed separately in the document, and it is not clear for what scenario the relevant assessment results apply.

The Proponent should provide clarification on whether the road haul option is considered an alternative or is part of the Project description and ensure that full results of required assessments are presented for any option that the Proponent considers as still possible .

Reference:

"Mary River Project Environmental Impact Statement Project Highlights" table provided in each volume.

DEIS Vol. 3, Sect. 6.5, 6.5.4.4 and Sect.6.5.4.6 2.2.5

Concern:

The "Mary River Project Environmental Impact Statement Project Highlights" table which is included in each volume states that the "*road haulage and shipping via Milne Inlet is also considered an alternative at this time*". The alternatives analyses in DEIS Vol. 3, Sect. 6.5.4.4 & 6.5.4.6 identifies this alternative as feasible. However in much of the DEIS this road haul option is treated as part of the formal Project description. For example, DEIS Vol. 3, Sect. 2.3 (page 35) states considerable upgrades will be undertaken for the Milne Inlet Tote Road to support the level of traffic proposed with year round ore haulage from the Mine Site to Milne Port using 120-t trucks. Also Table 3-2.1 (DEIS Vol. 3, Sect. 2.1.7, page 19) identifies ore stockpiles and an ore dock as permanent facilities and major Project components at Milne Port. Subsequent impact analyses (e.g., DEIS Vol. 5, Sections 2.3 and 2.4 dealing with air emission sources during construction and operation) clearly identify the ore haulage and handling at Milne Port as part of the Project being modeled. These modeled project results are further incorporated into the impact analyses on VECs (e.g., DEIS Vol. 6, Section 3.0 Vegetation) to determine Project impacts. As the road haul option and associated infrastructure appear to be so integrated into the Project description on which the impact analyses have been based, it is difficult to separate the Project impacts from those related to the road haul alternative alone. When it is made clear what option or options are considered by the Proponent, the DEIS will have to be reviewed to ensure all possible scenarios are fully presented and assessed. Continuation of the review of the DEIS without full clarity and full information on possibly preferred alternatives may lead to inefficiencies later in the process if more information is provided that is not consistent with current assumptions reviewers may make in relation to the limited information currently provided.

Rationale:

The impact analyses appears to have been undertaken with the road haul alternative as an integral part of the Project description which does not allow the reader to distinguish the differences in impacts associated with the Project with and without the implementation of the road haul alternative.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #15.

Issue:

References to DEIS sections cited in the Concordance of Addendum to the EIS guidelines table are missing.

INAC requests that the Proponent clarify or provide correct references for the sections 6.4.4.3 and 6.4.4.4 in Volume 3 of the DEIS as stated in Table 1C-1.3: Concordance of Addendum to EIS Guidelines. .

Reference:

DEIS Vol. 1, Appendix 1C-1, Table 1C-1.3

Concern:

Table 1C-1.3 Concordance of Addendum to EIS Guidelines cites Volume 1, Sections 6.4.4.3 and 6.4.4.4 as the reference for the "road haulage option" proposed as an alternative. *These sections are cited to correspond to the requirements of Section 6.1 of the NIRB guidelines but are missing from the DEIS document.* .

Rationale:

Clarification or correct reference citations required to confirm how Proponent has handled the road haul option. Also refer to the road haul option issue identified in Information Request #14.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #16.

Issue:

Closure and reclamation options are not addressed in the Alternatives assessment

INAC requests that the Proponent provide alternative closure and reclamation options as part of the alternatives assessment presented in the DEIS.

Reference:

DEIS Vol.3, Sect. 4.0, 6.5.2.3

Concern:

Section 6.1 of the NIRB Guidelines for the Project requires that alternative closure and reclamation options be addressed for the Project as part of the alternatives assessment. Alternative closure and reclamation options are not evaluated as part of the alternatives assessment.

Rationale:

The DEIS alternatives assessment does not satisfy NIRB Guideline Section 6.1 and is therefore considered incomplete.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #17.

Issue:

Alternatives analysis does not address all Project components such as on-going geotechnical exploration.

INAC requests that the Proponent examine and assess different alternatives related and "on-going geotechnical exploration" components of the Project.

Reference:

DEIS Volume 3, Section 6.0

Concern:

NIRB Guideline 6.1 states the *"EIS shall include an explicit analysis of all alternative means of carrying out the Project components*" and NIRB Guideline 3.2.1 defines on-going geotechnical exploration as Project components. The DEIS does not offer or assess any alternatives for this Project component.

Rationale:

The DEIS alternatives assessment does not satisfy NIRB Guideline 6.1 and is therefore considered incomplete.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #18.

Issue:

The alternative of a rail line from the mine site to Milne Inlet was not explicitly evaluated.

INAC requests the Proponent explicitly evaluate the alternative of a rail line connecting the mine site to a seaport at Milne Inlet.

Reference:

DEIS Vol.3, Table 3-6.1

Concern:

NIRB Guideline 6.1 directs the Proponent to specifically evaluate the alternative of *"routing the rail line from the Mary River mine site to a seaport at Milne Inlet"*. This alternative was not explicitly evaluated.

Rationale:

The DEIS alternatives assessment does not satisfy NIRB Guideline 6.1 and is therefore considered incomplete.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #19.

Issue:

The alternative of year round shipping, with periodic suspensions during critical life periods of relevant marine wildlife species was not formally evaluated.

INAC requests the Proponent evaluate the alternative of year round shipping, with periodic suspensions during critical life periods of relevant marine wildlife species.

Reference:

DEIS Vol. 3, Sect. 3.2.2 and 3.6.3

Concern:

NIRB Guideline 6.1 directed the Proponent to evaluate alternatives to year round shipping from Steensby Inlet, including *"year round shipping, with periodic suspensions during critical life periods of relevant marine wildlife species".* This alternative was not evaluated as part of the alternatives analyses.

Rationale:

The DEIS alternatives assessment does not satisfy NIRB Guideline 6.1 and is therefore considered incomplete.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #20.

Issue:

Lack of detail in the evaluation of alternative Project development scenarios.

INAC requests that the Proponent evaluate other reasonable Project development scenarios, including better addressing exploitation of other local deposits and justifying the 3 and 18 Mt/year split between road versus rail haul.

Reference:

DEIS Vol. 3, Sect. 6.3 –

Concern:

NIRB Guideline 6.2 on Project Design states that the general project design issues discussed in the EIS must include the considerations for future development. NIRB Guideline 6.4 on Future development requires the Proponent to "*evaluate any foreseeable expansions of the current Project, the needs of required infrastructure, and associated eco-systematic and socio-economic impacts. The Proponent shall also evaluate the potential for development of additional ore deposits in the Project area*".

The discussion of possible future development scenarios is handled in a superficial way in the DEIS with statements that infrastructure will be shared, etc. No discussion of impacted footprint or the possibility of an extended mine life appear to be considered as part of future development.

Further, DEIS Vol. 3, Sect. 6.3 describes that a Definitive Feasibility Study was completed in 2008 with further economic scenarios and sensitivity analyses undertaken in the interim. It was "*concluded that a minimum iron ore production rate of 21 Mt/a would be required to ensure long term economic viability of this mining operation*". DEIS

Vol. 3 (page 128) also states that rail transportation is estimated at C$ 1.50/t of ore versus C$ 17 to C$ 22/t for truck transportation based on current fuel prices. Based on this large cost discrepancy between hauling on the road versus rail, it is not clear how the road haul option can be rationalized or be sustained over the long term (21 year mine life) and whether the 21Mt/year production rate can still be considered the optimum production rate with this road/rail haulage split. Future development scenarios without the road haul option would appear warranted.

Rationale:

NIRB Guideline 6.4 requiring the Proponent to evaluate any foreseeable expansions of the current Project and evaluating the potential for development of additional ore deposits in the Project area has not been completed in a rigorous manner.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #21.

Issue:

The alternatives analysis was based on summing relative rankings of unweighted criteria to identify the preferred alternatives. Additional information is required to support the selection of the methodology, including the validity of the results.

INAC requests that the Proponent justify the validity of the use of the summation of un-weighted rankings to select the preferred alternatives.

Reference:

DEIS Vol. 3, Table 3-6.1 - Evaluation of Alternative Means of Carrying Out the Project (page 132)

Concern:

Volume 3 Table 3-6.1 (Evaluation of Alternative Means of Carrying Out the Project) presents the comparative analysis for alternatives for fourteen different project components in a matrix format. The analysis for each component used a comparative ranking system (assigning a ranking of 1 to 3) applied against the following six criteria:

- Technical feasibility;
- Cost implication in terms of implementation;
- Potential impacts to the environment;
- Community acceptability or preference;
- Enhancing socio-economic effects; and
- Amenability to reclamation.

The selection of the preferred alternative for each Project component was based on summing the individual relative rankings determined for each of the six criteria to score

the alternative - the highest resulting overall score representing the most preferred alternative. INAC questions whether the application of such a scoring methodology based on the summation of the relative rankings of un-weighted criteria will provide a reasonable assessment of the relative merits of each alternative.

Rationale:

The alternative analysis is a key component of the environmental assessment and, as such, the assessment methodology should be justified.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #22.

Issue:

No conceptual designs are provided for the mine site for alternate development or future development scenarios.

INAC requests the proponent provide conceptual designs for the mine site for alternate development and future development scenarios.

Reference:

DEIS Vol. 3, Section 6.0

Concern:

NIRB Guidelines 6.1 and 6.4 require alternate development and future development scenarios be considered as part of the alternatives assessment. The proponent has not offered any conceptual drawings of how these alternate development and future development scenarios might compare with the Project footprint of the undertaking as currently proposed.

Rationale:

The availability of conceptual drawings would allow a better understanding of the potential spatial boundaries of alternate development scenarios at the mine site and the potential future impacts associated with exploitation of the other local ore bodies.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

1.4 Assessment and mitigation

Refer to Information Requests in Sections 1.6, 1.8, 1.9, 2.0 and 3.0.

1.5 Cumulative impacts assessment

Information Request #23.

Issue:

The future temporal scale (5 years following closure) used for the cumulative analysis is too restrictive.

INAC requests the Proponent provide a rationale for limiting the cumulative impacts analysis to five years post closure.

Reference:

DEIS Vol. 9, Sect. 1.2.2

Concern:

There are a number of potentially adverse impacts at closure which have not been included in the cumulative effects analysis. Furthermore, using this time frame, the cumulative analysis does not consider the scenario of an extended operational life of the Mary River Project through the exploitation of other local deposits (instead doubling the production rate was considered (DEIS Vol. 9, page 41) if new deposits were to be exploited).

Rationale:

Section 7.8 of NIRB's Guidelines indicates that a longer temporal scale is required for the cumulative analysis to enable the Proponent to consider the reasonably foreseeable future for a more accurate analysis of variability and significant long-term effects. For example, the cumulative effects analysis temporal scale does not appear to address an extension of the life of mine. Furthermore, potential impacts from closure which could take decades to occur are not included in the cumulative effects analysis (See also Information Request #8).

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #24.

Issue:

DEIS does not contain a cumulative effects assessment of alternatives.

INAC requests the Proponent identify the associated cumulative effects of the alternatives considered as per Section 6.1 of the Guidelines.

Reference:

DEIS Vol. 3, Sect. 6.5

DEIS Vol. 9, Sect. 1.2.4

Concern:

Subsection 6.1 (page 18) of the NIRB Guidelines states that "*When the Proponent assesses the economic viability for each alternative option, due consideration must be given to the vulnerability of the arctic ecosystem, as well as the potential for extension of the mine life and/or increased iron ore production rates. Also, the associated cumulative effects of each option should be discussed, in accordance with the requirements of Subsection 7.8, particularly the potential for cumulative impacts on the marine ecosystem and Inuit harvesting activities*."

Subsection 7.8 of the NIRB Guidelines (page 39) states that the cumulative effects assessment (CEA) "*requires the explicit creation of alternative development scenarios and analysis of potential cumulative effects associated with each option. Therefore, the Proponent should endeavor to ensure its CEA addresses the alternatives presented under Subsection 6.1 of these Guidelines*."

The cumulative effect of Project alternatives does not appear to be addressed in the DEIS.

Rationale:

The DEIS cumulative effects assessment of alternatives does not satisfy NIRB Guidelines 6.1 and 7.8 and is therefore considered incomplete.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #25.

Issue:

The cumulative effects assessment framework applied is not clear.

INAC requests that the Proponent clarify how the Cumulative Effect Assessment Framework illustrated in DEIS Vol. 9, Figure 9-1.1 was applied in this Project.

Reference:

DEIS Vol. 9, Sect. 1.2.1 and Figure 9-1.1 (page 2)

Concern:

The Cumulative Effect Assessment Framework illustrated in DEIS Vol. 9, Figure 9-1.1 does not correspond to the description of the methodology provided in the text of DEIS Vol. 9, Sect.1.2.1. The Proponent is asked to clarify the discrepancy.

Rationale:

The cumulative effect assessment methodology applied by the Proponent is not clear and requires clarification.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #26.

Issue: The cumulative effects of the road haulage option are not provided.

INAC requests that the proponent include the project components of the road haulage option in the cumulative effects assessment.

DEIS Reference: Volume 9, Subsections 1.3, 1.3.1

Concern: Table 1C-1.3 Concordance with the addendum to the guidelines. Sect 7.8 says" *special attention to marine species through cumulative impacts of road haulage option".* The potential ore loading dock at Milne and Milne Tote road haulage option are not included in the list of project component for the CEA in Vol 9 Sect 1.0 (1.3.1).

Rationale: To ensure a thorough assessment of the cumulative impacts of the project all components, as requested in the guidelines, should be included in Volume 9. Section 1.0: Cumulative Effects assessment

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☐

1.6 Environmental management plans

Information Request #27.

Issue:

The Environmental Design Guidelines provided in DEIS Vol.10, Sect. 3 are presented with an inconsistent level of detail.

INAC requests that the proponent provide Project Environmental Design Guidelines at a greater level of detail (e.g., specific numerical criteria instead of merely providing reference citations).

Reference:

DEIS Vol. 10, Sect. 3

Concern:

The environmental design guidelines are provided in an inconsistent manner at different levels of detail in DEIS Vol. 10, Sect. 3. For example, numerical criteria are provided for wastewater parameters while for air emissions and noise, reference citations to relevant regulations are only provided.

Rationale:

Actual numerical criteria that are the basis of design should be provided along with the appropriate reference in order to verify the validity of the design.

Further, the requirement to source out secondary sources to confirm design guidelines impedes technical review of the DEIS.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #28.

Issue:

Although a key document for ensuring mitigation is implemented and valued ecosystem components (VECs) are protected, the DEIS provides insufficient detail on the Environmental Protection Plan (EPP) which will be prepared prior to construction for construction and operations.

INAC requests that the Proponent provide additional detail on the Environmental Protection Plan (EPP) that will be prepared for construction and operations, including a detailed annotated Table of Contents outlining the structure of the EPP and indicating, as required, major construction and operational activities, permit requirements, and associated mitigation measures and contingency planning. This includes a list of operational standards.

Reference:

DEIS Vol. 10, Sect. 4 and Appendix 10B - Exploration and Pre-Development Environmental Protection Plan (EPP)

Concern:

The Construction and Operations EPP will be a critical tool to ensure that the Proponent's commitments to mitigation made in the EIS are implemented in a systematic manner. The DEIS does not provide sufficient information on the Construction and Operations EPP, such as details on the structure or contents. An EPP is provided in the DEIS Volume 10, Appendix 10-B but it is for the exploration phase and bulk sampling program.

Rationale:

DEIS Vol. 10, Table 10-4.1 entitled "Structure and Content of the Environmental Protection Plan" provides a high level overview of the contents for each of the five listed major sections of the EPP which the Proponent intends on preparing for construction and operations. DEIS Vol. 10, Sect. 4.2 notes that "*Before start of the construction phase, the content of the EPP will expand rapidly to ensure that appropriate and adequate environmental protection measures are in place for all construction activities at all construction sites*" (page 22).

As per NIRB Guideline 9.2, INAC requires the Construction and Operations EPP only prior to construction, however sufficient information should be available at this stage in the review to provide a detailed annotated table of contents that demonstrates how the EPP will meet the mitigation and contingency planning commitments made in the DEIS in a systematic and documented manner. This includes an updated list of operational standards to be included in the EPP for construction and operations.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #29.

Issue:

The Borrow Pit and Quarry Management Plan does not address mitigation requirements for newly exposed PAG material which may remain exposed after construction material is removed.

INAC requests that the Proponent address monitoring and mitigation in the event PAG material is left exposed in the borrow pit and/or quarries after construction materials have been extracted.

Reference:

DEIS Vol. 10, Appendix 10D-6, Sect. 3.2 (page 7)

Concern:

The Borrow Pit and Quarry Management Plan does not identify exposure of ARD material from completed pits and quarries as a possible environmental concern, discuss how this will be monitored, or offer possible mitigation options in the event this occurs.

Rationale:

Exposed ARD material in completed pits and quarries may be a source of metal contamination to the environment.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #30.

Issue:

The DEIS does not provide an Emergency and Spill Response Plan for construction and operations as per NIRB Guideline 9.4.2.

INAC requests the Proponent provide an Emergency and Spill Response Plan for construction and operations phases which addresses both marine and land-based spills of all types and activities as well as hazardous materials and chemicals, including MSDS for hazardous materials.

Reference:

DEIS Vol. 10, Appendix 10C-1 (Emergency and Spill Response Plan)

Concern:

The Emergency and Spill Response Plan in DEIS Vol. 10, Appendix 10C-1 is only for exploration and pre-development and does not addressed construction or operations.

Rationale:

Compared to exploration and pre-development, potential spills during construction and operations could be significantly different in type, likelihood and magnitude as well as contingency plans. This needs to be reflected in the DEIS.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #31.

Issue:

The Milne Port – Oil Pollution Emergencies Plan does not address construction and operations.

INAC requests the Proponent provide an Oil Pollution Prevention/Emergency Plan for Milne Port for the construction and operations phases.

Reference:

DEIS Vol. 10, Appendix 10C-2

Concern:

The Milne Port – Oil Pollution Emergencies Plan provided in Appendix 10C-2 is applicable to the Project activities to be undertaken in year 2011 which, as indicated therein, are assumed to be similar to 2008, that is, pre-development. Given the importance and the sensitivity of the arctic marine environment, an Oil Pollution Prevention/Emergency Plan is required as part of the DEIS for construction and operations phases.

Rationale:

The Proponent must demonstrate that it has developed an effective emergency preparedness and response plan to avoid or otherwise minimize oil spills impacting on the marine environment during all phases of the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #32.

Issue:

Roles and responsibilities during spill response are not well defined.

INAC request that the proponent provide a more detailed description of the roles and responsibilities of the shipping company and the Baffinland Spill Response Team, including during a major spill incident.

Reference:

DEIS Vol. 10, Appendix 10C-1 (Emergency Spill Response Plan)

Concern:

The Baffinland Spill Response Team must be in a position to respond to a major spill incident given the remote nature of the Project. The roles and responsibilities are not well defined in the Emergency Spill Response Plan presented in Appendix 10C-1.

Rationale:

Information is required so that it can be determined that sufficient planning has been prepared for addressing a major spill in the environmentally sensitive remote regions of Nunavut.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #33.

Issue:

Lack of information regarding the emergency spill response equipment.

INAC requests the proponent provide a description of the equipment that would be maintained at various Project locations in response to an emergency due to a spill.

Reference:

DEIS Vol. 10, Appendix 10C-1 (Emergency Spill Response Plan)

Concern:

Sect. 5 of Appendix 10C-1 addresses the types of spills and Sect. 6 indicates how spills would be assessed with respect to different spill scenarios. Discussion fails to indicate what equipment would be maintained at various Project locations. It would be useful to indicate the nature of spill response equipment that would be on hand and the various Project facilities (e.g., a typical key equipment /materials inventory).

Rationale:

The Baffinland Spill Response Team must be in a position to respond to a major spill incident given the remote nature of the Project. Information is required so that INAC can determine that sufficient planning has been prepared for addressing a major spill in the environmentally sensitive remote regions of Nunavut.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #34.

Issue:

Supporting documentation for the Steensby Port Oil Pollution Plan is not provided.

INAC requests the Proponent provide Annexes 1 to 10 cited in Appendix 10C-3 of Volume 10.

Reference:

DEIS Vol. 10, Appendix 10C-3 (Steensby Port Oil Pollution Plan)

Concern:

Appendix 10C-2 - Milne Port Oil Pollution Plan - does not contain the ten annexes referenced in the Table of Contents of Appendix 10C-2.

Rationale:

The Steensby Port Oil Pollution Plan needs to be complete to enable a thorough review of the plan to ensure its adequacy.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #35.

Issue:

Supporting documentation for the Milne Port Oil Pollution Plan is not provided.

INAC requests the Proponent provide Annexes 1 to 10 cited in Appendix 10C-2 of Volume 10.

Reference:

DEIS Vol. 10, Appendix 10C-2 (Milne Port Oil Pollution Plan)

Concern:

Appendix 10C-2 - Milne Port Oil Pollution Plan - does not contain the ten annexes referenced in the Table of Contents of Appendix 10C-2.

Rationale:

The Milne Port Oil Pollution Plan needs to be complete to enable a thorough view of the plan.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #36.

Issue:

The Wastewater Management Plan does not address the proposed operations and closure phases of the Project.

INAC requests that the Proponent update their current Wastewater Management Plan to address the proposed operations and closure phases of the Project.

Reference:

DEIS Vol. 10, Appendix 10D-3

Concern:

The Wastewater Management Plan provided in Appendix 10D-3 represents the plan developed and currently in place to address the exploration phase of the Mary River development. Although it is acknowledged that the plan is a "living document" which will evolve when operations and closure plans are more developed, the plan submitted as part of the DEIS should attempt to document the final form of the plan representing both operations and closure phase development schemes.

Rationale:

Additional information is required to understand how the Proponent will ensure conformance with good environmental practices to assure all wastewater issues can be and will be addressed through all phases of the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

1.7 Monitoring and follow-up

Information Request #37.

Issue:

Monitoring post closure is assumed to be carried out until physical, chemical and biological stabilization has been achieved. There is no indication of how the Proponent will determine that post closure monitoring is no longer required as these objectives have been achieved.

INAC requests that the Proponent identify the criteria, mechanisms and/or measures which will be used to determine that the post-closure objectives have been met and monitoring is no longer required.

Reference:

DEIS Vol. 10, Appendix 10G, Sect. 9.

Concern:

Monitoring post closure is a commitment that could extend well into the future and should be based on achieving stability objectives. For example, it is indicated in Section 9.2 of Appendix 10G on page 9-1, that "*monitoring programs will continue until it has*

been shown that the objectives of the Final Closure Plan have been achieved and a monitoring program is no longer required." The Proponent should demonstrate its commitment to monitoring over the long term by identifying how it will determine that the post-closure objectives have been met and monitoring is no longer required.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

1.8 Risk assessment

Information Request #38.

Issue:

Stability analyses of the waste rock pile and pit slopes have not been conducted.

INAC requests the Proponent to provide stability analyses of the waste rock and pit wall slopes.

Reference:

DEIS Vol. 9, Sect.3.2.1 and Table 9.3-2

Concern:

DEIS Vol. 9, Section 3.2.1 states *"Stability analysis will be conducted during project design and planning to determine overburden slope configurations that would achieve a desired safety factor for the ore and rock parameters. Bench heights, excavation and face angles, rock buttress, etc. will be based on the results from the stability analysis as appropriate.*" Without completing the stability analysis it is difficult to confirm that the likelihood of a slope failure is "unlikely" (Table 9.3-2) and whether major changes to the pit design are necessary. See also Information Request #48.

Rationale:

Major changes to the pit design may impact the volume of waste rock generated and the distribution of PAG and NAG material.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #39.

Issue:

Thermal modelling of the Project infrastructure including the waste rock pile has not been conducted.

INAC requests that the Proponent completes thermal modelling of the Project infrastructure including the waste rock pile to confirm the integrity of designs.

Reference:

DEIS Vol. 9, Sect. 2.1

Concern:

Construction over ice rich or thaw sensitive permafrost ground is identified as a major problem leading to technical issues with Project infrastructure foundations. Further, the proposed waste rock management scheme relies on permafrost and thermal encapsulation for control of ARD. No thermal modeling has been carried out to confirm the robustness of the designs proposed and how they will perform in the event of climate warming over the long term.

Rationale:

Modelling would demonstrate the robustness of the proposed designs and in the case of the waste rock pile confirm that thermal encapsulation can be maintained over the long term preventing potential degradation of water quality due to ARD.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #40.

Issue:

DEIS does not provide sufficient information on medical facilities and medical emergencies.

INAC requests the Proponent provide additional information on its planned medical facilities, equipment, supplies, staffing and procedures, including medivac.

Reference:

Vol. 10 - Environmental, Health, and Safety, including Appendix 10A (Baffinland's Environmental, Health and Safety (EHS) Management Framework) and Vol. 10, Appendix 10E (Health and Safety Management Plan)

Concern:

As a triad of remote isolated sites, regularly subject to climatic extremes, the Project Environmental, Health and Safety Management Plan does not provide sufficient information on the planned outfitting of the medical facilities, the multi-skilled staffing

requirements, communications and medical evacuations procedures and coordination with other health care facilities, including in Nunavut or elsewhere, if required.

NIRB Guideline 9.4.1 (Risk Management and Emergency Response Plan) requires the discussion of options for the medical transport of injured staff or persons both within and beyond the Project area. Volume 10 (Environmental, Health, Safety Management System) covers the issues normally contained within general plans or guidelines, however, it does not provide any details on the medical facilities or associated staffing to be provided during the construction and operational phase of the Project. There are no details on the development of any medical evacuation plans or procedures that may need to be coordinated with other agencies. The discussion provided in Sect. 2.4 - Interaction with Nunavut's Medical System - in Vol. 10, Appendix 10E lacks any detail on the medical clinic envisioned for the Mary River Project (e.g., patient treatment capability, number of medical personnel appropriate for construction and operations, and basic medical equipment or supplies).

Rationale:

The Environmental, Health, and Safety Plan for the Project needs to address expected on-site conditions, which are exceptional with respect to remoteness and extreme weather conditions.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

1.9 Closure and reclamation planning

See also Information Requests #16 and #36.

Information Request #41.

Issue:

The closure and reclamation plan for the Project lacks detail, even at a preliminary level.

INAC requests that the Proponent provide more information on the closure and reclamation plan. This includes clearly identifying issues, including potential acid rock drainage and metal leaching, reclamation methods and the rationale for their selection, long term treatment requirements, restoration, time frames, schedules, long term monitoring and maintenance, consultation and the updating mechanism.

Reference:

DEIS Vol. 10, Appendix 10.G

Concern:

The closure and reclamation plan is insufficient and does not address many of the requirements under NIRB Guideline 9.6. The plan should address major issues,

including the management of potential ARD and ML from waste rock runoff, including the practicality of encasing PAG waste rock within NAG waste rock, considering the mine production schedule and the challenges of separating these materials during development. Overall, the plan requires additional information on reclamation methods. Closure time frames and schedules are required by NIRB, including proposed notice periods to employees and public. Major targets for closure and reclamation are also not identified. The Proponent should provide, as per INAC's Mine Site Reclamation Policy for Nunavut (2002), a plan for post-closure monitoring of the site including a monitoring schedule and reporting frequencies, including provision for appropriate progressive responses which trigger action whenever exceeded and the establishment of thresholds or the identification of changes in circumstances. Long term treatment options should be identified at a preliminary level, including the need to maintain essential infrastructure for example for access security, monitoring, and maintenance as well as power requirements associated with treatment. Also required is more detail on biological monitoring and a physical stability monitoring plan including the types of instruments proposed. The frequency of long term maintenance requirements are also required. More detail is required for the temporary closure plan given that temporary closure can happen at any point in time as a result of unexpected or unforeseen events. This information is important to support the design as well as to ensure that the financial security estimated to cover the costs of closure and reclamation is sufficient.

Rationale:

Closure planning needs to be progressed sufficiently to ensure that the proposed design will facilitate rather than hinder reclamation at closure and that the long term impacts at closure can be addressed in a cost effective manner.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #42.

Issue:

The Preliminary Mine Closure and Reclamation Plan does not provide documentation supporting the estimated period required for the open pit to fill with water.

INAC requests that the Proponent provide the closure water balance as well as background report(s) used to estimate the expected duration required for the pit to fill with water.

Reference:

DEIS. Vol. 1, Sect. 13.0, (page 122) and Vol. 10, Appendix 10-G. Sect. 7.2 (page 7-1)

Concern:

The DEIS states that the open pit is expected to gradually fill with water over an estimated 85 to 150 years. The gradual formation of a pit lake will result in the pit walls being exposed to precipitation and runoff over an extended period of time, which,

depending on the lithology of the pit walls, can result in ARD and associated metal leaching from the walls. In addition, if different from the above, the Proponent is also requested to provide a copy of the report referenced as KP 2008 in Appendix 10-G.

Rationale:

The predicted filling and resulting quality of the pit lake is critical to assessing the adequacy of a closure and reclamation plan, particularly given the size of the pit and prolonged estimated period for the pit to fill with water, which could warrant different closure methodologies.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #43.

Issue:

The Preliminary Mine Closure and Reclamation Plan does not provide information on the expected water quality of the waste rock dump run-off or the pit lake at closure. Furthermore, treatment, if required, is not adequately addressed in the closure plan.

INAC requests that the Proponent provide the water quality modeling for the open pit and the runoff from the waste rock dump for post closure as well as information on the proposed treatment.

Reference:

DEIS Vol. 10, Appendix 10G, Sect. 8 (page 8-1)

Concern:

The long term quality of the pit water and runoff from the waste rock dumps, including treatment, is a critical consideration for closure planning for the Project. Furthermore, given the size of the open pit, treatment could be costly. Runoff from the waste rock dump could be an ongoing concern of post-closure, whereas the pit lake may not require treatment for decades. Consideration has to be given to treatment staging as well as which facilities which should be retained post-closure for monitoring and treatment.

According to the Closure Plan, the proposed treatment for the pit lake, if required, would include *"drawing down the pit lake and treating the pit water with dilute water and discharging to the Mary River."* This dilution scheme requires further clarification.

Rationale:

The management ARD is a primary constraint for closure and furthermore, if ARD is an issue, it will become an increasing concern during post-closure into the long term. Information on expected water quality and treatment options are required to assess the adequacy of the closure and reclamation plan, including design decisions affecting closure.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.0 PROJECT COMPONENTS

Information Request #44.

Issue:

Description of project design and changes due to hydrological and marine ice flow is insufficient.

INAC requests that the Proponent provide an assessment of how project design will be affected by changes due to hydrological and marine ice flow regimes associated with potential climate change.

Reference:

DEIS Vol. 10, Sec 7.0

Concern:

Section 6.2 of the NIRB Guidelines requires a discussion on global climate change and an assessment of how potential climate change could affect permafrost and soils with high ice content, the hydrological regime, as well as marine ice flow regimes. The reference provided in the project concordance table (Vol.1, App. 1C-1) does not address this guideline. Vol. 9, Section 2.2 discusses impact of the environment on the project but does not address changes due to altered hydrological or marine ice flow regimes.

Rationale:

The project design description provided in DEIS is incomplete and therefore a technical review of this information is not possible.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #45.

Issue:

Lacking information on how precautionary principle was applied in project design.

INAC requests that the Proponent provide a description of how the precautionary principle has been addressed in project planning and management.

Reference:

DEIS Vol. 10, App 10F-1 and App. 10F-3

Concern:

The references cited in the concordance table (Vol. 1, App. 1C-1) indicate that the above-mentioned sections of the DEIS provide a description of how the precautionary principle was applied to project design and management; however this information is not provided in these references.

Rationale:

Sec. 6.2 of the NIRB Guidelines for the EIS requires that the Proponent demonstrate how the precautionary principle was applied to design and planning. This information is not provided therefore a technical review on this topic cannot be completed.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.1 Construction and operation

Information Request #46.

Issue:

Pre-construction schedule proposed does not appear to be reasonable.

INAC requests the Proponent clarify the camp man-power loading and scheduling needs. The Pre-construction schedule for early start construction activities may be not be reasonable, with a late delivery of construction materials/supplies in the autumn (open water season) of the first year of construction. .

Reference:

DEIS Vol. 3, Sect. 1.3, Fig. 3-1.3

Concern:

Temporary accommodation for construction labour required to start work (before existing camps are expanded) and potential conflicts with exploration/ environmental personnel will limit how many personnel can be accommodated for pre-construction activities. Camp man-power loading and scheduling have not been provided in sufficient detail to confirm the pre-construction schedule is realistic.

Rationale:

A better description/summary of the pre-construction schedule/activities would help in understanding the project execution plan. The assessments presented by the Proponent can not be evaluated if supporting documentations is not provided.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #47.

Issue:

Detail on hydro testing of large fuel tanks with seawater Is insufficient.

INAC requests that the Proponent provide further detail on the hydro testing of large fuel storage tanks.

Reference:

DEIS Vol. 3, Sect. 2.1.8

Concern:

The information provided on hydro testing procedures is not in sufficient detail to describe the use and ultimate disposal of hydro testing water and potential corrosion concerns. The Proponent should identify what water quality can be expected from water used for hydro testing of the large fuel storage tanks and if heating has been allowed for testing that may take place in freezing weather. Further, potential treatment options in the event that water quality of the test water is found to be unsuitable for discharge to the environment should be provided.

Rationale:

A description/summary of fuel tank QA/QC testing would help the Regulator understand how the Proponent will ensure conformance with good engineering practices.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.2 Mine and quarry design construction and operation

2.2.1 Borrow pit design and aggregate testing

Information Request #48.

Issue:

The description of proposed borrow sources is very generic consisting of listing of potential borrow pits.

INAC requests that the Proponent provide more detailed description of the borrow pit locations (map, ownership, principle geographic features etc, ground ice conditions and occurrence of massive ice.), plan of required construction materials (including quantities) and footprint of proposed borrow pits including complete geotechnical, hydrogeological and geochemical assessments.

Reference:

DEIS Vol. 3, Sect. 2.1.6 (Strategy for Sourcing Aggregates), App. 3B and 3C, Vol. 6, Sect. 2.1.4 (Geochemistry), Vol. 10, Appendix 10D-6, Attachments 2, 3, 4.

Concern:

The DEIS report does not provide sufficient information to characterize the quantity and quality of proposed construction material borrow areas.

- Design Consideration - The side slopes of the borrow pits are proposed be 1H:1V to 2H:1V. The document doesn't include any analyses to support this design. In addition, the document doesn't provide any geotechnical site investigation data that are required to outline and design borrow areas.

- Geotechnical Characterization of Material - There is a concern that material may not be suitable to use as a fine and coarse aggregates in structural concrete as the results of the AMEC laboratory testing on the saw-cut suggested that only one of the eleven samples passed the Los Angeles Abrasion test, seven met the requirements for the Mill Abrasion test and all tests failed to meet the limits specified for shape factor.

- Geochemical Characterization - the proposed quarries and borrow pits along the Milne Inlet Tote Road route and Railway Quarry Rock appear to have a low potential for ML/ARD and are expected to be suitable as quarry or borrow sources. However, individual quarry and borrow sites should be subjected to additional site-specific ML/ARD characterization with consideration given for additional assessment depending upon the tonnages to be used and anticipated geological variability.

Rationale:

Section 6.5.9 of the NIRB Guidelines requires a description (including mapping, ownership, geographic features) of the proposed borrow pits. This section further requires the estimate of quantities that will be extracted from each borrow location. In

order to ensure sufficient construction material during construction, operation and closure, the Proponent should provide detailed description and layout of the proposed borrow pits including complete geotechnical, hydrogeological and geochemical assessment. Additional site specific sampling and analysis are required to assess each location to an acceptable level of detail for regulatory review.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.2.2 Open pit design recommendations

Information Request #49.

Issue:

There is a lack of geotechnical information concerning the open pit design.

INAC requests that the Proponent provide additional geotechnical information with respect to the proposed open pit design.

Reference:

DEIS Vol. 6, Sect. 2.1.3.2 (Geomechanical Overview) and Sect. 2.3 (Sensitive Landforms)

Concern:

Overburden Slope Design

The majority of the open pit slope design work is focused on the bedrock. However, the overburden located on the east edge of the proposed open pit was previously identified as an area for concern due to depth and suspected high ice contents and geotechnical drilling was completed to assess the conditions in this area. A preliminary stability review was completed for a typical overburden slope configuration (based on anticipated foundation conditions) to determine the factor-of-safety (FOS) against slope failure. The overburden slope was recommended however, there are no geotechnical data and slope stability analysis results to assess design recommendations.

Proper runoff collection and diversions systems will need to be established to control runoff from the slopes and prevent erosion (and/or ponding of water on benches) from affecting the modified thermal regime. Collection ditches constructed along the benches should route flows to a central collection areas for sedimentation and removal via pumps. Insufficient information has been provided to determine impact assessment.

Rock Slope Design

A brief description of the geomechanical properties of the open pit area was provided by Proponent however, fundamental design questions related to structural stability and health and safety of workers have been left unanswered by the Proponent. The

Proponent should provide the following information in order to justify the design decisions:

- Geotechnical soil and rock mechanics properties should be provided in more detail to support open pit slope design; and
- The open pit mining methods should be described in more detail, including major elements and the rationale for selecting these design elements.

Rationale:

Without information concerning the geotechnical conditions (soil and rock) in which open pit will be developed and results of slope stability analyses, the design elements of open pit and the rationale for selection of those elements, it is difficult to determine if the impact assessment and mitigation proposed for the Project are appropriate and if they meet current mining standards.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

2.2.3 Fuel Storage

Information Request #50.

Issue:

The conceptual designs reflect only a 50% storage capacity for the proposed amount of fuel to be stored at that site.

INAC requests that the proponent verify design drawings (even if only conceptual) reflect the appropriate specifications to allow for secondary containment capacity of 110% of the largest fuel tank.

DEIS Reference:

Appendix 3C, Drawing 165926-6500-131-GAD-0001

Concern:

Inaccurate design drawings (even if only conceptual) do not encourage conformance or demonstrate good engineering practice.

Rationale:

To ensure conformance and support good engineering practices associated with fuel storage, the design drawings should reflect and adhere to the regulated secondary containment capacity of 110% of the largest fuel tank.

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #51.

Issue:

The DEIS does not identify if the 7.5ML storage tank on Steensby Island will be situated within a lined, bermed, secondary containment area, and further, if any ice protection measures will be employed to prevent damage as a result of ice creep on Steensby island. Additionally the Steensby Port fuel storage should be addressed in the spill contingency plan.

INAC requests that the proponent provide details and appropriate design drawings that verify the secondary containment and ice protection measures to be employed at the Steensby Island Fuel Storage area.

DEIS Reference:

Volume 3, Subsection 2.1.8

Concern:

Secondary containment measures have not been identified by the proponent, and relevant design drawings can not be found. Additionally, information pertaining to ice-creep on Steensby Island is also absent from the DEIS. Mismanaged and ill-designed fuel storage areas could substantially increase the risk of adverse environmental accidents. This fuel storage area should also be reflected in the spill contingency plan.

Rationale:

Given the proximity of the fuel storage tank on Steensby island to the receiving water body, secondary containment measures should be employed. Additionally, as the extent of ice-creep on Steensby Island has not been measured or verified by the proponent, ice protection measures should be put in place to protect the fuel tank from any potential damage.

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

2.3 Geotechnical engineering and permafrost considerations

Information Request #52.

Issue:

Thaw sensitive soils and massive ice deposits common to permafrost regions including the Project area, are the most common sensitive landforms in the Project area. Detailed

geotechnical investigation is required to understand relationship between landform and soils.

INAC requests that the Proponent provide spatial documentation correlating soils, landforms and vegetation information outlined in their sections of the document.

Reference:

DEIS Vol. 6 Sect. 2.1.3 (Geotechnical and Geomechanical Conditions) and Sect. 2.3 (Sensitive Landforms)

Concern:

Geotechnical investigations have been conducted across the Project area but in most cases not at a scale that can identify sensitive landforms at the scale that they occur. Some broad mapping of sensitive landforms was provided but a lot of details are missing to address adequately all design requirements. Ground disturbance activities such as excavation/cuts, fills, and changes to drainage patterns can change the thermal regime and induce thaw settlement and thaw weakening.

- Road and Railway construction, development of borrow areas for aggregate, and clearing of project development areas have the potential to affect sensitive landforms. It is a concern that the soils in these areas cannot support the weight of vehicles and equipment, and if excess weight is applied to these soils, severe rutting and erosion may occur. High ice content soils and thaw sensitive soils are the primary issues which lead to areas with potential for slope/ground instability.

- Milne Port - Although limited investigations have been completed to date, it is understood that the Milne Port is located in an area composed of coarse grained, well-drained sandy beach deposits. The soils were noted to be typically frozen below 2 m depth and contain ice lenses. Thaw-sensitive soil may create bearing capacity issue for the structures such as air strip, camp facility, etc. As proposed by the Proponent, the thaw sensitive soils will be avoided for the construction of infrastructures. However, the Proponent doesn't identify area with "better ground conditions" and do not provide sufficient details for foundation recommendations of the proposed structures.

- Mine Site - A number of sensitive landforms were identified in the vicinity of the Mine Site and reported by the Proponent. The Proponent provided general foundation recommendations that could be used for the Project infrastructure based on general permafrost protection guidelines. Foundation recommendations for the Mine Site infrastructure should be addressed in more detail.

- Overburden and Waste Rock Dumps **-** With the presence of ice rich foundations soils, creep settlement is expected to occur within the underlying foundations, leading to the development of cracks within the dump and at the dump surface. Management of surface runoff will be an important component of the waste dump construction/operation. Minimizing erosion and/or the effect of flowing or standing water on the thermal regime within the waste dump foundation soils and in close proximity to dump toes will be critical.

Rationale:

Avoidance of sensitive landforms and potential hazard areas is the first mitigation measure that has been used in the planning of the Project to date. However, not all areas of concern can be avoided. Without information concerning the geotechnical conditions in the Project area and detailed design recommendations, it is difficult to determine if the potential effects and proposed mitigation for the Project are appropriate and if they meet current mining standards. Additional studies and investigations will be required to gain greater knowledge of the issues and conditions present within the Project area, thereby increasing the level of confidence that all potential issues and effects have been identified with adequate mitigation measures incorporated into the designs and work plans.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #53.

Issue:

Additional development may require modifications to the infrastructure and will extend the Project into warmer permafrost conditions. The additional development may also increase the cumulative environmental impact.

INAC requests that the Proponent provide information by how much, over what period of time and what physical modification may be required if the Project is extended. This can be done in general terms since it is realized that these will not be defined until a much later date.

Reference:

DEIS Vol. 1, Sect. 1.3 and Sect. 2.3

Concern:

Northern Canada is expected to undergo climate warming that may result in considerable warming of permafrost during the operation phase and likely thawing during the long-term period. Proponent has indicated that there are potential ore deposits that may extend the operational phase of the Project. Since this climate warming may result in physically lower strength of the permafrost during the operation phase, it may be prudent to design Project infrastructure to accommodate the extended life of the Project during its design.

Rationale:

This information will allow the reviewers to assess how the additional development may impact on the existing infrastructures, drainage control and physical stability of waste rock dump, etc. and what could be the likely state of permafrost at the end of Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.4 Port design

Information Request #54.

Issue:

Description of main components of Milne Port site is incomplete.

INAC requests that the Proponent provide a detailed description of the main components of the Milne port site, in order to conform to the NIRB Guidelines as described in Section 6.5.1 and their corresponding cross-reference to the environmental impact assessment and management sections of the DEIS.

Reference:

DEIS Vol. 3, Sections 2.1.3, 2.1.5, 2.1.7, 2.1.8, 2.1.10, 2.2.3, 2.4.3, 2.6.7, 3.2.2.3, 3.2.3.7, 3.4.6.6, 3.5.3.5, 3.6.4.2 and 3.6.5.6

Concern:

The description of the Milne Port site facilities included in the DEIS is incomplete and does not cover all areas required to fully assess its impact on the environment, i.e., project phases, timelines, applicable standards and guidelines, and the cross-reference between the project components and their environmental impact/management. Sections referenced in Concordance Table 1C-1.1 as containing the information required in NIRB Guidelines do not always include such information or the information is insufficient or referrs to a whole Appendix instead of specific sections of it. If project description information required is provided in more detail in other sections of the DEIS it should be cross-referenced to indicate where it can be found.

Specific examples of missing information include:

- Description of oil handling facility, bulk fuel storage facilities and management;
- Only conceptual level drawings are provided while design and construction plans are required by the NIRB Guidelines;
- Equipment lists;
- HSEC plan;
- Water intake details; and
- Annual volumes of waste.

Rationale:

Section 6.5 of the NIRB Guidelines requires that "*the Proponent describe the Project components and all activities associated with each in a systematic way. The description shall encompass all stages of development, from site preparation through to construction, operation and maintenance (including any potential modifications and/or expansions that may be required during the operations phase based on exploration results), as well as closure and reclamation. The description must include an approximate timeline for all phases of the project, including closure, reclamation and post closure monitoring if applicable. Where specific codes of practice, guidelines and policies apply to items to be addressed, in particular if involving thresholds and quantitative limits to be applied, those documents must be cited and may be included as appendices to the EIS*."

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #55.

Issue:

The DEIS lacks sufficient information regarding stockpiling of ore at Milne Port for open water season shipping.

INAC requests the Proponent provide additional information on the stockpiling of ore for open water season shipping via Milne Port.

Reference:

DEIS Vol. 3, Sect. 2.2.3, Sect. 2.2.4 and Sect. 2.2.5

Concern:

The information provided in DEIS Vol. 3 is not in sufficient detail to describe the handling of frozen ore in open stockpiles/ships. It is not clear whether the temperature/moisture content of the ore and stockpiling during non-freezing times of the year will lead to any difficulties in reclaiming the ore from uncovered 3.0 million tonne stockpiles. The Proponent should clarify what proportion of the shipped ore is estimated to be lumps and fines and what measures of dust control have been allowed for from the large uncovered stockpiles at the port site. Further, it is not clear whether allowances have been made in the design for frozen ore placed in ship holds to thaw sufficiently to allow reclaiming at shipping destinations.

Rationale:

A description/summary of frozen ore handling would help understanding of how the Proponent will ensure conformance with good engineering practices and unloading of ships/barges at their destination.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #56.

Issue:

Insufficient information provided on Milne Port seasonal ore handling facilities.

INAC requests that the Proponent provide additional rationale for the design of the Milne Port seasonal ore handling facilities and why a permanent long term engineered solution was not considered.

Reference:

DEIS Vol. 3, Sect. 2.2.5 and Sect. 3.2.1.2

Concern:

A practical long term alternative for the transfer of ore is not provided in the DEIS. Seasonal removal of the temporary floating ore handling system at Milne Inlet can have potential significant marine environment impact. A permanent engineered alternative should be provided.

Rationale:

A better ore handling system at Milne Port would help the understanding of how the Proponent will ensure conformance with good environmental practices to assure long term reliability and seasonal readiness to load ships/barges.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #57.

Issue:

DEIS lacks clarification on Milne Port dredge material management and disposal.

INAC requests the Proponent provide additional information and contingency plan on the Milne Port dredge material quality, temporary storage areas, discharge management and final disposal location.

Reference:

DEIS Vol. 3, Sect. 2.2.4 (page 32) and Sect. 2.2.5 (page 34)

Concern:

The mismanagement of dredge materials can lead to degradation of water quality and other environmental impacts. The Port site dredge material temporary storage areas should be clearly identified. Control measures for the transport of sediments should be clearly identified. The handling of the wet dredge material for port site dock backfill needs to be better described. A contingency plan should be identified outlining proposed mitigation measures, treatment methods and expected water quality of dredge spoils drainage water should it be determined that discharge water quality requirements cannot be met. Final disposal location of the dredged material has only been identified as being on land. More information is required regarding the final disposal location, site selection criteria and transportation of these materials to the final disposal site.

Rationale:

Additional detail on the dredge spoils management is required to help understand how the Proponent will ensure conformance with good environmental practices. Section 6.5.8 of the NIRB Guidelines require that a description of the methods of disposal of dredging material, including the proposed sites for disposal of dredged materials, site selection criteria, and means of offshore and on-shore transport be provided as part of the EIS.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #58.

Issue:

DEIS lacks information on Steensby Inlet Port facilities – hazardous waste inventory.

INAC requests that the Proponent provide an inventory of the hazardous wastes to be shipped through the Steensby Inlet port facility.

Reference:
DEIS Vol. 3, Sec 1.1. 2.6, 3.6; Table 3-1.1

Concern:

Information is not provided related to the volume and/or quantity of hazardous wastes to be transported through Steensby Inlet Port facility.

Rationale:

Section 6.5.7.2 of the NIRB Guidelines requires that a description of the types and anticipated volumes/quantities of materials (including hazardous/dangerous goods cargo) to be transported to and from the Steensby Inlet port facilities be provided.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

2.5 Transportation route design

Information Request #59.

Issue:

DEIS lacks clarity on construction details of road cross drainage, stream and river crossings.

INAC requests that the Proponent provide further details on road cross drainage, the use of culverts for roadway drainage and the construction window for stream and river crossing.

Reference:

DEIS Vol. 3, Sect. 2.3.1

Concern:

The use of culverts for cross drainage is subject to ice build-up which will restrict passage of spring run-off and possibly result in damage to roadways. The Proponent should clarify what maintenance allowance has been made to open culverts up before the spring run-off season and what is the proposed construction window for the installation of stream and river crossings. This request includes outlining experience gained from road maintenance activities during the Mary River pre-development phase.

Rationale:

Providing practical arctic cross drainage designs and details of past years operating experience would help the Regulator understand how the Proponent will ensure conformance with good environmental practices to assure long term reliability of the Milne Inlet Tote Road.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #60.

Issue:

DEIS is lacking information on temporary use of existing roadways and construction details for the upgrading of Milne Inlet Tote Road.

INAC requests that the Proponent provide further details on the allowances that have been made to upgrade/maintain the existing transportation routes until the new permanent roadway/bridges are in place.

Reference:

DEIS Vol. 3, Sect. 2.3.1, Sect. 2.3.5

Concern:

Restrictive use of existing tote roadways will affect proposed construction schedule for upgrading. High ice content overburden and thaw sensitive soils in any road cuts/fills or borrow areas are the primary issues which may result in slope/road sub-grade instability. The condition of the existing 100 km Milne Inlet Tote roadways and limitations of existing bridges may severely restrict the movement of construction materials and equipment. The Proponent should clarify what allowances have been made to upgrade/maintain the existing transportation routes until the new permanent roadway/bridges are in place. Further, the Proponent should outline how impacts of seasonal (spring thaw) load restrictions on roadway serviceability have been allowed for in the road transportation plan considering the 120 t capacity ore haul trucks currently being proposed. Use of any esker materials for road construction and operations should be clarified. Road cuts should only be made in rock as overburden cut slopes may be subject to permafrost degradation/slumping.

Rationale:

Additional information is required to understand how the Proponent will ensure conformance with good environmental practices to assure existing roadways and bridges can be upgraded and operated as proposed by the Proponent.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #61.

Issue:

Lack of detail regarding permitting regime and land tenure associated with access roads.

INAC requests that the Proponent provide information relating to permitting and land tenure issues associated with all access roads, specifically indication of the Crown and Inuit Owned Lands.

Reference:

DEIS Vol. 3, Sect. 2.3.5 and Sect. 3.3.1

Concern:

Crown and Inuit Owned lands not identified in the referencing provided.

Rationale:

Section 6.5.5 of the NIRB Guidelines require that permitting regime and land tenure of all access roads (designations of accessibility to public) be provided as part of the Project description.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.6 Arctic railroad design

Information Request #62.

Issue:

The DEIS lacks construction details of rail line cross drainage, stream and river crossings.

INAC requests that the Proponent provide further details on cross drainage, the use of culverts for railway drainage and the construction window for stream and river crossing.

Reference:

DEIS Vol. 3, Sect. 2.5.2 (page 56) and Sect. 2.5.6 (page 59)

Concern:

The use of culverts for cross-drainage is subject to ice build-up which will restrict passage of spring run-off and possible result in damage to the railway. The Proponent should outline what maintenance allowances have been made to open culverts up before the spring run-off season and indicate what is the proposed construction window for the installation of stream and river crossings. This request includes outlining experience gained from road maintenance activities during the Mary River pre-development phase.

Rationale:

Providing practical arctic cross drainage designs and details of past years operating experience would help the Regulator understand how the Proponent will ensure conformance with good environmental practices to assure long term reliability of the rail line.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #63.

Issue:

Additional information required for railway tunnel ventilation.

INAC requests the Proponent provide further information on long railway tunnel ventilation requirements and power supply.

Reference:

DEIS Vol. 3, Sect. 2.5.4

Concern:

Ventilation requirements during construction and operations have not been addressed.

Rationale:

Additional information is required to understand how the Proponent will ensure good environmental practices to assure suitable railway tunnel construction and ventilation as proposed by the Proponent.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

2.7 Waste water treatment

Information Request #64.

Issue:

Supporting information concerning details on waste water treatment options for are not provided in the DEIS.

INAC requests that the Proponent provide a copy of the document entitled "Water treatment options for Baffinland, Mary River Project" (AMEC, 2010B) cited in the DEIS.

Reference:

DEIS Vol. 7 (Freshwater Environment), Sect. 3.4.3.2 Aqueous Point Source Emissions (Mine Contact Water - Impact Statement SWSQ-13) (page 177)

Concern:

Details regarding theoretical treatment options being considered for the Project are provided in a document entitled "*Water treatment options for Baffinland, Mary River Project"* (AMEC, 2010B) which is not included with the DEIS. Review of the document would be necessary to confirm the Project has considered appropriate alternatives and has taken site-specific conditions (e.g., cold weather) into account.

Rationale:

The DEIS should contain sufficient background information to support the choice of treatment technologies to be implemented and expected performance.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #65.

Issue:

Wastewater treatment requirements are discussed only at a conceptual level of detail.

INAC requests that the Proponent provide additional information regarding the proposed wastewater treatment scheme that may be necessary including expected performance and cost.

Reference:

DEIS Vol. 7 (Freshwater Environment), Sect. 3.4.3.2 Aqueous Point Source Emissions (Mine Contact Water - Impact Statement SWSQ-13) (page 177)

Concern:

The DEIS states that in the event that treatment is required prior to discharge, "*a modular treatment design with the capacity for pH adjustment, flocculation, coagulation, etc. will be used in conjunction with settling in each stormwater management pond. This approach will allow for flexibility in the treatment that will be applied and allow the various effluent parameters to be addressed (predominantly TSS settling, pH neutralization, and metal conversion to metal oxides).*" Details on the proposed system are not provided to confirm performance, design basis or cost. If treatment is required decades post-closure, it would be appropriate to ensure adequate funds are set aside for closure.

Rationale:

The DEIS should contain sufficient background information to support the choice of treatment technologies to be implemented, the expected performance and cost.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #66.

Issue:

DEIS lacks information on sewage/ grey water treatment and management

INC requests the Proponent provide a description of the sewage and gray water treatment (including system upsets/ malfunctions) for the operations phase of the Project.

Reference:

Vol. 10, Appendix 10D-3

Concern:

A design of the treatment of sewage and gray water including any contingency for periods of malfunction was not provided for the operations phase of the Project.

Rationale:

Section 6.5.13 of the NIRB Guidelines requires that a description be provided of the sewage and grey water treatment facilities. The description provided in the DEIS is incomplete as it does not deal with the operations phase of the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

2.8 Waste management

Information Request #67.

Issue:

The waste management plan is incomplete.

INAc requests the Proponent provide a Waste Management Plan that conforms to the NIRB Guidelines as described in Sections 6.5.13 - Waste Management Facilities; 9.4.7 - Incineration Management Plan; and 9.4.11- Landfill Management Facilities.

Reference:

DEIS Vol. 10, Appendix 10D-4 (Waste Management Plan)

Concern:

The Waste Management Plan as presented in Vol. 10, Appendix 10D-4 does not fully cover NIRB Guidelines as described in Sections 6.5.13 (Waste Management Facilities); 9.4.7 (Incineration Management Plan); and 9.4.11 (Landfill Management Facilities). For example, inventories of industrial wastes, landfill construction materials, water management, operations plan and reclamation plan are not fully developed.

Rationale:

INAC requires a Waste Management Plan that conforms to NIRB Guidelines to ascertain that sufficient planning has been carried out to manage waste issues on a Project of this type in a remote region.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #68.

Issue:

Estimation of waste quantities during construction and operation phases (Table 3.2 WMP) considers domestic wastes only. Domestic waste generation rates appear inappropriate for a remote mine camp.

INAC requests the Proponent provide estimates of the types and volumes of non-domestic hazardous and non-hazardous wastes specifically related to all Project phases and sites and re-examine domestic waste generation rates.

Reference:

DEIS Vol. 10, Appendix 10D-4, Table 3.2

Concern:

DEIS Vol.10, Appendix D-4, Table 3.2 seems to consider only general estimation of domestic wastes quantities generated during construction and operation phases. The DEIS does not include estimations of all waste types such as construction and industrial wastes, which will be a significant component of the waste stream for the Project. Proponent should also address tire and waste oil generation rated during construction and operations as these may be a significant amount and difficult to handle in a remote location.

Per capita domestic waste generation rates are based on California State data. These waste generation rates may not reflect local conditions in a mine camp. Information from the existing exploration operations should be used to define current per capita waste generation rates, although this may not match to larger camp operations based on a

more extensive supply chain, however it will provide an indication of a camp operating in a remote region.

Rationale:

Estimation of waste quantities, even if preliminary, is relevant to the initial sizing of main on-site handling and disposal facilities and amount of effort and risks involved in shipping wastes for off-site disposal. This would provide a better understanding of the potential environmental impacts and risks involved in the integrated management of wastes from the Project and appropriate mitigation measures.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #69.

Issue:

The DEIS lacks information regarding disposal alternatives for wastes.

INAC requests the Proponent include the basis for selection of off-site disposal options for some hazardous wastes in comparison to on-site disposal options.

Reference:

DEIS Vol. 10, Appendix 10D-4, Table 3-1.

Concern:

The DEIS does not seem to include alternatives for reuse, recycle or final disposal of all types of wastes generated during Project life and the risk assessment of shipping potential large quantities of hazardous wastes. Due to remoteness of the Project, consideration should be given to assessing the option of on-site disposal of most or all hazardous wastes, and its corresponding potential environmental and social impacts.

Rationale:

The results of an environmental assessment of alternatives for final disposal of wastes will be useful in the selection of the most appropriate disposal method and in the minimization of potential environmental risks and/or impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #70.

Issue:

Conceptual design of the landfill and landfill operations is lacking from the DEIS.

INAC requests the Proponent provide the conceptual design of the proposed landfill facility, including design capacity, landfill operations and existing landfill sites.

Reference:

DEIS Vol. 10, Appendix D-4, Sect. 3.5

Concern:

NIRB Guideline 6.5.3.7 requires the Proponent provide landfill design considerations and criteria, engineering features and facilities layout drawings, etc. DEIS Vol. 10, Appendix 10D-4, Section 3.5 mentions that details of landfill design and closure are available in Attachment 3 of this Appendix, but such information could not be found.

Apart from the general waste estimates provided in Appendix 10C, there is no indication of the functional design capacity of the landfill facility, and there is no mention in Design drawings within the Appendices 1 and 2 of Appendix 10C. DEIS should also improve upon the description of the established landfill operations.

Rationale:

INAC requires the conceptual design of the proposed landfill to ascertain that sufficient planning has been carried out to manage waste at a remote project site.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #71.

Issue:

Technical information on waste incinerator- air emissions required in the DEIS.

INAC requests the Proponent confirm compliance of the proposed incinerator with air emission limits and the rationale for using emissions provided by a different incinerator supplier than the one selected for the Project for the air emission's inventory.

Reference:

DEIS Vol. 10, Appendix 10D-4, Attachment 1

Concern:

DEIS Vol. 10, Appendix 10D-4, Attachment 1 describes the selected incinerators for the Project as being provided by Westland Environmental Services Inc. The air emissions inventory provides the air emissions from an incinerator by Eco Waste Solutions. Has Westland Environmental Services Inc. provided guarantees on meeting the emissions presented in the DEIS and if yes what are these limits.

Rationale:

Technical information relating to the selection of the incinerator and the relevant air emissions criteria will help determine if sufficient planning has been carried out for waste management at a remote project location.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #72.

Issue:

Technical information required for waste incinerator capacity.

INAC requests the Proponent provide information regarding the sizing of the incinerator, i.e., its waste handling capacity (e.g., tonnes/day) and waste types that are to be incinerated.

Reference:

DEIS Vol. 10, Appendix 10D-4, Sect. 3.4, Sect. 3.1, Tables 3.1 and 3.2, Sect. 3.2

Concern:

DEIS Vol. 10, Appendix 10D-4, Sect. 3.4 mentions the proposed capacity of the different incinerators, however they do not seem to match the quantities of wastes to be incinerated daily at each facility, as estimated in Table 3.2. It is not clear if incinerators are sized for construction or operations phase and what would happen with the excess waste in the event a higher volume of waste is produced. Incineration estimate does not take into account surge or peaking requirements associated with winter operations when landfill operations can be more difficult. This was a significant issue at Voisey's Bay

mine during construction given the volume of packaging and cardboard that had to be disposed.

DEIS Vol. 10, Appendix 10D-4, Sect. 3.2 mentions that untreated wood and cardboard can be burned in an open pit whereas Table 3.1 includes the option of incinerating such wastes, in addition to open burning, however, the incinerators do not appear to be sized to accommodate this practice. Clarification is needed.

DEIS Vol. 10, Appendix D-4, Sect. 1.1 mentions that management of sewage sludge is described in the Wastewater Management Plan, while Table 3.2 in this Appendix includes incineration of sludge cake. On the other hand, the Wastewater Management Plan does not consider incineration of sewage sludge.

Information is required regarding the sizing of the incinerator and the management of peak waste generation periods.

Rationale:

Technical information relating to the selection of the incinerator will help determine if sufficient planning has been carried out for waste management at a remote project location as per the requirements presented in NIRB Guideline 9.4.7 (Incineration Management Plan).

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

2.9 Hazardous materials handling

Information Request #73.

Issue:

Technical information required for waste incinerator- hazardous waste management.

INAC requests the Proponent provide rationale why some hazardous waste incineration capacity was not selected for the Project given the difficulties associated with shipping hazardous materials off-site.

Reference:

DEIS Vol. 10, Appendix 10D-4, Attachment 1

Concern:

The selected Westland Environmental Services Inc. incinerator only appears suitable for non-hazardous waste disposal. Given the remote nature of the Project it may be more reasonable to select an incinerator that is capable of disposing some hazardous wastes therefore eliminating the risks associated with shipping these materials off-site for disposal.

Food waste and other packaging materials can include a significant portion of plastics that could produce dioxin/furan emissions that may not be effectively handled by the Westland Incinerator included as the proposed incinerator in DEIS.

Rationale:

Technical information relating to the selection of the incinerator will help INAC determine if sufficient planning has been carried out for waste management at a remote project location.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #74.

Issue:

Waste management discussion does not include bio-medical waste management.

INAC requests the Proponent provide clarification of the waste management procedures/facilities for dealing with bio-medical wastes.

Reference:

DEIS Vol. 3, Sect. 2.1.10 Waste Management (page 25) and

DEIS Vol. 10, Appendix 10D-4, Sect. 3.7

Concern:

NIRB Guideline 6.5.13 stipulates that for hazardous waste (such as bio-medical wastes) the following be provided:

- Inventory of the types and predicted volumes/quantities of hazardous wastes to be generated or produced by Project activities, including shipping operations;
- Description of proposed storage, transport and disposal methods to be employed;
- Details regarding the destinations for each type of hazardous waste, including the disposal of containers used to transport or store hazardous materials;

The waste management discussion presented in DEIS Vol.3 Section 2.1.10 does not indicate how bio-medical waste is being handled at the Project sites. DEIS Vol. 10, Appendix D-4, Sect. 3.7 states that biomedical wastes will be shipped off-site for disposal or incinerated on-site, whereas several sections of this Plan mention that hazardous wastes will not be incinerated on-site.

Rationale:

NIRB Guideline 6.5.13 requires a description of all hazardous waste streams. A description would help to understand how the Proponent will ensure conformance with good engineering practices associated with bio-medical waste management.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #75.

Issue:

A comprehensive Hazardous Materials Management Plan is missing from the DEIS.

INAC requests the Proponent provide a comprehensive Hazardous Materials Management Plan for the different phases of the Project and different Project sites (ports, mine and road/railway camps).

Reference:

Section 9.4.9 of NIRB Guidelines includes the development of a Hazardous Materials Management Plan.

Concern:

Section 9.4.9 of the NIRB Guidelines requires the development of a Hazardous Materials Management Plan. The DEIS does not include this specific Plan and references to this Plan are usually linked to references to the Waste Management Plan (Appendix 10D-4) and the Emergency and Spill Response Plan (Appendix 10C-1), such as in Table 1C-1.1 - Concordance of EIS Guidelines. A comprehensive Hazardous Materials Management Plan that covers all Project phases and sites (ports, mine and road/railway camps) is required as part of the EIS. Estimation of preliminary volumes/quantities of hazardous materials and hazardous wastes is critical given the remoteness of the Project.

Much of what should be in a Hazardous Materials Handling Plan is in part presented in DEIS Vol. 10, Appendix 10E – Health and Safety Management Plan. The Hazardous Materials Handling Plan should be developed as an operational plan that includes drawings and procedures pertinent to the handling of materials in specific areas.

Rationale:

Due to environmental characteristics of Project area it is important to ensure that all prevention and mitigation measures have been considered for the proper handling and storage of hazardous materials during the different phases of the Project.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

3.0 SPECIFIC AREAS OF CONSIDERATION

3.1 Surface water quality and quantity

Information Request #76.

Issue:

Potential increased erosion at the South Cockburn Alluvial Fan Channel Diversion for the rail and access road is not addressed in the DEIS.

INAC requests that the Proponent indicate whether the potential for increased erosion associated with channelization of flows on the alluvial fan has been considered and that appropriate designs and environmental mitigation are available.

Reference:

DEIS Vol. 7, Sect. 2.2.4 (Subjects of Note) - Watercourse Crossings (page 18)

Concern:

Diversion of freshwater will occur near South Cockburn Camp, where the rail alignment crosses an alluvial fan. The fan was created from the depositional action of two watercourses, which both occupy the fan. Studies have shown these channels to be active and have changed location and size in the recent past. It is proposed that the flow from the existing network of braided channels on the fan will be contained within berms and directed to channels with crossings that will be designed to accommodate the extra flow volumes. There is a concern that the channelization of the flow on the alluvial fan will lead to increased erosion and sediment transport to Cockburn Lake until such time that the channels have stabilized.

Rationale:

In order to ensure the environmental assessment process captures all necessary impacts, it must be clear that the Proponent has considered the potentially unique erosion concerns at this crossing location and associated downstream impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #77.

Issue:

The Mary River Storm Water Management Plan (SWMP) has not been developed.

INAC requests that the Proponent provide a Stormwater Management Plan (SWMP) for the Mary River Project addressing all five major Project components (Steensby Port, rail

alignment, mine site, road alignment and Milne Port) and associated sub-components. The SWMP can be incorporated into the Surface Water and Aquatic Ecosystems Management Plan.

Reference:

DEIS Vol. 7, Sect. 2.2.4 (Subjects of Note) – Stormwater Management (page 19)

Concern:

The DEIS states that management of water in contact with non-key components (e.g., laydown areas, camps, airstrips and other mine use areas that may intercept water runoff) will be detailed in the Stormwater Management Plan (SWMP) but that the Mary River SWMP has yet to be developed. It is stated that the SWMP will manage water in contact with these non-key components in a manner that will minimize impacts to water quantity and hence the effects to water quantity that may result from interactions with non-key components are not assessed for impacts or significance. Without a SWMP available for review, it is difficult to confirm whether impacts to both water quantity and water quality are not significant and that appropriate mitigation will be implemented.

Rationale:

A SWMP should be developed as part of the DEIS submission to confirm the Proponent has considered both the water quantity and water quality issues related to stormwater management for all Project components and associated sub-components.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #78.

Issue:

The DEIS is based largely on data collected from 2005 to 2008. While it is implied that water quality and flow data are continuing to be collected, it is not known how new data will be incorporated into the EIS analyses/conclusions, if and when warranted.

INAC requests that the Proponent update their data summaries and determine whether any new data collected since 2008 has the potential to redefine baseline conditions and potentially modify DEIS conclusions.

Reference:

DEIS Vol. 7, Sect. 3.2 (Baseline Summary) (page 113)

Concern:

The DEIS states baseline conditions for key water indicators were derived from baseline data collected between 2005 and 2008. It is understood that data collection continues for many variables and that there is a possibility that baseline conditions and the impact analyses based on these conditions may change as more data becomes available.

Rationale:

The information and analyses contained in the environmental assessment should reflect the latest data collected to ensure all potential impacts and issues are addressed.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #79.

Issue:

Supporting information concerning the characterization of the water quality/quantity associated with the ore and waste rock from the mine are not provided in the DEIS.

INAC requests that the Proponent provide a copy of the document entitled "Evaluation of expected water quality from ore and waste rock Baffinland Mary River Project DEIS" (AMEC, 2010A) and a water balance for the ore and waste rock facilities.

Reference:

DEIS Vol. 3, Sect. 3.4.5, Vol. 7, Sect. 3.4.3.2 (page 176)

Concern:

Details regarding the characterization of mine water associated with the Project are provided in a document entitled "*Evaluation of expected water quality from ore and waste rock Baffinland Mary River Project DEIS"* (AMEC, 2010B) which is not included with DEIS. Review of the document would be necessary to ascertain if the projected quality is consistent with ARD/ML tests results and the validity of any assumptions made in the determination.

Section 6.5.13 of the NIRB Guidelines requires that a water balance be presented along with the runoff management plan for these facilities. This information was not provided in the DEIS.

Rationale:

The DEIS should contain sufficient background information to support the characterization of the mine water to ensure the impact analyses identifies all potential impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #80.

Issue:

No site water balance (schematic diagram) has been provided.

INAC requests that the Proponent provide a site water balance for the mine and port sites covering the construction, operations and closure phases of the Project.

Reference:

DEIS Vol. 7 and Vol. 10, Appendix 10D-3 (Wastewater Management Plan - SD-EMMP-003)

Concern:

The DEIS Guidelines (6.5.3.3, 6.5.13 and 8.1.5.1) and NWB Water application (Sect. 40a) require that a site water balance be prepared. Without a water balance available for each component and each phase of the Project, it is difficult to understand how water is used on-site, how it is potentially degraded and/or treated before release back into the environment.

Rationale:

A water balance, typically prepared as a schematic drawing, allows the reader to easily visualize the movement of water and wastewater around the Project site, the water management infrastructure that has been proposed and all related environmental releases. A water balance can serve as a visual check that all Project water has been accounted for.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

3.2 Hydrogeology

Information Request #81.

Issue:
A hydrogeology summary is not provided in the Project description document.

INAC requests that the Proponent provide a summary related specifically to hydrogeology.

Reference:

DEIS Vol. 1, Sect. 5.2.7 (Hydrology and Hydrogeology) and Sect. 5.2.8 (Surface and Groundwater Quality).

Concern:

The information provided in the two sections listed above is solely related to the hydrology and not for groundwater.

Rationale:

A description/summary of hydrogeological conditions of the Project including groundwater quality in the active zone would help better understand the physical site setting.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #82.

Issue:
The DEIS lack supporting information for the hydrogeological assessments

INAC requests that the Proponent provide hydrogeology/groundwater reports and data.

Reference:

DEIS Vol. 6, Sect. 2.1.5 (Groundwater/Hydrogeology)

Concern:

Hydrogeological assessments provided in the DEIS report are not supported by any site-specific investigation documentation.

Rationale:

Regulators cannot accurately evaluate assessments presented by the Proponent if supporting documentation is not provided.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

3.3 Geochemistry

Information Request #83.

Issue:

The types and volume or tonnage of the waste rock materials in the deposit are not clearly identified nor a clear definition provided with regard to waste rock versus ore.

INAC requests that the Proponent provide a clearer and more specific explanation of waste rock sample selection criteria. Information concerning the size, type and volume of the waste rock should be provided. Provide definitions for ore and waste rock.

Reference:

DEIS Vol. 6, Sect. 2.1.4.1 and Appendix 6B-1

Concern:

Prior to sample selection, a clear definition should be provided with regard to waste rock and ore. Also a description should be given of types of waste rock materials in the hanging wall and footwall and the volume or tonnage of each type of waste rock material in these zones. This information will help INAC understand the selection of the waste rock samples and the degree to which the samples being selected are representative. Such information should be readily available.

Rationale:

In order to accurately assess the design parameters proposed for the waste rock dump, INAC needs to understand the reasoning behind why certain samples were selected for testing while others were not. This information will provide more certainty that the baseline information that was collected is representative of future conditions in the waste rock dump.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #84.

Issue:

Although Baffinland intends to encapsulate the PAG material in the waste rock dump, little information is provided that would allow an assessment of impacts concerning the timing of excavation of NAG and PAG materials and details of planned stockpiles for NAG and PAG.

INAC requests further information on the timing and sequencing of the non-PAG and PAG materials mining.

Reference:

DEIS Vol. 6, Sect. 2.1.4.1 and Appendix 6B-1 and Appendix 10D-5

Concern:
As stated in the DEIS (Vol. 6, Sect 2.1.4.1), approximately 86% of the waste rock samples are unlikely to generate acidic drainage in the future. The remainder of the samples are classified as potentially acid generating (PAG) materials. (This statement is still subject to the representativeness of the sample selection process). Although a balance of NAG and PAG waste rock materials was provided (Appendix 10D-5), it appears that there may not be enough tonnage of NAG materials to encapsulate the PAG in the first few years of the mining. Also there is no discussion of the timing of excavation of NAG and PAG materials relative to mine requirements. INAC is concerned that, if in the general mining sequence PAG is mined before NAG, there may be the need for the temporary stockpile of PAG and re-handling of the PAG and NAG at the surface, leading to potential ARD/ML.

Rationale:

Given the intent to use NAG waste rock to encapsulate the PAG waste rock, INAC requires the information be available on the timing and sequencing of the PAG and NAG materials being mined in order to properly to complete an environmental assessment of the potential impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #85.

Issue:

Baseline data for 2010 humidity cell tests results is not provided.

INAC requests that the Proponent provide details of additional humidity cell tests carried out and their results. Additional humidity cell tests should also consider simulating the cold conditions.

Reference:

DEIS Vol. 6, Sect. 2.1.4.1 and Appendix 6B-1

Concern:

Geochemical loading calculations and water quality were based in part on the laboratory kinetic test work from the surface exposure of mineralized rock. However, these test results have not been provided.

The humidity cell tests for the Mary River Project were conducted under room temperature conditions (between 20° and 30°C). Literature has indicated that carbonate and zinc show higher release rates under cold conditions. More humidity cell tests should be considered under colder conditions similar to those that will be encountered at the mine site.

Rationale:

Impact predictions related geochemical loading and ARD are founded on baseline data provided by the kinetic test results and water chemistry. However, without this baseline data, the accuracy of all surface and groundwater impact predictions and appropriateness of related mitigation can not be assessed.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #86.

Issue:

Data from on-site monitoring of ore stockpile drainage and geochemical loading calculations is not provided.

INAC requests that the Proponent conducts frequent monitoring of ore stockpile drainage and that geochemical loading calculations be provided.

Reference:

DEIS Vol. 6, Sect. 2.1.4.1 and Appendix 6B-1

Concern:

Baffinland has conducted some on-site monitoring of ore stockpile drainage during the summer periods. The monitoring results were provided, however, the geochemical loading calculations were not provided. Although short-term monitoring of ore stockpile drainage has been conducted at the mine site, continued monitoring would be beneficial prior to operations to confirm drainage quality.

Rationale:

Limited information was provided concerning the drainage quality of the ore stockpile. INAC requires more certainty concerning the baseline information in order to have confidence in the predicted impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #87.

Issue:

Baffinland has proposed the encapsulation of PAG waste rock in the waste rock dump, but has not provided any simulation or test data to support their proposed design.

INAC requests that the Proponent conduct appropriate simulation tests (on-site or in the laboratory) that will support the encapsulation of the PAG rock within the core of the waste rock pile dumps. Also, a summary table should be provided which includes: annual waste rock production by each type and their fate. The protective measures should be provided for both permanent and temporary waste rock dumps during the operation of the mine to prevent ARD and ML.

Reference:

DEIS Vol. 6, Sect. 2.1.4.1 and Appendix 6B-1 and Appendix 10D-5

Concern:

The permanent waste rock dump is a conceptual design, but no analyses have been provided to support its design. It appears that PAG material will continue to be exposed to air and moisture in the dump during periods of mine operation. Particularly in the first few years of mining, there is a potential of ARD/ML if the amount of NAG material is not sufficient. The PAG material will be capped at the end of the mine.

Rationale:

Without any data to support the conceptual design of the waste rock dump, it is not possible to assess whether the Proponent has proposed an appropriate design, identified all of the potential impacts and recommended suitable mitigation measures. Although the design is conceptual, if it is to be assessed during an environmental assessment, it needs to be supported by actual data.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #88.

Issue:

Quarry and borrow pit materials were collected for assessment for use in the upgrade of Milne Inlet Tote Road. But no information was provided on the depths at which the samples were collected. In addition, no information was provided on the availability and boundaries of these materials.

INAC requests that the Proponent undertake more detailed drilling in order to determine the availability and boundary of suitable quarry and borrow pit locations.

Reference:

DEIS Vol. 6, Sect. 2.1.4.2 and Appendix 6B-2

Concern:

Additional samples should be tested to make certain minimal risk exists if these materials are to be used for the upgrading of the Milne Inlet Tote Road. In addition, the Proponent should provide the sampling depths for those results that were given.

Rationale:

The characteristics of materials used for road construction have the potential to impact surface water and sediment quality of the areas surrounding the road, as the materials could be PAG and have ARD potential. As the information concerning the extent and characteristics have not been provided, it is not possible to fully assess the accuracy of the currently predicted impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #89.

Issue:

During the railway construction, rocks in some places have to be cut. However, in the test program the saw-cut rock samples were not selected in an attempt to avoid additional weathering and oxidation during sample storage.

INAC requests that the Proponent conduct ML/ARD tests on saw-cut samples collected along the Railway alignment.

Reference:

DEIS Vol. 6, Sect. 2.1.4.3 and Appendix 6B-3

Concern:

ARD/ML tests were not conducted for saw-cut samples. This information is lacking for the area where the rocks would be cut for the railway construction. If the saw-cut samples under storage are not representative, freshly cut samples should be used.

Rationale:

The appropriateness of predicted impacts can not be assessed without verifying information concerning how the baseline information was collected and analysed. It is important to verify that the baseline data is adequate to support models and the resulting management decisions made.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

3.4 Soils, land forms and permafrost

Information Request #90.

Issue:

Clarification of inclusion of dams as a project component, and conceptual design of the larger pond reservoirs and dams (if applicable).

INAC requests the proponent identify if dams are a component of the project. Additionally, the Proponent should provide more detailed information on the likely geotechnical conditions and conceptual design of the larger proposed pond reservoirs and dams.

Reference:

DEIS Vol. 3, Sect. 3.4 Mine Site – Operation Phase;

DEIS Vol. 3, Sect. 4.0 – Closure and Post Closure; and.

DEIS Vol. 10, Appendix 10D-3 – Waste Management Plan.

Concern:

The use of dams as a project component is not mentioned within the text of the DEIS. However, diagram 3-2.3 (Mine Site Layout), identifies a 'low point dam' waste rock stock pile. Conceptual designs for the proposed dams could not be found. Dams with

inadequate design concepts could result in base seepage if warming of the impounded water and climate warming over the service life are not considered. Additionally, water ponds are an important part of the Project that collect and store potentially contaminated water before clean water is discharged into the environment. They will be present during the operation phase and into the monitoring period after Project closure. Ponds below the waste rock pile could remain in operation for a period of time. Limited information is scattered in several EIS volumes making it difficult to assess if proper conceptual designs are being proposed. In DEIS Vol. 3, Section 4.0 (Closure and Post Closure) no mention is made when the individual ponds will be closed, dams breached and reservoirs cleaned of contaminated sediments, if necessary.

Rationale:

It is important to provide relevant information on the design and operation of the ponds and associated dams to evaluate if necessary design concepts are being incorporated.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☐

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request #91.

Issue:

Lack of information in the DEIS regarding chemical and physical stability of the waste rock dump in the long term after mine closure.

INAC requests that the Proponent refine, if necessary, and provide more detailed information on the operation and long-term stability of the rock waste pile and provide conceptual design features that will minimize the occurrence of slope failure and ARD and ML discharge.

References:

DEIS Vol. 3, Sect. 3.4 and Sect. 3.4.5

DEIS Vol. 10, Appendix 10G – Preliminary Mine Closure and Reclamation Plan

Concern:

The mine will produce 640 Mt of waste rock during its 21 years of operation. It is important that this waste rock is optimally placed since any modification during closure would be prohibitively costly. The waste rock pile will be constructed on sloping frozen ground (till) with the final rock pile slopes being 2H:1V. There is a concern the proposed slopes may be too steep if the till has minor excess ice and this instability could likely be heightened over longer period due to the potential permafrost thawing due to climate warming. Present Project description and preliminary mine closure and reclamation plan do not provide sufficient comfort that significant environmental impact will not occur some 50 years after mine closure due to waste rock slope failures and ARD and ML discharge.

Rationale:

The Proponent has not demonstrated that the proposed waste rock pile slopes will be stable during the operation phase and during the long-term period. Furthermore, the Proponent suggests that the PAG waste rock will remain permanently frozen; which may not be the case within 100 years after closure if a modest climate warming rate of 1.0°C per decade occurs.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☐
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request # 89

Issue:

Need to clarify definition of "long-term" and its impact on design concepts for closure and reclamation design.

INAC requests that the Proponent state what time frame is considered for the closure and reclamation of the Project considering they are designing for the long-term.

Reference:

DEIS Vol. 10, Appendix 10G, Sect. 1

Concern:

For example, the issue of long-term closure design and reclamation was raised during panel discussion at the 2007 Yellowknife Geoscience Forum discussion organized by INAC Contaminated Sites Program[1]. The consensus of participants was that "long-term" means at least 100 years.

The concern is that it is unclear what the Proponent has considered as long-term.

Rationale:

Proponent should state what time period was considered for the long-term closure design; this would clarify their closure design and monitoring philosophy.

Joint Review Process:

[1] Holubec, Igor 2008. Consideration for closure design and rehabilitation for sites in permafrost regions subjected to climate warming. Report prepared for I Contaminated Sites Program of Indian and Northern Affairs.

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

Information Request # 90

Issue:

DEIS lacks information on availability of present measured ground temperature (thermistor) results.

INAC requests that the Proponent provide ground temperatures that have been measured in the installed thermistors between 2006 and 2008..

Reference:

DEIS Vol. 6, Sect. 2.1.3 (Geotechnical and Geomechanical Conditions)

Concern:

Ground temperatures measurements taken at the Project site are not provided in the DEIS.

Rationale:

Require ground temperature information to assess the design of infrastructure, ponds and waste rock storage areas and assess their stability in the long-term.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway) ☒

Issue applicable to the NIRB and NWB's joint review of a Type A water licence ☒

3.5 Vegetation

Information Request #92.

Issue:

Lack of detailed vegetation composition delineation or description in areas directly impacted by project development.

INAc requests that the Proponent provide vegetation unit delineation mapping for the mine site and port sites and furthermore this delineation mapping should incorporate baseline field data. Furthermore, the Proponent is requested to provide a breakdown of the vegetation loss by major unit for each of the five Project sites.

References:

DEIS Vol. 6, Sect. 3.0 - Vegetation

Concern:

Although extensive vegetation data was collected as part of terrestrial baseline field studies, this more detailed data is not presented as mapped vegetation units for each of the respective Project sites (i.e., mine site, port sites, road and railway). Figure 6-3.1 - Vegetation communities within the Mary River Regional Study Area – provides a regional perspective apparently solely based on Landsat data. There is no detailed mapping of each of the five Project sites (i.e., mine site, port areas, road and railway) delineating vegetation units. Furthermore, it appears that the Landsat data may have been used for calculating vegetation loss for each of the five Project sites. Finally, the impact assessment provides the total calculated vegetation loss for each Project site and the overall Project (i.e., summation of the vegetation loss for the Project sites) (Table 6-3.3 - Summary of Predicted Loss of the Terrestrial Habitat within and Outside the PDA on page 65 of Volume 6.). The total loss of vegetation for the overall Project is calculated to be 109.6 km^2. Table 6-3.4 - Predicted Loss of Broad Vegetation Community Types as a Result of Disturbance within the PDA – further breaks down the vegetation loss for the overall Project (109.6 km^2) by type of vegetation but not provide this breakdown for each of the Project sites.

As directed in the NIRB Guideline 8.1.8.2 (point ii), the Proponent is required to determine "*potential impacts to specific vegetation coverage and species composition from construction, operation, and reclamation activities in the Project area.*"

Extensive field data was collected throughout the study area and a detailed descriptive vegetation classification system was developed (DEIS Vol. 6, Sect. 3.0, page 50). Attempts were made to statistically relate field plot data to physical habitat conditions in order to predict individual community types at a regional level to develop wildlife habitat suitability models. The statistical methodology failed to effectively predict individual community types from habitat conditions and was subsequently modified to identifying and quantifying relationships between physical habitat conditions and plant community composition. These relationships were then used as the basis for projecting data for plant species and guilds from sample plots to mapped abundance for the entire RSA (Appendix 6D - Ecological Land Classification, Sect. 3.2, page 11/12). It is unclear as to whether this process was also designed to provide site-specific mapping of vegetative cover.

It appears that the information derived from the quantitative ecological land classification (ELC) was applied only to the Wildlife Habitat Suitability analysis and the Expected Effect to Potential Blueberry Cover within the RSA (Table 6-3.12) and Map 6-3.5, Volume 6. As a result, no specific mapping or description of vegetation cover is supplied for the five Project components resulted from the ELC despite the extensive field data collected (760 plots within the Project footprint) and classification system developed in the Terrestrial Baseline Report.

Rationale

The Proponent was directed to determine potential impacts to specific vegetation coverage and species composition and furthermore, the Proponent did conduct extensive field work in order to obtain the necessary site-specific data to conduct the impact analysis. However, it is not apparent if and how the Proponent incorporated this data into the impact analysis. The reviewer requires this information to understand the

existing conditions which will be impacted by the Project as well as to understand the specific potential impacts.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

Information Request #93.

Issue:

Inconsistency in the DEIS regarding vegetative restoration.

INAC requests that the Proponent provide further rationale for not carrying out vegetative restoration.

References:

DEIS Vol. 6, Sect. 3.2 (Vegetation)

Concern:

DEIS Vol. 6, Sect. 3.2, page 53, Par-5, states that: *"Proposed reclamation activities will be limited to providing physical and chemical stability and will not be designed to promote re-vegetation — the area will not be re-seeded. The effects to vegetation will be long-term as natural re-vegetation is expected to occur slowly."*

The rational provided in DEIS Vol. 6, Sect. 3.2.2.1, page 64, Mitigation Measures (point 3) indicates that this decision provides mitigation to avoid the spread of invasive species.

As directed in the NIRB Guideline 8.1.8.2 (point ix), the Proponent is required to provide a: "*Discussion of the management measures for minimizing/mitigation of disturbances to plant associations, including progressive reclamation/re-vegetation plans for disturbed areas, and measures to reduce the potential for establishment of invasive species in the area*" (Section 3.0, page 52, Volume 6 – Terrestrial Environment).

The Vegetation Baseline Report lists a number of locations where native species appropriate for re-vegetation on disturbed sites can be assessed for seed collection and subsequent restoration activities (e.g., Appendix 6C, Sect. 4.1 (page 12), Sect. 4.4, (pages 16 and 17).

Rationale

NIRB has directed the Proponent to provide progressive reclamation/re-vegetation plans for disturbed areas as well as to provide strategies for avoiding the spread of invasive species. It is not clear that these two directives are necessarily mutually exclusive. A rationale is required otherwise.

Joint Review Process:

Issue applicable to the NIRB and NPC's joint review of the transport corridor (railway)	☒
Issue applicable to the NIRB and NWB's joint review of a Type A water licence	☒

4.0 SOCIO- ECONOMIC IMPACTS

4.1 Public Participation and Engagement

Information Request #94.

Issue:

Methodology for selecting key community concerns, presented in Table 2-1.2.

INAC recommends that the Proponent describe the method and criteria used in selecting Key Community Concerns.

EIS Guideline Reference:

Subsection 2.2

DEIS Reference:

Volume 2, Subsection 1.6, Page 11

Concern:

Table 2-2.2 lists nine key community concerns identified during the public consultation process, and provides the Proponent's response on how the concerns are addressed. However, the basis for selecting these concerns is unclear. Other concerns were identified during public consultation, and summarized in Appendix 2A-1, but were not included in the summary table.

Rationale:

It needs to be clear in the DEIS that the method of selecting community concerns for assessment as a VSEC is appropriate with respect to the nature of issue, degree of concern, and extent of concern expressed by individuals from consulted communities.

4.2 Sustainable Development

Information Request #95.

Issue:

The DEIS does not summarize how sustainable development objectives will be addressed from a socio-economic perspective (as well as from other perspectives, see separate IR above).

INAC requests the Proponent provide a statement on how sustainable development objectives, such as preservation of biological diversity, intergenerational equity, and attainment of durable social and economic benefits will be addressed.

EIS Guideline Reference:

Subsection 2.4

DEIS Reference:

Volume 4 to 8

Concern:

While the DEIS addresses anticipated short and long term social and economic issues and benefits associated with the proposed Project in Volume 4, the proponent does not summarize in one place how the Project will contribute to Sustainable Development according to the three criteria used by the NIRB: (i) preservation of ecosystem integrity, (ii) respect for intergenerational equity, and (iii) attainment of durable social and economic benefits. While there is considerable content on how the project will contribute to social and economic benefits, the topic of intergenerational equity was not addressed.

A recommended approach would be for the Proponent to explain its understanding of sustainable development, and in particular how it views what self sustaining communities may look like and how they would function. The Proponent could identify key criteria of community sustainability and then specify how the Project will help communities within the RSA achieve such sustainability objectives.

Rationale:

INAC is committed to sustainable economic development, and requires understanding of how major resource development projects will be undertaken in a sustainable manner.

4.3 Analysis of Need & Purpose

Information Request #96.

Issue:

The DEIS does not detail the strategic implications of the project.

INAC requests the Proponent provide additional information on the longer term strategic implications of the Project, such as the establishment of ports and transportation infrastructure, and potential related strategic benefits, such as strengthening Canadian arctic sovereignty.

EIS Guideline Reference:

Subsection 5.6

DEIS Reference:

Volume 1, Subsection 1.3; Volume 9, subsections 1.3 and 2.7

Concern:

The proposed Project would be a major industrial operation located in an area of high strategic importance to Canada. By fostering economic development in the area, and developing port, railway, and roadway infrastructure, the Project would be expected to strengthen Canada's northern sovereignty. The DEIS has limited discussion of such strategic implications of the Project, which may be regarded as of high importance in the assessment of Project need.

Rationale:

INAC needs to understand that the Proponent has considered the broader strategic implications of industrial and infrastructure development in northern Baffin Island

Information Request #97.

Issue:

Current status of Project financing and the Proponent's future preparedness to meet the requirement for reclamation and security should the Project proceed.

INAC requests the Proponent provide additional information on Project financing including anticipated requirement for reclamation and security.

EIS Guideline Reference:

Subsection 5.6

DEIS Reference:

Volume 1, subsections 1.2 and 2.10

Concern:

The Mary River Project will require a large amount of capital to build-out, and success of the project will depend on the ability of the Proponent to raise and service capital obligations throughout the life of project, including the abandonment and reclamation phase. There is very limited information provided in the DEIS on how the Project will be financed, or potential risks to the financing model (such as sensitivity to interest rates and fluctuations in metal prices). Therefore, it is difficult to assess whether the Project would be regarded as a "high risk" or "low risk" investment from the perspective of the international capital community. Such perspective addresses the viability of the Project as a long term going concern.

While the DEIS provides a good overview of abandonment and reclamation plans and activities in Volume 3, Section 4.0 and Appendix 10G, there is no information on financing of abandonment and reclamation activities. Unfortunately, there is a long history in Canada of mine abandonment without adequate reclamation, due to lack of funding. Therefore, it is important to demonstrate how the Proponent intends to fund eventual abandonment and reclamation activities.

Rationale:

There is a legal requirement for companies to establish financial reserves to fund project reclamation. Given the scale of the project, INAC requests additional details on how abandonment and reclamation will be funded.

4.4 Alternatives to the Project

Information Request #98.

Issue:

The DEIS does not provide adequate information on the social and economic benefits of project alternatives.

INAC requests the Proponent provide additional information on how social and economic criteria were considered in the analysis of project alternatives.

EIS Guideline Reference:

Subsection 6.1

DEIS Reference:

Volume 3, subsections 6.5, 3.6.3, and 6.0

Concern:

Most of the assessment of project alternatives focuses on technical and cost considerations, and there is limited data or discussion provided on any socio-economic differences (positive or negative) of project alternatives upon local communities.

Rationale:

A balanced assessment of the merits of a project requires sufficient data and analysis of social and economic benefits of project alternatives.

4.5 Baseline Data Collection

Information Request #99.

Issue:

The DEIS provides only limited description of study methods, and no information on levels of uncertainty or gaps in data for the socio-economic components.

INAC requests the Proponent include a section describing levels of uncertainty and gaps in data for socio-economic components.

EIS Guideline

Reference: Subsection 7.2

DEIS Reference: Volume 4, Appendix 4A

Concern:

While the DEIS appears to describe socio-economic baseline conditions within the local and regional study areas in detail it does not identify data gaps or uncertainty associated with presented information. The reader thus assumes the analysis is based on comprehensive data set, and is not made aware of any missing, and potentially relevant, data not included or considered.

Rationale:

It needs to be clear in the DEIS that the scope of review is comprehensive and inclusive of relevant data for the determination of project effects. As well, identification of data gaps and uncertainty will help establish criteria and objectives for monitoring and adaptive management.

Information Request #100.

Issue: The DEIS provides only limited description of study methods, and no information on levels of uncertainty or gaps in data for the socio-economic components.

INAC requests that the Proponent include a section describing levels of uncertainty and gaps in data for socio-economic components.

EIS Guideline Reference: Subsection 7.2

DEIS Reference: Volume 4, Appendix 4A

Concern: While the DEIS appears to describe socio-economic baseline conditions within the local and regional study areas in detail it does not identify data gaps or uncertainty associated with presented information. The reader thus assumes the analysis is based on comprehensive data set, and is not made aware of any missing, and potentially relevant, data not included or considered.

Rationale: It needs to be clear in the DEIS that the scope of review is comprehensive and inclusive of relevant data for the determination of project effects. As well, identification of data gaps and uncertainty will help establish criteria and objectives for monitoring and adaptive management.

4.6 VECs and VSECs

Information Request #101.

Issue: Process by which TK was incorporated into the determination of VSECs, and uncertainty with respect to VSEC determination.

INAC requests that the Proponent describe how traditional knowledge (TK) or IQ was incorporated into the determination of VSEC's and document uncertainty with respect to VSEC determination.

EIS Guideline Reference: Subsection 7.2

DEIS Reference: Volume 2, Subsection 3.1 and Subsection 3.5; Volume 4, Volume 10

Concern: The process for VSEC determination in outlined in Section 3.5.1 of the DEIS. It is noted the NIRB identified VCs, which were then confirmed through public meetings. As well, while TK was used for identifying archeological sites, it is not clear how this was incorporated into the determination of VSECs, as suggested in Volume 2, Subsection 3.4. As well, any uncertainty with respect to the selected VSECs was not identified.

Rationale: It needs to be clear in the DEIS how TK was incorporated into the determination of VSECs before it can assess that the Proponent has adequately considered TK within the DEIS.

4.7 Public Consultation

Information Request #102.

Issue: Influence of public consultation on the development of the Project.

INAC requests that the Proponent provide a more comprehensive account of the influence of public consultation on the development of the Project.

EIS Guideline Reference: Subsection 7.4

DEIS Reference: Volume 2, Subsection 1.6

Concern: Section 1.6 of the DEIS summarizes key outcomes from consultation with North Baffin communities. This includes a table summarizing key community concerns and Baffinland's response, as well as key aspects of project planning and design particularly influenced by public consultation and TK. The information presented in Section 1.6 is useful, but incomplete, and some aspects of project design (such as snowmobile crossings of the rail-line) are not included.

Rationale: A comprehensive understanding of how public consultation influenced project design is necessary before assessment can be completed of whether consultation efforts were appropriate, meaningful, and feedback from consultation appropriately reflected in project development.

4.8 Traditional Knowledge

Information Request #103.

Issue: Summarize how and where traditional knowledge was weighted and incorporated into baseline data collection, impact prediction, significance assessment, and development of mitigation and monitoring programs.

INAC requests that the Proponent summarize where Traditional Knowledge (TK) is incorporated into the DEIS.

EIS Guideline Reference: Subsection 7.5

DEIS Reference: Volume 2, subsections 1.5 and 3.1

Concern: The DEIS demonstrates that the Proponent engaged in substantial TK consultation. Throughout the DEIS there are references to how TK was incorporated, for example, into the assessment of significance of impacts and consideration of project design alternatives. As consideration of TK is regarded as important by local communities, GN, and INAC it would be helpful that a table be prepared summarizing how and where TK was considered during project development.

Rationale: A summary of how TK was incorporated into the DEIS is required to assess whether the Proponent's efforts to obtain and incorporate TK were adequate.

4.9 Impact Prediction

Information Request #104.

Issue: Literature references on impact prediction.

INAC requests that the Proponent review, and provide a high-level discussion of the literature on the socio-economic effects of similar projects and work systems.

EIS Guideline Reference: Subsection 7.7

DEIS Reference: Volume 2, Subsection 5.0

Concern: The references provided in Volume 2, Subsection 5.0, are limited in scope and range.

Rationale: There is a large resource of literature on the socio-economic effects of mines, other types of resource development projects, fly-in/fly-out systems, etc. that help could inform and support impact predictions.

4.10 Cumulative Effects Assessment

Information Request #105.

Issue: Limited information provided on potential cumulative effects on harvesting of marine wildlife.

INAC requests the Proponent provide additional information and assessment of potential cumulative effects on harvesting of marine wildlife.

EIS Guideline Reference: Subsection 7.8

DEIS Reference: Volume 9.0, Section 1.4.4

Concern: Sec. 1.4.4. of the CEA assessed anticipated effects to the marine environment, including sea ice, marine water and sediment quality, marine habitat and biota, and marine mammals. Sec. 1.4.6 provides some information on potential cumulative effects of ice use. It is requested the discussion of cumulative effects on ice use be expanded and include more information of potential cumulative effects on harvesting of marine mammals.

Rationale: Given the ecological, cultural, and socio-economic importance of marine wildlife harvesting, more detailed information is required on potential cumulative effects to this resource.

4.11 Socio-economic Environment

Information Request #106.

Issue: The Proponent is expected to clearly identify limitations and knowledge gaps encountered in its efforts to collect the baseline data.

INAC requests that the Proponent identify potential gaps in baseline data on the socio-economic environment, indicate the extent by which such data would be informative in the assessment of potential Project impacts, and outline methods used to address gaps in baseline data.

EIS Guideline Reference: Subsection 8.2

DEIS Reference: Volume 4, Appendix 4A

Concern: Baseline socio-economic data presented in Volume 4 and appendices are expected to be appropriate in scope and depth to inform the assessment of potential

socio-economic effects of the proposed project. The EIS does not explicitly identify limitations in socio-economic data that may be relevant to the analysis and thus it is not possible to assess whether important topic areas have been overlooked. Examples of socio-economic data not found in the DEIS and supporting documents are information on recreation activities, traditional activities, religious orientation and practice, and hamlet political structure.

Rationale: It needs to be clear in the DEIS that the scope of review is comprehensive and inclusive of relevant data for the determination of project effects. As well, identification of data gaps and uncertainty will help establish criteria and objectives for monitoring and adaptive management.

4.12 Population Demographics

Information Request #107.

Issue: Limited information on religious and cultural practices of communities within the LSA.

INAC requests that the Proponent provide information on religious and cultural practices of communities within the RSA, including available data on religious orientation and religious practice.

EIS Guideline Reference: Subsection 8.2.1.1

DEIS Reference: Volume 4

Concern: Information on religious orientation and religious practice within LSA communities is not provided. Such information may be relevant for a number of reasons. Depending on the level of participation in organized religious or cultural activities, religious and/or cultural bodies may provide channels of communication between the Proponent and area residents. Religious or cultural practices, preferences, participation rates and access to places of spiritual practice may influence availability of LSA residents to work at Project sites.

Rationale: Understanding of religious orientation and practice within LSA communities should be clear in the DEIS in order to assess whether the Proponent has adequately considered this information.

Information Request #108.

Issue: Limited quantitative assessment on project induced demographic change and demographic stability.

INAC requests that the Proponent provide additional information on potential changes to and effects on demographic composition and stability of point-of-hire communities, including effects of in-migration from other communities within Nunavut and effects due to temporary change in demographic composition within LSA communities.

EIS Guideline Reference: Subsection 8.2.1.2

DEIS Reference: Volume 4, Subsection 2.3

Concern: The DEIS recognizes potential Project interactions on demographic stability due to in-migration of Inuit and non-Inuit into the North Baffin LSA, and out-migration of Inuit from the North Baffin LSA. While the DEIS proposes parameters to assess the magnitudes of migration (Volume 4, Subsection 2.3.1, page 15) it does not relate these parameters to forecast demographic changes at the North Baffin communities. The potential effects of migration of Inuit into the North Baffin LSA is treated as a "subject of note" where it is concluded that movements would be constrained due to housing scarcity in the North Baffin. However, during both construction and operational phases, the Mary River Project would be one of the largest regional employers and might reasonably be expected to attract job seekers from elsewhere in Nunavut to Iqaluit and perhaps to North Baffin point-of-hire communities. Potential implications for demographic change in communities outside the North Baffin LSA and Iqaluit are also not addressed.

Rationale: Information needed in order to develop a more complete understanding of project induced demographic change.

Information Request #109. I

Issue: Limited quantitative assessment on effects of temporary and final closure.

INAC requests that the Proponent provide additional information on potential changes to and effects on demographic composition and socio-economic conditions due to temporary and final closure. This analysis should include an assessment of risk of temporary closure (due for example to change in demand/price of iron ore) and a review of literature on effects of temporary and final closure of resource operations upon northern Canadian communities.

EIS Guideline Reference: Subsection 8.2.1.2

DEIS Reference: Volume 4, Subsection 5.4

Concern: The DEIS addresses temporary and final closure of the Mary River Project as a "subject of note." It recognizes that affected individuals will be eligible for employment assistance, and that businesses dependent on Project operations will also be affected. The DEIS also points out that the extent by which individuals and communities mitigate loss of employment income will depend on such factors as the extent to which transferable skills have been acquired, prudent personal financial management, and the extent to which communities have diversified economic capacity. Missing from the analysis are (i) quantification of the potential risk of temporary project shut-down due to fluctuation in iron ore demand/pricing, and (ii) references to studies of the effects of temporary and final shut down of resource operations upon economically dependent northern communities. It would be useful, for example, if lessons learned from the closure of the Nanisivik project, documented in the report "The Nanisivik Legacy of Arctic Bay – A Socio-Economic Impact Study (Brubacher and Associates 2002)" were included in the DEIS.

Rationale: A more comprehensive understanding of effects of temporary and final closure is required to assess the potential effects of the project upon potentially economic dependent communities.

4.13 Education and Training

Information Request #110.

Issue: Limited information on education infrastructure and services within the LSA.

INAC requests that the Proponent provide additional descriptive information on the educational infrastructure and services of North Baffin communities, including physical infrastructure, method of education delivery, and extent by which students undergo remote education and/or travel outside their communities to complete their high school education.

EIS Guideline Reference: Subsection 8.2.2.1

DEIS Reference: Volume 4, Subsection 3.1, Appendix 4A, Section 5.0

Concern: The DEIS provides a good breakdown of such information as high school enrollment, high school graduation rates (by gender), education levels attained, and post-secondary qualifications. Data on high school participation and graduation is disaggregated to the community level while other education data is aggregated to North Baffin, Iqaluit, and South Baffin. Missing from the assessment, however, is information on the capacity to meet current and potential formal education requirements in the North Baffin area. As the availability and quality of infrastructure, teaching resources, and qualified educators can influence community development (through education) it is important this information be provided.

Rationale: This information is needed to assess whether the proponent has developed adequate understanding of baseline socio-economic conditions within the LSA.

4.14 Livelihood and Employment

Information Request #111.

Issue: Limited information on gender roles, division of household labour based on gender, and household decision-making.

INAC requests that the Proponent provide additional descriptive information on the gender roles within the RSA, including division of household labour based on gender, and household decision-making.

EIS Guideline Reference: Subsection 8.2.3.1

DEIS Reference: Appendix 4A, sections 2.0, 3.0, 4.0, 7.0, and 8.0

Concern: The DEIS provided only limited information on gender roles within the RSA, and did not address topics such as division of household labour based on gender and household decision-making.

Rationale: This information is necessary to provide the context for assessing gender-specific potential impacts of the Project on affected communities, especially through commute employment, potential employment preferences and relative access to employment opportunities.

Information Request #112.

Issue: Limited information on commuting arrangements for workers from non point-of-hire communities.

INAC requests that the Proponent provide additional information on arrangements for transporting workers from non point-of-hire communities to the Mary River project site.

EIS Guideline Reference: Subsection 8.2.3.1

DEIS Reference: Volume 4, Section 5.0

Concern: The EIS Guidelines require the proponent to discuss commuting arrangements for local hire workers, especially those who live in non-point-of-hire communities. The DEIS does not provide this information for either the construction or operations phases. It is possible, given the size of the Project, that it will attract workers from non-point-of-hire communities. The ability of such individuals to participate in the Project may be limited by the commuting options available to them.

Rationale: A more detailed understanding is required of the effect of the proposed project on non point-of-hire communities.

Information Request #113.

Issue: Limited evaluation of change in income earnings on patterns of savings, expenditure, and consumption values.

INAC requests that the Proponent provide additional information on anticipated changes in income earnings on patterns of savings, expenditures, and consumption values.

EIS Guideline Reference: Subsection 8.2.3.1

DEIS Reference: Volume 4, Section 6.6, Appendix 4B

Concern: Household income and money management are treated as a “subject of note” within the DEIS, and the discussion of how the anticipated change in household income may affect savings, expenditure and consumption values is generalized, and lacks reference to documented cases. As changes in household money management may have profound social implications, affecting, for example, education levels of dependent children, it is desirable that more detail on this subject, including any proposed effects management initiatives, be provided.

Rationale: Additional information on this subject is required in order to assess that mitigation and monitoring measures, if needed, are adequate and appropriate.

4.15 Economic Development and Self Reliance

Information Request #114.

Issue: Impact of mine on economic development and self-reliance in Volume 4 needs to be better referenced with data on local economic activity.

INAC requests that the Proponent include additional information on effect of project on local economic development, including renewable resource exploitation and self reliance.

EIS Guideline Reference: Subsection 8.2.4.1

DEIS Reference: Volume 4, subsections 5.1 and 5.3, and Appendix 4B

Concern: Section 5.0 (Economic Development and Self-Reliance) of Volume 4 provides baseline information and effects assessment of the Project on the Nunavut economy as a whole. However, the EIS Guidelines also request that information be presented at a local scale, including potential variability between impacted communities.

Rationale: This information should be included so effects of the Project upon economic development and self-reliance can be evaluated at the community level.

Information Request #115.

Issue: Limited information on, and assessment of, the potential effects on tourism.

INAC requests that the Proponent include additional information on the relative effects of the project on current and potential future tourist activities in the North Baffin area.

EIS Guideline Reference: Subsection 8.2.4.2

DEIS Reference: Volume 4, subsections 5.1.1 and 5.1.2

Concern: The current value of tourism to the North Baffin economy is estimated in the DEIS at about $500,000 per year. The DEIS also acknowledges the Project may adversely affect some tourism activities due to impairment of the “Wilderness Experience.” The DEIS suggests adverse effects of the Project would be low because of the small size of the tourism industry in the region. However, the Project might also facilitate or generate tourism activity by bringing commute workers to the region, increasing incomes, improving transportation infrastructure and services, or industrial tourism. It would be valuable to include discussion on location specific tourism activities (or potential activities) that could be affected by the Project and a treatment of the relative importance of this economic sector vis-à-vis the potential relative impacts of the proposed project.

Rationale: A more comprehensive understanding of tourism, including potential project induced tourism and future tourism development, is needed to understand how this economic sector may be affected by project development.

4.16 Human Health and Well Being

Information Request #116.

Issue: Information on nutritional requirements and diet habits of residents of the RSA is incomplete.

INAC requests the Proponent provide additional information on diet and nutritional requirements and preferences of individuals in the RSA.

EIS Guideline Reference: 8.2.5.1

DEIS Reference: Volume 4, Subsection 6.1; Appendix 4A, Subsection 7.1

Concern: Food security has been identified as an issue of concern within the EIS Guidelines. While the DEIS provides good information on estimated consumption of country foods in North Baffin communities (Appendix 4A, Subsection 7.1.1.) as well as trends in food mail shipments (Appendix 4A, Subsection 7.1.1), baseline information on nutritional requirements of individuals living in communities of interest is missing. For example, it is not clear the proportion of nutritional requirements being satisfied by country food versus retail foods.

Rationale: This baseline information is needed to understand potential implications of the project on existing diet and nutrition requirements and preferences of local communities.

Information Request #117.

Issue: Capacity of health infrastructure and services in RSA.

INAC requests the Proponent provide additional information detailing the existing infrastructure and health services available in the RSA, including its capacity to handle any additional Project or Project-related demands.

EIS Guideline Reference: 8.2.5.1

DEIS Reference: Appendix 4A, subsections 6.7 to 6.9

Concern: Sections 6.6 through 6.9 of Appendix 4A provide a broad summary of community perspectives on health matters, including sexual health, mental health, suicide, and maternal health and child care. Also included is an outline of resources to support health and mental health in the Baffin region plus some statistics on health care funding and day care services. It is acknowledged in Appendix 4A, Subsection 6.9 that resourcing health care positions in Nunavut is a challenge, potentially resulting in under-capacity. Additional (if possible quantitative) information on capacity using, for example, indicators such as doctors per 1000 population, would be useful to help assess the capacity of Nunavut's health care system to respond to any Project or Project-related demands, including those related to in-migration, out-migration and other demographic change.

Rationale: Whether the Proponent's assessment of project effects on health infrastructure and services within the RSA is adequate can not be determined without both more

detailed baseline information on service capacity and quantitative assessment on additional service demand induced by the project.

Information Request #118.

Issue: Assessment and mitigation of potential cultural conflicts.

INAC requests the Proponent include assessment and mitigation of cultural conflicts into Volume 4.

EIS Guideline Reference: 8.2.5.2

DEIS Reference: Volume 4, Subsection 3.3, Appendix 4A, Subsection 3.1.8, Appendix 10F

Concern: While the DEIS addresses cultural conflict within Appendix 4A (Socio-Economic Baseline Report) and Appendix 10F-3 (Human Resources Management Plan) this issue is not addressed in Volume 4. Given that the Project will involve the interaction of large numbers of Nunavummiut and non-Nunavummiut, it would be useful if further information on the subject of potential cultural conflicts and their mitigation be included within the text of the main document on the Human Environment.

Rationale: A more complete analysis of potential cultural conflicts and mitigation measures is necessary in order to adequately assess that this topic of concern has been addressed.

4.17 Community Infrastructure and Public Services

Information Request #119.

Issue: Description of community infrastructure and public services.

INAC requests that the Proponent provide additional information on community infrastructure and services including, location and capacity of facilities, staffing levels, organizational structures and, where possible, assessment of capacity in comparison to national (or other relevant) standards to address both baseline requirements and additional demand should the Mary River project proceed.

EIS Guideline Reference: 8.2.6.1.

DEIS Reference: Volume 4, subsections 7.1 to 7.4, Appendix 4A, Section 6.0

Concern: In Volume 4 Subsection 7.4.2. the Proponent acknowledges that the Project will result in some increase in demand for public services and facilities. It also points out that this demand will be mitigated through the development of Project-specific facilities and services, for example medical care. However, insufficient baseline information is presented to understand which public facilities may be capacity constrained. For example, there is not information provided on the current capacity of health care infrastructure, emergency response, or policing in either the North Baffin communities or in Iqaluit. This information is needed to assess the potential of these infrastructure and services to respond to anticipated Project or Project-related demands.

Rationale: Whether the Proponent's assessment of project effects on health infrastructure and services within the RSA is adequate can not be determined without both more detailed baseline information on service capacity and quantitative assessment on potential additional service demands induced by the project.

4.18 Contracting and Business Opportunities

Information Request #120.

Issue: Lack of quantitative estimate of contracting and business opportunities.

INAC requests the Proponent provide a quantitative estimate of contracting and business opportunities during the construction and operations phases.

EIS Guideline Reference: 8.2.7.2

DEIS Reference: Volume 4, subsections 8.1 to 8.3

Concern: A breakdown of Baffinland's procurement through North Baffin and Iqaluit vendors during the 2006 to 2010 exploration and bulk sampling period is provided in Volume 4, Table 4-8.1. This table indicates that over the five year period Baffinland purchased nearly $10 million in goods and services from North Baffin vendors and $40 million in goods and services from Iqaluit vendors. However, in the effects assessment there is no estimate of the value of local and regional procurement during the construction and operational phases (or of derived indirect and induced economic benefits of such procurement). Acknowledging that the nature of local procurement will change as the Project moves into construction and operational phases it would nonetheless be helpful if a quantitative estimate be provided to help assess the benefits of the Project to local and regional vendors.

Rationale: Quantitative estimates of local and regional contracting and business opportunities during the construction and operational phases are needed to understand the economic benefit of the project to local communities.

4.19 Cultural Resources and Land Use

Information Request #121.

Issue: Relationship between cultural sites and social lives of local communities in LSA not provided in Volume 4, Section 2.5.

INAC requests Baffinland provide reference to where the relationship between cultural sites and social lives of local communities in LSA is described in the EIS or include this information.

EIS Guideline Reference: 8.2.8.1

DEIS Reference: Volume 4, Subsection 2.5

Concern: The Guidelines specify information on the relationship between cultural sites and the social lives of local communities in the LSA should be included in the DEIS. This information is not included in the section referenced in the Table of Concordance.

Rationale: The relationship between cultural sites and social lives of local communities needs to be clear in the DEIS in order to determine whether consideration of effects of project effects to cultural sites has been comprehensive.

Information Request #122.

Issue: The DEIS does not provide sufficient information to conclude on the significance of potential effects of the project on Inuit Harvesting.

INAC requests the Proponent to provide additional information documenting the relative importance of different harvesting areas in the Study areas.

EIS Guideline Reference: Subsection 8.2.8.1

DEIS Reference: Volume 4c, Section 3

Concern: The Guidelines require the proponent to provide a description of current and traditional land use areas and the importance of those areas to Inuit culture and social well being. Volume 4 C, Land Use Report describes current and historical traditional land use activities and areas; however, it does not conclude on the relative importance of these areas. While the information presented on the land use maps provides an indication of the relative importance of different areas based on the intensity of use, the proponent has not provided any analysis of the relative importance of different traditional land use areas.

Rationale: The relative importance of different traditional land use areas needs to be clear in the DEIS to allow consideration of tradeoffs that may be required due to access restrictions and project activities and to understand if proposed mitigations are adequate and the residual effects analysis is realistic.

Information Request #123.

Issue: There is limited analysis of potential effects of the project on traditional harvesting activities including interaction with project activities on land, ice and water, accessibility to harvest areas and overall analysis of potential effects.

INAC requests that the Proponent provide a more detailed assessment of potential interactions between project activities and Inuit harvesting and analysis of associated effects.

EIS Guideline Reference: Subsection 8.2.4.2, 8.2.8.2

DEIS Reference: Volume 4, subsections 10.4, 10.5, 10.6, 10.11

Concern: The measurable parameter used to assess the potential effects of the project on Inuit wildlife (caribou, marine mammals and fish) harvesting is the change in harvest

quantity per unit of effort. The effects analysis concludes that because the effects of the project on harvested species abundance and distribution are negligible to not significant, effects on harvesting are not significant. The DEIS does acknowledge that there may be a need to shift harvesting locations with respect to caribou as a result of effects to caribou habitat ; however there is no specific discussion as to interactions between project activities and harvesting activities and consequent effects on the latter. The proponent also states direct travel on the land fast ice in Steensby Inlet will no longer be possible unless future mitigation actions are implemented. The traditional land use maps depict this as an area of intensive Inuit land use. The DEIS needs to provide greater assessment of the interactions between project activities, primarily ship traffic and travel/harvesting activities and potential mitigations and residual effects in both open water and ice covered seasons to allow a full assessment of potential effects. Of note is that while shipping in Milne Inlet is only proposed during open water, the level of activity could be as high as 110 or more ship transits during the estimated 90 day open water period. For example will project activity displace harvesters from existing harvesting locations, requiring them to decrease activity or travel further distances?

Rationale: There is insufficient information and analysis in the DEIS to confidently conclude on the potential effects of the project on Inuit harvesting and associated cultural values and practices.

Information Request #124.

Issue: The proponent acknowledges that there may be some negative effects to Inuit harvesting, albeit the effects are predicted as not significant. There is limited discussion on the potential effects to cultural and traditional values, lifestyles and heritage coherence as a result of effects to harvesting.

INAC requests that the Proponent provide a more detailed assessment of potential effects to cultural and traditional values, lifestyles, etc related to changes in land use activities.

EIS Guideline Reference: Subsection 8.2.8.2

DEIS Reference: Volume 4, subsections 4.5.1, 6.5, 6.6.2, 10.4, 10.5, 10.6, 10.11

Concern: The effects assessment does not fully address this issue. The effects of the project on Inuit participation in harvesting is addressed as a Subject of Note in Section 4.5.1 of Volume 4. The proponent acknowledges that traditional harvesting is an important economic and cultural activity amongst Inuit. Employment from the project will provide financial resources to support harvesting, but that some employment schedules may prevent full participation. Mitigation measures (2 week rotation, vacation, money management training) are proposed. The EIS guidelines require a more detailed analysis of the effects of project induced changes to land and ice use activities (e.g. harvesting) on culture and traditional values, traditional lifestyles and heritage coherence in the potentially affected communities, taking into account changes to economy

structure, shift of consumption fashions, alteration of diet, habit, and other social aspects. This detailed analysis could not be found in the DEIS.

Rationale: While the DEIS concludes that the potential effects of the project on Inuit harvesting are not significant, there is limited information on the level of potential effect and the resulting potential effects to culture, tradition, diet and other social aspects of the affected communities.

4.20 Guidance and Leadership

Information Request #125.

Issue: Lack of information on the Inuit Impact and Benefits Agreement (IIBA).

INAC requests that the Proponent provide additional information on the current status of the IIBA negotiations, and include anticipated timing for completion, and items being negotiated.

EIS Guideline Reference: 8.2.9

DEIS Reference: Volume 4, Subsection 12.4

Concern: The Guidelines specify information on the IIBA to be included in the DEIS. Volume 4, Section 12.4 provides no information on the parties to the IIBA, IIBA negotiation process, or terms being discussed. This information is of interest to a wide variety of Project stakeholders.

Rationale: While the IIBA is under development, it should be clear in the DEIS that an adequate level of public information on the IIBA has been included within the DEIS to satisfy the terms of reference.

4.21 Socio-Economic Environmental Management Plans

Information Request #126.

Issue: VSECs identified in Volume 2 (Consultation, Regulatory Framework, and Assessment Methodology) not included in Volume 10 (Environmental Protection Plan).

INAC requests that the Proponent provide discussion on why VSECs identified in Table 2-3.2 of Volume 2 are not included in Table 10-2.1 of Volume 10.

EIS Guideline Reference: 9.2

DEIS Reference: Volume 2, Subsection 3.5.1, Table 2-3.2; Volume 10, Section 2.0, Table 10-2.1

Concern: The Guidelines specify that environmental protection plans be prepared for effects predicted for identified VECs and VSECs. While socio-economic management plan components are discussed in Volume 10 they are not all included in Table 10-2.1 (Environmental Monitoring and Mitigation Plans to Reduce Impacts on VECs and

VSECs). It is suggested a table summarizing environmental mitigation and monitoring plans and targeted VSECs (similar to Table 1-11.1 of Volume 1) be prepared.

Rationale: It would be useful if a summary table were prepared that identified which VSECs were subject to mitigation measures articulated in an environmental management plan. INAC needs this information to assess the adequacy of proposed mitigation for potential effects on VSECs.

Information Request #127.

Issue: No discussion of the role the Proponent will play in regional monitoring initiatives.

INAC requests that the Proponent provide additional information on how the socio-economic monitoring plans and mitigation programs identified in the EIS will align with regional monitoring efforts conducted by the Qikiqtaaluk Regional Socio-Economic Monitoring Committee (SEMC).

EIS Guideline Reference: 9.5

DEIS Reference: Volume 10, appendices 10F-1, 10F-2, and 10F-3

Concern: The Guidelines specify the proponent should describe how its regional socio-economic monitoring efforts will align with those of the SEMC. The SEMC is a regional organization focused on monitoring socio-economic effects of development in the Qikiqtaaluk region.

Rationale: The SEMC would benefit from information being collected by Baffinland with respect to regional economic monitoring, and an understanding of potential areas of overlap would avoid duplication of effort.

4.22 Risk and Safety Management

Information Request #128.

Issue: Limited information on mine safety equipment and devices.

INAC requests that the Proponent provide additional information on mine safety equipment and devices to be used at the Mary River mine site.

EIS Guideline Reference: 9.5.1

DEIS Reference: Appendix 10E, Section 4.0 and Subsection 7.1; Appendix 10A-1; Appendix 10A-2.

Concern: While the EIS details health and safety management system (Appendix 10E), environmental health and safety management framework (Appendix 10A-1), and standards for hazard identification and risk assessment (Appendix 10A-2) it does not provide information on mine safety equipment and devices, as required under the Guideline.

Rationale: This information is required to assess the adequacy and detail of the project's health and safety plan.

Information Request #129.

Issue: Lack of information on first aid training and occupational medical monitoring.

INAC requests that the Proponent provide additional information on first aid training and occupational health monitoring, including the anticipated number of first aid attendants that will be on site, as well as required level of training. In addition, INAC requests more specific information on nature and frequency of occupational health monitoring that will be undertaken.

EIS Guideline Reference: 9.5.1

DEIS Reference: Volume 4, subsections 7.0 and 12.0

Concern: While Appendix 10E provides a good overview of the health and safety management plan for the project it lacks specific information useful to understand how the safety plan will be fulfilled. For example, while it is identified that trained first aid personnel will be available, there is no detailed information on the number of first aid attendants that will be available at each site, or the level of first aid certification that will be required. In regards to occupational health, the EIS would benefit if information were provided on routine tests that will be undertaken to monitor the occupational health of employees, such as hearing and vision testing.

Rationale: This information is required in order to assess the adequacy and detail of the project's health and safety plan.

4.23 Community Involvement Plan

Information Request #130.

Issue: Description of where and how community input influenced the design and implementation of monitoring plans and initiatives.

INAC requests that the Proponent provide additional information that summarizes where community input influenced the design and implementation of monitoring plans and initiatives.

EIS Guideline Reference: 9.5.2

DEIS Reference: Appendix 10F-1, sections 2.0 and 3.0

Concern: It is acknowledged that Baffinland engaged in an extensive community consultation effort in developing the DEIS. Issues of concern for stakeholders are summarized in Appendix 10F-1, Table 3-2. It is requested a similar table be prepared that summarizes how community input influenced the design and implementation of monitoring plans and initiatives. A suggested approach would be to create a new table, based on Appendix 10F-1, Table 3-2, featuring an additional column that summarizes how issues of concern would be addressed through monitoring plans and initiatives.

Rationale: INAC considers community participation in development of monitoring plans to be of high importance. The Nunavut General Monitoring Plan (NGMP) to which INAC is a party is required to incorporate multiple stakeholder participation and Traditional Knowledge.

4.24 Human Resources Plan

Information Request #131.

Issue: Lack information on pay schedules.

INAC requests that the Proponent provide additional information on pay schedules.

EIS Guideline Reference: 9.5.4

DEIS Reference: Application 10F-3, sections 2.0, 3.0, 6.0, 7.0, and 8.0

Concern: While the human resources plan covers most topics identified in the Guidelines well, it does not include information on pay schedules.

Rationale: INAC requires a more complete understanding of compensation and benefits aspects of the human resources plan to assess program adequacy.