

**Ege Bay Exploration Program
Type 'B' Water Licence Application**

**Attachment 3
Regulatory Correspondence**



April 17, 2018

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Dear Ms. Ohokannoak, Mr. Kharatyan, Mr. Gillis, Mr. Williamson Bathory, and Ms. Lord-Hoyle:

RE: NPC File # 148801 [Ege Bay Exploration Program]

The following works and activities have been proposed in the above-noted project proposal:

1. Mineral Exploration: An initial drill program and other exploration activities in 2019 including a 50 person camp. Based on the results of the initial drill program, the exploration program may expand to include the following activities over the subsequent 5 years:
 - Operate up to 8 drills; Expand the initial camp to 100-persons; Implement bulk fuel storage using double-walled tanks; Source construction materials from one or two quarries;
 - Construct access trails to connect the camp to exploration areas to reduce helicopter use
 - Construct a small airstrip to improve air access to the site
2. Location: South Baffin at Ege Bay, approximately 90 km south of Steensby Port, and 190 km east of both Igloolik and Hall Beach

A complete description of the project proposal reviewed by the NPC can be accessed online using the link below.

The Nunavut Planning Commission (NPC) has determined that this project proposal is outside the area of an applicable regional land use plan. The project proposal requires screening by the Nunavut Impact Review Board (NIRB) because it does not belong to a class of exempt works or activities set out in Schedule 12-1 of the Nunavut Agreement.

By way of this letter, the NPC is forwarding the project proposal to the NIRB for screening. Project materials are available at the following address:

<http://lupit.nunavut.ca/portal/project-dashboard.php?appid=148801&sessionid=>

This decision applies only to the above noted project proposal as submitted. Proponents may not carry out projects and regulatory authorities may not issue licenses, permits and other authorizations in respect of projects if a review by the NPC is required.

If you have any questions, please do not hesitate to contact me at (867) 979-3444.

Sincerely,

A handwritten signature in black ink, appearing to read "Goump Djalogue". The signature is fluid and cursive, with the first name "Goump" and last name "Djalogue" clearly distinguishable.

Goump Djalogue
Senior Planner, MCIP, RPP
Nunavut Planning Commission



NIRB File No.: 18EN026
NPC File No.: 148801

August 17, 2018

To: The Honourable Dominic LeBlanc
Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade
House of Commons
Government of Canada
Ottawa, ON K1A 0A

Sent via email: dominic.leblanc@parl.gc.ca

Re: Screening Decision for Baffinland Iron Mines Corporation's "Eqe Bay Exploration Program" Project Proposal, Qikiqtani (South Baffin) Region

Dear Honourable Minister:

On April 17, 2018 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Baffinland Iron Mines Corporation's (Baffinland) "Eqe Bay Exploration Program" project proposal from the Nunavut Planning Commission (NPC or Commission), which noted that the project proposal is outside the area of an applicable regional land use plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB commenced screening this project proposal and assigned it file number 18EN026.

Following the assessment of all material information provided, the NIRB is recommending that a review of Baffinland's "Eqe Bay Exploration Program" project is not required pursuant to paragraph 92(1)(a) of the *NuPPAA*.

Pursuant to its discretion under paragraph 92(2)(a) of the *NuPPAA*, the NIRB has determined that specific terms and conditions are appropriate for this project.

Accordingly, the NIRB is issuing the attached Screening Decision Report dated August 17, 2018 to the responsible Minister. The Screening Decision Report provides, among other things, the regulatory framework, project overview and the NIRB's assessment process, factors relevant for the determining significance of impacts and recommended project-specific terms and conditions.

Please note that the project proposal will not be enclosed due to the size of the electronic document and the limited bandwidth. However, an electronic copy of the project proposal is accessible online from the NIRB's online public registry at www.nirb.ca/project/125336.

Please note that, the Board only directly addresses these notice letters to those individuals considered to be a "responsible Minister with decision-making authority" for the project as set out under the *NuPPAA*. However, regulatory authorities and other authorizing agencies associated with a proposed project (e.g., Regional Inuit Associations, Nunavut Water Board) will continue to be copied on the Notice of Release of the Screening Decision Report. The NIRB is providing these parties with notice and access to the Board's Screening Decision Report as required under s. 200(2) and in support of these parties in the fulfillment of their responsibilities under the *NuPPAA* and the *Nunavut Agreement* to address, and as appropriate, implement, to the fullest extent possible, any relevant NIRB recommendations contained in the Screening Decision Report.

We look forward to receiving a response from the responsible Minister and the NIRB remains available for consultation with the Minister regarding this report as necessary. If you have any questions or require clarification, please do not hesitate to contact the NIRB's Director, Technical Services, Tara Arko at (867) 983-4611 or tarko@nirb.ca.

Sincerely,



Elizabeth Copland, Chairperson
Nunavut Impact Review Board

cc: Aluki Kotierk, Nunavut Tunngavik Inc.
P.J Akeeagok, Qikiqtani Inuit Association
Lootie Toomasie, Nunavut Water Board

Enclosure: Screening Decision Report, NIRB File No.: 18EN026 (August 17, 2018)



SCREENING DECISION REPORT NIRB FILE No.: 18EN026

NPC File No.: 148801

August 17, 2018

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Baffinland Iron Mines Corporation's "Eqe Bay Exploration Program" is not required pursuant to paragraph 92(1)(a) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*).

Subject to the Proponent's compliance with the terms and conditions as set out in below, the NIRB is of the view that the project proposal is not likely to cause significant public concerns, and it is unlikely to result in significant adverse environmental and social impacts. The NIRB therefore recommends that the responsible Minister accepts this Screening Decision Report.

OUTLINE OF SCREENING DECISION REPORT

- 1) REGULATORY FRAMEWORK
- 2) PROJECT REFERRAL
- 3) PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS
- 4) ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NuPPAA*
- 5) VIEWS OF THE BOARD
- 6) RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS
- 7) MONITORING AND REPORTING REQUIREMENTS
- 8) OTHER NIRB CONCERNS AND RECOMMENDATIONS
- 9) REGULATORY REQUIREMENTS
- 10) CONCLUSION

REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and are confirmed by s. 23 of the *NuPPAA*:

Nunavut Agreement, Article 12, Section 12.2.5: In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area.

The purpose of screening is provided for under s. 88 of the *NuPPAA*:

NuPPAA, s. 88: The purpose of screening a project is to determine whether the project has the potential to result in significant ecosystemic or socio-economic impacts and, accordingly, whether it requires a review by the Board.

To determine whether a review of a project is required, the NIRB is guided by the considerations as set out under s. 89(1) of *NuPPAA*:

NuPPAA, s. 89(1): The Board must be guided by the following considerations when it is called on to determine, on the completion of a screening, whether a review of the project is required:

- (a) a review is required if, in the Board's opinion,
 - i. the project may have significant adverse ecosystemic or socio-economic impacts or significant adverse impacts on wildlife habitat or Inuit harvest activities,
 - ii. the project will cause significant public concern, or
 - iii. the project involves technological innovations, the effects of which are unknown; and
- (b) a review is not required if, in the Board's opinion,
 - i. the project is unlikely to cause significant public concern, and
 - ii. its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

It is noted that s. 89(2) of the *NuPPAA* provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b) of the *NuPPAA*.

As set out under s. 92(1) of the *NuPPAA*, upon conclusion of the screening process, the Board must provide its written report the Minister:

NuPPAA, s. 92(1): The Board must submit a written report to the responsible Minister containing a description of the project that specifies its scope and indicating that:

- (a) a review of the project is not required;
- (b) a review of the project is required; or
- (c) the project should be modified or abandoned.

Where the NIRB determines that a project may be carried out without a review, the NIRB has the discretion to recommend specific terms and conditions to be attached to any approval of the project proposal pursuant to paragraph 92(2)(a) of *NuPPAA* as follows:

NuPPAA, s. 92(2) In its report, the Board may also

- (a) recommend specific terms and conditions to apply in respect of a project that it determines may be carried out without a review.

PROJECT REFERRAL

On April 17, 2018 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Baffinland Iron Mines Corporation's (Baffinland) "Eqe Bay Exploration Program" project proposal from the Nunavut Planning Commission (NPC or Commission), which noted that the project proposal is outside the area of an applicable regional land use plan. Pursuant to Article 12, *Nunavut Agreement* and section 87 of the *NuPPAA*, the NIRB commenced screening the project proposal and assigned it file number **18EN026**.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

1. Project Scope

The proposed "Eqe Bay Exploration Program" project is located within the Qikiqtani (South Baffin) region, approximately 90 kilometres (km) southeast of Steensby Port, and 190 km northeast from the communities of Hall Beach and Igloolik. The Proponent intends to conduct a mineral exploration program at Eqe Bay. The program is proposed to take place from August, 2018 to October 2024.

As required under s. 86(1) of the *NuPPAA*, the Board accepts the scope of the Eqe Bay Exploration Program project as set out by Baffinland in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Use of sealift barges to deliver supplies to the beach near the proposed exploration area;
- Conduct archaeological surveys around the Project area in the summer of 2018;
- Initial set-up of a fifty (50) person trailer camp to support personnel in the fall of 2018, and subsequent expansion of the camp to accommodate 100 persons from 2019;
- Conduct initial drilling operations and exploration activities (i.e., geological mapping, till sampling and a backpack drill program) in late winter or spring of 2019:
 - Use of drill equipment to drill several holes to a depth of up to 100 metres;
 - Use of helicopters to move drills and to transport workers between the drill and camp site;
 - Use of a Twin Otter aircraft to transport workers and deliver supplies to the camp site from either Mary River, Hall Beach, or Igloolik;
 - Use of pick-up trucks, heavy equipment, and machinery for site personnel use and transportation including construction and site maintenance;
 - Installation of containerized waste water treatment plant, water purification plant, and power generators including deployment of a hard-wall shop for maintenance;
- Use and storage of 4,100 litres (L) of engine oil, 1,025 L of antifreeze, and 50 cubic metres (m³) of calcium chloride;
- Undertake construction of an airstrip including access trails to improve air access to the exploration site and to connect the camp site to the exploration area;
- Establishment of a new quarry to collect additional aggregate for airstrip construction and culvert installation at two (2) locations along the access road;
- Use of up to 299 m³ of water from unnamed lakes/ponds in the proposed project area;
- Use and temporary storage (cache) of up to 4,000 L of gasoline, 2,024,500 L of diesel and 20 m³ of prepackaged explosives to support exploration, mobile equipment, and heating;

- Incineration of combustible non-hazardous waste materials, including storage and backhaul of combustible wastes by searift to southern disposal or recycling facility;
- Installation of containerized waste water treatment plant, water purification plant, power generators, as well as deployment of a hard-wall shop for maintenance; and
- Generation and onsite treatment of greywater and sewage in a sewage treatment facility.

2. Inclusion or Exclusion to Scoping List

The NIRB has identified no additional works or activities in relation to the project proposal. As a result, the NIRB proceeded with screening the project based on the scope as described above.

3. Key Stages of the Screening Process

The following key stages were completed:

Date	Stage
April 17, 2018	Receipt of project proposal from the NPC
April 17, 2018	Information request
April 27, 2018	Proponent responded to information request(s)
April 27, 2018	Scoping pursuant to s. 86(1) of the <i>NuPPAA</i>
May 9, 2018	Public engagement and comment request
May 30, 2018	Receipt of public comments
June 8, 2018	Proponent provided with an opportunity to address comments/concerns raised by public
June 8, 2018	Ministerial extension requested from the Minister of Crown-Indigenous Relations and Northern Affairs
July 3, 2018	Proponent responded to comments/concerns raised by public
July 10, 2018	Public Opportunity to Review Response to Comments
July 20, 2018	Receipt of additional responses to comments

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on May 9, 2018 to community organizations in Hall Beach and Igloolik, as well as to relevant federal and territorial government agencies, Inuit organizations and other parties. The NIRB requested that interested parties review the proposal, and provide the Board with any comments or concerns by May 30, 2018 regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; and if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (and providing any recommended mitigation measures); and

- Any matter of importance to the Party related to the project proposal.

On June 8, 2018, the NIRB provided an opportunity for the Proponent to respond to the concerns raised during the public commenting period. The Proponent provided a response to concerns on July 3, 2018. Due to the types of concerns raised during the public consultation period, the NIRB provided parties with another opportunity to review Baffinland's response to comments including additional materials and provide feedback to the NIRB on this proposal by July 20, 2018. The following is a summary of all the comments and concerns received by the NIRB:

Oikiqtani Inuit Association (QIA)

- Noted that the Proponent did not provide appropriate mitigation and environmental monitoring plans, including closure and reclamation plan to address the potential environmental concerns associated with exploration activities;
- Noted that the Proponent did not provide information on how the proposed exploration program would benefit the local economy;
- Noted that the Proponent did not provide sufficient information regarding the frequency of flights to and from Mary River and to the Ege Bay exploration area;
- Requested that the Proponent provide a detailed Environmental Protection Plan that describes the protocols for minimizing noise impacts on wildlife and land users; and
- Requested clarification on whether the Proponent intends to build a single camp or multiple camps in the Project Development Area, and whether moving the camp and associated infrastructure to a different location is considered part of this application.

Government of Nunavut (GN)

- Recommended that the Proponent conduct wildlife and vegetation baseline studies on species abundance and distribution, including monitoring the levels of disturbance from exploration activities;
- Recommended that the Proponent separate portions of its Mary River Management Plans that are applicable to Ege Bay into a single or multiple document that can be assessed within the context of the Ege Bay proposal;
- Recommended that the Proponent complete caribou baseline monitoring studies, and conduct review of appropriate literature, including consult with local Inuit Qaujimagatuqangit holders and subject matter experts on this monitoring issue;
- Recommended that the Proponent implement flight logs and pilot awareness protocols to improve compliance to flight altitude requirements;
- Recommended that the Proponent describe measures taken to train, prepare for, and protect site-based workers in the event of bear encounters, for both their safety and that of the bears;
- Recommended that the Proponent address concerns regarding disposal of drilling fluids and muds, and monitor their potential effects on surrounding vegetation and wildlife;
- Recommended that sewage effluent meet suitable discharge standards prior to discharge to the environment to prevent transmission of communicable diseases; and
- Recommended that no heritage resource sites be disturbed during exploration program.

Environment and Climate Change Canada (ECCC)

- Recommended that the Proponent undertake mineral exploration in a manner that protects and avoid disturbance to migratory birds;
- Recommended that the Proponent conduct vegetation clearing activities outside of the migratory bird nesting area to avoid incidental take;
- Recommended that the Proponent submit a Waste Management Plan and Spill Contingency Plan to the Nunavut Water Board (NWB); and
- Recommended that the Proponent submit a quarry specific management plan and incorporate results of acid rock drainage and metal leaching assessment into the NWB's water licence process.

Fisheries and Oceans Canada (DFO)

- Requested that the Proponent submit technical drawings and hydrological reports to support evaluation of the impacts of culverts on fish habitat and fish passage; and
- Recommended that the Proponent provide additional information regarding the volume of lakes EB-1 and EB-2 to assess how camp and drilling activities may impact fish and fish habitat.

Indigenous and Northern Affairs Canada (now Crown Indigenous Relations and Northern Affairs Canada (CIRNAC))

- Noted concerns regarding the potential for geotechnical drilling, physical scarring, land disturbance activities to cause water and groundwater contamination, and influence acid generation and release of metal-bearing groundwater; and
- Recommended that the Proponent submit revised management plans that account for all activities and phases of the project, including potential expansion.

5. Comments and Concerns with respect to Inuit Qaujimaningit, Traditional and Community Knowledge

No concerns or comments were received with respect to Inuit Qaujimaningit or traditional and community knowledge in relation to the proposed project.

6. Proponent's Response to Public Comments and Concerns

The following is a summary of the Proponent's response to concerns as received on July 3, 2018:

- With respect to concerns regarding the lack of completed mitigation and environmental monitoring plans and closure and reclamation plan, the Proponent has submitted a Draft Closure and Reclamation Plan, and further noted that a Reclamation Security would be filed with the application for a Type "B" Water Licence to the Nunavut Water Board;
- In response to concerns regarding the possible impacts of the proposed exploration program on Polar Bears and caribou populations; the Proponent indicated that it would be implementing a general wildlife management protocol and Polar Bear mitigation measures at Ege Bay as currently being implemented at the Mary River site;
- In response to comments regarding the potential effects of drilling fluids and muds on vegetation and wildlife; the Proponent has indicated that no drilling activities would take place within 31 metres of any waterbody near the project area;

- In response to concerns pertaining to sewage and grey water disposal, the Proponent has indicated that greywater sumps would be used at the exploration camp in order to ensure that effluents meet expected discharge criteria;
- With respect to the lack of quarry specific management plans for the proposed project, the Proponent has indicated that a future quarry-specific management plan would be developed once it obtains a quarry concession agreement with the QIA; and
- In response to comments regarding the economic benefit of the project proposal, Baffinland indicated that it would explore different options to engage with the affected communities to provide employment, contracting and procurement opportunities, to support positive socio-economic effects.

7. Time of Report Extension

As a result of the time required to allow the Proponent respond to the concerns raised by parties regarding the proposed activities, the NIRB was not able to provide its screening decision report to the responsible Minister within 45 days as required by Article 12, Section 12.4.5 of the *Nunavut Agreement* and s. 92(3) of the *NuPPAA*. Therefore, on June 8, 2018 the NIRB wrote to the Minister of Crown-Indigenous Relations and Northern Affairs, Government of Canada, seeking an extension to the 45-day timeline for the provision of the Board's Report.

ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NuPPAA*

In determining whether a review of the project is required, the Board considered whether the project proposal had potential to result in significant ecosystemic or socio-economic impacts.

Accordingly, the assessment of impact significance was based on the analysis of those factors that are set out under s. 90 of the *NuPPAA*. The Board took particular care to take into account Inuit Qaujimaningit, traditional and community knowledge in carrying out its assessment and determination of the significance of impacts.

The following is a summary of the Board's assessment of the factors that are relevant to the determination of significant impacts with respect of this project proposal:

1. *The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.*

The proposed area exploration area is approximately 721 square kilometres and would include the establishment of a temporary exploration camp site and helicopter-assisted travel routes from the existing Mary River site to the proposed exploration area at Ege Bay. The locations where mineral exploration activities are designated to take place have been identified by both the Proponent and commenting parties to overlap caribou hunting grounds and harvesting locations for fish, marine mammals, waterfowl, and other wildlife species. As such the project proposal may potentially affect animal migratory patterns.

2. *The ecosystemic sensitivity of that area.*

The proposed project would take place in an area with no identified ecosystemic sensitivity, except for areas that are proximal to the seasonal home ranges, migration areas, and post breeding corridors for North Baffin caribou herds. In addition, the project area has been identified to be adjacent to the proposed location for the Agguttinni Territorial Park and having value and priority to the local communities for:

- i. Terrestrial wildlife;
- ii. Sport hunting;
- iii. Marine mammals
- iv. Waterfowl and egg harvest; and
- v. Fishing.

3. *The historical, cultural and archaeological significance of that area.*

The project Proponent has noted there are known areas of historical, cultural and archeological significance associated with the project area. During the public commenting period, the Government of Nunavut (GN) specifically indicated that there are approximately nine (9) recorded sites of archaeological significance in the proposed exploration area, and that other unidentified sites may also exist within the proposed exploration area. The Proponent has committed to ensuring that archaeological surveys would be conducted prior to undertaking exploration activities in the area and would require a permit from the Government of Nunavut-Department of Culture and Heritage to conduct the surveys.

4. *The size of the human and the animal populations likely to be affected by the impacts.*

The proposed project would occur approximately 190 kilometres northeast of the community of Hall Beach, the nearest community; as such, human populations are not likely to be affected by project impacts. As a result of the project activities being located within key wildlife habitats as identified by the local communities, it is likely that some wildlife species near the proposed exploration area could be disturbed or displaced or attracted to the area due to sensory disturbance from project-related activities. Impacts to wildlife could affect traditional land use activities, Inuit harvesting, and the cultural identity of the region.

The NIRB notes that, while the Ege Bay Exploration program is not near the community of Hall Beach (190 km northeast), it is likely that adjacent land areas may be occasionally used by residents for recreational/traditional pursuits and/or Inuit wildlife harvesting activities. Therefore, additional mitigation measures should be considered to reduce potential ecological impacts by encouraging further engagement of the community and the Hunters and Trappers Organization.

5. *The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts.*

As the “Ege Bay Exploration” project is a proposed mineral exploration program, the nature of potential impacts is well-known. Potential negative impacts are likely to be localized, of

low magnitude, infrequent and restricted to the short period of project activities in each field season. However, due to the proximity of the mineral exploration areas to wildlife harvesting areas, specific mitigation measures for the protection of critical life stages of wildlife species including birds and fish populations may be necessary. Based on past evidence of similar scope of activities, potential adverse impacts will be reversible and mitigable with due care.

6. *The cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.*

The proposed project would occur in an area with some history of development; however, the development is primarily associated with mineral exploration activities, military operations, as well as scientific research and include projects such as: “Exploratory Drilling at Erickson Lake” (NIRB File No. 02EN102); Fox-A (Bray Island) Environmental Site Investigation (NIRB File No. 06DN031); Caribou Health Monitoring: caribou sample collection for disease monitoring and genetic analysis (NIRB File No. 08YN035); Operation Nanook 2016 (NIRB File No. 16DN063), and GEM-2 North Baffin Bedrock Mapping (NIRB File No. 17YN003). Although the past projects are not currently operational, the potential for cumulative impacts to terrestrial wildlife species and habitats, fish and fish habitat, migratory birds, marine mammals, water quality, soil quality, cultural and archaeological resources, permafrost, and air quality have been identified and considered in development of the NIRB’s recommendations. No other projects are expected to occur in the project area defined for this project proposal, and no concerns of cumulative impacts were raised during the assessment.

7. *Any other factor that the Board considers relevant to the assessment of the significance of impacts.*

It is noted that the Proponent has addressed most of the concerns raised by parties during the commenting periods, and through the assessment it is clear that the Proponent has committed to ensuring that any potential negative impact of the proposed project on the environment is minimized and adequately mitigated. No other specific factors have been identified as relevant to the assessment of this project proposal.

Views of the Board

In considering the factors as set out above in the screening of the project proposal, the NIRB has identified a number of issues below and respectfully provide the following views regarding whether or not the proposed project has the potential to result in significant impacts. In addition, the NIRB has proposed terms and conditions that would mitigate the potential adverse impacts identified.

Administrative Conditions:

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the following project-specific terms and conditions have been recommended: 1-4.

Ecosystem, wildlife habitat and Inuit harvesting activities:

Issue 1: Potential negative impacts to terrestrial wildlife (including caribou), migratory and non-migratory birds, marine mammals, and fish population and their associated habitats due to increased noise disturbance generated from mineral exploration activities, including transportation of quarried materials, helicopter use, and camp set-up.

Board views: As discussed above in the assessment of factors relevant to this project proposal, the potential for impact(s) is applicable to project footprint of the Ege Bay exploration area. Noise generated from aircraft and exploration activities could increase disturbance of seabird colonies, terrestrial wildlife, migratory and non-migratory birds, marine mammals, and fish populations. Anthropogenic activities, especially those related to drilling and ground transportation, could induce additional environmental disturbance to terrestrial wildlife within and outside the project area. Due to the size of the exploration project, and the short and intermittent nature of the project activities, the potential negative impacts to affected terrestrial wildlife, marine mammals, fish population and seabirds would be expected to be minimal and temporary only. The Proponent has committed to complying with all relevant standard operating procedures and implementing all relevant guidelines to avoid harmful interference with terrestrial and marine biota. Further, the Proponent has committed to implementing minimum flight altitudes, follow seasonal restrictions and minimize noise during project activities to mitigate any potential negative impacts to wildlife in the area. The Proponent has submitted a draft Environmental Protection Plan which outlined various commitments and wildlife management protocols to be implemented to mitigate any potential negative impacts on wildlife species in the project area.

The Proponent would also be required to follow the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, *Species at Risk Act*, *Wildlife Act (Nunavut)* and *Aeronautics Act* (see Regulatory Requirements section).

Recommended Mitigation Measures It is recommended that the potential negative impacts may be mitigated by measures such as requiring the Proponent to avoid nesting areas of migratory birds, avoid wildlife and ensure not to harass wildlife, and to ensure that project personnel are properly briefed on wildlife protocols, sensitivities, and management procedures put in place prior to undertaking mineral exploration activities. The following terms and conditions are recommended to mitigate the potential negative impacts of project activities on wildlife species, including migratory birds breeding near the area: 7, 11, 18 through 34, and 37.

Issue 2: Potential negative impacts to surface and marine water quality, fish and fish habitat, vegetation and soils from increased dust deposition, disposal of hazardous materials and drilling wastes, fuel transportation and potential fuel spills during refuelling of equipment.

Board views: The potential for impacts is applicable to the project footprint of the Ege Bay exploration area. There is the potential for the project to negatively impact surface water quality and fish and fish habitat from fuel spills during refuelling of equipment. In addition, there is a potential for impacts from the exploration activities at each of the drill

sites as a result of using chemical additives to drill deep holes and the potential for fuel spills. Greywater, sewage, and other wastes associated with the exploration camp also have the potential to negatively affect water quality, fish and fish habitat. The Proponent has provided a draft Spill Contingency Plan that includes storage measures including secondary containment, spill response measures, equipment requirements, and overall handling procedures for the management of fuel and chemicals on site. Further, the Proponent has committed to ensuring that liquid hazardous wastes would be stored in a lined containment facility and backhauled by sealift to a southern disposal or recycling facility.

The Proponent would require a water licence from the Nunavut Water Board for water use and fuel storage. Further, the Proponent would also be required to follow the *Fisheries Act*, the *Transportation of Dangerous Goods Regulations*, the *Transportation of Dangerous Goods Act*, and the *Canadian Environmental Protection Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that potential negative impacts to water, fish, vegetation and soils from chemicals, fuels, and wastes would be mitigated by measures such as requiring the Proponent to implement proper fuel storage and spill response and ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. The following terms and conditions are recommended to mitigate the potential negative impacts from the project activities: 5, 6, 12 through 15, 17, 36, 40 through 42, and 44 through 51.

Issue 3: Potential negative impacts to vegetation health, soil quality, terrain stability and permafrost condition from ground disturbance activities associated with the construction of an airstrip, the camp establishment, quarry development, drilling activities and transportation of personnel and equipment.

Board Views: There is potential for ground disturbance activities to affect terrain stability and cause thawing of permafrost in the project area. Specifically, the use of heavy equipment on exposed soil may result in soil compaction or rutting, which could contribute to soil erosion during snow melt in late spring and early summer. The activities proposed for the project, including establishment of an airstrip and temporary camp and fuel caches, may also result in degradation of permafrost which would negatively affect ground stability. Further, there is potential for impacts to vegetation health and soil quality from the exploration activities including the drilling activities. The Proponent has indicated that ground disturbance activities would be undertaken in accordance with the operation standard contained in the draft Environmental Protection Plan which are anticipated to cause minimal effects on terrain stability and permafrost condition.

The Proponent would be required to reclaim the site once activities are completed or project abandoned. The Proponent would be required to follow *The Northern Land Use Guidelines - Pits and Quarries* and *The Nunavut Mining Safety Ordinance and the Territorial Quarrying Regulations*. The potential adverse impacts to ground stability, and

permafrost condition would be limited to the project footprint and are considered to be of low magnitude, short-term, and reversible.

Recommended Mitigation Measures: It is recommended that the potential negative impacts to vegetation health, soil quality, terrain stability and permafrost would be mitigated by measures requiring the Proponent to backfill drill holes and sumps prior to the end of each field season, and complete restoration of the lands used prior to the end of each field season and/or upon abandonment of the site. The Board recommends terms and conditions 13 through 17, 35, 43, 44, and 46 through 56 to mitigate the potential negative impacts of the project activities.

Issue 4: Potential negative impacts to air quality from engine exhaust, dust from ground transportation, and emissions from helicopter, drilling equipment, diesel generators and incinerator activities.

Board views: The potential for impacts is applicable to a small geographical area within the project footprint and with a low probability of extending beyond the project area. Non-hazardous wastes combustible wastes would be incinerated, and hazardous and non-combustible wastes would be transported south to an appropriate facility for disposal. The Proponent has provided a draft Environmental Protection Plan which describes management protocols of wastes generated during project operations. The potential negative impacts to air quality are considered to be of low magnitude, short-term, and reversible.

Recommended Mitigation Measures: It is recommended that the potential negative impacts to air quality may be mitigated by measures such as requiring the Proponent to not allow the incineration of waste oil/grease on site and to minimize engine idling. The Board recommends the following terms and conditions to mitigate the potential adverse impacts to air quality: 8 through 10, 37, and 44.

Issue 5: Potential negative impacts to public and traditional land use activities in the area due to sensory disturbance from drilling activities, transportation of personnel and equipment to and from the camp and drill sites, and camping activities.

Board Views: The Proponent has indicated that the proposed mineral exploration program would take place near harvest locations for wildlife species such as caribou, walrus, waterfowl and fish. Due to the site's proximity to seasonal home ranges and migration routes of caribou and other wildlife species, it is possible that wildlife avoidance may temporarily change the distribution of wildlife commonly harvested by local communities in the area, which may in turn affect personal enjoyment of the land, and the social and cultural activities practiced in the nearby communities.

The Proponent has committed to implementing wildlife mitigation measures to minimize disturbance to caribou, migratory birds, fish and marine mammals including seasonal restrictions on activity. In addition, terms and conditions have been recommended so that the Proponent plans exploration operations to avoid disturbance to key wildlife, birds, and

humans, and to minimize negative impacts to traditional land use activities by ensuring ongoing consultation with the community and community organizations.

Recommended Mitigation Measures: Term and condition 57 is recommended to ensure that the affected communities and organizations are informed about the project proposal and term and condition 58 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. In addition, terms and conditions 18 through 34 have been recommended to minimize interference with the movements of wildlife species and nesting/breeding birds around the project area. Further, terms and conditions 38 through 43 are recommended to minimize conflict between quarrying activities and public and traditional land use and risks to public safety.

Socio-economic effects on northerners:

Issue 6: Potential negative impacts to historical, cultural and archaeological sites from drilling, establishment of a temporary camp and airstrip, and ground disturbance activities.

Board Views: During the public commenting period, the Government of Nunavut indicated that there were approximately nine (9) recorded sites of archaeological significance in the project area with the potential for other unidentified sites to occur within the mineral exploration area. The Proponent has committed to seeking the participation of Elders from Igloolik when undertaking the archaeological survey program to determine areas of potential cultural heritage history and would be required to follow the *Nunavut Act* (as recommended in Regulatory Requirements section) when conducting the survey.

Recommended Mitigation Measures: Term and condition 57 is recommended to ensure that available Inuit Qaujimaningit can inform project activities and reduce the potential for negative impacts occurring to any historical sites.

Issue 7: Potential positive impacts to the local community from hiring of residents to assist with the proposed exploration program.

Board Views: It is noted that the Proponent has committed to work with the communities of Hall Beach and Igloolik to provide hiring and employment opportunities, and to engage with local stakeholders in order gather extensive knowledge of the land and wildlife species likely to be affected during the exploration program.

Recommended Mitigation Measures: Terms and conditions 57 and 59 have been recommended to ensure that the Proponent continues to inform affected communities of the results of the mineral exploration program, as well as provide community members with information to ensure successful local hiring opportunities.

Significant public concern:

Issue 8: No significant public concern was expressed during the public commenting period for this file.

Board Views: Follow up consultation and involvement of local community members is expected to mitigate any potential for public concern resulting from project activities. In addition, it is recommended that the Proponent adhere to its commitment of hiring local people during project activities.

Recommended Mitigation Measures: Term and condition 57 is recommended to ensure that the affected community and organizations are informed about the project proposal, and to provide the Proponent with an opportunity to proactively address or mitigate any concerns that may arise from the project activities findings. The Board is also recommending that the Proponent conduct ongoing public consultation and provide an annual report that includes wildlife observations and an evaluation of the success of the mitigative measures applied (see Monitoring and Reporting Requirements section below).

Technological innovations for which the effects are unknown:

No specific issues have been identified associated with this project proposal.

In considering the above factors and subject to the Proponent's compliance with the terms and conditions necessary to mitigate against the potential adverse environmental and social effects, the Board is of the view that the proposed project is unlikely to cause significant public concern and its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS

The Board is recommending the following specific terms and conditions to apply in respect of the project:

General

1. Baffinland Iron Mines Corporation (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
2. The Proponent shall forward copies of all permits obtained and required for this project to the Nunavut Impact Review Board (NIRB) prior to the commencement of the project.
3. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 148801), and the NIRB (Online Application Form, April 27, 2018; Ege Bay Exploration Program Project Proposal, April 27, 2018; Draft Ege Bay Environmental Protection Plan, Draft Inspection and Monitoring Plan, Draft Spill Contingency Plan, July 4, 2018; and Access Road Culvert Design, July 7, 2018).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations, and Guidelines.

Water Use

5. The Proponent shall not extract water from any fish-bearing waterbody unless the water intake hose is equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams should not be used for water withdrawal unless otherwise authorized by the Nunavut Water Board.

6. The Proponent shall not use water, including constructing or disturbing any stream, lakebed or the banks of any definable water course unless otherwise authorized by the Nunavut Water Board.

Waste Disposal/Incineration

7. The Proponent shall keep all garbage and debris in bags placed in a covered metal container or equivalent until disposed of at an approved facility. All such wastes shall be kept inaccessible to wildlife at all times.
8. The Proponent shall incinerate all combustible wastes daily and remove the ash from incineration activities and non-combustible wastes from the project site to an approved facility for disposal.
9. The Proponent shall ensure that the incineration of combustible camp wastes comply with the *Canadian Wide Standards for Dioxins and Furans*, and the *Canadian Wide Standards for Mercury*.
10. The Proponent shall ensure that no waste oil/grease is incinerated on site.

Fuel and Chemical Storage

11. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
12. The Proponent shall locate all fuel and other hazardous materials a minimum of thirty-one (31) metres away from the high water mark of any water body and in such a manner as to prevent their release into the environment unless otherwise authorized by the Nunavut Water Board.
13. The Proponent shall ensure that re-fueling of all equipment occurs a minimum of thirty-one (31) metres away from the high water mark of any water body unless otherwise authorized by the Nunavut Water Board.
14. The Proponent shall use adequate secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) when storing barreled fuel and chemicals at all locations.
15. The Proponent shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available during any transfer of fuel or hazardous substances, at all fuel storage sites, at all refuelling stations, at vehicle maintenance areas and at drill sites.
16. The Proponent shall remove and treat hydrocarbon contaminated soils on site or transport them to an approved disposal site for treatment.
17. The Proponent shall ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. All spills of fuel or other deleterious materials of any amount must be reported immediately to the 24 hour Spill Line at (867) 920-8130.

Wildlife - General

18. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.

19. The Proponent shall not harass wildlife. This includes persistently circling, chasing, hovering over pursuing or in any other way harass wildlife, or disturbing large groups of animals.
20. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
21. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.

Migratory Birds and Raptors Disturbance

22. The Proponent shall not disturb or destroy the nests or eggs of any birds. If nests are encountered and/or identified, the Proponent shall take precaution to avoid further interaction and or disturbance (e.g., a 100 metres buffer around the nests). If active nests of any birds are discovered (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have left the nest.
23. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.
24. The Proponent shall avoid the seaward site of seabird colonies and areas used by flocks of migrating waterfowl by three (3) kilometres.
25. The Proponent shall ensure its aircraft avoid excessive hovering or circling over areas where bird presence is likely.

Aircraft Flight Restrictions

26. The Proponent shall not alter flight paths to approach wildlife and shall avoid flying directly over animals.
27. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum flight altitude of 610 metres above ground level except during landing, take-off or if there is a specific requirement for low-level flying, which does not disturb wildlife or migratory birds.
28. The Proponent shall ensure that aircraft maintain a vertical distance of 1000 metres and a horizontal distance of 1500 metres from any observed groups (colonies) of migratory birds. Aircraft should avoid critical and sensitive wildlife areas at all times by choosing alternate flight corridors.
29. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.
30. The Proponent shall advise all pilots of relevant flight restrictions and enforce their application over the project area, including flight paths to/from the project area.

Caribou Disturbance

31. The Proponent shall cease activities that may interfere with the migration or calving of caribou, until the caribou have passed or left the area.
32. The Proponent shall not block or cause any diversion to caribou migration and shall cease activities likely to interfere with migration such as airborne geophysics surveys, drilling or movement of equipment or personnel until such time as the caribou have passed.
33. During the period of May 15 to July 15, the Proponent shall suspend all project operations, including low-level over flights, drilling, blasting/trenching, and use of snow mobiles and all-

terrain vehicles outside the immediate vicinity of the camp. Should the results of localized monitoring satisfy the Land Use Inspector that project operations may resume without disturbing pregnant caribou cows or cows with young calves, the suspension may be lifted for the period specified.

34. Should pregnant caribou cows, cows with young calves, or groups of 50 or more caribou be observed within one (1) kilometre of project operations at any time, the Proponent shall suspend all operations in the vicinity, including low-level over flights, drilling, blasting/trenching, and use of snow mobiles and all-terrain vehicles outside the immediate vicinity of the camp, until caribou are no longer in the immediate area.

Ground Disturbance

35. The Proponent shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles must be suspended if rutting occurs.
36. The Proponent shall implement suitable dust, erosion and sediment suppression measures on all areas before, during and after conducting activities in order to prevent sediments or fugitive dust from entering any waterbody or surrounding environment.
37. All construction and road vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.

Establishment of New Quarries

38. The Proponent shall clearly stake and flag pit and quarry boundaries, so they remain visible to other land users.
39. The Proponent shall locate quarry/pit facilities so as to avoid all recreational sites and public use areas, and to protect unique geographical features and natural aesthetics.
40. The Proponent shall ensure there is no obstruction of natural drainage, flooding or channel diversion from quarry/pit access, stockpiles, or other structures or facilities.
41. The Proponent shall ensure that silt fences/curtains are installed down gradient of any quarry activities.
42. The Proponent shall maintain an undisturbed buffer zone of at least 100 metres between quarry site and any high-water mark of any water body. Alternately: The Proponent shall maintain an undisturbed buffer zone between the periphery of quarry sites and the high-water mark of any water body that is of an adequate distance to ensure erosion control.
43. The Proponent shall locate screening and crushing equipment on stable ground, at a location with ready access to stockpiles.
44. The Proponent shall use water or other non-toxic and biodegradable additives for dust suppression as necessary to maintain ambient air quality without causing water to pool or runoff.

Drilling on Land

45. The Proponent shall not conduct any land based drilling or mechanized clearing within thirty-one (31) metres of the normal high-water mark of a water body unless otherwise authorized by the Nunavut Water Board.

46. The Proponent shall not allow any drilling wastes to spread to the surrounding lands or water bodies.
47. If an artesian flow is encountered, the Proponent shall ensure the drill hole is immediately plugged and permanently sealed.
48. The Proponent shall ensure that all drill areas are constructed to facilitate minimizing the environmental footprint of the project area. Drill areas should be kept orderly with garbage removed daily to an approved disposal site.
49. The Proponent shall ensure that all sump/depression capacities are sufficient to accommodate the volume of waste water and any fines that are produced. The sumps shall only be used for inert drilling fluids, and not any other materials or substances.
50. The Proponent shall not locate any sump within thirty-one (31) metres of the normal high-water mark of any water body unless otherwise authorized by the Nunavut Water Board. Sumps and areas designated for waste disposal shall be sufficiently bermed or otherwise contained to ensure that substances do not enter a waterway.
51. The Proponent shall ensure all drill holes are backfilled or capped prior to the end of each field season. All sumps must be backfilled and restored to original or stable profile prior to the end of each field season.

Temporary Camps

52. The Proponent shall ensure that all camps are located on gravel, sand or other durable land.
53. The Proponent shall ensure that the land use area is kept clean and tidy at all times.

Restoration of Disturbed Areas

54. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
55. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of field work.
56. The Proponent shall complete all clean-up and restoration of the lands used prior to the end of each field season and/or upon abandonment of site.

Other

57. The Proponent should consult with local residents regarding their activities in the area and solicit available Inuit Qaujimaningit and information that can inform project activities.
58. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
59. The Proponent should, to the extent possible, hire local people and access local services where possible.

In addition, the Board is recommending the following:

Finalized Version of Management Plans

1. Prior to the start of project activities, the Proponent shall submit a finalized version of all management plans, specifically the Ege Bay Environmental Protection Plan, Inspection and Monitoring Plan, and Spill Contingency Plan to Qikiqtani Inuit Association (QIA) and Crown-Indigenous Relations and Northern Affairs Canada. The Proponent is encouraged to consult with the QIA, the Government of Nunavut and include relevant federal departments during revision of the management plans regarding project schedule and timelines to ensure adequate mitigation of potential environmental impacts.

Closure and Reclamation Plan

2. The Proponent shall submit a Closure and Reclamation Plan to the Nunavut Impact Review Board, Qikiqtani Inuit Association and Government of Nunavut- Department of Environment prior to undertaking exploration activities in the area. The Plan should include procedures for using native plant species for re-vegetation in order to eliminate risk of introducing invasive species to the area pursuant to the Wildlife Act.

Archaeology Report

3. The Proponent should conduct Heritage Resource Impact Assessment (HRIA) in order to prevent or minimize potential project-related effects on known heritage areas, and unidentified archaeological sites. The assessment should be conducted prior to commencing exploration activities and include locations (i.e., latitude and longitude) of where any archaeological sites and features are encountered relative to the project development area, and where possible should include information regarding the participation of the community of Igloolik and Hall Beach in the HRIA. The results of the HRIA should be submitted to the Government of Nunavut-Department of Culture and Heritage.

Annual Final Report

4. The Proponent shall submit a comprehensive final report to the Nunavut Impact Review Board on or before March 31st of each year. The final report must contain, but is not limited to, the following information:
 - a) A summary of activities undertaken for the year, including:
 - a map showing the approximate location of drill sites;
 - a map showing the location of the fuel cache;
 - a description of local hires, contracting opportunities and initiatives;
 - flight altitudes, frequency of flights and anticipated flight routes;
 - site photos;
 - b) A detailed summary of activities undertaken, including any planned progressive reclamation work;
 - c) A summary of community consultations undertaken throughout the year, providing copy of materials presented to community members, a description of issues and concerns raised, discussions with community members and advice offered to the company as well

as any follow-up actions that were required or taken to resolve any concerns expressed about the project proposal;

- d) A log of instances in which residents from nearby communities occupy or transit through the project area for the purpose of traditional land use or harvesting. This log should include the location and number of people encountered, activity being undertaken (e.g., berry picking, fishing, hunting, camping, etc.), date and time; and any mitigation measures or adaptive management undertaken to prevent disturbance;
- e) A record of wildlife observations, including observed locations (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animals if possible. A map of known sensitive wildlife sites such as denning sites, caribou crossing sites, and raptor nests in the area should accompany the report.
- f) A summary of any wildlife mitigation actions undertaken, including the number of cease-work orders required as a result of proximity to caribou and any other wildlife;
- g) An analysis of the effectiveness of mitigation measures for wildlife, and identification of adaptive mitigation that will be implemented if mitigation measures were unsuccessful;
- h) Summary of any heritage sites encountered during the exploration activities, any follow-up action or reporting required as a result and how project activities were modified to mitigate impacts on the heritage sites;
- i) Summary of its knowledge of Inuit land use in/near the project area and explain how project activities were modified to mitigate impacts on Inuit land use; and
- j) Summary of how the Proponent has complied with conditions contained within this Screening Decision, and all conditions as required by other authorizations associated with the project proposal.

OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board is recommending the following:

Change in Project Scope

1. Responsible authorities or Proponent shall notify the Nunavut Planning Commission or Qikiqtani Inuit Association as appropriate, and the NIRB of any changes in operating plans or conditions, including phase advancement, associated with this project prior to any such change.

Copy of licences, etc. to the Board and Commission

2. As per s. 137(4) of the *NuPPAA*, responsible authorities are required to submit a copy of each licence, permit or other authorization issued for the Project to the Nunavut Planning Commission and the NIRB. Please forward a copy of the licences, permits and/or other authorizations to the NIRB directly at info@nirb.ca or upload a copy to the NIRB's online registry at www.nirb.ca.

Bear and Carnivore Safety

3. The Proponent should review the Government of Nunavut's booklet on Bear Safety, which can be downloaded from this link: http://gov.nu.ca/sites/default/files/bear_safety_-

[reducing bear-people conflicts in nunavut.pdf](#). Further information on bear/carnivore detection and deterrent techniques can be found in the “*Safety in Grizzly and Black Bear Country*” pamphlet, which can be downloaded from this link: http://www.enr.gov.nt.ca/sites/default/files/web_pdf_wd_bear_safety_brochure_1_may_2015.pdf.

4. There are polar bear and grizzly bear safety resources available from the Bear Smart Society with videos on polar bear safety available in English, French and Inuktitut at <http://www.bearsmart.com/play/safety-in-polar-bear-country/>. Conservation Information can also be obtained from Parks Canada’s website on bear safety at the following link: <http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/d.aspx> or in reviewing the “*Safety in Polar Bear Country*” pamphlet, which can be downloaded from the following link: http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/~media/pn-np/nu/auyuittuq/pdf/shared/PolarBearSafety_English.ashx.
5. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officers of Hall Beach, phone: (867) 983-8507) and Igloolik, phone: (867) 934-8999.

Species at Risk

6. The Proponent review Environment and Climate Change Canada’s “Environment Assessment Best Practice Guide for Wildlife at Risk in Canada”, available at the following link: http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf. The guide provides information to the Proponent on what is required when Wildlife at Risk, including *Species at Risk*, are encountered or affected by the project.

Migratory Birds

7. The Proponent review Canadian Wildlife Services’ “Key migratory bird terrestrial habitat sites in the Northwest Territories and Nunavut”, available at the following link: <http://publications.gc.ca/site/eng/317630/publication.html> and “Key marine habitat sites for migratory birds in Nunavut and the Northwest Territories”, available at the following link: <http://publications.gc.ca/site/eng/392824/publication.html>. The guide provides information to the Proponent on key terrestrial and marine habitat areas that are essential to the welfare of various migratory bird species in Canada.
8. For further information on how to protect migratory birds, their nests and eggs when planning or carrying out project activities, consult Environment and Climate Change Canada’s Incidental Take web page and the fact sheet “Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs” available at <http://www.ec.gc.ca/paom-itmb/>.

Incineration of Wastes

9. The Proponent review Environment and Climate Change Canada’s “Technical Document for Batch Waste Incineration”, available at the following link: <http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1>. The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting.

10. The Proponent review the Canadian Council of Ministers of the Environment's "Guidance Document for Canadian Jurisdictions on Open-Air Burning", available at the following link: http://www.ccme.ca/files/Resources/air/wood_burning/pn_1548_CCME%20Guidance%20Document%20on%20Open%20Air%20Burning%20FINAL.pdf as a guidance document for best practices associated with open-air burning.

Transport of Dangerous Goods and Waste Management

11. Environment and Climate Change Canada recommends that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.
12. The Proponent shall ensure that proper shipping documents (waste manifests, transportation of dangerous goods, etc.) accompany all movements of dangerous goods. Further, the Proponent shall ensure that the shipment of all dangerous goods is registered with the Government of Nunavut Department of Environment, Department of Environment Manager. Contact the Manager (867) 975-7748 to obtain a manifest if dangerous goods including hazardous wastes will be transported.

Aircraft Identification

13. The Proponent shall provide the community of Hall Beach and Igloolik a description of the planned helicopter activities, including photo(s) of the helicopter to be used, approximate flight paths, plans and times as available prior to commencement of activities to ensure community members are aware of the planned activities.

Caribou Management

14. Territorial and federal government agencies in Nunavut should work together with Regional Inuit Associations, co-management boards and industry to develop an action plan to identify and mitigate potential cumulative effects of human land use activities, including mineral exploration, on North Baffin caribou. This assessment of cumulative effects should occur at a regional scale (i.e., larger than individual project areas).
15. As a result of expressed concerns regarding mineral exploration and the associated potential for cumulative effects on caribou and caribou habitat within the Qikiqtani region, the NPC, territorial and federal government agencies should work together with Regional Inuit Associations, co-management boards, the public, and industry to ensure the Nunavut-wide Land Use Plan currently under development identifies appropriate land use in these areas prior to potential mineral exploration occurring. The plan should identify and mitigate potential cumulative effects of human land use activities on Baffin caribou on both localized and regional scales.
16. The NPC should be aware of the public concerns regarding a perceived lack of protection for caribou and caribou habitat within the Qikiqtani region of Nunavut. In developing a Nunavut-wide Land Use Plan, the NPC may wish to consider formalized protection of important caribou habitat, and seasonal restrictions on potentially disruptive activities in these areas to minimize disturbance to caribou lifecycles and Inuit harvesting activities.

Crown – Indigenous Relations and Northern Affairs Canada

17. Crown – Indigenous Relations and Northern Affairs Canada (CIRNAC) impose mitigation measures, conditions and monitoring requirements pursuant to the Federal Land Use Permit, which require the Proponent to respect the sensitivities and importance of the area. These

mitigation measures, conditions and monitoring requirements should be in regard to the location and area; type, location, capacity and operation of facilities; use, storage, handling and disposal of chemical or toxic material; wildlife and fisheries habitat; and petroleum fuel storage.

18. CIRNAC consider the importance of conducting regular Land Use Inspections, pursuant to the authority of the Federal Land Use Permit, while the project is in operation. The Land Use Inspections should be focused on ensuring the Proponent is in compliance with the conditions imposed through the Federal Land Use Permit.
19. It is recommended to CIRNAC that no extension be issued to the Land Use Permit until Finalized Version of Management Plans, Closure and Reclamation Plan, Archaeology Report, and Annual Final Report are received.

Qikiqtani Inuit Association

20. The Qikiqtani Inuit Association impose strict mitigation measures and/or conditions upon the Proponent pursuant to the Inuit Owned Lands License in regard to fuel and chemical storage, drilling, water conditions, ground disturbance and wildlife on Inuit owned land.

Nunavut Water Board

21. The Nunavut Water Board impose mitigation measures, conditions and monitoring requirements pursuant to the Water Licence, which require the Proponent to respect the sensitivities and importance of water in the area. These mitigation measures, conditions and monitoring requirements should be in regard to use of water, snow and ice; waste disposal; access infrastructure and operation for camps; drilling operations; spill contingency planning; abandonment and restoration planning; and monitoring programs.

Crown – Indigenous Relations and Northern Affairs Canada– Water Resources Division

22. CIRNAC – Water Resources Division should consider the importance of conducting regular inspections, pursuant to the authority of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, while the project is in operation. Inspectors should focus on ensuring the Proponent is in compliance with the conditions imposed through the Water Licence.

REGULATORY REQUIREMENTS

The Proponent is also advised that the following legislation may apply to the project:

Acts and Regulations

1. The Proponent is advised that the *Canadian Environmental Protection Act* (<http://laws.justice.gc.ca/en/C-15.31/>) lists calcium chloride (CaCl) as a toxic substance. The Proponent should assess alternatives to the use of CaCl as a drill additive, including biodegradable and non-toxic additives.
2. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
3. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-28.8/>).

4. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>).
5. The *Species at Risk Act* (<http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html>). Attached in **Appendix A** is a list of Species at Risk in Nunavut.
6. The *Wildlife Act* (Nunavut) and its corresponding regulations (<http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html>).
7. The *Nunavut Act* (<http://laws-lois.justice.gc.ca/eng/acts/N-28.6/>). The Proponent must comply with the proposed terms and conditions listed in the attached **Appendix B**.
8. The *Transportation of Dangerous Goods Regulations* (<http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm>), *Transportation of Dangerous Goods Act* (<http://laws-lois.justice.gc.ca/eng/acts/t-19.01/>), and the *Canadian Environmental Protection Act* (<http://laws-lois.justice.gc.ca/eng/acts/C-15.31/>).
9. The *Aeronautics Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-2/>).
10. The *Nunavut Mining Safety Ordinance* and the *Territorial Quarrying Regulations* (<http://www.canlii.org/en/ca/laws/regu/crc-c-1527/latest/crc-c-1527.html>) or equivalent.
11. The *Explosives Act* (<http://laws-lois.justice.gc.ca/eng/acts/E-17/page-1.html#h-5>).
12. The *Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations* (<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/FullText.html>). The Proponent must identify their tank system to Environment and Climate Change Canada and installation of new systems must comply with the regulations' design requirements.

Other Applicable Guidelines

13. The *Guidelines for the use of Explosives in or near Canadian Fisheries Waters* (<http://publications.gc.ca/site/eng/82558/publication.html>).
14. The *Northern Land Use Guidelines Pits and Quarries* (<http://www.aadnc-aandc.gc.ca/eng/1100100023585>) provide guidelines for progressive reclamation applicable to establishment of pits and quarries.

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Baffinland Iron Mines Corporation "Eqe Bay Exploration Program". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated August 17, 2018 at Whale Cove, NU.

England

Elizabeth Copland, Chairperson

Attachments: Appendix A: Species at Risk in Nunavut
Appendix B: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

Appendix A

Species at Risk in Nunavut

Due to the requirements of Section 79(2) of the Species At Risk Act (SARA), and the potential for project-specific adverse effects on listed wildlife species and its critical habitat, measures should be taken as appropriate to avoid or lessen those effects, and the effects need to be monitored. Project effects could include species disturbance, attraction to operations and destruction of habitat. This section applies to all species listed on Schedule 1 of SARA, as listed in the table below, or have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which may be encountered in the project area. This list may not include all species identified as at risk by the Territorial Government. The following points provide clarification on the applicability of the species outlined in the table.

- Schedule 1 is the official legal list of Species at Risk for SARA. SARA applies to all species on Schedule 1. The term “listed” species refers to species on Schedule 1.
- Schedule 2 and 3 of SARA identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are “pending” addition to Schedule 1 of SARA. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the species at risk Registry at <http://www.sararegistry.gc.ca> for information on specific species.

Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of species at risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.

For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.

Mitigation and monitoring measures must be undertaken in a way that is consistent with applicable recovery strategies and action/management plans.

Schedules of SARA are amended on a regular basis so it is important to check the SARA registry (www.sararegistry.gc.ca) to get the current status of a species.

Updated: September 2017

Terrestrial Species at Risk ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Migratory Birds			
Buff-breasted Sandpiper	Special concern	Schedule 1	ECCC
Eskimo Curlew	Endangered	Schedule 1	ECCC
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	ECCC
Harris's Sparrow	Special Concern	Pending	ECCC
Horned Grebe (Western population)	Special Concern	Schedule 1	ECCC
Ivory Gull	Endangered	Schedule 1	ECCC
Peregrine Falcon	Special Concern (<i>anatum-tundrius</i> complex ³)	Schedule 1 - Schedule 3	ECCC
Red Knot (<i>islandica</i> subspecies)	Special Concern	Schedule 1	ECCC
Red Knot (<i>rufa</i> subspecies)	Endangered	Schedule 1	ECCC
Red-necked Phalarope	Special concern	Pending	ECCC
Ross's Gull	Threatened	Schedule 1	ECCC
Rusty Blackbird	Special Concern	Schedule 1	ECCC
Short-eared Owl	Special Concern	Schedule 1	ECCC
Vegetation			
Blanket-leaved Willow	Special Concern	Schedule 1	Government of Nunavut
Felt-leaf Willow	Special Concern	Schedule 1	Government of Nunavut
Porsild's Bryum (Moss)	Threatened	Schedule 1	Government of Nunavut
Arthropods			
Traverse Lady Beetle	Special Concern	Pending	Government of Nunavut
Terrestrial Wildlife			
Caribou (Barren-Ground population)	Threatened	Pending	Government of Nunavut
Dolphin and Union Caribou	Special Concern	Schedule 1	Government of Nunavut
Grizzly Bear (Western Population)	Special Concern	Pending	Government of Nunavut
Peary Caribou	Endangered	Schedule 1	Government of Nunavut
Peary Caribou (High Arctic Population)	Endangered	Schedule 2	Government of Nunavut
Peary Caribou (Low Arctic Population)	Threatened	Schedule 2	Government of Nunavut
Wolverine	Special Concern	Pending	Government of Nunavut
Wolverine (Western population)	Non-active	Pending	Government of Nunavut
Marine Wildlife			
Atlantic Walrus	Special Concern	Pending	DFO
Beluga Whale (Cumberland Sound population)	Endangered	Schedule 2	DFO
Beluga Whale (Eastern High Arctic – Baffin Bay population)	Special Concern	Pending	DFO
Beluga Whale (Eastern Hudson Bay population)	Endangered	Pending	DFO

Beluga Whale (Southeast Baffin Island – Cumberland Sound population)	Endangered	Schedule 2	DFO
Beluga Whale (Western Hudson Bay population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Arctic population)	Endangered	Schedule 2	DFO
Bowhead Whale (Eastern Canada – West Greenland population)	Special Concern	Pending	DFO
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Narwhal	Special Concern	Pending	DFO
Polar Bear	Special Concern	Schedule 1	Government of Nunavut/DFO
Fish			
Atlantic Cod, Arctic Lakes	Special Concern	Pending	DFO
Atlantic Wolffish	Special Concern	Schedule 1	DFO
Bering Wolffish	Special Concern	Schedule 3	DFO
Blackline Prickleback	Special Concern	Schedule 3	DFO
Fourhorn Sculpin	Special Concern	Schedule 3	DFO
Fourhorn Sculpin (Freshwater form)	Data Deficient	Schedule 3	DFO
Northern Wolffish	Threatened	Schedule 1	DFO
Roundnose Grenadier	Endangered	Pending	DFO
Spotted Whitefish	Threatened	Schedule 1	DFO
Thorny Skate	Special Concern	Pending	DFO

¹ The Department of Fisheries and Oceans has responsibility for aquatic species.

² Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

Appendix B Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders



INTRODUCTION

The Department of Culture and Heritage (CH) routinely reviews land use applications sent to the Nunavut Water Board, Nunavut Impact Review Board and the Indigenous and Northern Affairs Canada. These terms and conditions provide general direction to the permittee/proponent regarding the appropriate actions to be taken to ensure the permittee/proponent carries out its role in the protection of Nunavut's archaeological and palaeontological resources.

TERMS AND CONDITIONS

- 1) The permittee/proponent shall have a professional archaeologist and/or palaeontologist perform the following **Functions** associated with the **Types of Development** listed below or similar development activities:

	Types of Development (See Guidelines below)	Function (See Guidelines below)
a)	Large scale prospecting	Archaeological/Palaeontological Overview Assessment
b)	Diamond drilling for exploration or geotechnical purpose or planning of linear disturbances	Archaeological/ Palaeontological Inventory
c)	Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities	Archaeological/ Palaeontological Inventory or Assessment or Mitigation

Note that the above-mentioned functions require either a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit. CH is authorized by way of the *Nunavut and Archaeological and Palaeontological Site Regulations*¹ to issue such permits.

¹ P.C. 2001-1111 14 June, 2001

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.
- 3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
- 4) The permittee/proponent shall immediately contact CH at (867) 934-2046 or (867) 975-5500 should an archaeological site or specimen, or a palaeontological site or fossil, be encountered or disturbed by any land use activity.
- 5) The permittee/proponent shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation until permitted to proceed with the authorization of CH.
- 6) The permittee/proponent shall follow the direction of CH in restoring disturbed archaeological or palaeontological sites to an acceptable condition. If these conditions are attached to either a Class A or B Permit under the Territorial Lands Act Indigenous and Northern Affairs Canada directions will also be followed.
- 7) The permittee/proponent shall provide all information requested by CH concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.
- 8) The permittee/proponent shall make best efforts to ensure that all persons working under its authority are aware of these conditions concerning archaeological sites and artifacts and palaeontological sites and fossils.
- 9) If a list of recorded archaeological and/or palaeontological sites is provided to the permittee/proponent by CH as part of the review of the land use application the permittee/proponent shall avoid the archaeological and/or palaeontological sites listed.
- 10) Should a list of recorded sites be provided to the permittee/proponent, the information is provided solely for the purpose of the proponent's land use activities as described in the land use application, and must otherwise be treated confidentially by the proponent.

Legal Framework

As stated in Article 33 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*:

Where an application is made for a land use permit in the Nunavut Settlement Area, and there are reasonable grounds to believe that there could be sites of archaeological importance on the lands affected, no land use permit shall be issued without written consent of the Designated Agency. Such consent shall not be unreasonably withheld. [33.5.12]

Each land use permit referred to in Section 33.5.12 shall specify the plans and methods of archeological site protection and restoration to be followed by the permit holder, and any other conditions the Designated Agency may deem fit. [33.5.13]

Palaeontology and Archaeology

Under the *Nunavut Act*², the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*³, it is illegal to alter or disturb any palaeontological or archaeological site in Nunavut unless permission is first granted through the permitting process.

Definitions

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

“archaeological site” means a place where an archaeological artifact is found.

“archaeological artifact” means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement).

“palaeontological site” means a site where a fossil is found.

“fossil” includes:

Fossil means the hardened or preserved remains or impression of previously living organisms or vegetation and includes:

- (a) natural casts;*
- (b) preserved tracks, coprolites and plant remains; and*
- (c) the preserved shells and exoskeletons of invertebrates and the preserved eggs, teeth and bones of vertebrates.*

Guidelines for Developers for the Protection of Archaeological Resources in the Nunavut Territory

(**Note:** Partial document only, complete document at: www.ch.gov.nu.ca/en/Archaeology.aspx)

Introduction

The following guidelines have been formulated to ensure that the impacts of proposed developments upon heritage resources are assessed and mitigated before ground surface altering activities occur. Heritage resources are defined as, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings and cairns. Effective collaboration between the developer, the Department of Culture, and Heritage (CH), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CH is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and the federal government. Its role in mitigating impacts of developments on heritage resources is as

² s. 51(1)

³ P.C. 2001-1111 14 June, 2001

follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals prepared to undertake the study to the developer; issue an archaeologist or palaeontologist permit authorizing field work; assess the completeness of the study and its recommendations; and ensure that the developer complies with the recommendations.

The primary regulatory agencies that CH provides information and assistance to are the Nunavut Impact Review Board, for development activities proposed for Inuit Owned Lands (as defined in Section 1.1.1 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*), and the Indigenous and Northern Affairs Canada, for development activities proposed for federal Crown Lands.

A developer is the initiator of a land use activity. It is the obligation of the developer to ensure that a qualified archaeologist or palaeontologist is hired to perform the required study and that provisions of the contract with the archaeologist or palaeontologist allow permit requirements to be met; i.e. fieldwork, collections management, artifact and specimen conservation, and report preparation. On the recommendation of the contract archaeologist or palaeontologist in the field and the Government of Nunavut, the developer shall implement avoidance or mitigative measures to protect heritage resources or to salvage the information they contain through excavation, analysis, and report writing. The developer assumes all costs associated with the study in its entirety.

Through his or her active participation and supervision of the study, the contract archaeologist or palaeontologist is accountable for the quality of work undertaken and the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

Types of Development

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*
- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*

- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*
- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources.*

Types of Studies Undertaken to Preserve Heritage Resources

Overview: An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

Reconnaissance: This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may indicate a very low or negligible heritage resource potential. Alternately, in the case of small-scale or linear developments, an inventory study may be recommended and obviate the need for a reconnaissance.

The main goal of a reconnaissance study is to provide baseline data for the verification of the presence of potential heritage resources, the determination of impacts to these resources, the generation of terms of reference for further studies and, if required, the advancement of preliminary mitigative and compensatory plans. The results of reconnaissance studies are primarily useful for the selection of alternatives and secondarily as a means of identifying impacts that must be mitigated after the final siting and design of the development project. Depending on the scope of the study, a Class 1 or Class 2 Permit is required for this type of investigation.

Inventory: A resource inventory is generally conducted at that stage in a project's development at which the geographical area(s) likely to sustain direct, indirect, and perceived impacts can be well defined. This requires systematic and intensive fieldwork to ascertain the effects of all possible and alternate construction components on heritage resources. All heritage sites must be recorded on Government of Nunavut Site Survey forms. Sufficient information must be amassed from field, library and archival components of the study to generate a predictive model of the heritage resource base that will:

- allow the identification of research and conservation opportunities;
- enable the developer to make planning decisions and recognize their likely effects on the known or predicted resources; and
- make the developer aware of the expenditures, which may be required for subsequent studies and mitigation. A Class 1 or 2 permit is required.

Assessment: At this stage, sufficient information concerning the numbers and locations of heritage resources will be available, as well as data to predict the forms and magnitude of impacts. Assessments provide information on the size, volume, complexity and content of a heritage resource, which is used to rank the values of different sites or site types given current archaeological knowledge. As this information will shape subsequent mitigation program(s), great care is necessary during this phase.

Mitigation: This refers to the amelioration of adverse impacts to heritage resources and involves the avoidance of impact through the redesign or relocation of a development or its components; the protection of the resource by constructing physical facilities; or, the scientific investigation and recovery of information from the resource by excavation or other method. The type(s) of appropriate mitigative measures are dictated by their viability in the context of the development project. Mitigation strategies must be developed in consultation with, and approved by, the Department of Culture and Heritage. It is important to note that mitigation activities should be initiated as far in advance of the construction of the development as possible.

Surveillance and monitoring: These may be required as part of the mitigation program.

Surveillance may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

Monitoring involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.