



SCREENING DECISION REPORT NIRB FILE No.: 17EN059

KIA File No.: KTL113B001
NPC File No.: 148574

September 19, 2017

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Transition Metals Corporation (Transition) "Arcadia Bay Property" is not required pursuant to paragraph 92(1)(a) of the *Nunavut Planning and Project Assessment Act* (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) as follows:

"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.”

These objectives are confirmed under section 23 of the NuPPAA.

The purpose of screening is provided for under section 88 of the NuPPAA:

“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 subsection 89(1) of NuPPAA:

“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 subsection 89(2) provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b).

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. Specifically, paragraph 92(2)(a) of NuPPAA provides:

“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 May 19, 2017 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Transition Metals Corporation’s (Transition) “Arcadia Bay Property” 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 section 87 of the *Nunavut Planning and Project Assessment Act* (NuPPAA), the NIRB commenced screening this project proposal and assigned it file number 17EN059.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

1. Project Scope

The proposed “Arcadia Bay Property” project is located within the Kitikmeot region, approximately 160 kilometres (km) east of Kugluktuk, and 305 km southwest of Cambridge Bay. The Proponent intends to explore for economic gold deposits along the shore of Arcadia Bay, south of the Coronation Gulf. The program is proposed to take place seasonally from July 2017 to June 2022.

As required under subsection 86(1) of the NuPPAA, the Board accepts the scope of the Arcadia Bay Property project as set out by Transition in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Establishment of a temporary camp site for up to 12 personnel to support exploration activities;
- Use of a fixed wing aircraft (float or ski-equipped) to transport all supplies and equipment to the project area from Yellowknife, Cambridge Bay and/or Kugluktuk;
- Use of a helicopter for transportation of fuel, equipment and personnel, and for daily drop off and pick-ups to field locations within the Project area;
- Potential use of a barge landing site at Coronation Gulf during the summer months to bring in supplies and/or equipment;
- On-land drilling with the use of a diamond drill to undertake a 12 hole diamond drilling program, totalling 2,500 metres;
- Use of water from a river adjacent to the camp for domestic and drilling activities;
- Use of a dual-chamber controlled air incinerator for incinerating combustible wastes;
- Transportation, storage (caching) and use of 32,910 litres (L) of fuel (diesel, gasoline and aviation fuel) for refuelling aircraft, equipment and engines;
- Potential small temporary fuel caches to support the drilling and exploration programs;
- Transportation, storage and use of chemicals;
- Generation and disposal of grey water, sewage and drill water into sumps; and
- Storage of non-combustible wastes and hazardous waste materials in sealed containers for recycling or disposal offsite.

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
May 19, 2017	Receipt of project proposal and screening referral from the NPC
May 23, 2017 & May 30, 2017	Information request(s)
June 20, 2017	Proponent responded to information request(s)
June 20, 2017	Scoping pursuant to subsection 86(1) of the NuPPAA
July 4, 2017	Public engagement and comment request
July 25, 2017	Receipt of public comments
July 26, 2017	Proponent provided with an opportunity to address comments/concerns raised by public
August 2, 2017	Ministerial extension requested from the Minister of Indigenous and Northern Affairs Canada
August 18, 2017	Proponent responded to comments/concerns raised by public

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on July 4, 2017 to community organizations in Kugluktuk and Cambridge Bay, 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 July 25, 2017 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; if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

The following is a summary of the comments and concerns received by the NIRB:

Government of Nunavut

Archaeological Resources

- Noted that archaeological surveys have not been conducted in the proposed exploration areas and noted concern with respect to potential for project-related activities to interact with archaeological/paleontological resources. Recommended the following:
 - Hire a qualified archaeologist to conduct archaeological assessment of the project area;
 - Conduct a field assessment of the complete footprint of the camp area(s) and associated components (heliport, roads, laydown areas, and barge landing, etc.);
 - Assess all drilling locations (50 m radius) and water-hose route to the closest water source intake;

- Assess any sampling, prospecting, and all other locations where land disturbance activities are planned to occur;
- A thorough archaeological assessment will assist in determining the archaeological potential of the project area, and aid the development of mitigation plans for any archaeological resources that may be affected by project activities;
- The proponent should immediately contact the Territorial Archaeology office to obtain a list of archaeologists who are qualified to hold a permit in Nunavut; and
- No person shall alter, or otherwise disturb an archaeological site, or remove any artifact from an archaeological site, and no building of inuksuit is recommended.

Winter drilling activities

- Requested clarification as to whether winter drilling is considered part of the current project proposal;
- Requested the Proponent describe the scope of the proposed winter drilling activities, in order to allow parties comment on the additional activities; and
- Noted that the proposed winter activities may pose additional impacts to the Dolphin and Union caribou herd that use the project area throughout the winter.

Caribou and caribou habitat

- Update the definition of “critical caribou habitat” to account for the critical habitat of the Dolphin and Union caribou herd, as well as its calving ground and the sea-ice used during migration;
- Recommended that a fully developed monitoring and management program be in place for monitoring the environmental impacts of the proposed project on caribou habitat and ensure potential impacts are mitigated;
- Reminded the Proponent that any project-related activities taking place from November to May would likely coincide with the seasonal ranges of the Dolphin and Union herd;
- Recommended the Proponent follow extra precautions, such as undertaking more caribou surveys in hilly terrains, in order to avoid disturbance to caribou that may be out of visual sight. Further noted that the threshold for suspending activities should be lowered from 50 caribou to 12 caribou considering the behavior and group size characteristics of the Dolphin and Union herd;
- Recommended the Proponent identify the specific caribou herd that is present within the project area and requested a list of mitigation measures, including description of how wildlife monitoring initiatives would consider and incorporate baseline environmental conditions of the area during the early phase of the project;
- Proponent should be aware of the frequency of occurrence of other wildlife species (Grizzly Bear, Wolf, and Wolverine) not identified in the project area; and
- Recommended that the Proponent contact the Government of Nunavut Wildlife Deterrent Specialist to have additional information on specific deterrent programs.

Lack of monitoring and mitigation measures for moose and muskox

- Ensure that the Environmental Management Plan (EMP) is updated to include for monitoring and mitigation plans for moose and muskox habitat.

Environment and Climate Change Canada (ECCC)

- Noted the EMP lacked sufficient information regarding waste management planning. Information requested as follows:
 - Specify whether the onsite incinerator would be able to handle sewage/blackwater from the pacto toilets and clarify that the incineration equipment selected for onsite use is specifically designed to handle incineration of black water; and
 - Reminded the Proponent that incineration of black water, including sludge is discouraged unless the incinerator is specifically designed to handle this waste stream and follows the manufacturer's operating instructions to achieve appropriate combustion.

Fisheries and Oceans Canada (DFO)

- Recommended that the Proponent comply with the *Fisheries Act* during project activities in order to ensure that the project does not cause any harm to fish, and fish habitat by following DFO's guidance tools.

Indigenous and Northern Affairs Canada

- Noted lack of information within the Abandonment and Restoration Plan and requested the following additional information:
 - A commitment to backfill or cap all drill holes prior to the end of each field season and upon the completion of the project, in order to reduce the potential impacts of the proposed project to wildlife habitat, and to prevent the introduction of contaminants from the surface to the sub-surface.

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 August 18, 2017:

- In response to concerns regarding backfilling or capping all drill holes prior to the end of each field season, and upon completion of the proposed project, the Proponent indicated that its Abandonment and Restoration Plan has been amended and revised accordingly to ensure that all drill casings would be removed or be cut off to ground level or below, and also capped at the end of each field season.
- In response to concerns regarding the incineration of blackwater, the Proponent indicated that the proposed Project would utilize a batch feed, dual-chamber controlled air incinerator for the incineration of all authorized combustible wastes.
- The Proponent has further committed to ensuring that if sewage would be incinerated, it would ensure that the incinerator in use would be a suitable model, which is designed to incinerate this type of waste, and if not capable of incinerating sewage it will ensure that sewage would be disposed of in privy pits (outhouses).

- In response to comments regarding compliance with the *Fisheries Act*, the Proponent indicated that it is committed to ensuring that all relevant mitigations measures would be employed to prevent any harm to fish and their habitat, and that all the guidance documents on the DFO website, including all other requirements of federal, territorial and municipal agencies would be reviewed and followed.
- In addressing concerns regarding the potential for the proposed project to disturb archaeological sites, the Proponent indicated it is committed to deploying a qualified archaeologist to site to conduct an assessment of the project area, and to ensure that any identified or undocumented archaeological or palaeontological sites or artifacts found in the area are not disturbed.
- In response to comments regarding winter drilling, the Proponent clarified that no winter drilling activities are planned at the Arcadia Bay Property, and that if any winter drilling activities are contemplated in the future the Kitikmeot Inuit Association, Nunavut Water Board and the NIRB will be notified, and be provided with full description of the planned activities, including timing and locations.
- In response to comments regarding wildlife disturbance, the Proponent indicated that it is committed to developing a mitigation, management and monitoring program for the Project, which would consider the unique biodiversity of the area, including potential long-term impacts to caribou and other wildlife species.

7. Time of Report Extension

As a result of the time required to allow the Proponent provide a response to the comments, 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 subsection 92(3) of the NuPPAA. Therefore, on August 2, 2017 the NIRB wrote to the Minister of Indigenous and Northern Affairs Canada, 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 section 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 designated for exploration activities is approximately 27 square kilometres, and would include the establishment of a temporary exploration camp site. In

addition, the proposed project footprint also includes daily helicopter-assisted travel routes from the proposed camp site to the proposed exploration sites. The project Proponent has indicated that the proposed exploration area lies outside of critical caribou habitat; however, during the commenting period, the GN noted that the proposed area is within an important wintering and spring migration area of the Dolphin and Union caribou herd, and encompasses key habitats for moose and muskox. As such, there is potential for the proposed activities to take place within important habitats and seasonal ranges for ungulates, including other far-ranging wildlife species, migratory and non-migratory birds. In addition, the specific locations where mineral exploration and associated drilling activities are designated to take place have been identified by the Proponent to be adjacent to some important wildlife areas, such as Bathurst Elu Inlets Bird Habitat and the Victoria Island Caribou Sea Ice Crossing. Further, the proposed project activities may take place within habitat for wolf, wolverine, Arctic fox, Arctic hare, migratory and non-migratory birds, fish and fish habitat, as identified by the Proponent, the Government of Nunavut (GN) and NPC mapping sources. As such, the project proposal may potentially affect animal migratory patterns.

2. *The ecosystemic sensitivity of that area.*

The proposed project area has been identified as an important wintering and spring migration area of the Dolphin and Union caribou, and for other ungulate species (moose and muskox); as such, the proposed activities would occur in an area with ecosystemic sensitivity. In addition, the project area is also considered to have value and priority to the local community for:

- i. Terrestrial wildlife;
- ii. Sport hunting;
- iii. Migratory birds;
- iv. Berry picking; and
- v. Fishing.

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

The Proponent did not identify any known areas of historical, cultural and archaeological significance associated with the project area; however, during the commenting period, the GN specifically noted the potential for the proposed project to encounter or disturb archaeological sites near the vicinity of the project area and recommended that a qualified archaeologist be deployed to site to conduct an archaeological assessment of the project area. Should the project be approved to proceed, the Proponent would be required to conduct an archaeological assessment of the project area, and contact the Government of Nunavut-Department of Culture and Heritage if any sites of historical, cultural or archaeological significance are encountered.

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

The proposed project would occur at a location approximately 160 km east of Kugluktuk, the nearest community; as such, human populations are likely to be affected by project impacts.

The Proponent has indicated that the proposed mineral exploration activities may cause wildlife to be displaced through loss of habitat or result in physical stress and mortality due to increased noise and physical disturbances. In addition, the GN has noted that the project area is within an important wintering and spring migration area of the Dolphin and Union caribou herd, which may also overlap with the seasonal home ranges of other terrestrial wildlife species, such as moose, muskox, grizzly bears, wolves and wolverines. The Proponent has also identified some other protected areas, such as Bathurst Elu Inlets Bird Habitat and the Victoria Island Caribou Sea Ice Crossing as likely to be affected by potential project impacts. Further, there is the potential for impacts to community members from Kugluktuk that may use these areas in proximity to the proposed project area for traditional activities such as hunting, fishing and camping activities.

Although no significant public concerns were raised during the public commenting period, the NIRB notes that the close proximity of the proposed activities to the community of Kugluktuk, and an area used by residents for recreational/traditional pursuits could potentially contribute to public concern developing. A term and condition has been recommended to direct engagement with the community, hunters and trappers organization and interested parties, as well as posting public notices to ensure residents are aware of the project activities being or to be conducted.

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 “Arcadia Bay Property” project is a proposed mineral exploration program, the nature of potential impacts is considered to be well-known. Potential adverse impacts are likely to be localized, of low magnitude, infrequent and restricted to the short period of project activities in each field season (up to 8 weeks). However, due to the proximity of the mineral exploration activities to protected areas for birds, as well as seasonal ranges, migration areas and post-breeding corridors for caribou herds and muskox, specific mitigation measures for the protection of critical life stages of birds and terrestrial wildlife species 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 take place within a 100 kilometre radius to a number of other projects that are currently active, in addition to other projects proposed and currently undergoing assessment by the Board as listed in Table 1 below. However, it is noted that this project is not likely to result in residual or cumulative impacts. The potential for cumulative impacts to water and soil quality, wildlife and wildlife habitats, as well as freshwater fish and habitats due to exploration activities, and other projects occurring in the region has been identified and considered in the development of the NIRB’s recommendations. Terms and

conditions recommended for each of these projects are expected to reduce any residual impacts, and as such would limit or eliminate the potential for cumulative effects to occur.

Table 1: Project List

NIRB Number	Project	Project Title	Project Type
<i>Proposed Developments– undergoing assessment</i>			
12MN043		Izok Corridor	Mine and All Weather Road
17XN011		Grays Bay Road and Port Project	Infrastructure
<i>Active Projects</i>			
17YN067		2017/18 Research Program for the Grays Bay Road and Port project	Research (ongoing)
17YN061		Kitikmeot Region Marine Science Study	Research (ongoing)
17YN041		A Coastal, Pan-Canadian Collection of plants, microalgae and marine invertebrates for the Canadian Museum of Nature, as part of Canada C3	Research (ongoing)
14YN001		CROW - Canadian Ranger Ocean Watch	Research (ongoing)

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

No other specific factors have been identified as relevant to the assessment of this project proposal.

IEWS 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, muskox and moose), migratory and non-migratory birds, and their associated habitats due to increased noise generated from drilling and exploration activities, including daily transport of personnel to project sites by helicopter, 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 a small geographic area of approximately 27 square kilometres and may overlap with seasonal home ranges of many terrestrial wildlife species, such as migrating caribou, muskox and moose, including migratory and non-migratory birds. As the proposed project site is located near a migratory bird habitat (Elu Inlets Bird Habitat), and within the seasonal ranges, migrating routes and post breeding corridors for the Dolphin and Union caribou herds, the potential for impacts to ungulate species and other terrestrial wildlife populations are considered to be short-term (up to 8 weeks) seasonally. Further, the implementation of minimum flight altitudes and seasonal restrictions are expected to further mitigate potential adverse impacts to caribou and muskox, including migratory birds. In addition, the Proponent has submitted a site-specific Environmental Management Plan, which outlines various commitments and wildlife management protocols to be implemented onsite, in order to mitigate adverse impacts on caribou, muskox, moose and migratory birds including Species at Risk.

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 adverse impacts to terrestrial wildlife and migratory birds may be mitigated by measures such as requiring the Proponent to maintain minimum flight altitudes, comply with seasonal restrictions, ceasing activities that may interfere with the migration or calving of caribou or muskox until caribou/muskox have left the area, and not damaging any wildlife habitats during project activities. The following terms and conditions are recommended to mitigate the potential adverse impacts: 7; 11, 18 through 33 and 36.

Issue 2: Potential negative impacts to surface water quality, and fish and fish habitat, vegetation health, and soil quality from drilling activities, camp establishment, fuel transportation, and disposal of hazardous materials.

Board views: There is potential for negative impacts to surface water quality, fish and fish habitat, vegetation health and soil quality from ground disturbance activities, sediment runoff from project areas and disposal of drilling wastes and fuel spills. The Proponent has committed to implementing proper hazardous material handling protocol and waste management practices, in order to ensure that project-related activities do not result in the release of contaminants into surface water, or damage vegetation or surface soil within the project area. In addition, the Proponent has submitted an Environmental Management Plan, which outlines several mitigation measures for preventing adverse impacts to the terrestrial and aquatic ecosystems. The Proponent has also submitted an Emergency Response Plan to address any potential fuel spill incidents during exploration or drilling activities. As a result, the potential adverse impacts to water quality, fish and fish habitat, vegetation and soil are considered to be of low magnitude, infrequent, and reversible.

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 *Nunavut Waters and Nunavut Surface Rights Tribunal 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 the potential adverse impacts to surface water quality, fish and fish habitat, vegetation health and soil quality may be mitigated by measures, such as requiring the Proponent not to allow any drilling wastes to spread to the surrounding lands or water bodies, and also to ensure that all fuel and hazardous materials are located a minimum distance away from the high water mark of any water body. The following terms and conditions are recommended to mitigate the potential adverse impacts of drilling, fuel use, and transportation activities on surface water quality and quantity, fish and fish habitat, vegetation health, and soil quality: 5, 6, 12 through 17, 35, 37 through 42 and 45.

Issue 3: Potential negative impacts to terrain stability and permafrost condition from camp establishment, movement of equipment and drilling activities.

Board Views: The Proponent has identified that drilling activities and heat radiating from camp buildings may thaw permafrost, and may subsequently impact ground stability during project activities. The Proponent has submitted an Environmental Management Plan, which outlines measures to prevent disturbance and damage to permafrost condition within the project area. Additionally, the Proponent has submitted an Abandonment and Restoration Plan, which outlines its commitment to undertake final restoration of disturbed areas, in order to ensure minimal impacts to terrain stability and permafrost condition during project activities or site abandonment. The potential negative impacts to ground stability and permafrost are considered to be of low magnitude and reversible.

The Proponent would also be required to follow the *Canadian Environmental Protection Act*.

Recommended Mitigation Measures: It is recommended that the potential negative impacts to ground stability and permafrost would be mitigated by measures requiring the Proponent to locate the temporary camp on suitable land, backfill drill holes and sumps prior to the end of each field season and plug all drill holes should artesian flow be encountered. The Board recommends terms and conditions 34, and 39 through 47.

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

Board views: There is potential for negative impacts to air quality from emissions from heavy equipment and incineration activities, which would be limited to the project footprint and with a low probability of extending beyond the geographic area. The potential

negative impacts to air quality are considered to be of low magnitude, short-term, and reversible.

Recommended Mitigation Measures: The Board recommends the following terms and conditions to mitigate the potential negative impacts to air quality: 8 through 10 and 36.

Issue 5: Potential negative impacts to public and traditional land use activities in the area due to transportation of personnel and equipment to the exploration sites and camp area.

Board Views: Due to the site's close proximity to a migratory bird habitat and the seasonal home ranges, including migration routes of caribou and other terrestrial wildlife species, it is possible that wildlife avoidance may temporarily change the distribution of wildlife species commonly harvested in the area, which may in turn affect personal enjoyment of the land and the social and cultural activities practiced in the community. Terms and conditions have been recommended to avoid disturbance to key wildlife species, 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 48 is recommended to ensure that the affected communities and organizations are informed about the project proposal and term and condition 50 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 33 have been recommended to minimize interference with the movements of terrestrial wildlife and nesting/breeding birds.

Socio-economic effects on northerners:

Issue 6: Potential negative impacts to historical, cultural and archaeological sites from ground-based activities, and the establishment of a temporary camp.

Board Views: The Proponent has not identified any known archaeological or paleontological sites associated with the project area; however during the commenting period, the GN noted concerns regarding the potential for several archaeological sites or features to be present within the area and be disturbed due to project activities. Further, as reiterated, the Proponent has submitted an Environmental Management Plan, which outlines its commitment to ensure that any documented or undocumented archaeological or paleontological sites or artifacts encountered within the project area are not disturbed. The Proponent is required to follow the *Nunavut Act* and contact the Culture and Heritage Department should it encounter any historical sites in the project area (as recommended in Regulatory Requirements section).

Recommended Mitigation Measures: Term and condition 48 is recommended to ensure that available Inuit Qaujimaningit can inform project activities and reduce the potential for negative impacts occurring to any additional historical sites.

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

Board Views: The Proponent has committed to providing seasonal employment and training opportunities for local Inuit in the camp facility and in the field, and has further indicated that it would continue to consult with local stakeholders in order to gather extensive knowledge of the land and wildlife population around the area before and during exploration activities.

Recommended Mitigation Measures: Terms and conditions 48 and 49 have been recommended to ensure that the Proponent continues to inform the community of mineral exploration activities and provide community members with information to ensure a successful local hiring opportunity.

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 48 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.

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. Transition (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 NIRB (Online Application Form, Abandonment Restoration Plan, Emergency Response Plan, Environmental Management Plan, Spill Fuel Management Plan, Waste Management Plan, June 19, 2017; including the Proponent Response to Comments, August 21, 2017).
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 approved 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 approved 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. Unless otherwise authorized by the Nunavut Water Board, 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.
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 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 unless 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.

Caribou and Muskox Disturbance

30. The Proponent shall cease activities that may interfere with the migration or calving of caribou or muskox, until the caribou or muskox have passed or left the area.
31. The Proponent shall not block or cause any diversion to caribou or muskox 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 or muskox have passed.
32. The Proponent shall not construct or operate any camp, or cache any fuel within ten (10) kilometres, or conduct any drilling operation within five (5) kilometres of any paths or crossings known to be frequented by caribou (e.g., designated caribou crossings).
33. During the period of May 15 to July 15, when caribou are observed within one (1) kilometre of project operations, the Proponent shall suspend all operations, including low-level over flights, blasting, and use of snow mobiles and all-terrain vehicles outside the immediate vicinity of the camps. Should pregnant caribou cows or cows with young calves be observed within one (1) kilometre of project operations, the Proponent shall also suspend all operations in the vicinity, including low-level over flights, blasting, and use of snow mobiles and all-terrain vehicles, until caribou are no longer in the immediate area.

Ground Disturbance

34. 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.
35. The Proponent shall implement suitable erosion and sediment suppression measures on all areas before, during and after conducting activities in order to prevent sediment from entering any waterbody.
36. All construction and road vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.

Drilling on Land

37. 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.
38. The Proponent shall not allow any drilling wastes to spread to the surrounding lands or water bodies.
39. If an artesian flow is encountered, the Proponent shall ensure the drill hole is immediately plugged and permanently sealed.
40. Drill areas should be kept orderly with garbage removed daily to an approved disposal site.

41. 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.
42. The Proponent shall not locate any sump within thirty-one (31) metres of the normal high water mark of any water body. Sumps and areas designated for waste disposal shall be sufficiently bermed or otherwise contained to ensure that substances do not enter a waterway unless otherwise authorized.
43. 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

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

Restoration of Disturbed Areas

46. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
47. 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

48. 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.
49. The Proponent should, to the extent possible, hire local people.
50. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.

MONITORING AND REPORTING REQUIREMENTS

Annual Report

1. The Proponent shall submit a comprehensive annual report with copies provided to the Nunavut Impact Review Board (NIRB) and Government of Nunavut by March 31st of each year of permitted activities beginning March 31, 2018. The annual report must contain, but 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 work plan for the following year, including any progressive reclamation work undertaken;

- 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 community residents 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 discussion of issues related to wildlife and environmental monitoring, including the number of cease-work orders required as a result of proximity to caribou and any other wildlife;
- f) A brief summary of wildlife observation results as well as any mitigation actions that were undertaken. In addition, the Proponent shall maintain a record of wildlife observations while operating within the project area and include it as part of the summary report. The summary report based on wildlife observations should include the following:
 - 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.
 - Prior to conducting project activities, the Proponent should map the location of any sensitive wildlife sites such as denning sites, calving areas, caribou crossing sites, and raptor nests in the project area, and identify the timing of critical life history events (i.e., calving, mating, denning and nesting).
 - A discussion of potential impacts to caribou and other terrestrial wildlife species, and how mitigation and monitoring was expected to address the impacts;
 - A summary of impacts from the project observed during operations, the number of times work was ceased due to wildlife being in proximity to the project, and a description of how the Proponent ensured that operational activities were managed and modified to avoid impacts on wildlife and sensitive areas. Should mitigation measures be triggered, include details of how mitigation and monitoring measures within the exploration areas were implemented and the results of the measures as implemented;
 - An analysis of the effectiveness of mitigation measures for wildlife;
- g) 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;
- h) 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;

- i) Summary of the results of any environmental studies undertaken by or in coordination with the project, or any plans for future studies;
- j) A 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

Change in Project Scope

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

Bear and Carnivore Safety

2. 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.
3. 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/>. 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.
4. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officer of Kugluktuk, phone: (867) 982-7440).

Species at Risk

5. 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

6. 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.

7. 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

8. 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.

Transport of Dangerous Goods and Waste Management

9. Environment and Climate Change Canada recommends that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.
10. 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.

Caribou Management

11. 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 barren-ground caribou. This assessment of cumulative effects should occur at a regional scale (i.e., larger than individual project areas).
12. Territorial and federal government agencies update the Caribou Protection Map with updated data and information from the Beverly Qamanirjuaq Caribou Management Board.

REGULATORY REQUIREMENTS

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

Acts and Regulations

1. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-28.8/>).

3. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>).
4. 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.
5. 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>) contains provisions to protect and conserve wildlife and wildlife habitat, including specific protection measures for wildlife habitat and species at risk.
6. 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**.
7. 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/>).
8. The *Aeronautics Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-2/>).

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Transition Metals Corporation "Arcadia Bay Property". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated September 19, 2017 at Whale Cove, NU.



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

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

²Environment 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.

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.

¹P.C. 2001-1111 14 June, 2001

- 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

² s. 51(1)

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 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

³ P.C. 2001-1111 14 June, 2001

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.