



## SCREENING DECISION REPORT NIRB FILE No.: 16UN058

Associated NIRB File No.: 00MN059  
NPC File No.: 148350

**December 22, 2016**

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Indigenous and Northern Affairs Canada's (INAC or Proponent) "Jericho Mine Site Stabilization" 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(s) accepts this Screening Decision Report.

### OUTLINE OF SCREENING DECISION REPORT

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### REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the Nunavut Land Claims Agreement (NLCA) 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 September 30, 2016 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Indigenous and Northern Affairs Canada’s (INAC or Proponent) “Jericho Mine Site Stabilization” project proposal from the Nunavut Planning Commission (NPC or Commission).

The Jericho Diamond Mine Project (NIRB File No. 00MN059) was previously approved by the Board to proceed subject to the requirements of Project Certificate No. 002. After the project’s current owner, Shear Diamonds (Nunavut) Corp. (Shear), gave notice that the site was being

placed in temporary shutdown in October 2012, it was declared abandoned by the then-Minister of Aboriginal Affairs and Northern Development in January 2014. Aboriginal Affairs and Northern Development Canada's (now INAC) Contaminated Sites Division has been managing the site since 2013 for specific risks required by Shear's water licence 2AM-JER1119, specifically site water drainage, tailings, as well as fuel and hazardous waste management. The Minister directed enforcement to take any reasonable measures to prevent, counteract, mitigate or remedy any resulting adverse effects on persons, property or the environment.

Following an internal evaluation of the scope proposed for the "Jericho Mine Site Stabilization Project", the NIRB determined that the activities were not considered within the scope of the Board's original Review of the Jericho Diamond Mine Project (NIRB File No. 00MN059) and as such, are being treated as a new project subject to screening.

Pursuant to Article 12, Section 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 86 of the *Nunavut Planning and Project Assessment Act* (NuPPAA), the NIRB commenced screening this project proposal and assigned it file number 16UN058.

## PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

### 1. Project Description

The proposed "Jericho Mine Site Stabilization Project" is located within the Kitikmeot region, approximately 260 kilometres (km) southeast of Kugluktuk, 430 km southwest of Cambridge Bay, at the existing Jericho Diamond Mine. With the goal of restoring the abandoned site to an environmentally safe condition, stabilizing the site to prevent water accumulation, and preventing the environmental migration of contaminants into surrounding ecosystems, INAC intends to conduct specific site stabilization and remediation activities between January 1, 2017 and March 31, 2018, followed by long-term monitoring during the summer months from 2019 to 2020, and possibly as long as 2044.

As required under subsection 86(1) of the NuPPAA, the Board accepts the scope of the Jericho Mine Site Stabilization Project proposal as set out by INAC in the project proposal. The scope of the project proposal includes the following undertakings, works, or activities:<sup>1</sup>

- Transportation of equipment, fuel, supplies, and personnel to the site by:
  - Aircraft from Yellowknife and Kugluktuk, or via
  - Seasonal winter road connection routing between the Jericho site and the existing Tibbit-Contwoyto Winter Road to mobilize and demobilize equipment between the site and Yellowknife, NWT. Approximately 20-25 round trip truckloads would be going up and back from Ekati to the Jericho site each year during two winter road seasons in February and March.
- Storage of fuel, oil, and chemicals at site for use towards stabilization activities.
- Use of existing site infrastructure, equipment, and supplies:

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<sup>1</sup> The proposed "Jericho Mine Site Stabilization Project" would not include the stabilization and remediation of infrastructure associated with the abandoned Jericho Diamond Mine Project situated on Inuit Owned Land (IOL). The proposal would, however, include the development of a winter road and the use of existing site roads located on IOL.

- Maintenance and use of existing site airstrip and roads;
- Use of accommodations and support buildings, generators, and equipment to accommodate up to 50 personnel;
- Use of heavy machinery and equipment, passenger vehicles, and all-terrain vehicles to support site stabilization activities;
- Extraction of water from Carat lake for use at camp and for remediation activities, including wetting of roads on the Jericho site as dust control;
- Management of wastes at site, specifically:
  - Treatment and disposal of black and grey water using an on-site wastewater treatment system; and
  - Incineration of combustible wastes and select hazardous wastes from camp and remediation operations using appropriate incinerators.
- As the previously approved landfill is located on Inuit Owned Land, the stabilization would involve designing and development of a new non-hazardous landfill for use in site remediation, and closure of the landfill by capping. This landfill would hold wood debris, metal debris, aboveground storage tanks, drums, rubber, concrete, plastic and other inert items. The preferred location being proposed is west of the main camp pad on a primarily bedrock area.
- Establishment of a new landfarm within the existing Phase I and II fuel tank farm areas.
- Remediation and demolition activities to include:
  - Collection, storage, and transportation of hazardous wastes, including identified heavy metal contaminated soils, off-site by truck for disposal at appropriate facilities;
  - Excavation of petroleum hydrocarbon (PHC) and Tier 1 metal contaminated soils from around the Jericho site for remediation within the new on-site landfarm;
  - Collection and disposal of non-hazardous wastes and debris on-site, including crushing and disposal of empty fuel barrels in the new landfill;
  - Treatment and disposal of aqueous liquids on-site using aqueous liquid waste treatment systems;
  - Demolition of site buildings including main camp facility, large aboveground storage tanks, and ancillary structures and disposal in new landfill (EXCEPT: process plant, truck shop, airport camp, and facilities located on Inuit Owned Land);
  - Decommissioning and cleaning of approximately nine (9) above-ground storage tanks coated with lead-based paint, to be dismantled and staged at site for future management;
  - Restoration of natural water flow at site, specifically:
    - Breaching and stabilization of existing water retention structures C1 Diversion, West Dam, and Divider Dyke A;
    - Construction of features to direct water flow into the open pit and to manage future outflow;
  - Removal and processing of up to 50,000 cubic metres (m<sup>3</sup>) of aggregate material from existing structures (gravel pads and dams) as well as previously established borrow source 'A' to facilitate remediation activities;
  - Construction of a cover for Cell A of the Processed Kimberlite Containment Area; and

- Grading and contouring of berms, pads, and remediation areas, including re-grading and removal of 6 (six) containment berms (two tank farm berms, gen-set day tank berm at main camp, airstrip tank berm, truck shop tank berm, and hazardous waste transfer area berm).
- Infrastructure to remain in place after remediation and demolition activities are complete includes the airstrip, site roads, core box laydown area, airport camp, truck shop, and process plant. The emulsion plant would also remain as it is located on Inuit Owned Land. Structures noted as both remaining and being landfilled were the PKCA East Dike tire berm and the core shack have been confirmed as expected to be dismantled and disposed of in the new landfill.
- Undertake long-term monitoring and sampling at site to ensure effectiveness of remediation.
- Hiring of Nunavut residents for project personnel and remediation services.

## 2. Scoping

The NIRB has identified no additional works or activities in relation to the project proposal.

## 3. Key Stages of the Screening Process

The following key stages were completed:

Date	Stage
September 30, 2016	Receipt of project proposal from the NPC
September 30, 2016	Scoping pursuant to subsection 86(1) of the NuPPAA
October 21, 2016	Public engagement and comment request
November 14, 2016	Receipt of public comments
November 14, 2016	Ministerial extension requested from the Minister of Indigenous and Northern Affairs
November 30, 2016	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 October 21, 2016 to community organizations in Kugluktuk, Cambridge Bay, Gjoa Haven, Taloyoak, Bathurst Inlet and Bay Chimo, 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 November 14, 2016 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 and socio-economic effects; and if so, why;
- Whether the project is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; if so, why;

- Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (providing 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:

**Kitikmeot Inuit Association (KIA)**

- No comments or concerns at this time.

**Government of Nunavut (GN)**

- Indicated that 49 archaeological sites are within the proposed project boundary based on the Nunavut Archaeological Site Database, however, clarified that previously unrecorded sites could be present in the area and that the proposed winter road routing presents limited potential for adverse impacts on archaeological sites;
- Reminded the Proponent that all archaeological sites in Nunavut are protected by law and recommended various mitigation measures including activity buffer zones in proximity to archaeological sites and strict adherence to the proposed winter road routing;
- Noted that aircraft traffic can cause undue stress to wildlife when operated at low altitudes and recommended operational mitigation measures including maintaining an altitude of 610 metres (m) except when approaching the airstrip, landing, or on takeoff and visual assessments of the airstrip during operations;
- Noted that the proposed project boundary and winter road route overlaps with the seasonal range of the Bathurst caribou herd, and potentially with the outer range of the Beverly caribou herd, and that project activities could create a zone of influence in the area which could disrupt movement patterns and cause sensory disturbance;
- Recommended that the Proponent employ various caribou mitigation measures including activity suspension protocols when caribou are observed on-site, seasonal operations delays or work cessation protocols when large groups of caribou are in specific proximity to the project, caribou monitoring protocols, and recommended that the Proponent adheres to winter road operational measures employed in the Northwest Territories when travelling outside of Nunavut;
- Highlighted that winter road construction and use has the potential to disturb wildlife and recommended that the Proponent employs wildlife right-of-way measures, work cessation measures, and conducts a den survey along the proposed winter road route prior to construction and use to avoid unnecessary damage to wildlife and their habitats;
- Noted that there is a lack of information pertaining to the winter road sections that would traverse land and that it is not able to precisely assess impacts to wildlife and wildlife habitat in those areas;
- Indicated that the proposed project activities could negatively impact muskox in the vicinity of the project area and recommended seasonal avoidance measures;
- Noted that wildlife may be utilizing abandoned structures on-site for nesting, denning, and refuge and that the deconstruction of on-site buildings could result in wildlife mortality and/or the destruction of dens and nests;

- Recommended that the Proponent undertake surveys and inspections of all infrastructure to identify nests, dens, and refuges prior to reclamation work and highlighted Section 73 of the *Nunavut Wildlife Act*; and
- Acknowledged the need for remediation of the Jericho Mine site for the environmental protection of the region and its intention to work cooperatively with INAC to find resolutions on all matters and concerns.

#### **Fisheries and Oceans Canada (DFO)**

- Indicated that it is not aware of any significant public concern at this stage of the NIRB's assessment or any significant ecosystemic or socioeconomic impacts associated with the project proposal;
- Noted that the project is unlikely to result in significant adverse impacts due to the nature of the remediation activities, but highlighted that proponents are responsible for avoiding and mitigating *serious harm to fish* that are part of, or support, commercial, recreational, or Aboriginal fisheries;
- Requested confirmation that the Proponent would abide by the DFO's "Measures to Avoid Causing Harm to Fish and Fish Habitat"; and
- Requested additional information relating to water quality monitoring, finalized construction schedules, road and culvert maintenance plans, water sourcing measures, dam remediation and stabilization measures, water diversion plans, fish passage around infrastructure.

#### **Indigenous and Northern Affairs Canada (INAC)**

- Indicated that it had no comments or additional terms and conditions to offer at this time.

#### **Transport Canada (TC)**

- Identified concerns with the transportation of hazardous wastes and the breaching and stabilization of existing water retention structures;
- Recommended that the Proponent adheres to the Transportation of Dangerous Goods Guidelines; and
- Noted that an application under the *Navigation Protection Act* may be required if water retention structures were previously approved under the *Navigable Waters Protection Act* and the Proponent has not opted out of the program.

#### **North Slave Métis Alliance (NSMA)**

- Noted that dust deposition can adversely affect caribou habitat and requested that the Proponent clarify its dust suppression protocols, including what constitutes "when needed" application, where water would be sourced for dust suppression, and how the water would be monitored for contaminants;
- Noted that mismanaged incinerators can emit contaminants to surrounding environments, including to caribou and wildlife habitats, and requested additional information on how incinerators would be managed and monitored;
- Identified concerns associated with the proposed breaching of the west dam and requested that the Proponent clarify how destabilization and climate change scenarios were considered in the project's development;

- Recommended that the Proponent select a cover for Cell A of the Processed Kimberlite Containment Area that would allow re-vegetation and would facilitate caribou habitation;
- Recommended that the Proponent prepare updated Wildlife Mitigation and Monitoring Plan (WMMP), and circulate to parties, which includes:
  - Details on what activities would be suspended, and within what spatial boundaries, should caribou venture near the project site;
  - How the Proponent intends to monitor the movement of caribou;
  - What transportation mitigation and deterrence measures would be employed on-site; and
  - How storage facilities would be inspected;
- Provided wildlife mitigation and monitoring recommendations including work cessation setbacks in proximity to caribou, satellite collar monitoring agreements with the Government of Northwest Territories – Environment and Natural Resources, and site monitoring measures such as the hiring of environmental monitors.

### **Ticho Government**

- Noted that the title of the project is not reflective of the project as the description of activities encompasses remediation of only half of the abandoned mine site;
- Requested clarification on several project components including fuel storage procedures, waste management and incineration procedures, clarification on why the existing landfill on Inuit Owned Land (IOL) would not be utilized, whether project components on IOL would be remediated, and details regarding what environmental sampling would be included as part of INAC's long-term monitoring program;
- Recommended that INAC suspend operations when large groups of caribou cow and calves are near the project during summer months as calves are still vulnerable to stresses; and
- Indicated that it does not support the project proposal at this time.

### **Crystal Exploration Inc.**

- Highlighted concerns related to community involvement and consultation, as well as local development in the area, noting that the remediation of the Jericho Mine would impede the economic viability of the redevelopment and reopening of the mine;
- Noted that the reopening of the mine would generate new employment, skills training, and economic benefits to the region, as well as value for the development of the Grays Bay Deep Water Port and Road project;
- Provided introductory details pertaining to Crystal Exploration Inc.'s mineral exploration activities surrounding the Jericho Diamond Mine on the James River Dyke, Muskox, and Contwoyto deposits;
- Recommended that INAC postpone the remediation of the site to allow Crystal Exploration Inc. the opportunity to conduct community consultations, as well as engineering, environmental, and economic analyses of the mine site to potentially capitalize on existing infrastructure and development through the reopening of the mine;
- Detailed its interest, as communicated through non-binding correspondence with INAC, to manage, secure, and maintain the Jericho Diamond Mine for the purpose of reopening the mine through a three-year (3-year) option agreement which would include a variety of



maintenance and environmental liability measures, as well as the development of an early impact benefit agreement with the KIA and Nunavut Tunngavik Inc.; and

- Indicated that it does not support the proposed project.

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

No concerns or comments were received with respect to Inuit Qaujimaningit, however the following points were made by parties, which involved traditional and community knowledge in relation to the proposed project.

### **North Slave Métis Alliance (NSMA)**

- Agreed with the Proponent's determination that project activities have the potential to affect wildlife and that the project area is used intensely by Bathurst caribou, however, noted concerns regarding how the proposed wildlife mitigation measures would be implemented and monitored for effectiveness;
- Identified that NSMA members have aboriginal rights to harvest Bathurst caribou, and as such, expressed concern that the NSMA was not consulted during the project's development because of its potential to affect the Bathurst caribou herd. Further, expressed concern that the NSMA was not consulted, and remain unaware of, other INAC projects that could have adversely impacted Bathurst caribou;
- Recommended that the Proponent engages the NSMA on all projects that may have adverse effects on the Aboriginal rights of NSMA members; and
- Highlighted its concern regarding the proposed project's location within Bathurst caribou herd range and stated its conditional support for the project pending the incorporation of the recommended mitigation and monitoring measures.

### **Thcho Government**

- Noted that Jericho Mine Site is located within the Bathurst caribou herd's range, during summer months calves are still vulnerable to stresses, therefore activities at site should be suspended when cow/calf groups near site.

## **6. Proponent's Response to Public Comments and Concerns**

The following is a summary of the Proponent's response to concerns as received on November 30, 2016:

- Detailed INAC's record of successfully completing 20 similar remediation projects in Nunavut to demonstrate its experience in planning appropriately for impacts of the current proposal, noted that the project proposal was short term, any impacts would be temporary, and sampling would be undertaken to ensure that remediation objectives were being met.
- Potential impacts to archaeological sites in the area would be addressed through implementing specific mitigation measures, site stabilization activities including routing of winter road would be limited to areas previously disturbed during mining operations, and informed by the previous owner's archaeological impact assessment.
- Reiterated the planned wildlife mitigation and monitoring measures to protect caribou specifically highlighting:

- Committed to following the recommended minimum flight altitudes and runway wildlife surveys,
  - Detailed work suspension thresholds in proximity to aggregations of caribou,
  - Seasonal work suspensions in the presence of caribou cows,
  - Noise reduction and equipment maintenance measures,
  - Site hardening and access restriction measures,
  - Vehicle operations and right-of-way measures, and
  - Waste management protocols.
- Highlighted specific project details and Plans that will be completed following the selection of a contractor.
  - Noted that as Kugluktuk is the community closest to the Jericho site and INAC understands that its residents hunt in the area; therefore INAC held a community meeting in Kugluktuk to discuss the stabilization plans, sought community input to inform design, and expects to undertake future consultations during and upon completion of the proposed project.
  - To address the economic impacts of the project, INAC indicated that prior to the development of the Site Stabilization Plan and project proposal it hired a contractor to complete a Commercial Viability Assessment of the Jericho Diamond Mine, which included engagement of key stakeholders, diamond developers, and diamond producers. The assessment noted, based on feedback from engaged parties, that Jericho's resources are lower quality and smaller than other developments in the region, and concluded that current market conditions are unfavourable and likely to remain the same for the medium term. In its discussions with Crystal Exploration regarding possible purchase of the mine, INAC has determined that Crystal Exploration is not currently in a position to provide the necessary security and take on the liability at this time. INAC finally noted that although the proposed project may somewhat diminish some site assets, the majority of the important mine infrastructure (i.e. the truck shop, processing plant, and airstrip) would remain intact, and that INAC would be open to revisiting the re-commercialization of the mine at a future date after the site stabilization was complete.

#### FACTORS FOR DETERMINING SIGNIFICANCE OF IMPACTS

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 project would occur within the existing footprint of the abandoned Jericho Diamond Mine and would assume a geographic area of approximately 25 square kilometres

(km<sup>2</sup>). Additionally, the physical footprint of the project would include the partial development and seasonal use of the existing Tibbit-Contwoyto Winter Road, which would connect the project to Yellowknife, Northwest Territories (NWT), as well as periodic air travel to and from Yellowknife, NWT and Kugluktuk, NU.

The Proponent submitted a comprehensive Environmental Screening Report which indicated that project activities are expected to take place within the habitats of many far-ranging wildlife species, as well as habitats for small and large terrestrial mammals, bird populations, and various freshwater species. The proposed project would occur within the migratory range of the Bathurst caribou herd, and within the border ranges of the Beverly, and Dolphin and Union caribou herds. Additionally, the proposed project would occur within the habitats of six (6) species of conservation concern listed within the *Species at Risk Act* including grizzly bears, wolverines, peregrine falcons, red-necked phalaropes, short-eared owls, and the previously-mentioned Dolphin and Union caribou.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur within the existing footprint of the abandoned Jericho Diamond Mine, and as such, would be operating within, and adjacent to, ecosystems that may have been impacted by past mining operations and insufficient site closure procedures. However, due to the nature of the proposed project, remediation and stabilization activities would be expected to address current environmental hazards on-site and stabilize the overall ecosystemic integrity of the area. Additionally, the proposed project would occur within the migratory range of the Bathurst caribou herd, and within the border ranges of the Beverly, and Dolphin and Union caribou herds.

This area has also been identified as having value and priority to the local community for:

- i. Terrestrial wildlife, including Beverly, Bathurst, Peary caribou; and
- ii. Fish species.

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

The Proponent indicated that an Archaeological Impact Assessment was conducted by the Tahera Diamond Corporation during the Jericho Diamond Mine's development, which determined that none of the 25 heritage sites identified on-site were of sufficient potential of significance to require avoidance by development. During the commenting period for this file, however, the Government of Nunavut indicated that 49 archaeological sites are within the proposed project boundary based on the Nunavut Archaeological Site Database, yet noted that the winter road routing presents limited potential for adverse impacts on archaeological sites.

As the proposed project would be contained within the boundaries of the existing Jericho Diamond Mine site, and the winter road would be routed consistent with past winter road development, the Proponent would not be expected to interact with historical, cultural, or archaeological sites outside those previously identified. Should the project be approved to proceed, the Proponent would be expected to contact the Government of Nunavut – Department of Culture and Heritage should any additional sites of historical, cultural, or archaeological significance be encountered.

The Proponent also identified that the proposed project site is located in an area used by residents of the community of Kugluktuk for hunting and camping, as such the Proponent has also noted that the community has been consulted prior to submission of this project proposal.

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

The proposed project would occur approximately 260 kilometres (km) southeast of Kugluktuk, and 430 km southwest of Cambridge Bay, the nearest communities, and seasonal use of the areas around the mine have been noted as being used for hunting and camping, and could therefore result in seasonal impacts to undertaking traditional land use. Far-ranging wildlife populations and specific caribou herds have been noted to use the area for summer foraging, and the movement of these herds could be affected by the proposed project resulting in impacts to the animal populations and hunters. The Proponent has proposed mitigation measures to limit any potential negative impacts from the project, including committing to operational considerations specifically recommended by commenting parties for this project.

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 “Jericho Mine Site Stabilization Project” is a proposed remediation project, intended to stabilize risks identified at the site as well as bring the site into compliance with the requirements of its Type “A” water licence, the nature of potential impacts is considered to be well-known, with potential for infrequent, localized impacts to the biophysical environment that are temporary in nature, reversible, and mitigable with due care.

The project is being proposed as a result to previous non-compliance issues with the site’s Type “A” water licence, is intended to reduce environmental risks at site due to the lack of continued operations or presence of the mine’s owner, Shear Diamonds (Nunavut) Corp., and as such would be expected to reduce long-term impacts to the area. INAC has provided details regarding other sites in the region, which it has successfully remediated, and expects to apply its experience, in addition to hiring a contractor with appropriate experience, to complete the project. In addition to the temporary and short term stabilization activities that would occur on site, appropriate monitoring would occur during and after the stabilization activities to provide assurance that the activities have been successful in addressing the environmental risks at site, reducing the potential of future negative impacts occurring.

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 current project proposal would take place at an existing development; however, activities related to the previously approved Jericho Diamond Mine Project (NIRB File No. 00MN059) have not been occurring since the site was placed into temporary closure by its owner, Shear Diamonds (Nunavut) Corp., prior to being declared abandoned by the Minister of Aboriginal Affairs and Northern Development Canada in 2014. Undertakings at site have been limited

to managing specific environmental risks as required by the Type “A” water licence, during which time the site has otherwise been unmanned by Shear staff, and the components proposed within this project proposal would be taking place as a result of the unplanned discontinuation of mining activities, therefore no localized cumulative effects would result.

The proposed project would occur within a 100 kilometres of a number of other exploration and development projects that are currently active, in addition to other projects proposed and currently undergoing assessment with the Board, listed in Table 1 below. The potential for cumulative impacts to water and soil quality, wildlife and wildlife habitats, as well as freshwater fish and habitats resulting from the site stabilization and other projects occurring in the region have been considered during the development of the NIRB’s recommendations.

**Table 1: Project List**

<b>NIRB #</b>	<b>Project Title</b>	<b>Project type</b>
<b>Active Developments</b>		
08EA084/09RN066	Back River Exploration and Winter Road Project	Multi-year exploration
11EN047	Lupin Exploration Project	Advanced exploration
13EN013	Itchen Lake Property and Contwoyto Lake Property Project	Multi-year exploration
13UN038	Contwoyto Lake Remediation Project	Remediation
14EN033	Hood River Project	Multi-year exploration
15EN024	Muskox Diamond Project	Multi-year exploration
<b>Proposed Developments – undergoing assessment</b>		
03UN114	Bathurst Inlet Port and Road	Transportation Infrastructure
08MN006	Hackett River Mine	Mine Development
12MN036	Back River Gold Mine	Mine Development
12MN043	Izok Corridor	Mine and All Weather Road

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

As noted above, the objective of the proposed project is to stabilize and remediate an area that has specifically identified hazardous wastes, uncontrolled wastes, and risks of further environmental issues, which could contribute to more serious contamination and environmental degradation without intervention. As such, the predicted long-term outcomes of the proposed project would be expected to offset any short-term negative impacts, which may result from the remediation of the Jericho Mine site. By treating and removing contaminated soils, removing and disposing of structures, disposing of site debris, deconstructing and stabilizing various mine-related features, and restoring select natural water flows, while adhering to the NIRB’s terms and conditions as well as the respective authorizations, it is expected that the project would provide an increase to the ecosystemic and environmental integrity of the area. The NIRB maintains a responsibility to monitor activities at the Jericho site under Part 7 of the Nunavut Agreement, and the board has been working with INAC to identify and manage environmental risks at site, and would expect to continue monitoring the Jericho Mine site through the undertaking of the site stabilization project.

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 migratory birds and habitat, and wildlife and wildlife habitat resulting from noise, dust, and transportation activity to/from and at site, as well as specific remediation activities.

**Board views:** As discussed above in the assessment of factors for this project proposal, components of the site stabilization project could result in impacts to birds, wildlife and their habitats, specifically periodic aircraft transportation of fuel, personnel, and supplies between the Jericho site, Yellowknife, and Kugluktuk; seasonal winter road development and use for transportation of personnel, supplies, fuel, and wastes; and various site activities. However, impacts resulting from site stabilization activities would be applicable to a small geographic area, temporary in nature, and would occur intermittently. Within the Proponent's Environmental Screening Report, an extensive assessment of potential wildlife interactions with the proposed project was presented, as well as proposed mitigation measures to address potential wildlife impacts during all project phases. Proposed mitigation measures included considerations for large groups of caribou and caribou cows during sensitive temporal periods (calving and post calving), as well as wildlife right-of-way restrictions, site hardening procedures, dust suppression measures, noise reduction measures, and specific waste management and fuel storage protocols. In addition to the Proponent's proposed mitigation measures, it is expected that standard operational considerations would mitigate any potential adverse impacts to wildlife, migratory birds, and their respective habitats.

Although the proposed remediation activities may not provide an immediate net increase in the habitat available to wildlife species due to the developed state of the project area, the removal, remediation, and stabilization of environmental hazards would be expected to decrease the overall environmental stress currently borne within the project's spatial boundary and could encourage future wildlife inhabitation.

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

Noted Traditional Knowledge or Inuit Qaujimaningit: Comments received from the North Slave Metis Alliance and the Tłıchǫ Government noted that the proposed project would overlap spatially and temporally with the Bathurst caribou herd's summer range and that various project activities could create a zone of influence that could affect caribou in the region.

Recommended Mitigation Measures: It is recommended that potential negative impacts to birds, wildlife and their habitats may be mitigated by requiring the Proponent to employ specific personnel training procedures as well as the mitigation measures committed to. The NIRB recommends the following terms and conditions to address potential negative impacts from remediation activities, specifically fuel and waste management measures; wildlife interaction and monitoring measures; seasonal and wildlife-specific activity cessation measures, as well as minimize site activities creating wildlife attractants: 7-9, 12, 28-33, 38-40, 43, 53, and 60.

To minimize adverse impacts from transportation activities and provide operational considerations for flights and winter road activities, the following terms and conditions are recommended 33-37, 40, 43, 52, 61, and 63.

**Issue 2:** Potential negative impacts to ground and surface water quality, fish, and fish habitat resulting from remediation activities; landfarming and landfill operations; camp operations; storage, transportation, and disposal of wastes; transportation, storage and use of fuel; and the seasonal development and use of the winter road.

Board views: The potential for negative impacts to water quality, fish, and fish habitat from site stabilization and transport activities would include recommendations made for negative impacts to birds, wildlife, and their respective habitats detailed in Issue 1 above. Further, additional considerations should be made for freshwater quality, fish, and fish habitat due to the limited ability of the freshwater species to relocate to other areas should adverse effects be encountered. These negative impacts however would be applicable to a limited geographic area localized around project activities, and the probability of impacts occurring is considered to be low with proposed mitigation measures outlined by the Proponent. Within the Proponent's Environmental Screening Report, an assessment of potential project interactions with the aquatic environment and hydrology, in addition to proposed mitigation measures, was provided to address potential impacts on these valued ecosystemic components throughout all project phases. In addition to the proposed mitigation measures, which include erosion and sediment control measures, fuel storage and spill contingency plans, transportation protocols, personnel training measures, and remediation best practices, it is expected that standard operational considerations would mitigate any potential adverse impacts to water quality, fish, and fish habitat. As such, potential impacts would be considered to have a low magnitude, be mostly reversible and temporary in nature, and would have a low probability of extending beyond the immediate project area.

It is further expected that the removal, remediation, and stabilization of environmental hazards on-site would significantly restore the environmental integrity of the area compared the current status-quo.

The Proponent would require a water licence from the Nunavut Water Board for project activities; additional considerations for operational considerations based on the potential negative impacts identified above would be considered during subsequent permitting processes (see Other NIRB Concerns and Recommendations section below). The Proponent would also be required to follow the *Fisheries Act*, the *Transportation of Dangerous Goods Act*, the *Canadian Environmental Protection Act*, and various operational guidelines and regulations (see Regulatory Requirements section).

**Recommended Mitigation Measures:** It is recommended that potential negative impacts to water quality, fish, and fish habitat may be mitigated by requiring the Proponent to employ mitigation measures related to fish habitat and passage protection; water protection during operations; fuel storage, use, and spill response; waste management; personnel training related to fuel and waste handling; landfarm and landfill operations; winter road development; and site reclamation. The following terms and conditions are recommended to mitigate the potential adverse impacts to water quality, fish, and fish habitat: 5-7, 10-15, 18, 20, 22, 23, 25-27, 29, 42, 44-49, 51, 53-55, and 57-59.

**Issue 3:** Potential negative impacts to soil quality and vegetation resulting from remediation activities; landfarming and landfarm operations; camp operations; storage, transportation, and disposal of wastes; transportation, storage and use of fuel; and the seasonal development and use of the winter road.

**Board views:** The potential for impacts is applicable to a small geographic area and the probability of impacts occurring is considered to be low. Within the Proponent's Environmental Screening Report, an assessment of potential project interactions with soil and terrain, and vegetation, in addition to proposed mitigation measures, was provided to address potential impacts on these valued ecosystemic components throughout all project phases. In addition to the proposed mitigation measures, which include erosion and sediment control measures, fuel storage and spill contingency plans, transportation protocols, personnel training measures, and remediation best practices, it is expected that standard operational considerations would mitigate any potential adverse impacts to soil quality, and vegetation. As such, potential impacts would be considered to have a low magnitude, be reversible in nature, and would have a low probability of extending beyond the immediate project area.

It is further expected that the removal, remediation, and stabilization of environmental hazards on-site would significantly restore the environmental integrity of the area compared the current status-quo.

The Proponent may also be required to follow the *Fisheries Act*, the *Transportation of Dangerous Goods Act*, the *Canadian Environmental Protection Act*,



and various operational guidelines and regulations (see Regulatory Requirements section).

**Recommended Mitigation Measures:** It is recommended that potential negative impacts to soil quality and vegetation may be mitigated by requiring the Proponent to employ mitigation measures related fuel and waste handling, fuel storage, use, and spill response; waste management; personnel training related to fuel and waste handling; landfarm and landfill operations; winter road development; and site reclamation. The following terms and conditions are recommended to mitigate the potential adverse impacts to soil quality and vegetation: 13-21, 23, 24, 27, 41, 42, 44, 48, 50-52, and 57 through 63.

**Issue 4:** Potential negative impacts to air quality resulting from site stabilization and remediation activities, including dust and emissions generated by transportation activities and use of heavy equipment, incineration of combustible wastes, landfarming operations, and landfill operations.

**Board views:** The potential for negative impacts is applicable to limited areas within the project footprint with a low probability of extending beyond the previously disturbed Jericho site. Within the Proponent's Environmental Screening Report, an assessment of potential project interactions with air quality, in addition to proposed mitigation measures, was provided to address potential impacts throughout all project phases. The Proponent's assessment considered mostly greenhouse gas (GHG) emissions from equipment and transportation operations, and gas emissions from incineration activities. Potential dust-related impacts were discussed in other areas of the Proponent's assessment. Considering the temporary and intermittent nature of the proposed project and the equipment requirements to conduct the scale of remediation being proposed, it is expected that standard operational considerations would mitigate any potential adverse impacts to air quality. Further, the Proponent has committed to employing dust suppression measures, using appropriate equipment to meet regulatory standards, and providing staff training for the proper use of equipment.

**Recommended Mitigation Measures:** It is recommended that potential negative impacts to air quality may be mitigated by requiring the Proponent to employ mitigation measures related to incineration and incineration waste management, and dust suppression measures. The following terms and conditions are recommended to mitigate the potential adverse impacts to air quality: 7-9, 22, 26, 43, and 53.

**Issue 5:** Potential negative impacts to traditional land use activities in the area, and areas adjacent to the proposed project boundary, due to remediation operations, site activities, and transportation operations.

**Board Views:** The Proponent has indicated that the proposed project would take place in an area that local people have traditionally used for hunting and camping. Although the proposed project would include temporary and intermittent activities that would have limited potential for direct interaction with traditional land use activities, short-term

impacts are possible. As identified by the Proponent and commenting parties, the proposed project would occur within the migratory range of the Bathurst caribou herd, and within the border ranges of the Beverly, and Dolphin and Union caribou herds. Harvesting of these traditional resources may be limited within the direct project area, however, unmitigated project impacts could affect the migratory patterns of these herds and could result in indirect impacts to harvesting activities tied to these shared traditional resources in other areas.

Within the Proponent's Environmental Screening Report, wildlife mitigation measures were provided which include work cessation scenarios, right-of-way procedures, noise reduction measures, waste management measures, as well as site hardening protocols. In addition to the Proponent's proposed mitigation measures, it is expected that standard operational considerations would mitigate any potential adverse impacts to wildlife, and in turn traditional land use activities, in the direct project area and areas adjacent to the proposed project. Terms and conditions have also been recommended to ensure safety to the public and to ensure that potential impacts to traditional land use activities are minimized should they be observed. Further, the Proponent has consulted with the community of Kugluktuk and has committed to conducting ongoing consultation, which would be expected to address any community issues that may arise.

Noted Traditional Knowledge or Inuit Qaujimaningit: Comments were received from transboundary community groups who identified concerns with potential impacts from the proposed project on shared traditional resources, such as caribou.

Recommended Mitigation Measures: Term and condition 56 has been recommended to ensure that all pit and borrow areas are clearly marked to identify hazards on-site. Term and condition 61 is recommended to ensure that the affected communities and organizations are informed about the project proposal, and term and condition 63 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. Terms and conditions associated with the protection of wildlife and wildlife habitat were recommended within Issue 1 of this section.

**Socio-economic effects on northerners:**

**Issue 6:** Potential negative impacts to historical, cultural, and archaeological sites from camp and remediation operations, and the seasonal development and use of the winter road.

Board Views: The Proponent indicated within its application that 25 heritage sites were identified in the project area through an Archaeological Impact Assessment conducted by the Tahera Diamond Corporation during the Jericho Diamond Mine's development. The Proponent further noted that the original assessment determined that none of the 25 heritage sites identified were of sufficient potential of significance to require avoidance by development. During the commenting period for this file the Government of Nunavut indicated that 49 known archaeological sites are within the proposed project boundary (winter road and Jericho site) based on the Nunavut Archaeological Site

Database, but that the proposed development of the winter road presents limited potential for adverse impacts on archaeological sites.

As the proposed project would be occurring within the boundaries of the existing Jericho Diamond Mine site, and the winter road would be routed consistent with past winter road development, the Proponent would not be expected to interact with any additional historical, cultural, or archaeological sites outside those previously identified. However, the Proponent is required to adhere to the *Nunavut Act* and would be required to contact the Government of Nunavut – Department of Culture and Heritage when encountering historical sites (see Regulatory Requirements). The Proponent has also committed to conducting additional community consultations at various times throughout the proposed project's duration which would be expected to address any concerns related to historical, cultural, and archaeological sites.

Recommended Mitigation Measures: Term and condition 61 is recommended to ensure that available Inuit Qaujimaningit and community knowledge of the area can inform project design and term and condition 44 is further recommended reduce the potential for negative impacts to any additional historical sites. In addition, the Proponent has been referred to Government of Nunavut – Department of Culture and Heritage's "Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders" (found in Appendix B of this report) which details measures to be taken by Proponents for the identification, avoidance, and protection of archaeological and heritage resources in Nunavut pursuant to the *Nunavut Act*.

**Issue 7:** Potential positive impacts to the regional economy, community of Kugluktuk, and NWT as the Proponent has committed to hiring local community members for various project activities as well as supporting an employee training fund, and will be transporting materials and personnel through Kugluktuk and Yellowknife.

Board Views: As detailed in the Proponent's project application, the contract for site stabilization and the carrying out of remediation activities will contain an Inuit Opportunities Considerations clause that will require the contractor to maintain a target level of Inuit employment on the project. The Proponent has indicated that similar projects in the past have had Inuit employment levels between 60-70%. In addition, the Proponent indicated that the contract will also contain a training fund that would allow the contractor to access up to 2% of the contract value for training purposes. Inuit training opportunities would provide community members the necessary skills for employment opportunities related to this project and others in the future. This has been presented to the community of Kugluktuk during the public information session previously conducted by the Proponent.

Recommended Mitigation Measures: Although this recommendation notes positive impacts, the NIRB is recommending terms and conditions 62 and 63 to ensure the Proponent continues to inform communities of the awarding of the contract to carry out the project activities as well as the ongoing site activities to ensure community members are aware of and best able to successfully connect with the local hiring opportunity.

**Issue 8:** Potential negative impacts to the overall value of the development infrastructure at the Jericho mine site as the site stabilization components include removal and disposal of specific site structures and equipment, and removal of previously constructed water retention structures.

**Board Views:** The Board notes concerns raised by Crystal Exploration during the public commenting period, and acknowledges that the abandoned Jericho Diamond Mine, as a formerly operating mining operation, has a degree of embodied economic value due to the existing infrastructure and development that exists on-site, and the regulatory approvals that were tied to its operations. Although the reopening of the mine would have the potential to stimulate local economies through employment, training, and tax revenues, the Board recognizes that interested parties, to-date, have not demonstrated binding commitment to the acquisition and reopening of the Jericho Diamond Mine. Additionally, due to the nature of the site's abandonment, and the ongoing management needs of a mine in care and maintenance, a number of environmental hazards have required consistent management throughout the past several years by INAC's Contaminated Sites Division. INAC's ongoing management activities have provided a level of site stability; however, their operations have not included advanced remediation and have only been considered temporary while more permanent solutions have been assembled. Through the NIRB's monitoring functions related to the Jericho Diamond Mine Project (NIRB File No. 00MN059), the NIRB has identified that without timely intervention, existing contamination and environmental hazards on-site could compound into more critical environmental liabilities, thus further degrading the environmental integrity of the area. In light of these conditions and circumstances, the Board considers the proposed project necessary to effectively address existing and potential environmental concerns related to the Jericho Mine site.

**Recommended Mitigation Measures:** The NIRB has recommended term and condition 3 and 61 to address the concern of the undertaking limiting future potential of economic development at the site, and encourages the Proponent to continue in line with its considerations presented in the Jericho Site Stabilization Project – Environmental Screening Report and information provided with the Opportunity to Address Comments provided during the assessment.

**Significant public concern:**

**Issue 9:** Public concern was expressed during the public commenting period for this file, and indicated that for various reasons several parties do not support the project.

**Board Views:** The Board notes parties concerns regarding expectations for community consultation to occur with transboundary groups, impacts to the environment and wildlife, and the site's economic value being reduced due to the undertaking of remediation activities, which have resulted in parties expressing lack of support for the proposal. Environmental and wildlife concerns have been addressed in the discussions of issues above and as demonstrated in the previous discussions, the NIRB considers the mitigation measures proposed by the Proponent would minimize potential negative

impacts of the current proposal, operational considerations would be implemented as required by applicable legislation, and stabilization activities would be conducted in line with licensing expectations previously imposed to manage impacts from site activities. The NIRB acknowledges the efforts of INAC to consult with potentially affected communities, and would encourage future consultation efforts to take into account feedback received during this assessment. The Board is satisfied that the concerns raised during the public consultation period have been considered and addressed by the Proponent, and would also consider this feedback as ongoing monitoring activities are conducted at the site for this project proposal, and of the Jericho Mine site as required by Project Certificate No. 002.

**Recommended Mitigation Measures:** The NIRB is requesting, as part of the annual reporting requirements tied to the proposed project, that the Proponent detail all community consultation undertaken prior to, during, and following project activities. For more details on annual reporting requirements please refer to the Monitoring and Reporting Requirements section. The NIRB would further like to note that condition 61 is recommended to support for consultation to occur in all affected communities. Finally, condition 63 is recommended to establish support for the preservation of Inuit harvest and land use rights, and would also indicate support for the preservation of hunting and land use rights for all aboriginal groups.

**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. Indigenous and Northern Affairs Canada (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 (Application to Determine Conformity; INAC, KIA, NWB Applications, Comprehensive Application, September 30, 2016), and the NIRB (Online Application Form, Non-Technical Summaries, Consultation Summary, Winter Road Group Agreement, Site Diagrams, NIRB Part 1 Form including translations, and NIRB

Part 2 Form dated October 14 and 18, 2016; Proponent Correspondence Re Clarification of project information, October 13, 17, and 21, 2016).

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, where possible or appropriate, 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*.

### **Fuel and Chemical Storage**

10. 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.
11. The Proponent shall ensure that re-fuelling 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.
12. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
13. The Proponent shall use adequate secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) when storing barrelled fuel and chemicals.
14. The Proponent shall use drip pans or other equivalent device when refuelling equipment. The Proponent shall also use secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) at all refuelling stations.
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 vehicle maintenance areas.

16. The Proponent shall inspect and document the condition of all large fuel tanks (in excess of 205 litres) and all barrelled fuel caches on a weekly basis when personnel on site. All fuel and chemical storage containers must be clearly marked with the Proponent's name and examined for leaks immediately upon delivery.
17. The Proponent shall remove and treat hydrocarbon contaminated soils on site or transport them to an approved disposal site for treatment.
18. 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.

### **Landfarm Operations**

19. The Proponent shall treat only petroleum and hydrocarbon contaminated soils at the landfarm facility. Materials contaminated with other substances such as glycol and heavy metals are not to be stored at the landfarm and must be disposed of at an authorized facility.
20. The Proponent shall ensure that it meets the required standards as set out in the Nunavut Water Board's Water Licence for this project prior to any discharge of water collected in the retention cell(s).
21. The Proponent shall ensure that the equipment used for aeration in the landfarm operation have been cleaned off within the landfarm facilities prior to exiting.
22. The Proponent shall take appropriate dust suppression measures when conducting soil turning and removal.
23. All operations personnel shall be adequately trained prior to commencement of landfarm operations, and shall be made aware of all operational guidelines and Proponent commitments relating to the Project.

### **Landfill Operations**

24. The Proponent shall dispose of non-hazardous materials only at the landfill and shall limit this disposal to those materials listed as acceptable for disposal. Hazardous materials, materials listed as unacceptable for disposal at the landfill, or materials that contain asbestos, fluorescent tubes or ozone depleting substances are not to be disposed of in the landfill and must be disposed of at an authorized facility.
25. The Proponent shall ensure that it meets the standards and/or limits as set out in the Nunavut Water Board Water Licence and any other permits as required for this project.
26. The Proponent shall take appropriate dust suppression measures when conducting soil topping of landfill materials, or landfill capping activities.
27. All operations personnel shall be adequately trained prior to commencement of landfill operations, and shall be made aware of all operational guidelines and Proponent commitments relating to the Project.

### **Wildlife - General**

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

29. The Proponent shall not harass wildlife. This includes persistently worrying or chasing animals, or disturbing large groups of animals. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
30. 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**

31. 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.
32. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.
33. The Proponent shall ensure its aircraft avoid excessive hovering or circling over areas where bird presence is likely.

### **Aircraft Flight Restrictions**

34. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum altitude of 610 metres above ground level unless there is a specific requirement for low-level flying, which does not disturb wildlife and migratory birds.
35. 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.
36. The Proponent shall ensure that aircraft do not, unless for emergency, touch-down in areas where wildlife are present.
37. 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 and Muskoxen Disturbance**

38. 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.
39. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration, such as the use of equipment, aircraft traffic, and movement of equipment or personnel, until such time as the caribou have passed.
40. 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, and use of snow mobiles and all-terrain vehicles outside the immediate vicinity of the camps. Following July 15, if caribou cows or calves are observed within one (1) kilometre of project operations, the Proponent shall also suspend all operations in the vicinity, including



low-level over flights, and use of snow mobiles and all-terrain vehicles, until caribou are no longer in the immediate area.

#### **All-Weather Road and Ground Disturbance**

41. 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.
42. 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.
43. All construction and road vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.

#### **Winter Road**

44. The Proponent shall select a winter route that maximizes the use of frozen water bodies.
45. The Proponent shall not erect camps or store materials on the surface ice of lakes or streams, except that which is for immediate use.
46. The Proponent shall ensure that no disturbance of the stream bed or banks of any definable watercourse be permitted.
47. The Proponent shall not move any equipment or vehicles without prior testing the thickness of the ice to ensure the lake is in a state capable of fully supporting the equipment or vehicles.
48. The Proponent shall ensure that bank disturbances are avoided and no mechanized clearing carried out immediately adjacent to any watercourse.
49. The Proponent shall ensure that stream crossings and/or temporary crossings constructed from ice and snow, which may cause jams, flooding or impede fish passage and or water flow, are removed or notched prior to spring break-up.
50. The Proponent shall avoid disturbance on slopes prone to natural erosion, and alternative locations shall be utilized.
51. The Proponent shall implement sediment and erosion control measures prior to, and during operations to prevent sediment entry into the water during the spring thaw. This includes ensuring that a sufficient thickness of snow and ice is present on the winter road to prevent unnecessary erosion of the underlying ground surface and impact on underneath vegetation.
52. The Proponent shall implement a clean-up and reclamation stabilization plan, which should include, but is not limited to, re-vegetation and/or stabilization of exposed soil in road bed.

#### **Aggregate Removal from Quarries**

53. 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.
54. The Proponent shall not remove any material from below the ordinary high water mark of any lake or stream.

55. The Proponent shall not deposit or permit the deposit of sediment into any water body.
56. The Proponent shall clearly stake and flag pit and quarry boundaries so they remain visible to other land users.
57. 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.
58. The Proponent shall ensure that silt fences/curtains are installed down gradient of any quarry activities.
59. 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.

### **Temporary Camps**

60. The Proponent shall ensure that the land use area is kept clean and tidy at all times.

### **Other**

61. 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.
62. The Proponent should, to the extent possible, hire local people.
63. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.

## **MONITORING AND REPORTING REQUIREMENTS**

In addition, the Board is recommending the following:

### **Final Plans**

1. Despite providing extensive documents outlining the proposed project, terms of reference, environmental screening reports, and interim plans, it was noted that the final versions of these plans would be developed once the contract was awarded to the company undertaking the site stabilization activities. Prior to undertaking any activities at the site, the Proponent is required to submit copies of the finalized plans to the NIRB, including but not limited to:
  - a) Emergency Response Plan,
  - b) Site Waste and Hazardous Waste Management Plan,
  - c) Site Dust Management Plan,
  - d) Fuel Management and Spill Contingency Plan,
  - e) Waste Water Treatment Plant Operations Plan
  - f) Wildlife Mitigation and Monitoring Plan,
  - g) Any other environmental monitoring or management plans, and
  - h) Copies of permits related to the undertaking of the project proposal.

## Annual Report

2. The Proponent shall submit a comprehensive annual report to the Nunavut Impact Review Board at the end of each year of permitted activities, and before December 31<sup>st</sup> of each year. It is expected that reporting requirements under NIRB File No. 16UN058 will be coordinated with existing reporting requirements associated with INAC's ongoing site management and monitoring functions related to the Jericho Diamond Mine Project (NIRB File No. 00MN059) as approved to proceed under Project Certificate No. 002. The Board expects to receive the first such report on or before December 31, 2017.

The annual report must contain, but not limited to, the following information:

- a) A summary of activities undertaken for the year, including:
  - a map and associated details pertaining to remediation activities and site operations conducted to-date;
  - a map detailing the locations of all fuel storage areas illustrating all containment structures, accompanied with a description of all containment measures implemented;
  - a description of local hires and employee training initiatives;
  - details on transportation activities undertaken including:
    1. aircraft flight frequency, approximate flight routes, and altitudes;
    2. finalized winter road routing and vehicle traffic information (number of return trips, types of vehicles);
  - site photos illustrating site conditions and areas of remediation works;
  - a summary of wastes disposed on-site as well those transported for disposal off-site, including locations and any required mitigation during transportation;
- b) An updated work plan for the following year including an approximate work schedule;
- 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 Proponent, as well as any follow-up actions that were required or taken to resolve any concerns expressed about the project;
- d) A log of instances in which community residents occupied or transited 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 brief summary of wildlife mitigation and monitoring results as well as any mitigation actions 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 should include the following:
  - Locations (i.e., latitude and longitude) and species of wildlife observed on-site including 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);
  - The Proponent should indicate potential impacts from the project, and ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites;
  - A summary of the effectiveness of mitigation measures for wildlife impacts; and
  - If mitigation measures are observed to be ineffective or not achieving the expected outcomes, a discussion of issues interfering with the mitigation and alternative plans to reduce impacts to the wildlife in the vicinity of the project;
- f) A 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;
- g) A summary of its knowledge of Inuit land use in/near the project area and how project activities were modified to mitigate impacts on Inuit land use; and
- h) A summary of how the Proponent has complied with conditions contained within the Screening Decision Report, 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 (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](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](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](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) 982-7450).

### **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](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 Waste/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 a waste manifest or the appropriate transportation of dangerous goods (TDG) documentation accompany all potential hazardous samples and/or materials that are transported off site. Further, the Proponent shall ensure that the shipment of waste is registered with the Government of Nunavut Department of Environment (GN-DoE). Contact the Manager of Pollution Control and Air Quality at (867) 975-7748 to obtain a manifest if hazardous waste will be generated during project activities.

11. The Proponent shall provide an authorization or letter of conformation of disposal be obtained from the owner/operator of the landfill to be used for disposal of project-related wastes.

### **Winter Roads/Trails**

12. If ice bridges are constructed, the Proponent follow the mitigation measures outlined in Fisheries and Oceans Canada's Operational Statement for Ice Bridges, available at the following internet address: now <http://www.dfo-mpo.gc.ca/pnw-ppe/fpp-ppp/guide-eng.html>.
13. Cutting or filling of crossing approaches below the high water mark will require prior review and approval by Fisheries and Oceans Canada - Fish Habitat Management Branch.

### **Indigenous and Northern Affairs Canada**

14. Indigenous and Northern Affairs Canada (INAC) 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.
15. INAC 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.

### **Kitikmeot Inuit Association**

16. The Kitikmeot 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, water conditions, ground disturbance, and wildlife on Inuit owned land.

### **Nunavut Water Board**

17. 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; spill contingency planning; abandonment and restoration planning; and monitoring programs.
18. In particular, mitigation measures, conditions and monitoring requirements should be considered for the use of water, snow and ice for the development and maintenance of the winter road/trail for this project.

### **Indigenous and Northern Affairs Canada – Water Resources Division**

19. INAC – 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.

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* (<http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html>), which 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/>). The Proponent must ensure that proper shipping documents accompany all movements of dangerous goods. The Proponent must register with the Government of Nunavut, Department of Environment Manager of Pollution Control and Air Quality at 867-975-7748.
8. The *Aeronautics Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-2/>).
9. The Proponent shall undertake quarrying in accordance with 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.
10. 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**

11. The Proponent shall practice progressive reclamation in accordance with the restoration guidelines outlined in Indigenous and Northern Affairs Canada's *Northern Land Use Guidelines Pits and Quarries* (<http://www.aadnc-aandc.gc.ca/eng/1100100023585>).
12. The Proponent shall review and apply as applicable, design, operation, monitoring, sampling, analytical methods, decommissioning and closure, record keeping and reporting requirements for landfarming projects as found within the *Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Soils* (Science Applications International Corporation Canada,

March 2006). It is recommended that the Proponent and any consultants hired for the project refer to this document as it relates to the future operations of the landfarming activities.

## CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Indigenous and Northern Affairs Canada's "Jericho Mine Site Stabilization". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated December 22, 2016 at Arviat, NU.



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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](http://www.sararegistry.gc.ca)) to get the current status of a species.

Updated: October 2016

Species at Risk <sup>1</sup>	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility <sup>2</sup>
Migratory Birds			
Eskimo Curlew	Endangered	Schedule 1	ECCC
Buff-breasted Sandpiper	Special concern	Pending	ECCC
Ivory Gull	Endangered	Schedule 1	ECCC
Ross's Gull	Threatened	Schedule 1	ECCC
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	ECCC
Rusty Blackbird	Special Concern	Schedule 1	GN
Peregrine Falcon	Special Concern ( <i>anatum-tundrius</i> complex <sup>3</sup> )	Schedule 1 - Threatened ( <i>anatum</i> ) Schedule 3 – Special Concern ( <i>tundrius</i> )	GN
Short-eared Owl	Special Concern	Schedule 3	GN
Red Knot ( <i>rufa</i> subspecies)	Endangered	Schedule 1	ECCC
Red Knot ( <i>islandica</i> subspecies)	Special Concern	Schedule 1	ECCC
Horned Grebe (Western population)	Special Concern	Pending	ECCC
Red-necked Phalarope	Special concern	Pending	ECCC
Vegetation			
Felt-leaf Willow	Special Concern	Schedule 1	GN
Blanket-leafed Willow	Special Concern	Schedule 1	GN
Porsild's Bryum	Threatened	Schedule 1	GN
Terrestrial Wildlife			
Peary Caribou	Endangered	Schedule 1	GN
Peary Caribou (High Arctic Population)	Endangered	Schedule 2	GN
Peary Caribou (Low Arctic Population)	Threatened	Schedule 2	GN
Barren-ground Caribou (Dolphin and Union population)	Special Concern	Schedule 1	GN
Marine Wildlife			
Polar Bear	Special Concern	Schedule 1	GN/DFO
Grizzly Bear	Special Concern	Pending	GN
Wolverine	Special Concern	Pending	GN
Atlantic Cod, Arctic Lakes	Special Concern	Pending	DFO
Atlantic Walrus	Special Concern	Pending	DFO
Beluga Whale (Cumberland Sound population)	Threatened	Pending	DFO
Beluga Whale (Eastern Hudson Bay population)	Endangered	Pending	DFO
Beluga Whale (Western Hudson Bay population)	Special Concern	Pending	DFO
Beluga Whale (Eastern High Arctic – Baffin Bay population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Canada – West Greenland population)	Special Concern	Pending	DFO
Bowhead Whale (Eastern Arctic population)	Special Concern	Schedule 2	DFO
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Grey Whale (Eastern North Pacific population)	Special Concern	Schedule 1	DFO

Species at Risk <sup>1</sup>	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility <sup>2</sup>
Humpback Whale (Western North Atlantic population)	Special Concern	Schedule 3	DFO
Narwhal	Special Concern	Pending	DFO
Fish			
Northern Wolffish	Threatened	Schedule 1	DFO
Atlantic Wolffish	Special Concern	Schedule 1	DFO
Bering Wolffish	Special Concern	Schedule 3	DFO
Fourhorn Sculpin	Special Concern	Schedule 3	DFO
Roundnose Grenadier	Endangered	Pending	DFO
Spotted Wolffish	Threatened	Schedule 1	DFO
Thorny Skate	Special Concern	Pending	DFO
Atlantic Cod, Arctic Lakes	Special Concern	Pending	DFO
Blackline Prickleback	Special Concern	Schedule 3	DFO

Notes: DFO: Fisheries and Oceans Canada; ECCC: Environment and Climate Change Canada; GN: Government of Nunavut

<sup>1</sup>The Department of Fisheries and Oceans has responsibility for aquatic species.

<sup>2</sup>Environment and Climate Change Canada 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.

<sup>3</sup>The *anatum* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was assessed by COSEWIC as Special Concern.

## 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:

	<b>Types of Development</b> (See Guidelines below)	<b>Function</b> (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*<sup>2</sup> to issue such permits.

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

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<sup>2</sup> P.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*<sup>3</sup>, the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under

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<sup>3</sup> s. 51(1)

the *Nunavut Archaeological and Palaeontological Sites Regulations*<sup>4</sup>, 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](http://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, 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

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<sup>4</sup> 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.