



SCREENING DECISION REPORT
NIRB FILE NO.: 10XN039

NWB File No.: 2AM-MEA0815

September 15, 2010

Honourable John Duncan
Minister of Indian and Northern Affairs Canada
Indian and Northern Affairs Canada
Ottawa, ON

Via email: Duncan.J@parl.gc.ca and minister@inac-ainc.gc.ca

Re: Screening Decision for Agnico-Eagle Mines Ltd's "Meadowbank Airstrip Expansion" Project Proposal

Dear Honourable John Duncan:

The primary objectives of the Nunavut Impact Review Board (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.

Section 12.4.4 of the NLCA states:

Upon receipt of a project proposal, NIRB shall screen the proposal and indicate to the Minister in writing that:

- a) the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5;*
- b) the proposal requires review under Part 5 or 6; NIRB shall identify particular issues or concerns which should be considered in such a review;*
- c) the proposal is insufficiently developed to permit proper screening, and should be returned to the proponent for clarification; or*
- d) the potential adverse impacts of the proposal are so unacceptable that it should be modified or abandoned.*

NIRB ASSESSMENT AND DECISION

After a thorough assessment of all material provided to the Board (please see *Procedural History* and *Project Activities* in **Appendix A**), in accordance with the principles identified within Section 12.4.2 of the NLCA, the decision of the Board as per Section 12.4.4 of the NLCA is:

12.4.4 (a): the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5.

RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS (pursuant to Section 12.4.4(a) of the NLCA)

The Board is recommending that the following or similar project-specific terms and conditions be imposed upon the Proponent through all relevant legislation:

General

1. Agnico-Eagle Mines Ltd. (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 NIRB (AEM Letter to NIRB – February 4, 2010; Project Proposal Airstrip Expansion – February 2010; AEM Additional Information Submission – May 25, 2010, AEM Response to Comments – September 6, 2010; and Technical Memorandum Response to DOE Request for Additional Information – August 31, 2010) and to other agencies (DFO Application for HADD Authorization – April 21, 2010).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Water Use and Quality

5. 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.
6. The Proponent shall adhere to limits on Total Suspended Solids and elevated sedimentation as outlined in the Water Quality Management Plan as previously approved by the NWB and also as provided within its Erosion/Sediment Control Plan.
7. The Proponent shall ensure that only non-potentially acid generating materials are used for the in-lake placement of rock and that where potentially acid generating materials are encountered it shall abide by previously approved mitigation plans and procedures for the safe storage and/or usage of such.

Waste Disposal

8. The Proponent shall manage all garbage and debris in a manner that is consistent with its previously approved Waste Management Plan for the Meadowbank site.

Fuel and Chemical Storage

9. The Proponent shall locate all fuel and other hazardous materials as well as re-fuelling of all equipment 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.
10. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife
11. The Proponent shall use adequate secondary containment or a surface liner (e.g. self-supporting insta-berms and fold-a-tanks), when storing barreled fuel and chemicals at all locations.
12. The Proponent shall ensure appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) be readily available during any transfer of fuel or hazardous substances, as well as at vehicle-maintenance areas and at drill sites.
13. The Proponent shall remove and treat hydrocarbon contaminated soils on site or transport them to an approved disposal site for treatment.
14. The Proponent shall ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. All spills of fuel or other deleterious materials of any amount must be reported immediately to the 24 hour Spill Line at (867) 920-8130.

Wildlife

15. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
16. 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.
17. 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.
18. 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 metre 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.

Ground Disturbance

19. The Proponent shall implement suitable erosion and sediment suppression measures on disturbed areas before, during and after construction in order to prevent sediment from entering any waterbody.
20. The Proponent shall implement sediment and erosion control measures by employing erosion prevention measures (e.g., berms or silt fence) in the project area during construction and/or operation.

21. The Proponent shall stockpile all overburden/topsoil generated during construction using proper erosion prevention measures. Upon project completion, the Proponent shall back fill, reclaim/re-contour and re-vegetate all disturbed areas.

Restoration of Disturbed Areas

22. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of project activities.
23. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
24. The Proponent shall complete all clean-up and restoration of the lands used upon abandonment of site.

Other

25. Any activity related to this application, and outside the original scope of the project as described in the application, will be considered a new project and should be submitted to the NIRB for Screening.

MONITORING AND REPORTING REQUIREMENTS

In addition, the Board is recommending the following:

1. The Proponent shall, in its annual report to the NIRB required in accordance with Project Certificate No. 004 for the Meadowbank Gold Project(for 2010, and 2011 if the airstrip expansion activities are extended into 2011), include the following information as it pertains to the airstrip expansion and subsequent airstrip operation:
 - a. A detailed summary of activities undertaken for the year;
 - b. Wildlife encounters and actions/mitigation taken (as any such encounters or actions may relate to the airstrip expansion);
 - c. A summary of any community consultations undertaken regarding the planned expansion;
 - d. Site photos;
 - e. Progressive reclamation work undertaken;
 - f. Results of blast hole samples and analyses undertaken;
 - g. A summary of how the Proponent has complied with the NIRB terms and conditions contained within its Screening Decision, and the conditions associated with all authorizations for the airstrip and the current expansion project.

The Proponent should note that the NIRB will incorporate the information submitted regarding the airstrip expansion into its existing monitoring program for the Meadowbank Gold Project (File No. 03MN107).

OTHER NIRB CONCERNS AND RECOMMENDATIONS

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

1. All Authorizing Agencies shall notify the NIRB of any changes in operating plans or conditions associated with this project prior to any such change.
2. The Proponent should undertake efforts to communicate its plans to expand the airstrip with the community of Baker Lake.
3. The Proponent shall follow the Fisheries and Oceans Canada's (DFO) *Guidelines for the use of Explosives in or near Canadian Fisheries Waters* and shall not conduct blasting if wildlife is within sight or hearing distance of the project area.

REGULATORY REQUIREMENTS

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

1. The *Fisheries Act* (<http://laws.justice.gc.ca/en/showtdm/cs/F-14///en>).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://www.canlii.org/ca/sta/n-28.8/whole.html>).
3. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws.justice.gc.ca/en/showtdm/cs/M-7.01>).
4. The *Species at Risk Act* (<http://laws.justice.gc.ca/en/showtdm/cs/S-15.3>). Attached in **Appendix B** is a list of Species at Risk in Nunavut.
5. The *Nunavut Wildlife Act* 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.justice.gc.ca/en/showtdm/cs/N-28.6>). The Proponent must comply with the proposed terms and conditions listed in the attached **Appendix C**.
7. The *Navigable Waters Protection Act (NWPA)* (<http://laws.justice.gc.ca/en/N-22/index.html>).

Validity of Land Claims Agreement

Section 2.12.2

Where there is any inconsistency or conflict between any federal, territorial and local government laws, and the Agreement, the Agreement shall prevail to the extent of the inconsistency or conflict.

Dated September 15, 2010 at Sanikiluaq, NU.



Lucassie Arragutainaq, Chairperson

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

Appendix A

Procedural History and Project Activities

Procedural History

On February 4, 2010 the NIRB received Agnico-Eagle Mines Ltd.'s (AEM) "Meadowbank Airstrip Expansion" project proposal from AEM. On February 10, 2010 the NIRB issued correspondence to AEM which advised that a conformity determination (Keewatin Regional Land Use Plan) from the Nunavut Planning Commission (NPC) and a referral for screening from one or more of the agencies responsible for authorizing the project activities would be required prior to Screening by the NIRB.

On March 2, 2010 the NIRB received notification from the Nunavut Planning Commission that no conformity determination (Keewatin Regional Land Use Plan) would be required for the "Meadowbank Airstrip Expansion" project proposal. On April 15, 2010 the Nunavut Water Board (NWB) advised the NIRB that AEM's application to expand the Meadowbank airstrip would require an amendment to the original NWB water license (2AM-MEA0815). Further, on April 18, 2010 Fisheries and Oceans Canada (DFO) advised the NIRB that the proposed airstrip expansion would require formal authorization by DFO.

After undertaking a preliminary completeness check, the NIRB determined that the project proposal as submitted did not contain sufficient information to permit proper screening and requested that additional information be submitted by May 21, 2010. On May 24, 2010 the NIRB received the requested information.

Related File History

The original Meadowbank Gold Mine project (NIRB File No. 03MN107) was screened by the NIRB in 2003 and underwent an environmental Review pursuant to Part 5, Article 12 of the Nunavut Land Claims Agreement (NLCA). The NIRB held a technical meeting, pre-hearing conference, and final hearing to facilitate its assessment of the Meadowbank Gold Mine Project. On December 30, 2006 the Board issued the Meadowbank Gold Mine Project Certificate (No. 004), allowing the project to proceed subject to terms and conditions contained therein.

Upon review of the Final Environmental Impact Statement and other materials relevant to the original NIRB file (03MN107), it was determined that the proposed expansion of the Meadowbank airstrip into Third Portage Lake was not assessed as part of the original Meadowbank Gold Mine project and therefore, the proposed Meadowbank Airstrip Expansion required screening in accordance with Part 4, Article 12 of the NLCA. The NIRB assigned this project proposal file number 10XN039.

This project proposal was distributed to community organizations in Baker Lake as well as to relevant federal and territorial government agencies, and Inuit organizations. The NIRB requested that interested parties review the proposal and provide the Board with any comments or concerns by June 22, 2010 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 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.

On or before June 22, 2010, the NIRB received comments from the following interested parties:

- Environment Canada (EC)
- Indian and Northern Affairs Canada (INAC)
- Fisheries and Oceans Canada (DFO)
- Government of Nunavut – Department of Environment (GN-DOE)

On July 6, 2010, the NIRB provided an opportunity for the Proponent to respond to the concerns raised during the public commenting period. The Proponent requested additional time to provide a response to concerns and on September 6, 2010, submitted the requested response.

All comments provided to the NIRB regarding this project proposal, in addition to the Proponent's response to comments, can be viewed on the NIRB's ftp-site, at the following location: <http://ftp.nirb.ca/SCREENINGS/COMPLETED%20SCREENINGS/>

Project Activities

The proposed project is located at the Meadowbank Gold Mine site, approximately 70 kilometres (km) north of the hamlet of Baker Lake. The currently proposed expansion of the Meadowbank airstrip is tentatively scheduled to begin in October 2010. The Proponent has indicated that the expanded airstrip and subsequent ability to use larger aircraft will ultimately reduce the number of flights into the Meadowbank site per week from 10 to 4, increase the capacity to transport personnel and cargo to and from the site, and offer an improved safety measure for greater accessibility and evacuation potential to and from the Meadowbank site.

The project activities include:

- Expansion of Meadowbank airstrip to a total length of 2103 metres (m), with 412 m located within the high water mark of Third Portage Lake (in-lake portion);
- Expansion of Meadowbank airstrip to a width of 60 m;
- Deactivation of current all weather access road connection to Meadowbank site and subsequent diversion of the access road via the Tailings Road;
- Construction of expanded airstrip using materials generated during mining activities at Meadowbank (an estimated total of 875,000 cubic metres of non-acid generating rock material will be required) including:
 - Approximately 700,000 cubic metres of material to be placed in the water for the in-lake portion of the expansion
 - 70,000 cubic metres of material to be used to build the diverted section of the all weather road; and

- Earthwork activities associated with airstrip expansion to utilise equipment used during other Meadowbank project construction activities.

Appendix B

Species At Risk in Nunavut

This list includes species listed on one of the Schedules of SARA (*Species at Risk Act*) and under consideration for listing on Schedule 1 of SARA. These species have been designated as at risk by COSEWIC (Committee on the Status of Endangered Wildlife in Canada). This list may not include all species identified as at risk by the Territorial Government.

- 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.

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

Updated: August 4, 2009

Species at Risk	COSEWIC Designation	Schedule of SARA	Government Organization with Lead Management Responsibility ¹
Eskimo Curlew	Endangered	Schedule 1	EC
Ivory Gull	Endangered	Schedule 1	EC
Ross's Gull	Threatened	Schedule 1	EC
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	EC
Rusty Blackbird	Special Concern	Schedule 1	Government of Nunavut
Felt-leaf Willow	Special Concern	Schedule 1	Government of Nunavut
Peregrine Falcon (<i>anatum-tundrius</i> complex)	Special Concern	Schedule 1 (<i>anatum</i>) Schedule 3 (<i>tundrius</i>)	Government of Nunavut
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Peary Caribou	Endangered	Pending	Government of Nunavut
Beluga Whale (Eastern Hudson Bay population)	Endangered	Pending	DFO
Red Knot (<i>rufa</i> subspecies)	Endangered	Pending	EC

Beluga Whale (Cumberland Sound population)	Threatened	Pending	DFO
Atlantic Cod (Arctic population)	Special Concern	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
Killer Whale (Northwest Atlantic / Eastern Arctic populations)	Special Concern	Pending	DFO
Porsild's Bryum	Threatened	Pending	Government of Nunavut
Atlantic Walrus	Special Concern	Pending	DFO
Narwhal	Special Concern	Pending	DFO
Red Knot (<i>islandica</i> subspecies)	Special Concern	Pending	EC
Horned Grebe (Western population)	Special Concern	Pending	EC
Barren-ground Caribou (Dolphin and Union population)	Special Concern	Pending	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut
Polar Bear	Special Concern	Pending	Government of Nunavut
Wolverine (Western Population)	Special Concern	Pending	Government of Nunavut

¹ Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency. The Department of Fisheries and Oceans (DFO) has responsibility for management of aquatic species.

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



INTRODUCTION

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

TERMS AND CONDITIONS

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

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

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

¹ P.C. 2001-1111 14 June, 2001

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.
- 3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
- 4) The permittee/proponent shall immediately contact CLEY 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 CLEY.
- 6) The permittee/proponent shall follow the direction of CLEY 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 INAC's directions will also be followed.
- 7) The permittee/proponent shall provide all information requested by CLEY 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 CLEY 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 *Nunavut Land Claims Agreement*:

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

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

Palaeontology and Archaeology

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

Definitions

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

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

“archaeological artifact” means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Nunavut Land Claims 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*

² s. 51(1)

³ P.C. 2001-1111 14 June, 2001

GUIDELINES FOR DEVELOPERS FOR THE PROTECTION OF ARCHAEOLOGICAL RESOURCES IN THE NUNAVUT TERRITORY

(NOTE: Partial document only, complete document at: <http://gov.nu.ca/cley/english/arch.html>)

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, Language, Elders and Youth (CLEY), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CLEY 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 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 CLEY 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 Nunavut Land Claims Agreement), and the Department of Indian and Northern Affairs, 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, Language, Elders and Youth. 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.