



## FINAL SCOPE LIST FOR THE NIRB'S ASSESSMENT OF THE BACK RIVER PROJECT

The Nunavut Impact Review Board (NIRB or the Board) has consulted with the public and interested parties to determine the scope of its Review of Sabina Gold & Silver Corp.'s (Sabina or the Proponent) proposed "Back River" project. This consultation process (i.e. scoping) aims to identify the potential impacts of a proposed project as well as the valued components of the physical and social environment. The scope list must include the physical works and activities for all stages of the project, should identify components of the ecosystemic and socio-economic environments, and list the Valued Ecosystem Components (VECs) and Valued Socio-Economic Components (VSECs) which the Proponent will be required to discuss within its Environmental Impact Statement.

The scope of the NIRB's assessment is based on the requirements of Section 12.5.2 of the Nunavut Land Claims Agreement (NLCA), the NIRB's 10 Minimum Environmental Impact Statement (EIS) Requirements, and the project proposal submitted to the NIRB on June 15, 2012.

### **1) Project Description, including the purpose and need for the Project**

The scope of the project proposal includes all physical works, activities, and/or undertakings, as submitted to the NIRB by Sabina for the Back River Project on June 15, 2012, and encompasses the entire project life.

#### **A. Project Proposal Summary**

The Back River project (the Project) is a proposed gold mining and milling operation located approximately 150 kilometres south of the community of Bathurst Inlet within the Kitikmeot region of Nunavut. The Project includes the use of open pit and underground mining techniques at eight deposits (Locale 1, Locale 2, Lone Cow, GH, Slave, Goose, Umwelt, and Llama). Sabina proposes to mill up to 7,000 tonnes of ore per day over a 10-18 year operation period, removing approximately 20-28 million tonnes of ore total, and producing 300,000-400,000 ounces of gold annually. The milling rate would involve up to 2 million tonnes of ore per year, with anticipated total waste rock and tailings production of 350 million tonnes and 25 million tonnes, respectively.

Sabina's proposal indicates that Project construction would take approximately two (2) years, followed by a ten to eighteen (10-18) year mine operation phase, and a five (5) year closure period. Ancillary infrastructure would include a marine access component which

would support open-water shipping during the construction phase and annual resupply during operations, with the mine product, dore gold bars, to be flown to market directly from site.

The proposal submitted indicated that up to 1,600 employees would be required during the construction phase, with an on-site labour requirement of up to 900 people on rotation during operations.

## **B. Project Components**

### **i. Goose Property**

*Activities and Facilities:* development of open pit and/or underground mines to access three main deposits identified as Goose, Umwelt, and Llama; potential dewatering of Goose Lake, Llama Lake or other lake near mine pit boundaries or to gain access to the deposit; construction/mobilization of mill; tailings management facility; emulsion mixing plant and wash bay; lined bulk storage area for ammonium nitrate, reagents, and explosives magazines; ore stockpile; core logging facility; assay laboratory; warehousing facility; emergency facilities (fire and ambulance station); general maintenance building (site services); mine maintenance building; light vehicle maintenance workshop; heavy equipment maintenance workshop; diesel power plant; power utility buildings; brine mixing buildings; tailings storage area; waste management building; waste rock storage area; 600-person camp; modular potable water treatment system; fresh water sourced from Goose Lake and other suitable lakes on property; modular sewage treatment system; fuel tank farm with capacity of 50 million litres for diesel storage; additional bulk fuel storage areas as required, with capacity of less than 100,000 litres each, at emergency shelters, airstrips, and machine shops; all-weather airstrip and associated navigation equipment including 1900-2500 metres long by 45 metres wide airstrips to accommodate Hercules C-130 aircraft and Boeing 737 Combi jet aircraft and possible helicopter landing facilities.

### **ii. George Property**

*Activities and Facilities:* development of open pit and/or underground mines to access five main deposits identified as Locale 1, Locale 2, Lone Cow, GH, and Slave; construction/mobilization of lined bulk storage area for ammonium nitrate; emulsion mixing plant and wash bay; explosives magazines; reagent storage; ore stockpile, core logging facility; warehousing facility; emergency facilities (fire and ambulance station); general maintenance building (site services); mine maintenance building; waste management building; waste rock storage area; light vehicle maintenance workshop; heavy equipment maintenance workshop; diesel power plant; power utility buildings; brine mixing buildings; 350-person camp; modular potable water treatment system; fresh water sourced from George Lake and other suitable lakes on property; modular sewage treatment system; fuel tank farm with capacity of 18 million litres

for diesel storage; additional bulk fuel storage areas as required, with capacity of less than 100,000 litres each, at emergency shelters, airstrips, and machine shops; all-weather airstrip and associated navigation equipment including 1900-2500 metres long by 45 metres wide airstrips to accommodate Hercules C-130 aircraft and Boeing 737 Combi jet aircraft and potential helicopter landing facilities.

### **iii. Mobilization and Shipping**

*Activities and Facilities:* construction and operation of several all-weather and/or winter roads on and between the Marine Laydown Area, Goose property, and George property used to access infrastructure and transport ore from mine sites to the mill at the Goose property. If the Bathurst Inlet Port and Road Project is available for Sabina's use, the proposed Marine Laydown Area and all-weather and winter corridors will be revised to assess this alternative. Marine access, activities, and associated infrastructure including: annual resupply and seasonal transport during the open-water season to move equipment, supplies and fuel to site on 5-10 ships per year (or equivalent via barge) during construction, and 3-5 ships per year (or equivalent via barge) during operations; ships to be routed north of Bathurst Inlet to the Coronation Gulf, and on through existing shipping corridors to the east or west; construction of laydown area situated in the southern portion of Bathurst Inlet; in-water loading and unloading facilities to include a dock, jetty, moorings and buoys; on-land infrastructure to include lined bulk storage area for ammonium nitrate; reagent storage; emergency and spill response facilities (to focus on ocean fuel spills); general maintenance building; waste management building; light vehicle maintenance workshop; additional bulk fuel storage areas of less than 100,000 litres each at emergency shelters, airstrips, and machine shops; fuel tank farm with 70-million litre capacity for diesel storage; 100-person camp; modular potable water treatment system; modular sewage treatment system; diesel power plant; fresh water sourced from lake close to marine laydown area; a small airstrip and associated navigation equipment capable of supporting Dash 7/8 aircraft. Project areas may be accessed by fixed wing aircraft of varying sizes up to a Boeing 737 Combi (or similar) type aircraft. Flights would be anticipated at 5-10 per week with higher numbers during construction with helicopters continuing to be used for environmental monitoring, ongoing exploration and other remote activities.

### **iv. Abandonment, Decommissioning and Reclamation**

*Activities and Facilities:* removal of nearly all facilities and reclamation of disturbed areas at the end of the mine life excepting roads, airstrips, tailings storage areas, and waste rock areas to be returned to a condition which would be acceptable to regulators and communities.

## **2) Anticipated ecosystemic and socio-economic impacts of the Project**

The assessment of the potential for ecosystemic and socio-economic impacts by the proposed project components and activities as outlined in the section above must refer to the

factors listed below. The scope of potential impacts caused by the project components, activities, and undertakings to environmental and socio-economic factors shall take into account the appropriate temporal and spatial boundaries and draw upon relevant information from scientific sources and traditional knowledge.

- a.** Air quality
- b.** Climate and meteorology
- c.** Noise and vibration
- d.** Terrestrial environment, including
  - i) Terrestrial ecology
  - ii) Landforms and soils
  - iii) Permafrost and ground stability
- e.** Geological features including discussion of geology and geochemistry
- f.** Hydrological features and surface water quality
- g.** Hydrogeology and groundwater
- h.** Sediment quality
- i.** Freshwater aquatic environment, including
  - i) Aquatic ecology
  - ii) Aquatic biota including representative fish as defined in the *Fisheries Act*, aquatic macrophytes, benthic invertebrates and other aquatic organisms
  - iii) Habitat including fish habitat as defined in the *Fisheries Act*
  - iv) Commercial, recreational and Aboriginal fisheries as defined in the *Fisheries Act*
- j.** Terrestrial vegetation
- k.** Terrestrial wildlife and wildlife habitat, including
  - i) Representative terrestrial mammals to include caribou, caribou habitat migration and behaviour, muskoxen, wolverine, grizzly bears, polar bears, wolves and less conspicuous species that may be maximally exposed to contaminants
  - ii) Wildlife migration routes and crossings
- l.** Birds and bird habitat, including
  - i) Raptors
  - ii) Migratory birds
  - iii) Seabirds
- m.** Marine environment, including
  - i) Marine ecology
  - ii) Marine water and sediment quality
  - iii) Marine biota including fish and benthic flora and fauna
  - iv) Marine habitat
  - v) Commercial, recreational and Aboriginal fisheries as defined in the *Fisheries Act*
- n.** Marine wildlife
- o.** Terrestrial and marine species at risk
- p.** Socio-economic factors, including
  - i) Economic development opportunities
  - ii) Employment
  - iii) Education and training
  - iv) Contracting and business opportunities

- v) Population demographics
- vi) Benefits and revenues (tax, royalties, etc.)
- q. Traditional activity & knowledge including
  - i) Land use
  - ii) Food security
  - iii) Language
  - iv) Cultural and commercial harvesting
- r. Non-traditional land use and resource use
- s. Heritage resources to include among the following, burial, sacred and historic sites:
  - i) Archaeology
  - ii) Palaeontology
  - iii) Cultural
- t. Health and well being
  - i) Individual and community wellness
  - ii) Family and community cohesion
- u. Community infrastructure and public services
- v. Health and safety including employee and public safety
- w. Residual and cumulative effects, giving specific consideration to the Project in terms of existing, proposed and reasonably foreseeable future mining and transportation infrastructure projects
- x. Potential transboundary impacts and proposed mitigation measures to address Project activities which could affect resources with transboundary ranges (i.e. communities and groups which depend upon the Bathurst caribou herd)

### **3) Anticipated Effects of the Environment on the Project**

The scope of the assessment will include the potential anticipated effects of the arctic environment on the project throughout the project's life, including the following factors:

- a. Climate and meteorology including climate change
- b. Permafrost
- c. Geotechnical hazards including slope movement, differential or thaw settlement, frost heave, and ice scour
- d. Flooding
- e. Unfavourable geological conditions

### **4) Steps which the proponent proposes to take including any contingency plans, to avoid and mitigate adverse impacts**

The scope of the assessment will include any contingency plans or risk management plans to avoid and mitigate adverse impacts caused by the proposed project components and activities. These plans must extend, where relevant, through all project phases. These plans shall take into account the appropriate temporal and spatial boundaries and are expected to

draw upon relevant information from scientific sources, best practice and traditional knowledge and are to include, but not be limited to:

- a. Emergency and spill response
- b. Hazardous materials and waste management
- c. Accidents and malfunctions
- d. Regulatory requirements
- e. Mitigation measures

**5) Steps which the Proponent proposes to take to optimize benefits of the Project, with specific consideration being given to expressed community and regional preferences as to benefits**

The scope of the assessment will include steps which the Proponent proposes to take to optimize benefits of the project, and should include, but not be limited to:

- a. Compensation and benefits
- b. Health benefits
- c. Human health and well-being
- d. Employment
- e. Education and training
- f. Land use
- g. Contracting and business opportunities
- h. Any non-confidential details from an Inuit Impact and Benefit Agreement

**6) Steps which the Proponent proposes to take to compensate interests adversely affected by the Project**

The scope of the assessment will include the steps which the Proponent proposes to take to compensate interests of parties adversely affected by the Project including all non-confidential process and content details pertaining to any Inuit Impact and Benefit Agreement pursued in connection with the Project.

**7) The monitoring programs proposed by the Proponent to identify and manage ecosystemic and socio-economic interests potentially affected by the Project**

The scope of the assessment will include any programs that will be established to monitor the potential ecosystemic and socio-economic impacts caused by the proposed project components and activities.

**8) The interests in lands, waters and other resources which the Proponent has secured or seeks to secure**

The scope of the Project will include any interests in lands, waters and other resources which the Proponent has secured or seeks to secure based on the proposed works and activities or undertakings that constitute the Back River project proposal.

Nunavut Impact Review Board	Project Certificate
Nunavut Water Board	Type 'A' Water Licence
Kitikmeot Inuit Association	Land Use Licences, leases, easements, right-of-ways, and Quarry Concession Permit(s)
Nunavut Tunngavik Inc.	Mineral Production Lease
Government of Nunavut – Community & Government Services	Quarry approval and Right-of-Way approval
Government of Nunavut – Department of Culture and Heritage	Archaeology Permit(s) and Palaeontology Permit(s)
Nunavut Research Institute	Socio-economic & Traditional Knowledge Research Licence, Scientific Research Licence
Aboriginal Affairs and Northern Development Canada	Class 'A' Land Use Permit, rights-of-ways, Land Lease, Waterlot Lease and Quarry Permit(s)
Environment Canada	Schedule 2 Amendment to Metal Mining Effluent Regulations, and potentially Disposal at Sea Permit
Fisheries and Oceans Canada	Section 35 authorization under the <i>Fisheries Act</i>
Natural Resources Canada	Licence for a Factory and Magazine
Transport Canada	Navigable Waters Approval(s) and/or Exemption(s) and Oil Pollution Prevention/Emergency Plan as per the <i>Canada Shipping Act</i>
Workers Safety & Compensation Commission	Permit to Store Detonators, Explosives Use Permit

## 9) Options for implementing the Project

The scope of the assessment will include project alternatives including alternatives to individual components/activities, alternate timing and development options, as well as presenting the “no go” option as it pertains to the overall Project.

#### **10) Any other relevant matters**

The scope of the assessment will include any other matters that the NIRB considers relevant, including:

- a.** Technical innovations previously untested in the Arctic including new technology for mine design, operation, and tailings management;
- b.** Traditional knowledge;
- c.** Statement of consultation principles and practices;
- d.** Significant effects analysis;
- e.** Sustainability analysis;
- f.** Interactions with Valued Ecosystem Components and Valued Socio-Economic Components;
- g.** Discussion of similar resource development projects in other jurisdictions; and
- h.** Planned future development and the associated level of uncertainty.