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# Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

June 20, 1997

## Part I - Introduction

Part I of the Guidelines introduces the overall scope and intent of the public review process as they apply to the preparation of the EIS.

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# Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

## 1.0 Purpose of the Guidelines

This document contains the Guidelines for the Voisey's Bay Nickel Company (the Proponent) to be used in preparation of an Environmental Impact Statement (EIS) for their proposed nickel, copper and cobalt mine and mill project (the Undertaking) in Labrador. The factors to be considered in the EIS are set out in the Panel's Terms of Reference which are contained in the Memorandum of Understanding (MOU) prepared and signed by the Government of Canada, Government of Newfoundland and Labrador, Labrador Inuit Association (LIA) and the Innu Nation of Labrador (Innu Nation).

Definitions in the MOU apply in the Guidelines and are found in Appendix 1. The factors to be considered in the environmental assessment review are found in Appendix 2.

## 1.1 How the Guidelines Were Prepared

When preparing the draft guidelines, the Panel reviewed the scoping reports prepared by the Innu Nation ("Between a Rock and a Hard Place") and the LIA ("Seeing the Land is Seeing Ourselves"), dated 15 March, 1996, and 4 July, 1996, respectively, as instructed by the MOU. The draft guidelines were available in four languages for public review and comment beginning on March 14, 1997. The Panel then held public meetings (scoping sessions) in communities in Labrador and in St. John's, during April and May of 1997 to hear comments and suggestions from the public and the signatories to the MOU.

Following the scoping sessions and after careful consideration of all comments received, the Panel has prepared these final Guidelines. Although the main purpose of the scoping phase was to produce the final Guidelines, the Panel believes all oral and written submissions made in the scoping phase to be important contributions to the review process. The Panel, therefore, encourages the Proponent to consider all information received during the scoping phase when preparing the EIS.

## 1.2 Preparation and Review of the EIS

The Guidelines establish the issues that the Proponent must address in the EIS, how to describe and assess these issues, and how to structure the EIS. While the Guidelines provide a framework for preparing a complete and accessible EIS, it is the responsibility of the Proponent to provide sufficient data and analysis to allow evaluation of the environmental effects of the Undertaking by the Panel, the public, and technical and regulatory agencies. The Proponent will prepare an EIS to address the requirements of the Guidelines for submission to the Panel. The Panel will then make the EIS available to the public and will receive comments, during a 75 day review period, on the adequacy of the EIS as a response to the Guidelines. The Panel will consider oral comments as fully as written comments. Within 30 days of the close of this review period, the Panel will determine if the EIS contains adequate information to hold public hearings. If the information provided in the EIS is determined not to be sufficient, the Panel will request additional information. The Panel will only proceed to public hearings when it has determined that the EIS contains adequate information to allow effective public review of the Undertaking.

## 1.3 Panel Report

Following public hearings, the Panel will prepare and submit a report that includes, but is not limited to, a description of the public review process, a summary of any comments and

recommendations received from the public and the rationale, conclusions and recommendations of the Panel.

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## 2.0 The Environmental Impact Statement as a Basis for Public Review

The purpose of the Guidelines is to produce an EIS that will move the review process toward its objectives as set out in the Panel's Terms of Reference. It will serve as the basis for the Panel's review of the Undertaking and will enable any interested party, the public, and the Panel to understand and assess the potential impacts of the proposed Undertaking. For this to occur the EIS must provide the following information:

1. how the Proponent consulted with the public during the preparation of the EIS;
2. a full description of the Undertaking and its rationale including the need for and alternatives to the Undertaking and a full description of the way that potential environmental effects have been identified and addressed by the Proponent in the Undertaking's planning and design;
3. the factors that the Proponent considers could alter the Undertaking and how it could be altered by these factors (e.g., markets, ore reserves, adjacent developments, jurisdiction or proposed regulatory changes);
4. the current state of the Environment [ The term "Environment" when capitalized refers specifically to the MOU definition found in Appendix 1. When not capitalized, it refers to one or more components of this definition.] that could be affected by the Undertaking;
5. the short and long-term environmental effects, including residual effects, of the Undertaking within Labrador and other affected areas, the significance of these effects, and how they might be modified by the factors identified in (c) above;
6. the cumulative environmental effects of the Undertaking in combination with other projects or activities that have been or will be carried out;
7. proposals to create or enhance beneficial effects;
8. the Proponent's plans for mitigation, including remediation and compensation;
9. contingency plans for accidents, malfunctions and unplanned events; and,
10. the Proponent's proposed follow-up program including monitoring and ongoing public communications and involvement. As an integral part of the public review process, a plain language summary and translations shall be provided which address each of the above listed sections.

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## Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

### 3.0 Scope and Content of the Review

The MOU gives specific instructions to the Panel with respect to both the scope of the review and the factors to be considered. This section explains how the Panel intends to interpret certain key instructions.

#### 3.1 Full Consideration of Traditional Ecological Knowledge

The aboriginal peoples of the region in which the Undertaking is proposed have substantial and distinct knowledge that is essential to the understanding and assessment of the impacts of the Undertaking, and the mitigation of these impacts. For much of the information requested by the Guidelines, aboriginal knowledge will make as important a contribution as scientific and engineering knowledge. The Proponent shall, therefore, fully consider local aboriginal knowledge and expertise in preparing the EIS.

For the purposes of this assessment, aboriginal knowledge may be regarded as the knowledge, understanding, and values held by aboriginal people that bear on the impacts of the Undertaking and their mitigation. This knowledge is based on personal observation, collective experience, and oral transmission over generations. The Panel recognizes that aboriginal knowledge and expertise is evolving with new experience and understanding, and therefore believes it would be inappropriate to limit aboriginal peoples' contribution to this assessment to what is commonly known as "Traditional Ecological Knowledge", although this will be a very important component.

Those elements of aboriginal knowledge relating to values, norms and priorities have been particularly important in the scoping phase of the review. The Panel anticipates that aboriginal knowledge relating to factual information on such matters as ecosystem function, resource abundance, distribution and quality, use of land and resources, social and economic well-being, and to explanations of these facts and causal relations among them will be required for the development of adequate baselines, impact predictions, and the assessment of significance, all of which are essential to the EIS and its review.

This information shall be obtained and presented in one of two ways.

The Proponent shall make best efforts, with the co-operation of other parties, to incorporate into its EIS aboriginal knowledge to which it has access or which it may reasonably be expected to acquire through appropriate diligence, in keeping with appropriate ethical standards and without breaching obligations of confidentiality.

Alternatively, the Proponent shall facilitate the presentation of such knowledge by aboriginal persons and parties themselves to the Panel during the course of the review.

The Panel believes that this decision is best decided by mutual agreement between the Proponent and the affected aboriginal parties.

#### 3.2 Land Claims

The MOU states that:

*"Although a review of the substance or definition of aboriginal rights or a determination of the scope and substance of land claims negotiations are not within the Panel's Terms of Reference, the Panel may consider submissions*

*regarding the relationship between the Undertaking and land claims negotiations."*

The Panel interprets its mandate to mean that it may consider the following matters with respect to land claims:

- whether proceeding with the Undertaking prior to the negotiation of a land claims agreement with an affected aboriginal party would jeopardize, impair, or limit those negotiations; and,
- whether documentation of land use and occupancy relating to the territorial extent of the land claim, as provided to the Panel by an aboriginal party, indicates that there are current uses of land and resources for traditional purposes that might be adversely affected by the Undertaking.

The Panel will not, however, make findings or recommendations regarding the acceptability of a claim for negotiations, the substantive merits of such a claim, or the existence or substance of aboriginal rights.

### **3.3 Sustainability Assurance**

Promotion of sustainable development is a fundamental purpose of environmental impact assessment, and the MOU specifically requires the Panel to take into consideration three factors that are directly pertinent to the task of assuring sustainability (i.e. ensuring that the full costs of development are identified, mitigated, compensated or offset). These factors are:

- the extent to which biological diversity is affected by the Undertaking;
- the capacity of renewable resources that are likely to be significantly affected by the Undertaking to meet the needs of present and future generations; and,
- the extent of application of the precautionary principle to the Undertaking (see section 3.4).

It is the Panel's interpretation that progress towards sustainable development will require the following:

- the preservation of ecosystem integrity, including the capability of natural systems to maintain their structure and functions and to support biological diversity;
- respect for the right of future generations to the sustainable use of renewable resources; and,
- the attainment of durable and equitable social and economic benefits.

Therefore, in reviewing the EIS and other submissions, the Panel will consider:

- the extent to which the Undertaking may make a positive overall contribution towards the attainment of ecological and community sustainability, both at the local and regional levels;
- how the planning and design of the Undertaking have addressed the three objectives of sustainable development stated above;
- how monitoring, management and reporting systems will attempt to ensure continuous progress towards sustainability; and,
- appropriate indicators to determine whether this progress is being maintained.

### 3.4 Application of the Precautionary Principle

The MOU requires the Panel to consider the "extent of application of the precautionary principle to the Undertaking". The Rio Declaration of 1992, to which Canada is a signatory, states that the precautionary approach requires that: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

The Panel interprets the precautionary principle as applying, in the particular context of this Undertaking, to the following activities:

- the release of toxic or deleterious substances into the environment;
- water withdrawals and diversions;
- the use of untested technology, or of existing technology in untested situations, where reliability is uncertain; and,
- other actions likely to cause significant damage to the environment, and particularly to biological productivity and ecosystem health.

Further, the Panel understands the application of the precautionary principle to require:

- that the onus of proof shall lie with the Proponent to show that a proposed action will not lead to serious or irreversible environmental damage, especially with respect to overall environmental function and integrity, considering system tolerance and resilience;
- scientific research and high-quality information; and,
- access to information, public participation, and open and transparent decision-making.

The Proponent shall indicate how the Undertaking conforms to the precautionary principle in at least the following ways:

1. that in designing and operating the Undertaking priority has been given to strategies that avoid the creation of adverse impacts;
2. that control of deleterious outputs or other potentially damaging activity goes beyond current emission standards where warranted by the potential environmental effects;
3. that contingency plans address explicit worst-case scenarios and include risk assessments and evaluations of the degree of uncertainty;
4. that monitoring programs are designed to ensure rapid response and correction where adverse effects are detected; and,
5. that liability and insurance regimes are established that hold the Proponent and its contractors accountable for adverse effects and associated damages, and their limitation and control, throughout the life of the Undertaking, including its decommissioning and rehabilitation.

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## Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

### 4.0 Preparation and Presentation of the Environmental Impact Statement

This section sets out how the EIS is to address public participation, study strategy, methodology and presentation. Through its EIS, it is up to the Proponent to demonstrate that it has addressed the considerations listed in section 2.0.

#### 4.1 Comprehensive Public Involvement

Public involvement is a central objective of the overall review process and a means to ensure that the Proponent addresses public concerns. In preparing the EIS, the Proponent shall first consult with residents and organizations in affected communities, other interested organizations, resource users and relevant government agencies. In particular, these Guidelines require the Proponent to demonstrate an understanding of aboriginal rights, interests, values and concerns and to recognize and respect them in planning and carrying out its proposed activities. Therefore, aboriginal and settler people who have traditionally used the area must be consulted.

The Proponent shall then describe in the EIS the objectives of this consultation, the methodology used, the results, and the ways in which the Proponent intends to address the concerns identified.

Meaningful public involvement in the environmental assessment review can only take place if the public has a clear understanding of the proposed Undertaking as early as possible in the review process. Therefore, the Proponent shall:

1. continue to provide up-to-date information describing the Undertaking to the public and especially to the communities likely to be most affected by the Undertaking;
2. involve the LIA and the Innu Nation in determining how best to deliver that information, i.e., the types of information required, translation needs, different formats, the possible need for community meetings; and,
3. explain the results of the EIS in a clear direct manner to make the issues comprehensible to as wide an audience as possible (see section 4.3).

#### 4.2 Study Strategy and Methodology

The Proponent is expected to observe the intent of the Guidelines and to identify and describe all significant environmental and socio-economic effects likely to arise from the Undertaking, including situations not explicitly identified in these Guidelines. It is possible that these Guidelines include matters that, in the judgement of the Proponent, are not relevant or significant to the Undertaking. If such matters are omitted from the EIS, they shall be clearly indicated so that the public and other interested parties have an opportunity to comment on this judgement. Where the Panel disagrees with the Proponent's decision, it may require the Proponent to provide additional information.

The Proponent shall explain and justify methods used to predict impacts of the Undertaking on the valued components of the Environment, on the interactions among these components and on the relations of these components to the overall ecosystem and socio-economic environment. The information presented must be substantiated. In particular, the Proponent shall describe how valued components of the Environment were identified and what methods were used to predict and assess the effects of the Undertaking on these components. The value of a

component not only relates to its role in the ecosystem, but also to the value placed on it by humans. The culture and way of life of the people using the area affected by the Undertaking are themselves considered valued components. Wherever possible, the Proponent shall differentiate information regarding the baseline description, impact predictions and the effectiveness of mitigation measures by age, gender and aboriginal status and by community. The Proponent shall also explain how it has used feminist research to identify how the Undertaking will affect women differently from men. The Proponent shall indicate how the significance of effects was assessed and justify the criteria selected.

In describing methodology, the Proponent shall explain how it used aboriginal, scientific, engineering and other knowledge to reach its conclusions. Any assumptions made shall be clearly identified and justified. All data, models and studies must be documented so that the analyses are transparent and reproducible. All data collection methods shall be specified. The uncertainty, reliability and sensitivity of models used to reach conclusions shall be indicated. The sections on the existing Environment and on impact predictions and assessment shall be prepared to the highest standards in the relevant subject area. All conclusions shall be substantiated.

The EIS shall identify all significant gaps of knowledge and understanding where they are relevant to key conclusions presented in the EIS. The steps to be taken by the Proponent to address these gaps should also be identified. Where the conclusions drawn from scientific and technical knowledge are inconsistent with the conclusions drawn from aboriginal knowledge, the EIS shall contain a balanced presentation of the issues and a statement of the Proponent's conclusions.

#### **4.3 Presentation of the EIS**

For clarity and ease of reference, it is suggested that the EIS be presented in the same order as the Guidelines. However, in certain sections of the EIS, the Proponent may decide that the information is better presented following a different sequence. The EIS shall include a guide that cross-references the Guidelines with the EIS so that points raised in the Guidelines are easily located in the EIS.

In the interest of brevity, the EIS shall make reference to, rather than repeat, information that has already been presented in other sections of the document. A key subject index would also be useful and should reference locations in the text by volume, section and sub-section. As well, the names of the Proponent's key personnel and/or contractors/sub-contractors responsible for preparing the EIS shall be listed. Supporting documentation shall be provided in separate volumes, and shall be referenced by volume, section and page in the text of the main EIS. The Proponent shall make the EIS text available on an internet website. The Proponent is also requested to consider presenting their documents in CD-ROM format with key subject search capacity.

The Proponent shall present the EIS in the clearest language possible. However, where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms shall be included. The Proponent shall provide charts, diagrams and maps wherever useful to clarify the text, including perspective drawings that clearly convey what the developed Undertaking site would look like. Maps shall be of a limited number of common scales to allow for comparison and overlay of mapped features.

#### **4.4 EIS Summary and Translation**

The Proponent shall prepare a plain language summary of the EIS that will provide the reader with a concise but complete overview of the EIS, including all the information listed in section 2.0. This summary, including all diagrams, maps and illustrations, shall be made available in English, Innu-Eimun and Inuktitut. The summary shall also be prepared in both video and audio tape formats in all three languages

In order for the Proponent's EIS submission to the Panel to be considered complete, the EIS summary must be prepared and translated in both the written and alternative formats, and ready for wide distribution.

It is essential to the public hearings stage of the environmental assessment that residents of those communities likely to be affected by the Undertaking have an adequate understanding of the proposed Undertaking and its effects. The Proponent shall therefore explain in the EIS how this information will be communicated effectively, either directly by the Proponent, or through collaborative arrangements with the LIA, the Innu Nation, or individual communities.

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## Part II - Content of the Environmental Impact Statement

Part II of the Guidelines provides specific instructions for the content of each section of the EIS.

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# Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

## 5.0 Introduction

This section shall orient the reader to the Environmental Impact Statement (EIS) by briefly introducing the geographic setting, the proposed Undertaking, the Proponent, the environmental assessment review process, and the content and format of the EIS.

### 5.1 The Setting

The Proponent shall provide a concise description of the geographic setting in which the Undertaking is proposed to take place. This description shall integrate the natural and human elements of the Environment in order to explain the interrelationships between the physical and biological aspects and the people and their communities.

### 5.2 The Undertaking

The Proponent shall briefly summarize the mineral resource, the Undertaking, its purpose, location, scale, components, activities, timing and phases.

### 5.3 The Proponent

This section shall introduce readers to the Proponent. The Panel is particularly interested in corporate accountability for the management of environmental effects. Therefore the Proponent should provide information on:

1. ownership of rights and interests in the Undertaking;
2. corporate and management structures;
3. the linkage of these factors between the Proponent and its parent company;
4. placement of the parent company in world nickel markets;
5. importance of the Undertaking to world nickel supply; and,
6. the relevant experience of the parent company over the last 10 years in mining operations in regard to the following:
  1. record of compliance within Canada and elsewhere with government policies and regulations pertaining to environmental protection and socio-economic issues, any penalties imposed by government as a result of significant non-compliance and details of any corrective measures it has implemented;
  2. mine safety, accidents, spills and emergencies, including details of the events, the responses taken and any penalties levied;
  3. record in honouring commitments to implement environmental and socio-economic mitigation measures, including rehabilitation, during mining operations and in the event of planned or premature mine closure;
  4. relations with aboriginal peoples in Canada or peoples in less developed countries;
  5. relevant experience in operations in arctic and subarctic regions; and,
  6. record in incorporating environmental and socio-economic considerations into Undertaking construction, operation, decommissioning and reclamation, including programs or techniques for avoiding or reducing adverse effects and/or enhancing beneficial effects.

## 5.4 The Environmental Impact Statement

The Proponent shall:

1. briefly explain the environmental assessment review process in the context of the MOU;
2. describe the role of the EIS in the overall environmental assessment process; and,
3. provide an annotated table of contents for all volumes and background reports, and any other information that will help the reader find his or her way around the EIS.

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# Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

## 6.0 Boundaries for the Environmental Assessment

The Proponent shall define the spatial and temporal boundaries for the environmental assessment according to the following criteria.

### 6.1 Spatial Boundaries and Scale

In determining the spatial boundaries to be used in assessing impacts, the Proponent shall consider the following:

1. the physical extent of the Undertaking itself, and the territory the Proponent will control through lease or other tenure arrangements;
2. the extent of aquatic and terrestrial ecosystems potentially affected by the Undertaking (e.g., impact areas could be defined by the range of the George River caribou herd or by the extent of a plume of potential contaminant transport to the downstream point of no observable or measurable impact), giving full consideration to aboriginal knowledge;
3. the extent of land use for subsistence, commercial, cultural, recreational, spiritual and aesthetic purposes by aboriginal and settler persons and communities whose territories encompass (a) or (b), as indicated by information provided by LIA and Innu Nation in the context of this review, as well as any interests of neighbouring aboriginal groups as defined in lands and resources within the impact area as indicated by (a) or (b); and,
4. the zones of economic impact, including local, regional (i.e. Labrador), and provincial.

These boundaries also indicate the range of appropriate scales at which particular baseline descriptions and the assessment of impacts should be presented. The Proponent is not required to provide a comprehensive baseline description of the Environment at each of the above scales, but shall provide sufficient detail to address the relevant impact issue. The EIS shall contain a justification and rationale for all boundaries and scales chosen.

### 6.2 Temporal Boundaries

With respect to baseline information on the Environment, the Proponent shall present a sufficient time-depth of data and information to establish norms, trends, and extremes.

In assessing the impact of the Undertaking, the Proponent shall cover the period from the discovery of the ore body through all phases of the Undertaking including construction, operation, decommissioning and demolition, to the end of post-decommissioning, i.e. the period after the mine has been decommissioned, the site rehabilitated, environmental monitoring and management obligations have been met and the Proponent has effectively surrendered any leases for a mining development and associated activities. Where residual effects of the Undertaking are predicted to last longer than the end of post-decommissioning, the Proponent shall indicate when these effects will no longer be of significant consequence.

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## **Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking**

### **7.0 Understanding Description**

The Proponent shall provide a description of the Undertaking that includes the following:

1. an explanation of the need for the Undertaking and an analysis of alternatives available to the Proponent if the Undertaking does not proceed;
2. a description of those aspects of the Undertaking, including accidents and malfunctions, that could reasonably be expected to affect the physical and biological environment, the contemporary use of the land and natural resources, and the health, cultural and socio-economic conditions of affected residents;
3. descriptions and assessment of alternative means of carrying out the Undertaking and its key components that are technically and economically feasible. These shall include, but not be limited to, tailings disposal, waste rock disposal, fly-in fly-out camp or town site, concentrate storage and transportation. Sufficient information should be provided for the reader to understand the reasons, including consideration of environmental and socio-economic impacts, for selecting the preferred alternative and for rejecting others;
4. an explanation of how the natural environment has influenced the design of the Undertaking;
5. consideration of the conditions or circumstances that could affect or alter the selection of a particular alternative, such as size of ore reserves, market conditions, pending or proposed regulatory changes and adjacent developments (see section 7.5);
6. descriptions, including risk assessments, of occupational health and safety issues associated with all phases of the Undertaking;
7. information on best environmental management practice in mining in Canada and elsewhere, and a discussion of known experience with these techniques, procedures, and policies, and their effectiveness and reliability, particularly under arctic or subarctic conditions;
8. a discussion of how design, engineering and management plans are consistent with the maintenance of ecosystem function and integrity;
9. a demonstration of how the Proponent has applied the precautionary principle in its Undertaking design and management;
10. a discussion of the range of options considered as alternatives for the pace and scale of the operation including different scenarios contemplated for the lifespan of the mine, a consideration of the timing of phases and components of the Undertaking; and,
11. a risk assessment of those economic or other conditions that might impair the fulfillment of the Proponent's plans and commitments regarding the avoidance or mitigation of adverse impacts.

### **7.1 Regulatory Environment**

The Proponent shall identify all federal and provincial environmental and other related laws, regulations and associated standards that require compliance in respect to the Undertaking and explain how such requirements will be met. Each regulatory approval required shall be listed with the following details:

1. activity requiring approval and when it is required;

2. name of approval or permit;
3. regulatory agency; and,
4. associated legislation.

## **7.2 Undertaking Components and Activities**

The description shall address all phases of the Undertaking with particular attention to seasonal adaptations necessitated by climatic and sea ice conditions.

### **7.2.1 Construction Phase**

This section shall include information regarding all construction activities, schedules by season, methods to transport materials, infrastructure and personnel requirements (such as, occupations, skills, entry requirements, duration of work) and related support and transportation facilities during the construction phase. This information shall also address the concurrent construction and development of the underground mine with the open pit operation.

#### **7.2.1.1 Activities**

Activities described shall include but not be limited to:

1. all site preparation and materials laydown areas;
2. all site clearing including vegetation, soil and rock removal, and associated disposal or storage methods;
3. all construction-related earth works including borrow pits, quarries, cut and fill and stream crossings;
4. blasting activities including explosives transportation, manufacture and storage;
5. the use, transportation, handling and storage of all hazardous materials, concrete and aggregate;
6. site rehabilitation including removal of temporary services; and,
7. construction management procedures to ensure regulatory compliance, including construction camp operation and policies.

#### **7.2.1.2 Components**

These activities shall be described in relation to the construction of each of the major components of the Undertaking, including:

1. roads, airfields, and docks;
2. housing and other camp infrastructure and services including water supply, sewage, and waste disposal facilities;
3. on-site power generation and transmission facilities, and/or transmission facilities from off-site;
4. mill;
5. concentrate storage facilities;
6. dikes and control structures related to tailing and waste rock ponds, and other water withdrawal, regulation and diversion facilities; and,
7. pipelines.

#### **7.2.2 Operation Phase**

This section shall include, but not be restricted to, information regarding all activities, schedules, duration, infrastructure and personnel requirements during the operation phase.

1. Mining operations, including but not restricted to the following:
  1. open pit mining operations including deposit geology and ore reserves, pit design, technology to be used and any site-specific problems such as those related to the high sulphide content of the ore or to permafrost;
  2. underground mining operations as currently defined including deposit geology and ore reserves, predicted mining methods and equipment, technology to be used, mine access, mine services and Undertaking surface support facilities;
  3. pits and quarries; and,
  4. storage or disposal of all mining waste, including a description of its physical and chemical properties and stability.
2. Milling operations, including but not restricted to the following:
  1. details of the chemical composition of the concentrate and ore;
  2. a description of the unit operations including chemical additions;
  3. tailings disposal installations and operations including, the physical and chemical properties and stability of tailings, pipeline and dam/liner design features including emergency spill response plans and details of deposition methods; and,
  4. process water supply and handling.
3. Description of all effluents and emissions released during the Undertaking.
4. All water diversion, withdrawal and drainage operations and structures.
5. All site infrastructure facilities and related operations, including but not restricted to:
  1. solid and liquid waste storage, handling and treatment facilities;
  2. facilities for the storage, handling and disposal of hazardous materials including explosives and petroleum products;
  3. power generating and distribution facilities including alternative sources considered; and,
  4. housing and other infrastructure provided for employees, contractors, and visitors.
6. On-site ore concentrate transportation and storage operations and facilities.
7. Systems and structures for air and land transportation, with estimates of traffic type and frequency.
8. Marine transportation system including detailed information regarding, but not limited to:
  1. preferred shipping route options, and the hydrographic and ice information and other criteria used to determine these selections;
  2. preferred shipping season and shipping frequency options, and any associated navigation aids, such as icebreaker support, and the criteria for making these decisions;
  3. marine communication systems, including information dissemination to other interested parties;
  4. proposed shipping vessels design and their relation to cargo, shipping routes and shipping seasons;
  5. all environmentally hazardous materials to be shipped and measures to ensure cargo safety;
  6. cargo loading and unloading practices and precautions, with particular attention to toxic or dangerous goods; and,
  7. effluent emissions from shipping operations.

9. All off-site facilities within Labrador specifically intended for the expediting, transport and storage of materials destined for the site or for waste removed from the site, and all fixed housing and transport facilities established for the use of employees, contractors and visitors in transit.
10. Breakdown of all personnel requirements by occupation, skill, entry requirements, duration of work and related support and transportation facilities.
11. Other undertakings or activities relevant to the assessment of the Undertaking's effects.

### **7.2.3 Decommissioning and Post-Decommissioning Phases**

This section shall describe the Proponent's approach to, and conceptual plans for, decommissioning, including demolition and rehabilitation, and post-decommissioning activities. As well, it shall also specify ownership and control of the site and responsibility for monitoring and maintaining the integrity of essential structures relating to waste rock and tailings after decommissioning. It shall discuss and provide evidence for the long term stability of these structures under extreme conditions.

### **7.3 Environmental Protection Plan**

The Proponent shall describe its Environmental Protection Plan and its environmental management system through which it will deliver this plan. The plan shall provide an overall perspective on how potentially adverse environmental effects will be managed over time and shall include:

1. waste management/minimization plans for the following: tailings, waste rock, domestic and industrial solid wastes, liquid waste, and hazardous waste including the use, handling, transportation, storage, production and disposal of toxic substances, chemicals, fuels and lubricants;
2. an acid rock drainage management plan;
3. a plan to control, minimize, and mitigate any contaminants, such as heavy metals, excess suspended solids, oxygen demanding materials or organic contaminants that may be released or generated by mining, milling and storage, including any acidification that might accelerate such release;
4. a water supply and management plan including potable and process water;
5. an operating regime for tailing and waste rock ponds, including contingencies;
6. a fish habitat management plan that ensures compliance with the "No Net Loss" principle of the Department of Fisheries and Oceans (DFO);
7. a plan to control air emissions from the Undertaking including dust generated from the mine, roads, mill and concentrate handling;
8. an air traffic management plan for the site including control over use of the airstrip by third parties;
9. a marine transportation plan for the shipping of supplies and products, including proposed schedules;
10. plans to manage human/wildlife interactions at the site and adjacent areas and address hazards to wildlife presented by the Undertaking and its employees (e.g., minimizing bear attraction);
11. emergency response and contingency plans, including plans for addressing spills and other accidents and malfunctions both on land and in water;
12. plans for ongoing site rehabilitation during the life of the Undertaking; and,
13. plans regarding occupational health and safety including risk assessment and communication.

The Proponent shall indicate the sensitivity of its operations and management plans to variation in natural conditions including extreme events and potential climate change over all phases of the Undertaking.

#### **7.4 Commitments and Policies**

The Proponent shall describe its commitments, policies and arrangements directed at promoting beneficial, or mitigating adverse, socio-economic effects. The Proponent shall discuss any requirements for contractors and sub-contractors to comply with these policies. This description shall include information on:

1. commuting and work rotation of workers;
2. recruitment, training, hiring, employment counselling, pay equity and employment, including those policies specifically for aboriginal and local candidates and those promoting aboriginal participation, and any limitations due to existing or anticipated federal or provincial laws, regulations or obligations under international treaties and agreements, or collective agreements;
3. orientation to the workplace, cross-cultural, anti-racism and anti-sexism policies and programs and personal counselling, for both aboriginal and non-aboriginal employees;
4. occupational health and safety and related training, committees and communications and emergency response plans for workplace accidents;
5. control of movements to and from the mining lease area by employees and others;
6. reducing the potential for social problems on the job-site or in the home communities resulting from the Undertaking, including policies on sexual and gender harassment, alcohol and drugs on the job site and work and pay schedules;
7. ensuring public safety on site with respect to firearms, while respecting the rights and needs of harvesters from adjacent communities to travel freely through the country in the course of their activities;
8. managing hunting, fishing and gathering on or from the site by non-aboriginal employees, while respecting the harvesting rights of aboriginal employees;
9. accommodating aboriginal personnel wishing to pursue harvesting and traditional activities, for example with respect to work scheduling;
10. use of committees and liaison arrangements to respond to issues raised by employees;
11. contracting and procurement, including those which promote local sourcing and participation of local businesses and how this will be accomplished;
12. education, entry requirements, career development counselling and training for job-entry, on the job and post-Undertaking employment;
13. encouraging youth to consider and pursue education, training and employment opportunities; and,
14. use of and payment for municipal facilities and services in local communities, whether directly by the Proponent or by its contractors, sub-contractors or suppliers.

#### **7.5 Future Developments**

The Proponent shall discuss the potential for further increasing the capacity of on-site development and infrastructure in response to new ore deposits, whether discovered by the Proponent or other parties.

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## Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

### 8.0 Existing Environment

The purpose of this section is to describe the existing Environment, how it came to be, and what is valued by the different peoples who inhabit the region, at a level and scale of detail that enables readers to understand the material presented and its significance to them.

This section of the EIS shall provide a baseline description of the Environment (as defined in the MOU but subdivided in sections 8 and 9 as the physical, biological and socio-economic environments), including the components of the existing Environment and environmental processes, their interrelations and interactions, and the variability in these components, processes, and interactions over time scales appropriate to this EIS (see section 6.2). The Proponent's description of the existing Environment shall be in sufficient detail to permit the identification, assessment and determination of the significance of potentially adverse effects that may be caused by the Undertaking.

This description shall include, but not necessarily be limited to those environmental components, processes, and interactions that either were identified to be of public concern during scoping sessions or that the Proponent considers likely to be affected by the proposed Undertaking. In doing so, the Proponent shall indicate to whom these concerns are important and the reasons why, including social, economic, recreational, cultural, spiritual, and aesthetic considerations. The Proponent shall also indicate the specific geographical areas or ecosystems that are of particular concern, and their relation to the broader regional environment and economy, e.g., the contribution of the Voisey's Bay area to critical habitat, population stocks, the presence of particular species in northern Labrador or the harvesting economy of northern Labrador.

In describing the physical and biological environment, the Proponent shall take an ecosystem approach that takes into account both aboriginal and scientific knowledge and perspectives regarding ecosystem health and integrity. The Proponent shall identify and justify the indicators and measures of ecosystem and social health and integrity it uses, and these shall be related to Undertaking monitoring and follow-up measures.

In describing the socio-economic environment, the Proponent shall provide information on the functioning and health of the socio-economic environment, encompassing a broad range of matters that affect the people and communities in the impact area.

For the biological environment, baseline data in the form of inventories alone is not sufficient for the Panel to assess impacts, although they may be useful in evaluating loss for the purposes of compensation. The Proponent shall consider the resilience of species, communities, and habitat. The Proponent is not required to generate new stock assessments for species other than fish in affected aquatic environments, but it shall include all available historical data on population stocks and status. Emphasis shall be on those species, communities and processes identified as valued components of the ecosystem during the scoping sessions, however, the interrelations of these phenomena and their relation to the entire ecosystem and communities of which they are a part must be indicated. The Proponent shall address such issues as habitat, nutrient and chemical cycles, food chains, productivity, vectors of disease and parasites, and the incidence of pathology, as these may be appropriate to understanding the impact of the Undertaking on ecosystem health and integrity. Range and probability of natural variation over time shall also be considered. To the extent that the Proponent relies on its own data obtained since 1995, it shall comment on how representative these data are over space and time, and any limitations on the inferences or conclusions that can be drawn from them.



In providing baseline information on the Environment, the Proponent shall present a sufficient time-depth of data and information to establish norms, trends, and extremes, to the extent that such information is available. Aboriginal knowledge of these matters shall be an integral part of this baseline, to the extent that it is available to the Proponent. The Proponent shall comment on the quality and reliability of these data and their applicability for the purpose used, and clearly identify gaps, insufficiencies, and uncertainties, especially those that should be remedied for monitoring purposes.

The baseline, while necessarily relying on recent and current data, should not be a static or equilibrium description of the Environment. Therefore, to assist in identifying and accounting for trends in and alterations of the Environment that are unrelated to the Undertaking, the Proponent shall:

1. identify
  1. the significant events or processes, natural or anthropogenic, that have already affected the Environment since circa. 1940,
  2. how these have affected the Environment,
  3. whether these effects are ongoing;
2. indicate how activities since the staking of the Voisey's Bay mineral deposit may have altered the Environment described; and,
3. provide a description of the likely condition of the Environment within the expected lifespan of the Undertaking, if the Undertaking were not approved. Considerations shall include but not be limited to possible local impacts of global climate change, variation in wildlife abundance and distribution; contaminant distribution; and demographic and socio-economic trends, including indicators of economic and social well-being.

A key objective of the above is to maximize the possibility of distinguishing between the Undertaking's effects on the Environment, and the effects of other factors, particularly those identified in (a) and (c) above, and the analysis shall be relevant to this objective. It is not intended that the Proponent undertake new research for this purpose, but its analysis must be supported by sound evidence and account for all relevant information including aboriginal knowledge, local perspectives and appropriate scientific literature. Boundaries and scale shall be appropriate to those elements of the Environment discussed, e.g., biological, socio-economic, cultural.

The Proponent shall indicate the source of all information and analysis in this section, e.g. literature review, its own research (or Proponent-funded research), or aboriginal knowledge and expertise.

### **8.1 Physical Environment: Baseline Description**

The Proponent shall describe the components, processes, and interrelations of the existing physical environment. This description shall include (with particular emphasis on the spatial boundaries identified in section 6.1.(a) for items (a) to (d) listed below and identified in section 6.1(b) for items (e) to (k) listed below):

1. bedrock geology, hydrogeology and geomorphology;
2. surface geology and soils, including chemistry and structure, with particular reference to their permeability in relation to tailings and waste rock ponds;
3. permafrost conditions, including areas of discontinuous permafrost, high ice content soils, thaw sensitive slopes, and stream-banks;
4. areas of ground instability such as slumping or landslides;
5. climate and meteorology, including magnitude and frequency of extreme events;
6. marine conditions including bathymetry, tides, currents;

7. sea ice conditions and regime, and their relation to (e) and (f);
8. fresh water and estuarine features and regimes, on a watershed basis, including hydrological characteristics, water chemistry and turbidity, surface water flow, ground water regime (including aquifer recharge zones) and chemistry, flood zones, and ice formation and melt patterns;
9. pertinent physical and chemical properties of sediment, including sediment profiles;
10. current levels of and trends in any environmental contaminants such as, but not limited to, heavy metals, organochlorines, or nutrients, in air, water, soil or sediments; and,
11. ambient air quality and noise levels.

## **8.2 Biological Environment: Baseline Description**

Without limiting the range of considerations, the Proponent shall consider the following components, the interactions between these components, and their interactions with the physical and biological environment, primarily at the geographical scale indicated in section 6.1 (b) and 6.1(c):

1. regional occurrence and distribution, range, abundance, and population status, including seasonal variation and variability over multiple years;
2. habitat and life cycle requirements;
3. migratory patterns and routes and the corresponding sensitive periods where these routes cross habitat affected by the Undertaking;
4. status and productivity of habitat;
5. current condition and health of the species, including
  1. contaminant loading and its relationship to section 8.1(j), including relation to toxicity thresholds for key organisms,
  2. observable indicators of health such as body condition, parasites, disease or other indicators used by aboriginal people or biologists, and
  3. qualities relating to taste, texture, or other indicators used by aboriginal people of the species that they harvest;
6. existence of any rare species or populations or those with federal, provincial, regional or local designated status (i.e., vulnerable, threatened, endangered or extirpated), and their habitats; and,
7. any other issues identified through public consultations.

The Proponent shall consider the status of lower trophic levels as these relate to ecosystem health and productivity, to biodiversity and to valued species. The Proponent shall indicate how its biodiversity studies were carried out.

The Proponent shall also consider plant and vegetation communities of ecological, economic or other human importance, including wetlands such as bogs, fens, marshes, swamps and shallow waters, and coastal and intertidal zones, and their productivity and health.

## **8.3 Socio-economic Environment: Baseline Description**

In describing the socio-economic environment, the Proponent shall take a holistic approach that takes full account of the distinctive ways of life of the local communities, the critical requirements for their maintenance and enhancement, and the aspirations and plans of the communities. The Proponent shall have due regard for the distinctive economic and social role of subsistence and commercial harvesting at the household, community and regional levels, and other uses of lands and resources for traditional purposes by aboriginal and settler persons and shall consider the status, health, persistence, and resilience of those features of the local economy.

The profile of the existing socio-economic environment shall describe conditions at the community, regional (Labrador) and provincial levels, in such a way that the potential effects on the functioning and health of the socio-economic environment and the significance of these effects can be assessed. The profile shall employ, as appropriate, socio-economic indicators to help define the features of the system, and these shall be relevant to the valued components of the environment, and to public concerns identified during scoping sessions. Socio-economic indicators shall include, but not be limited to, demographics, employment, income, education and skills, use of land (including water and ice) and resources, including fish and wildlife harvesting, housing, quality of life, health, morbidity and mortality, diet including country food, and substance abuse, and the interrelations of these indicators. The Proponent shall identify and justify the indicators and measures of personal and community health and well-being it uses. Socio-economic information provided shall be broken down where possible by age, gender, and aboriginal status, by community.

The Proponent shall identify, to the best of its understanding, the various perspectives and aspirations for the future within the region. In this context, the Proponent shall consider the relationship between the Undertaking and any land claims respecting the general area.

The Panel is aware that information on socio-economic matters must be obtained from a combination of the following sources: existing literature; existing administrative and monitoring data held chiefly by responsible governments and agencies; social surveys; and aboriginal knowledge. Ethical social research standards require that the last two can only be obtained with the consent and cooperation of local residents. The Panel requires the Proponent to demonstrate that it has made best efforts either to obtain this information itself, where appropriate, or to assist the Innu Nation, the LIA, or other appropriate organizations and persons, to provide it for inclusion in the EIS, or to present it directly to the Panel during the course of the review.

The description shall address the following elements as well as any other issues identified through public consultations.

1. Demographics, i.e. population at the regional and community level, including trends in births, deaths, fertility, and migration.
2. Regional and community economies, including:
  1. employment (including participation rates) and income by industry and occupation;
  2. community economic profiles showing the relative balance of income from all sources, including subsistence activities, to the extent that such data are available or can be estimated. This information shall be presented on both a household and per capita basis;
  3. local consumer prices and cost of living, particularly with respect to food, shelter, utilities and transportation;
  4. current status of fisheries, other forms of harvesting, and the factors affecting them; and,
  5. current and projected land-based enterprises and economic activities including tourism, outfitting, commercial harvesting and recreation.
3. Education, training, and skill levels, as these relate to existing employment patterns and opportunities.
4. Land and resource use:
  1. harvesting activities and other traditional uses, including cultural and spiritual, of aboriginal and settler persons and communities within the local impact area of the Undertaking and their viability, and the relation of harvesting to the household and community economy. Particular attention shall be given to current (pre-Undertaking) resource accessibility and quality; harvesting activities and customary aspects of tenure; recent and current encroachment on and restriction of harvesting activities by competing or incompatible uses of land and resources or consequent regulations; and,

2. recreational and hunting and fishing activities by other residents.
5. Human health and well-being:
  1. the physical and mental health of residents of the area most directly impacted by the Undertaking, based on local perceptions of health and well-being and on quantitative indicators such as mortality, morbidity, and social pathology or dysfunction; and,
  2. diet and the relation of country food to physical, social, and cultural health and well-being.
6. Social and cultural patterns, including:
  1. cultural and spiritual life of the communities, including language;
  2. patterns of family and community life, such as community and household social organization, including the organization of work, both paid and unpaid and its distribution between men and women, and the patterns of sharing and mutual aid; and,
  3. social relations between residents and non-residents, between men and women, among generations and between aboriginal and non-aboriginal persons.
7. Cultural sites, including:
  1. archaeological, paleontological, burial, cultural, spiritual and heritage sites; and,
  2. protected areas such as parks, sanctuaries or preserves, whether established or proposed.
8. Housing, infrastructure, and services in adjacent communities and the Upper Lake Melville area, including:
  1. cost and availability of housing and land;
  2. current levels of use of existing social, institutional, family, health and community services including emergency response and law enforcement services, transportation facilities and services, waste disposal and management, and infrastructure and the capacity of these to meet additional and new needs; and,
  3. status of community and local government organizations and institutions, including their powers, responsibility, and financing.

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## **Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking**

### **9.0 Impact Assessment, Mitigation Measures, Residual Effects and Cumulative Environmental Effects**

The purpose of this section is to indicate what will happen as a result of the Undertaking, in what ways the Environment may be changed, where, and for how long, and whether residents will be better or worse off during the Undertaking, and after its termination.

This section shall:

1. identify what changes may be expected to occur as a result of the Undertaking including accidents, malfunctions and unplanned events. The effects of worst case scenarios shall be addressed as appropriate;
2. assess these effects and their significance;
3. describe and justify the Proponent's plans to mitigate the adverse effects of the Undertaking and enhance its beneficial effects and assess the likely effectiveness of those plans;
4. identify any residual effects of the Undertaking, and the Proponent's plans to compensate for these; and,
5. assess cumulative environmental effects of the Undertaking.

The impact assessment shall be based on the assumption that management plans, commitments and policies (described in sections 7.3 - Environmental Protection Plan and 7.4 - Commitments and Policies) have been put into place.

#### **9.0.1 Environmental Effects**

In predicting and evaluating the effects of the Undertaking, the Proponent shall provide substantial detail and state clearly what elements and functions of the Environment may be lost, where, how much, for how long, and with what overall effect.

The Proponent shall indicate the degree of uncertainty in predicting the effects identified. The EIS shall provide a comprehensive analysis of the short and long-term effects of the Undertaking on the physical, biological and socio-economic environments and on the interactions among these environments, and indicate the sensitivity of the function, integrity, and health of these environments to these predicted effects. With respect to the biological environment, while consideration of species-specific impacts is essential, due consideration shall also be given to impacts on biological processes and ecosystem health and integrity.

The prediction of effects shall be based on clearly stated hypotheses of causal relations. The Proponent shall specify the indicators used and how these indicators would measure and verify these effects in subsequent monitoring, especially to distinguish the effects of the Undertaking from those of other activities or processes.

#### **9.0.2 Significance**

The EIS shall contain an analysis of the significance of the effects it predicts. It shall contain sufficient information to enable the Panel and participants to understand and review the Proponent's judgment of the significance of effects. The Proponent shall define the terms used to

describe the level of significance. The Proponent shall assess the significance of predicted effects according to the following categories:

1. magnitude;
2. geographic extent;
3. timing, duration and frequency;
4. degree to which effects are reversible or mitigable;
5. ecological and social/cultural context;
6. probability of occurrence; and,
7. the capacity of renewable resources to meet the needs of the present and those of the future.

The analysis shall also clarify the effects of the Undertaking on matters of public concern as identified in the Proponent's consultation process and as raised in the public scoping sessions.

### **9.0.3 Geographic Scale**

The EIS shall pay particular attention to the geographical scale of anticipated impacts, by characterizing them as appropriate in or at the:

1. regional and provincial levels as in section 6.1(d);
2. traditional use areas as in section 6.1(c);
3. ecosystem level (e.g., key watersheds, streams, estuaries such as Reid Brook, with particular emphasis on critical habitat and seasons); and,
4. local harvesting/use areas (e.g., Voisey's Bay area, Anaktalak Bay area), and indicating the relation of each to (a) and (b) above, (e.g., proportion of habitat or population in specified area in relation to these larger areas, with particular attention to what is critical to ecosystem health).

### **9.0.4 Mitigation**

The Proponent shall describe general and specific measures intended to mitigate the potentially adverse effects of the Undertaking. Mitigation as defined in the MOU includes the elimination, reduction, or control of adverse environmental effects, and restitution for damage through replacement, restoration, compensation or other means. The Panel expects that these different components of mitigation may be described in different parts of the EIS. More specifically, plans to prevent impacts will probably be included in section 7, and plans to compensate for environmental damage that cannot be avoided or minimized will be dealt with in section 9.3. Mitigation procedures introduced here for the first time shall be discussed in greater detail. Mitigation measures described elsewhere in the EIS shall be listed and referenced. The Proponent shall indicate which measures respond to statutory or regulatory requirements or to bilateral agreements, and which go beyond these.

Proposed mitigation measures shall be described by phase, timing and duration. Information must be provided on methods, equipment, procedures, policies and training associated with the proposed mitigation. The Proponent shall discuss and evaluate the effectiveness of the proposed measures and assess the risk of mitigation failure and the potential severity of the consequences

The Proponent shall indicate what other mitigation measures were considered and explain why they were rejected. Trade-offs between cost savings and effectiveness of the mitigation measures shall be justified. The Proponent shall identify who is responsible for the implementation of these measures and the system of accountability, including the obligations of all its contractors and subcontractors. The Proponent shall also document mitigation measures employed at similar mining projects where this will provide useful information on effectiveness and reliability.

The EIS shall to the extent possible avoid repetition by identifying the impact and the proposed mitigation measure in the same discussion, and do this by specific impact, first with respect to effects of the Undertaking on the physical and biological environment and, secondly with respect to the socio-economic, including cultural, environment.

### **9.1 Physical and Biological Impacts and Mitigation**

The impacts of the Undertaking on the existing physical and biological environment, as characterized by sections 8.1 and 8.2 shall be identified and assessed, and the proposed mitigation measures described. Particular attention shall be paid to effects related to the following:

1. proposed shipping and the sea ice regime, particularly the stability and duration of shore-fast ice;
2. contaminant or pollution releases, including chronic releases, that may be associated with the Undertaking, including but not limited to heavy metals and organochlorines that may bioaccumulate or biomagnify in the food chain;
3. water quality including groundwater;
4. hydrological cycle;
5. fish and fish habitat, especially Reid Brook and its estuary;
6. terrestrial or aquatic habitat loss, impairment of ecosystem function, or changes in productivity;
7. loss of biodiversity;
8. marine mammals, including noise of ship traffic;
9. caribou, including migration timing and routes;
10. waterfowl, including staging and feeding areas; and,
11. edible quality of country food, including contaminant loading, and other factors such as taste and texture as measured by local residents.

The discussion of these effects and their proposed mitigation shall give full consideration to aboriginal knowledge of the Environment and of appropriate and effective mitigation measures.

### **9.2 Socio-economic Impacts and Mitigation**

The Proponent shall assess the beneficial and adverse effects on the social, economic, and cultural environment by the proposed Undertaking. In doing so, the Proponent shall identify and take into account the particular needs and interests of various segments of the local populations (e.g. youth, elders, women, harvesters), and consider how the Undertaking may affect each of them. The Proponent shall indicate to the best of its ability and within available knowledge, how the Undertaking will enhance and/or impair both the current social, cultural, and economic ways of life in the communities, and community aspirations for the future, including other economic opportunities. In considering the local social and economic effects of the Undertaking, the Proponent shall have due regard for the attitudes and perceptions of local residents, and how these are grounded in their culture, social organization, and historical experience. The assessment shall consider the capacity of the people, communities and institutions to respond to the Undertaking.

Where beneficial impacts are predicted, but depend in part on actions to be taken by parties other than the Proponent (e.g., where local access to certain jobs requires that a training program be offered by an outside agency) information shall be provided about these required actions and about any agreements reached.

The analysis shall pay particular attention to the distinctive benefits and problems associated with a fly-in, fly-out operation. In assessing the effects of the Undertaking on people's lives particular attention shall be given to the comparative adverse and beneficial effects for workers,



their spouses and families, and other residents, of a major employment base away from the communities, rotational work schedules and the presence of large numbers of transient employees and contractors in the region. The Proponent shall describe its plans to mitigate the identified adverse effects.

The Panel is aware that the Proponent has entered into impact benefit agreement (IBA) negotiations with the LIA and Innu Nation. The Proponent shall describe its consultation process with these groups and identify and describe, within the confines of confidentiality agreements, the key elements of any IBA and compensation packages being negotiated, and how these relate to the environmental protection plan, commitments, and policies described in sections 7.3 and 7.4. The Proponent shall indicate how it intends to continue working with the LIA, Innu Nation, and more generally, band and community councils, and other organizations if the Undertaking goes ahead.

The Proponent shall also present its understanding of how proceeding with the Undertaking in advance of land claim settlements might adversely affect settlement negotiations and aboriginal rights and interests.

With respect to mitigation measures to reduce or offset adverse effects on the lives and well-being of individuals, families and communities most directly affected by the Undertaking, the Proponent shall indicate how mitigation will address impacts experienced by residents by age group and gender where appropriate and shall describe how the Innu Nation, the LIA and community organizations will be involved in the development, application and ongoing evaluation of these measures.

The assessment of impacts and the proposed mitigation measures shall include, but not be limited to, effects of the Undertaking on the following matters.

1. Regional and community demographics, in particular, intra-regional migration and residence patterns.
2. The local, regional, and provincial economies, whether direct, indirect or induced with respect to:
  1. employment and income, with particular reference to wage and salary employment by skills category, gender and age over the life of the Undertaking. This shall include estimates of provincial, regional, local, aboriginal and female participation, and opportunities for participation, in wage and salary employment, considering such factors as the extent to which the skills of the available workers match job requirements, the level of interest in mining work, commuting arrangements to allow these workers to reach the site, and the role of unions in hiring and employment;
  2. community income and household economics, including subsistence activities;
  3. local consumer prices and cost of living, particularly with respect to food, shelter, utilities and transportation;
  4. fisheries and other forms of harvesting, whether commercial or subsistence;
  5. activities such as tourism, outfitting, commercial harvesting and recreation, including foregone or precluded opportunities foregone or precluded as a result of the Undertaking;
  6. opportunities for local, regional and provincial businesses to supply goods and services both directly to the Undertaking and to meet the demand created by the expenditure of new income by employees of, and suppliers to, the Undertaking;
  7. opportunities to diversify the northern economic base to produce and to supply new goods and services; and,
  8. competition for labour between the Undertaking and existing businesses, institutions and traditional activities.

3. Education, training, and skills, including appropriate local and regional training opportunities available to local people to take advantage of jobs created by the Undertaking, including training by the Proponent.
4. Subsistence and commercial harvesting activities by community residents, in particular:
  1. disruption of harvesting and travel by shipping and icebreaking during the period of ice cover;
  2. disruption of fishing and other harvesting activities by shipping during the open water period;
  3. measures to ensure continued unrestricted and safe access and passage on land and sea for harvesting and travel by local residents, and alternatives to be provided in the event of disruption;
  4. changes in the abundance and distribution of harvested species, especially caribou, fish, and marine mammals, as identified in section 9.1, that would adversely affect harvesting; changes in the quality of harvested species, including contamination, as identified in section 9.1, that would adversely affect their consumption or sale;
  5. measures to avoid or minimize changes in the abundance, distribution, or quality of harvested species, or mitigate the consequences of such changes; and,
  6. measures to control hunting, fishing, or harassment of animals by on-site personnel, while respecting the harvesting rights of aboriginal persons and/or land claims beneficiaries.
5. Human health and well-being in adjacent communities, as indicated by:
  1. local perceptions of physical and mental health;
  2. measures of mortality and morbidity, and of social pathology and dysfunction such as unwanted pregnancies, sexually transmitted diseases, substance abuse, violence (both physical and sexual), and crime; and,
  3. changes in diet and the use of country food.
6. Social and cultural patterns, including:
  1. cultural and spiritual life of the communities, including language loss or retention;
  2. patterns of social organization at the household and community level, including the organization of work, mutual aid, and sharing; and,
  3. social relations between residents and non-residents, between men and women, among generations, and between aboriginal and non-aboriginal persons.
7. Cultural and natural heritage, including:
  1. mitigation measures to be applied for the protection and documentation of historic resources;
  2. protected areas such as parks, sanctuaries or preserves, whether established or proposed; and,
  3. visual and aesthetic impacts of the Undertaking on the landscape during all phases.
8. Housing, infrastructure and services, including:
  1. changes in shelter availability, quality and affordability in adjacent communities and the Upper Lake Melville area and measures to mitigate adverse effects,
  2. any permanent changes to infrastructure and services caused by the Undertaking, and
  3. compensation arrangements for local, public or private service providers whose burdens and costs are increased as a result of the Undertaking.

9. Revenues accruing to federal, provincial and local government through taxation and royalties.

### **9.3 Residual Effects and Compensation**

The Proponent shall describe and assess residual effects and outline its compensation plans and policies for addressing adverse residual effects.

#### **9.3.1 Residual Effects**

The Proponent shall describe and assess residual effects using the categories for significance set out in section 9.0.2. Residual effects include:

1. those beneficial or adverse effects that may remain at each stage of the Undertaking after proposed mitigation or enhancement measures are implemented, including emergency response and contingency plans; and,
2. those effects that may remain after decommissioning activities are completed.

#### **9.3.2 Compensation**

The Proponent shall outline its compensation plans and policies for addressing adverse residual effects, including compensation for:

1. loss of fish habitat in accordance with DFO's policy for the Management of Fish Habitat; and,
2. damage caused by the Proponent's activities to the environment, to property, or to the land and resource use of others. Regarding losses relating to property, use, access, harvests, added harvesting effort and costs, the Proponent shall describe any existing or proposed programs including administrative procedures, criteria for eligibility, onus of proof, and criteria for loss evaluation.

The Proponent shall also provide a comparison of existing compensation programs for mining and other resource development activities. It shall indicate its financial basis and security for providing compensation funds and any limitations on liability that it or its insurers may impose.

### **9.4 Cumulative Environmental Effects**

The proponent shall identify and assess the cumulative environmental effects of the Undertaking in combination with other projects or activities that have been, or will be, carried out in Labrador or within the areas specified in 6.1(b) and 6.1(c), as appropriate. The approach and methodologies used to identify and assess cumulative impacts shall be explained.

The assessment of cumulative environmental effects of the Undertaking shall include, but not be limited to:

1. future development scenarios at the site or on other Voisey's Bay Nickel Company properties in the region as identified in section 7.5 Future Developments;
2. exploration activities by the Proponent or others within the impact areas identified in 6.1 (b) and 6.1(c);
3. the development of other mineral deposits that may now appear feasible because of the proximity of the Undertaking's infrastructure; and,
4. hydro power developments.

In assessing the impacts of cumulative environmental effects, the Proponent shall identify any changes in the predictions of environmental effects and the assessment of their significance; the effectiveness of proposed mitigation and compensation measures, and the response to such

changes; and, the implications for monitoring and follow up programs as described in section 10.

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## Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking

### 10.0 Monitoring and Follow-Up Programs

This section of the EIS will provide information on proposed monitoring programs and actions to be taken to respond to monitoring results, including plans for a formal follow-up program to verify the predictions contained in the EIS.

#### 10.1 Monitoring

The Proponent shall describe the environmental and socio-economic monitoring programs to be incorporated into all phases of the Undertaking in order to ensure that regulatory requirements are met, sustainable development objectives are advanced and that adverse impacts are avoided or minimized and beneficial impacts maximized as predicted in the EIS. The Proponent shall describe how the results of monitoring programs will be used to refine or modify the design and implementation of management plans, mitigation measures and Undertaking operations. This section shall also discuss the ways in which holders of aboriginal knowledge and area residents will be involved in monitoring programs which shall be designed to ensure that the input of all appropriate interest groups is received, including women and youth. The Proponent shall distinguish as appropriate between compliance and effects monitoring programs.

The proposed approach for monitoring shall be described. The Proponent shall explain the reasons for any cases where it is not possible to specify the details of a monitoring program in the complete EIS that is submitted to the Panel. The Proponent shall explain when and how the program will be defined, and whether it will be reviewed by public and regulatory agencies. This description shall include:

1. the objectives of the monitoring program and a schedule for collection of the monitoring data required to meet these objectives;
2. the relationship of the various components of the monitoring program to specific regulatory requirements;
3. the selection of the subjects and indicators to be monitored, and the criteria used in their selection including the role played by ecological risk monitoring in determining subjects and indicators;
4. the frequency, duration and geographic extent of monitoring, and the justification for these decisions;
5. approaches and methods used to analyse monitoring data, including the use of on-site and off-site facilities and services, the time required to obtain results and the implications for swift and effective response;
6. reporting and response mechanisms, including criteria, quantified when appropriate, for initiating a response, and the procedures to be followed. The reasons for selecting these criteria should be explained;
7. the approaches and methods for monitoring the cumulative environmental effects of the Undertaking in combination with other Undertakings and activities in the area as identified in section 9.4 Cumulative Environmental Effects;
8. integration of monitoring results with other aspects of the Undertaking including adjustments to operating procedures and refinement of mitigation measures;
9. experience gained from previous and present monitoring programs;

10. procedures to assess the effectiveness of monitoring programs, mitigation measures, and recovery programs for areas disturbed by the Undertaking;
11. plans and programs to involve independent experts, government agencies, the LIA, the Innu Nation, communities, holders of aboriginal knowledge and renewable resource users in monitoring programs, and any joint monitoring programs established with communities;
12. sources of funding for all monitoring programs; and,
13. quality assurance and quality control measures to be applied to monitoring programs.

The Proponent shall provide a table showing all environmental components discussed in sections 8.1 to 8.3 and indicating where monitoring is proposed.

## 10.2 Follow-Up Program

The MOU requires the Panel to consider the need for and requirements of a follow-up program. A follow-up program is a formal, ongoing process to verify the accuracy of the environmental assessment of the Undertaking and determine the effectiveness of mitigation measures. If either of these two steps identify unforeseen adverse impacts, then the existing mitigation measures should be adjusted or, if necessary, new mitigation or compensation measures should be developed.

The Proponent shall identify from their perspective:

1. the need for such a program and its objectives;
2. how it would be structured;
3. which elements of the monitoring program described in 10.1 it would incorporate;
4. the roles to be played by the Proponent, regulatory agencies, the LIA, Innu Nation and others in such a program;
5. possible involvement of independent researchers;
6. the sources of funding for the program; and,
7. reporting.

The Proponent shall also provide information, when relevant, on formal follow-up programs associated with other mining or northern projects.

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## **Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking**

### **Appendix 1 - Definitions Provided From the Memorandum of Understanding**

**"Agency"**

means the Canadian Environmental Assessment Agency;

**"Canada"**

means the Government of Canada;

**"Contingency Plan"**

means a program intended to address malfunctions, accidents or unplanned events that may occur in connection with the Undertaking;

**"CEAA"**

means the *Canadian Environmental Assessment Act*;

**"Cumulative Environmental Effect"**

means the additive and interactive effects of an undertaking in combination with other Undertakings or activities that have been or will be carried out;

**"Day"**

means a calendar day;

**"EIS Guidelines"**

mean the direction provided to the Proponent by the Panel on matters which must be addressed in the Proponent's Environmental Impact Statement;

**"Environment"**

means the components of the earth and includes

1. land, water and air, including all layers of the atmosphere,
2. all organic and inorganic matter and living organisms,
3. the social, economic, recreational, cultural, spiritual and aesthetic conditions and factors that influence the life of humans and communities, and
4. a part or combination of those things referred to in paragraphs (a) to (c) and the interrelationships between two or more of them;

**"Environmental Assessment" ("EA")**

means an assessment of the Environmental Effects of the Undertaking that is conducted in accordance with this Memorandum of Understanding;

**"Environmental Effect"**

means, in respect of an undertaking

1. any change that the undertaking may cause in the Environment, including any change on health and socio-economic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, and



2. any change to the undertaking that may be caused by the Environment, whether any such change occurs within or outside Canada;

**"Environmental Impact Statement" ("EIS")**

means the report that presents the results of the EA conducted by the Proponent;

**"Federal Ministers"**

mean the Minister of the Environment of Canada and the Minister of Fisheries and Oceans of Canada;

**"Follow-up Program"**

means a program for

1. verifying the accuracy of the EA of the Undertaking,
2. determining the effectiveness of any measures taken to Mitigate the adverse Environmental Effects of the Undertaking, and
3. implementing measures to Mitigate adverse Environmental Effects identified in (a) and/or (b);

**"Innu Nation"**

means the Innu Nation of Labrador;

**"LIA"**

means the Labrador Inuit Association;

**"Memorandum of Understanding" ("MOU")**

means this Memorandum of Understanding including Schedules 1 and 2 and the Annex to Schedule 1 attached hereto;

**"Mitigation"**

means in respect of the Undertaking, the elimination, reduction or control of the adverse Environmental Effects of the Undertaking, and includes restitution for any damage to the Environment caused by such effects through replacement, restoration, compensation or any other means, and "Mitigate" has a corresponding meaning;

**"NEAA"**

means the *Newfoundland Environmental Assessment Act*;

**"Newfoundland & Labrador"**

means the Government of Newfoundland and Labrador;

**"Panel"**

means the review panel which is appointed pursuant to Section 3 of this MOU;

**"Participant Funding Program"**

means the program which is referred to in Section 2.5 of this MOU;

**"Parties"**

mean signatories to this MOU;

**"Proponent"**

means Voisey's Bay Nickel Company Limited;

**"Provincial Ministers"**

mean the Minister of Environment and Labour of Newfoundland & Labrador and the Premier as Minister Responsible for Intergovernmental Affairs of Newfoundland & Labrador;

**"Residual Effect"**

means an Environmental Effect remaining after all mitigative measures have been applied;

**"Responsible Authority"**

means a federal body that is required under CEAA to ensure that an environmental assessment of the Undertaking is conducted;

**"Review"**

means the joint public review to be conducted by the Panel in accordance with this MOU;

**"Secretariat"**

means the Secretariat which is established pursuant to Section 2.6 of this MOU;

**"Terms of Reference"**

means the Terms of Reference for the Panel, as set out in Schedule 1;

**"Undertaking"**

means the proposed construction, operation, demolition, decommissioning, rehabilitation and effective surrender of any leases by the Proponent of a mining development and associated activities as described in Schedule 2.

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## **Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking**

### **Appendix 2 - Annex to Schedule 1 of the Memorandum of Understanding Factors to be Considered During Public Review**

The definitions within Section 1 of the Memorandum of Understanding on Environmental Assessment of the Proposed Voisey's Bay Mining Development will apply to this Annex. The Review will include consideration of the following factors as they relate to all phases of the Undertaking:

1. Description of the Undertaking, including its temporal and spatial boundaries;
2. Need for the Undertaking;
3. Purpose of and rationale for the Undertaking;
4. Analysis of alternatives including:
  1. alternatives to the Undertaking, and
  2. alternative means of carrying out the Undertaking which are technically and economically feasible and the Environmental Effects of any such alternatives;
5. Temporal and spatial boundaries of the study areas;
6. Extent to which biological diversity is affected by the Undertaking;
7. Description of the present Environment which may reasonably be expected to be affected, directly or indirectly, by the Undertaking, including adequate baseline characterization;
8. Description of the likely future condition of the Environment within the expected life span of the Undertaking if the Undertaking were not approved;
9. Environmental Effects of the Undertaking including the Environmental Effects arising from malfunctions, accidents or unplanned events that may occur in connection with the Undertaking;
10. Potential Cumulative Environmental Effects of the Undertaking;
11. The significance of the effects as described in items 9 and 10;
12. Proposed Mitigation measures that are technically and economically feasible and that would Mitigate any significant adverse Environmental Effects of the Undertaking, including the interaction of these measures with existing management plans;
13. Proposals for environmental compliance monitoring;
14. Measures to enhance any beneficial Environmental Effects;
15. Proposals for Contingency Plans;
16. Residual Effects associated with the Undertaking and their significance;
17. Need for and requirements of any Follow-up Program in respect of the Undertaking;
18. Capacity of renewable resources that are likely to be significantly affected by the Undertaking to meet the needs of present and future generations;
19. Extent of application of the precautionary principle to the Undertaking; and
20. Comments received by the Panel during the Review.

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