

**Honourable Charlene Johnson**  
Minister

December 12, 2008

# **GUIDELINES**

for

Environmental Impact Statement

# **Elross Lake Area Iron Ore Mine**

## INTRODUCTION

New Millennium Capital Corporation is required through the provincial environmental assessment process to prepare an Environmental Impact Statement (EIS) for the Elross Lake Area Iron Ore Mine. The purpose of the EIS is to identify the potential environmental effects associated with the proposed undertaking, identify appropriate mitigative measures and predict the significance of residual and immitigable effects. A Component Study will be carried out to address baseline information for the socioeconomic. The EIS will contain a review of all available pertinent information as well as such additional new information or data as provided by the proponent or requested by the Minister of Environment and Conservation. The contents of the EIS will be used by the Minister of Environment and Conservation, in consultation with Cabinet, to determine the acceptability of the proposed project based on its anticipated environmental effects, proposed mitigation, and significance of residual environmental effects. The EIS will be as concise as possible while presenting the information necessary for making an informed decision.

The following guidelines, and the resultant EIS, pertain only to those aspects of the proposed undertaking located within the province of Newfoundland and Labrador.

The undertaking is also subject to a federal environmental assessment pursuant to the Canadian Environmental Assessment Act (CEAA). To date, Natural Resources Canada and the Canadian Transportation Agency are Responsible Authorities for the CEAA environmental assessment. Fisheries and Oceans Canada is currently advising on the provincial committee and will determine what role it will play with respect to CEAA once required information is provided by the Proponent. Environment Canada and Health Canada have identified as Federal Authorities capable of providing expert advice to the assessment. Additional agencies may advise as needed throughout the EIS process. The Responsible Authorities will use information contained in the EIS, relevant to the federal scope, to prepare the federal environmental assessment.

As more specific information is provided and as additional baseline information is gathered, other concerns and potential effects may be required to be considered by the Minister as recommended by the Environmental Assessment Committee.

The proponent is required to hold public information sessions on the environmental assessment results in the community of Labrador City-Wabush.

The purpose of the Guidelines is to assist the proponent in completing an EIS which conforms to legislative requirements and to address information requirements that will assist in making an informed decision on the undertaking. The contents of the EIS should be organized according to the following format and address the identified information requirements:

## **1. EXECUTIVE SUMMARY**

The executive summary will contain the following information: identification of the proponent; a project overview; predicted environmental effects (both biophysical and socio-economic); mitigative measures; residual environmental effects; cumulative environmental effects; an outline of the component study completed; proposed monitoring programs and response plans and a summary of the fundamental conclusions of the EIS. The summary will allow reviewers to focus immediately on areas of concern.

The summary will be written in terms understandable to the general public and it will include a Table of Concordance which will identify where specific Guideline requirements are addressed in the EIS.

## **2. INTRODUCTION**

### ***2.1 Name of Undertaking***

The undertaking has been assigned the Name "Elross Lake Area Iron Ore Mine." The proponent should identify the name which it proposes to use for the undertaking.

### ***2.2 Identification of Proponent***

Name the corporate body and state the mailing address.

Name the chief executive officer and state the official title, telephone number, fax number and e-mail address.

Name the principal contact person for purposes of environmental assessment and state the official title, telephone number, fax number and e-mail address.

### ***2.3 Purpose of the Environmental Impact Statement***

The purpose of the Environmental Impact Statement is to report on the results of the process by which the change in the present or future environment that would result from an undertaking is predicted and evaluated before the undertaking has begun or occurred.

## **3. THE PROPOSED UNDERTAKING**

### ***3.1 The Prospective Site and Study Area***

A precise description of the boundary of the prospective site is to be presented, accompanied by maps of an appropriate scale (described below) showing the entire area of each alternative with:

- principle structures and appurtenant works
- types and quantities (ha) of habitat to be disturbed

The information on the boundary and extent of the project area is to be in digital form on computer discs in a format suitable for incorporation in a Geographic Information System (GIS). Maps should be at a 1:50,000 scale and possibly in ARC shape format. As a minimum, the information is to consist of sufficient number of geographic coordinates of point locations, line locations and/or spatial extent, as appropriate, of the features at the selected map scale and projection to either re-create the hard-copy versions provided as part of the EIS or to accurately display the features digitally. (Information already available on the National Topographic maps need not be provided.) The information must be organized and labeled such that each unique feature is distinguishable from all others. Appropriate descriptive parameters of each data set such as projection, UTM Zone, datum and data collection method (e.g., GPS, aerial survey, etc.) must also be included. The format should be in ASCII tabular format or in a spreadsheet or database format such as Lotus 1-2-3, Excel, dBase or similar software.

### ***3.2 Rationale/Need/Purpose of the Project***

The rationale for the project will describe its perceived benefits, both local and provincial. If the undertaking is in response to an established need, this should be clearly stated.

### ***3.3 Alternatives***

#### *3.3.1 Alternatives to the Project*

This section will describe functionally different ways to meet the project need and achieve the project purpose. The discussion shall address, but not necessarily be limited to, the null (do nothing) alternative.

#### *3.3.2 Alternative Methods of Carrying Out the Project*

This section will detail the process the proponent undertook to determine potential sites, alternative processing options and plant design, waste management alternatives and environmental protection opportunities. The proponent's public consultation process will be described and relate the project alternatives to the results of the consultations.

A detailed discussion of technically and economically feasible alternatives and the biophysical and socio-economic selection criteria (e.g., habitat alteration, construction costs, operation and maintenance savings, technical factors, employment and training) for the alternatives will be provided. The discussion will include, among other things, location, design, construction standards, maintenance standards, watercourse crossings, etc., which were or could have been considered. The discussion should also take into account the respective alternative energy and water requirements, together with the alternative's effects on the generation of emissions, effluents and wastes.

If only one alternative is viable or possible, a statement will be made to this effect with supporting argument. Additional information on any alternatives which may have been considered and rejected, but which may still be regarded as viable should be provided. State the reasons for the rejection of those alternatives.

### ***3.4 Relationship to Legislation, Permitting, Regulatory Agencies and Policies***

The EIS will identify and discuss the project within the context of all existing relevant legislation and policies (municipal, provincial and federal). The proponent will provide a comprehensive list of permits and regulatory approvals required for the undertaking. The list will include the following details:

- activity requiring regulatory approval
- name of permit and/or regulatory approval (e.g. authorization).
- legislation requiring compliance
- regulatory agency

### ***3.5 General Project Description***

The EIS will describe the scope of the project for which an assessment is being conducted.

The EIS will provide a written and graphic description (e.g. maps and drawings) of the physical features of the undertaking particularly as it is planned to progress through the construction and operation phases of its lifespan. The description should also address other phases of the project as can reasonably be foreseen, including modification, decommissioning and abandonment. Any assumptions which underlie the details of the project design shall be described, including effects avoidance opportunities inclusive of pollution prevention, and adherence to best management practices. Where specific codes of practice, guidelines and policies apply to items to be addressed, those documents shall be cited and included as appendices to the EIS, including mapping at an appropriate scale. Physical features include, but are not limited to:

- access road(s), and intersections, including those which may require upgrading, as well as service roads
- lighting
- stream crossings, including culverts, bridges and fording sites
- stream(s) or other water bodies (including pits) to be dewatered
- temporary stream diversions
- temporary construction/operations camp(s), laydown areas
- exact locations of mineral licenses and ore bodies to be mined in relation to Newfoundland and Labrador and Quebec provincial geographic boundaries and detailed volumes of Quebec based resources to be mined and processed in Labrador

- borrow pits, major excavations and waste rock disposal locations construction and rehabilitation
- temporary sewage and waste disposal facilities
- methods of handling waste and refuse at work and camp locations
- mine infrastructure, including ore crushing, screening and washing facilities, fuel tanks and utilities (including water supply and distribution, water treatment, rock fines and wash water discharges, electricity supply configuration and owner/operator arrangements, substations and/or on-site electricity transmission/distribution lines or alternative generation methods)
- railway infrastructure, including railcar loading station, ties, rails and ballast on rail bed, ownership of new railway infrastructure, regulatory governing body and designation of common carrier status
- shipping
- explosives magazine/factory component
- support buildings, including but not limited to, administrative and engineering offices, warehouses, maintenance buildings and laboratory
- effluent treatment plant components, as well as effluent discharge locations and configuration and including anticipated effluent plume(s)
- planned feasibility studies associated with the project, proposed mineral resources included within the feasibility studies and completion dates
- clearance/condemnation work in areas underlying proposed waste piles, including in pit or on land disposal of fines and other infrastructure

### **3.6 Construction**

The details, materials, methods, schedule, and location of all planned construction activities related to the physical features will be presented including estimates of magnitude or scale where applicable. This is to include but not be limited to, the following:

- general construction practices incorporating erosion and sedimentation control
- include a detailed overview of the work camps to be used during the construction and operation phases, including location(s), capacity, facilities, solid waste disposal and disposal of construction waste, as well as identified opportunities for waste recycling
- included details on methods of transportation used to get workers to and from camps
- construction schedule, including proposed time frames for right-of-way clearing, slash disposal, construction adjacent to watercourses, utility placement, processing and storage facilities
- site preparation (i.e., grubbing/clearing of right-of-way, cut and/or fill operations, etc.)
- water body alteration: a 15 metre undisturbed buffer along the high water mark of all water bodies must be maintained. Identify any alterations that must be carried

- out in the water or within buffer areas, such as for water supply intakes, stream crossings, storm drainage works or infilling and any stream activities
- watercourse crossing structures: location of crossings for access and service roads, transmission lines, railroads, as well as pipeline crossings, their proposed infrastructure (e.g., bridge, culvert), and their proposed specifications (e.g., clearance from watercourse, height, width, length, diameter, and construction materials); infill area or footprint together with design criteria and standards, length, width, cross section and estimated types and amount of fill material required. In order to avoid impacts on fish and fish habitat it is recommended that any proposed watercourse crossings be designed and installed such that abutments are above the high water mark
  - design of upgrades to existing watercourse crossing associated with new or existing roads and railway that may affect fish or fish habitat
  - blasting activities in or near water bodies
  - electrical systems: location of substations, transmission and method of providing external cable transport mechanisms whether aerial or buried
  - estimate all significant emissions (defined as those emissions from equipment such as that listed below) during construction, including but not limited to sources from heaters, vents, diesel power generators, storage tanks, stockpiles, ponds, basins, vehicles, road surfaces, cooling towers, effluent treatment systems, ore crushing, screening and washing facilities, and generators. Provide a description of how the emission estimate was derived (i.e., emission factor references)
  - excavations
  - blasting operations; explosives magazine/factory development
  - vehicle types, truck routes, hours of operation of vehicles.
  - transport, storage and use of hazardous materials, fuels, lubricants and explosives
  - establishment, operation and removal of construction camp and yard areas including their water, sewage and food handling provisions
  - sources and estimated volumes of acceptable types of aggregate, ballast and pit-run material with identification of any currently known sources likely to be used
  - disposal areas for excess/waste rock and overburden, including locations of any currently known or planned disposal sites
  - disposal areas for organic soil, slash, grubbing, including locations of any currently known or planned disposal sites
  - plans for wood fibre harvested associated with the project
  - removal of temporary operations
  - site rehabilitation and monitoring

With a goal of maximizing benefits for the province, the proponent shall present a strategy to ensure Full and Fair Opportunity and First Consideration for employment, contracting and procurement, education and training.

This description must identify corporate hiring objectives, quantitative and qualitative goals, special measures and policies; monitoring of compliance with objectives, goals,

measures and policies; duration of contracts and/or employment and provide for a communication plan and any required re-evaluation process of objectives, goals, measures and policies. Included will be a Women's Employment Plan as a tool to aid the gender equity objective of the corporate hiring strategy.

In order to properly assess the socio-economic impacts in the province, specific information, but not limited to the 150 construction positions, contracting and procurement, and education and training, will be provided, including a benefits statement with a concise description of the proportion of positions, contract and procurement, and education and training opportunities which will be available to Newfoundland and Labrador residents, contractors and sub contractors and businesses in relation to the project totals.

Specific numbers by National Occupational Classification (NOC-2006), gender and employment equity considerations and period of employment will be provided.

Identify any measures to be implemented that may require contractors and sub-contractors to include employment equity considerations. Initiatives for the hiring of journeymen, apprentices, engineering and technology students during construction and also those initiatives to increase opportunities for underrepresented groups will be described.

Provide an analysis of the availability of the skilled workforce necessary to complete the project and how any shortages in skilled trades may be addressed. The analysis is to include all positions associated with the project, listing the province in which they are located.

### ***3.7 Operation and Maintenance***

With a goal of maximizing benefits for the province, the proponent shall present a strategy to ensure Full and Fair Opportunity and First Consideration for employment, contracting and procurement, education and training.

This description must identify corporate hiring objectives, quantitative and qualitative goals, special measures and policies; monitoring of compliance with objectives, goals, measures and policies; duration of contracts and/or employment and provide for a communication plan and any required re-evaluation process of objectives, goals, measures and policies. Included will be a Women's Employment Plan as a tool to aid the gender equity objective of the corporate hiring strategy.

All aspects of the operation and maintenance of the proposed development will be presented in detail, including, but not limited to, information on the 150 operation and maintenance positions by National Occupational Classification (NOC-2006), gender and period of employment. Operation includes, but is not limited to, product delivery, product processing, value-added secondary processing, product export and waste handling.

In order to properly assess the socio-economic impacts in the province, specific information, but not limited to the 150 operating positions, contracting and procurement, and education and training, will be provided, including a benefits statement with a concise description of the proportion of positions, contracts and procurement, and education and training opportunities which will be available to Newfoundland and Labrador residents, contractors and sub contractors and businesses in relation to the project totals.

Information regarding the nature of any cross-border mobility for employees/contractors associated with the project will be provided.

Impacts, direct or indirect, the project may have on existing mining operations, railway operations, mineral exploration and/or mine development on mineral titles held by other parties in the area and right of ways, will be provided. An analysis of the impact, direct or indirect, the project will have on the operations or future viability of other mining projects in Labrador west including, but not limited to The Iron Ore Company of Canada, Wabush Mines and Labrador Iron Mines and the capacity of the QNS&L, Tshuettin Rail Transportation and Wabush Mines Arnaud railways, will be required.

Estimate all significant emissions (defined as those emissions from equipment such as that listed below) during operation, including but not limited to, sources from ore crushing, screening and washing facilities, stockpiles, vehicles, road surfaces, effluent treatment systems, and mobile sources.

The use of Best Available Control Technology (BACT) is required for all new emission sources. The EIS must identify the control technology to be applied at each gaseous emission source.

All sources of effluent must be identified and characterized. Effluent includes, but is not limited to, process tailings and water, stormwater, sewage and surface runoff. Estimated annual quantities of each effluent must be provided. Cleaning methods and residue disposal options must also be described. In addition proposed sampling parameters and schedule must be provided for discharges.

Provide detailed estimates of energy consumption profiles on an annual and daily basis including peak and average requirements. In particular, indicate electricity consumption forecasts and the planned onsite generation versus purchased electricity split.

Fully describe chemical storage facilities indicating how chemicals, reagents, catalysts and other potentially hazardous or toxic materials are to be handled, stored, segregated and contained. Identify chemicals by their Chemical Abstract Service Registry Number (CASRN) together with associated quantities, characteristics and toxicities.

Include in operational details water use for non-domestic purposes, including water used in the washing process. Provide water withdrawal requirements throughout the year in consideration of hydrology of ponds and supporting watersheds and the ability of the

basin to support daily demand and recharge throughout the year. Identify water level variations in ponds as a result of water extraction throughout the year. Include details on the intake structure (design details, size of fish screens). If any conservation or technology measures are to be employed they should be identified. Identify the existing water quality from all sources, the required water quality for its desired use and any treatment processes necessary to meet the requisite water quality. This information will pertain mainly to Timmins 1. Identify the expected locations and number of de-watering wells, the volume of water to be pumped and the location/use of this water.

Include the following information regarding factory/magazine component of the project:

- Explosives to be manufactured (typically ammonium nitrate fuel oil (ANFO) and/or emulsion/watergel);
- Maximum quantity of explosives at each facility;
- Infrastructures for manufacturing and storing explosives should be identified and include: explosives and detonator magazines, fuel storage, ammonium nitrate storage, maintenance/wash areas, process trucks and their parking area, any offices, warehouses, buildings, etc.;
- Specified location, with distances to vulnerable features such as dwellings, roads, camps, etc. Demonstrate that safety distances required by the NRCan Explosive Regulatory Division (ERD) have been considered and met.

Include information on any food handling provisions during both construction and operation as well as disposal provisions for associated wastes.

Provide details on the establishment, operation and removal of the construction camp and yard areas including their water, sewage and food handling provisions.

Initiatives through such measures as training and skills upgrading for the hiring of journeymen, apprentices and engineering and technology students during operation and maintenance, as well as initiatives to increase opportunities for under-represented groups in occupations in which they are under-represented will be described. Under-represented groups are to be identified through both census data demographic characteristics and labour force data for census subdivisions in the employment catchment area (defined as those areas in NL that may provide workforce).

Identify the project's potential initiatives for employee well-being through such things as recreational facilities, Employee Assistance Program and accommodation for childcare and homecare responsibilities. In order to gauge the adequacy of recreational opportunity and childcare and homecare provide an assessment of off-site facilities and services where those facilities and services will not be available on-site.

Identify the operational emergency response, safety and fire fighting facilities as well as preventative operating practices and support services. This will include on-site as well as regionally supplied training and preventative measures.

Maintenance includes, but is not limited to, routine ongoing maintenance of the mine and site infrastructure (including redeveloped railway), machinery, as well as periodic maintenance requiring plant closure or processing shut down. In addition to the employment information related to operation and maintenance it is important to include environmentally relevant information such as the location of maintenance support areas, material storage locations, and the likely maintenance and winter treatment of equipment.

Also, documentation to demonstrate the Iron Ore Company of Canada/Quebec North Shore and Labrador Railway, Tshiuetin Rail Transportation and Wabush Mines Arnaud railway's agreement/acceptance of the railway line connection to existing railway line infrastructure and agreement/acceptance to provide transportation of New Millennium iron ore and agreement of associated parties for access to port facilities in the Sept Isles region will be provided. This analysis is to include the increased railway traffic from the proposed Bloom Lake Railway.

### **3.8 *Abandonment***

The predicted lifespan of temporary facilities and the mine, processing facilities, and railway will be indicated. Details regarding decommissioning and abandonment will be presented. Identify, at least in general terms, the issues requiring consideration in decommissioning based on current legislation for hazardous and other materials and structural requirements.

Rehabilitation, closure plans and financial assurances will be required by the Department of Natural Resources.

## **4. ENVIRONMENT**

### **4.1 *Existing Environment***

The EIS will identify the study area and will describe the existing biophysical and socio-economic environment of the study area, and the resources within it, emphasizing Valued Ecosystem Components (VECs) (as defined by Beanlands and Duinker, 1983). In addition, the EIS will describe environmental interrelationships and sensitivity to disturbance. Description will reflect four seasons in the study area where appropriate, through the use of original baseline studies or existing data. If the study results or data has been extrapolated or otherwise manipulated to depict environmental conditions in the study area, modeling methods and equations will be described and identify calculations of margins of error.

The timing and extent of any surveys for flora, fauna and ecologically sensitive areas must be provided.

A qualitative and quantitative description of the present environment will include, but is not limited to:

- meteorological conditions, including weather patterns as they relate to processing operation and routine and periodic maintenance.
- atmospheric conditions, including wind speeds and directions, precipitation amounts and precipitation chemistry. Particular attention is to be paid to ambient dust levels in areas where construction and operational activities may contribute to increased dust levels. Ambient air quality baseline assessment for common air contaminants prior to construction.
- ambient water quality baseline assessment for common water quality parameters prior to construction.
- site information on each stream or wetland crossing including: water depth, width, flow rate, substrate type, and potential obstructions to navigation. Hydrologic information on each body of water within the project footprint or within the predicted zone of influence.
- identification of wetland resources including location, size and class, classified using the Canadian Wetland Classification System, of any wetland within a predicted zone of influence and conduct of a wetland evaluation. The true ecosystem value of each wetland is to be examined using comprehensive valuation methodology that assesses component, functional and attribute values, including their wildlife habitat potential (including wildlife at risk), groundwater recharge role and potential, and their role in surface water flow regulation (storm water retention and flood control). Field surveys and investigations required to supplement available data must be completed in an acceptable manner.
- flora, including typical species, species-at-risk, and potential habitat for flora species-at-risk. Flora species at risk include those species listed under the federal Species at Risk Act and the provincial Endangered Species Act as well as COSEWIC listed species. Current information can be obtained from appropriate sources and augmented by field surveys and investigations required to supplement available data. Available data, survey results and detailed mitigation measures that demonstrate a special emphasis on avoidance of environmental effects is to be included in the EIS.
- fauna (including migratory species), fauna species-at-risk, and potential habitat for fauna species-at-risk. Fauna species at risk include those species listed under the federal Species at Risk Act and the provincial Endangered Species Act as well as COSEWIC listed species. Fauna and avifauna in this context includes, but is not limited to, eagles, osprey, and woodland caribou. Current information can be obtained from appropriate sources and augmented by field surveys and investigations required to supplement available data. Available data, survey results and detailed mitigation measures that demonstrate a special emphasis on avoidance of environmental effects is to be included in the EIS.
- fish and fish habitat, which includes a description of fish species and the magnitude/extent of existing, past, and potential, commercial, recreational or aboriginal fisheries which occur within the lakes, ponds and streams in the vicinity of the proposed project. As well as a description and quantification of fish habitat with the potential to be impacted by project operations, such as but not limited to, mining, storage, infrastructure, access roads, railway construction and in particular the existing flooded pits (Timmins 1 & 2) to be used for water

extraction and residue disposal. Information on the bathymetry, drainage area and recharge rates in the Timmins 1 open pit area and associated watercourses (e.g. connecting to Pinette Lake and Elross Lake) should be outlined on a 1:50 000 scale topographic maps as the potential exists for these to be dewatered due to mining activities. A description of the fish sampling methodology utilized should be included.

The identification of known data gaps is imperative.

Discussion of the description of the existing environment will be developed for each alternative drawing specific reference to the VECs. Detailed discussions will be developed for the following VECs:

- Socio-economic, demonstrating a goal of maximizing benefits for the province. The discussion will include corporate hiring objectives and policies, employment of under-represented groups, the effects the mine may have on existing industry and services and the ability of existing infrastructure to service the proposed construction and operation. The feasibility of the project, as related to socio-economic issues, will be included in this analysis.
- Caribou species and habitat, including two-tiered mitigation measures in the case that migratory and/or woodland species frequent the project area. The analysis will include woodland caribou from Labrador and Québec. The Caniapiscaw River, Lac Joe, and MacFayden River herds may be effected by construction and/or operation. A study of the potential effects any railway construction could have on caribou will be incorporated.

The woodland caribou mitigation plan will be implemented while the monitoring program is determining the identity of any caribou present in the area.

## **4.2 Data Gaps**

Information gaps from a lack of previous research or practice will be described indicating baseline data/information which is not available or existing data which cannot accurately represent environmental conditions in the study area over four consecutive seasons through a complete year. If background data have been extrapolated or otherwise manipulated to depict environmental conditions in the study area, modeling methods and equations shall be described and shall include calculations of margins of error.

## **5. ABORIGINAL CONSULTATION**

The EIS shall demonstrate the Proponent's understanding of the interests, values, concerns, contemporary and historic activities, Aboriginal traditional knowledge and important issues facing Aboriginal groups, and indicate how these will be considered in planning and carrying out the Project.

To assist in ensuring that the EIS provides the necessary information to address issues of potential concern to the Aboriginal groups, the Proponent shall consult with each group for the purpose of:

- a) Familiarizing the group with the Project and its potential environmental effects;
- b) Identifying any issues of concern regarding potential environmental effects of the Project; and
- c) Identifying what actions the Proponent is proposing to take to address each issue identified, as appropriate.

If the Proponent is not able or should not address any particular issue(s), the EIS should include supporting reasons. The results of those consultations are to be presented in a separate chapter of the EIS with individual section for each of the affected Aboriginal groups. The Proponent must refer readers to the relevant sections of the EIS, as appropriate.

## **6. ENVIRONMENTAL EFFECTS**

The EIS will describe the scope of the assessment being conducted for the undertaking.

The EIS will contain a comprehensive analysis of the predicted environmental effects of each project alternative for the VEC's. If the impacts are attributable to a particular phase of the project (construction, operation, maintenance or decommissioning) then they will be designated as such.

The EIS will also assess the effects of the environment on the project. In particular the EIS must identify the vulnerability of the project to climatic elements (including wind, weather and global climate change) and describe the provisions for minimizing any identified risk.

The report will characterize the disposal area for process tailings including the hydraulic conductivity of the base of the pit, and the potential to impact on groundwater and surrounding watersheds. Control technologies in consideration are also to be described.

Information will be included regarding methods to prevent suspended solids and other contaminants (originating from areas including but not limited to waste rock and overburden piles, tailings storage areas, crushing and washing areas) from migrating to nearby water bodies. The acid generating potential of waste rock will also be provided.

Environmental effects on freshwater fish habitat, fish species and any existing or potential commercial, recreational or aboriginal fisheries that occur in the area of the proposed infrastructure, plant and mine location, water supply and residue disposal (i.e. tailings) location must be evaluated. As part of the evaluation any effects associated with water withdrawal must be examined, as must the potential effects on any downstream habitat.

Identify the potential impacts of ammonia discharges from blasting operations and prepare an ammonia control strategy. Indicate the fuel and ammonium nitrate storage plans. Provide the liquid effluent disposal and treatment protocols.

The capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future must be addressed.

Predicted environmental effects (positive and negative, direct and indirect, short and long-term) will be defined quantitatively and qualitatively for each project alternative and for each valued ecosystem component. In this regard, the EIS will offer the study strategy, methodology and boundaries of the assessment which includes the following considerations:

- the VEC within the study boundaries and the methodology used to identify the VEC
- definition of the spatial and temporal study boundaries for the interactions of the project, as proposed or subject to subsequent modification, with VECs and the methodology used to identify the study boundaries;
- the temporal boundaries (i.e., duration of specific project activities and potential effects) for construction and operation
- the strategy for investigating the interactions between the project and each VEC and how that strategy will be used to coordinate individual studies undertaken
- the strategy for assessing the project's contribution to cumulative effects on each VEC
- the strategy for predicting and evaluating environmental effects, determining necessary mitigation, remediation and/or compensation, and for evaluating residual effects
- definition of impact significance criteria against which to evaluate the potential impact of interactions;
- description of potential interactions;
- discussion of issues and concerns which relate to specific interactions;
- discussion of the existing knowledge on information related to the interactions;
- analysis of potential effects (significance, positive or negative, etc.).

In the latter regard, the proponent will offer a definition of significance for each category examined (e.g. biophysical or socio-economic).

Environmental effects will be defined and discussed in the following terms for the phases of the project (construction, operation, modification and decommissioning): nature, spatial extent, frequency, duration, magnitude (qualitative and quantitative), significance, and level of certainty.

The environmental effects of the project, including the environmental effects of malfunctions or accidental events that may occur in connection with the project will be discussed with respect to risk, severity and significance. Consequences of low probability, high impact events, including design failure, will also be described. In

relation to accidents and malfunctions provide the following information to support an assessment of potential effects on the environment, including but not limited to species at risk and their habitat(s):

- discussion of accidents and malfunctions that could occur related to shipping and processing activities, the probability of such events occurring, the fate of any hazardous materials that could be released as a result of such events, and the potential interactions with environmental features
- reference to the standards, codes and regulations applicable to governance of the project

Environmental effects from emissions estimates are required as part of the assessment. Preliminary dispersion modeling, incorporating baseline measurements as background values for construction and operation, must be presented. The modeling must also account for combined effects of other significant air contaminant emission sources within the general project area. The proponent is advised that stack emission tests and accompanying dispersion models and/or ambient air monitoring may be required following commencement of mining and processing operations to demonstrate compliance with ambient air quality standards.

Environmental effects on freshwater quantity and quality is required as part of the assessment for all water bodies within the project footprint or influence zone of the project.

Environmental effects on the socio-economic environment are to be detailed and include, but will not be limited to, training needs, public health services in relation to potential demand as a result of the mine, adequacy of existing acute care services, potential need for an increase in community health support services.

The EIS must also address environmental effects, as defined under CEAA. "Environmental effect" refers to any change that the project may cause in the environment, including any effect of any such 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 includes any change in the project that may be caused by the environment.

#### **Cumulative Environmental Effects:**

Consideration of any cumulative effects on valued ecosystem components that are likely to result from the project in combination with other projects or activities that have been or will be carried out [e.g., existing and proposed shipping (railway or alternative(s) to be included) and industrial activity in the area] will be discussed in the EIS. Other projects or activities that should be considered include the LIM proposal for Schefferville, Wabush Mines' operations, IOC's operations, and increased shipping traffic on the

Bloom Lake Railway, QNS&L, Tshuetin Rail Transportation and Wabush Mines Arnaud railways will be required. Additionally, any areas of NL that may be effected with respect to socio-economic issues will be included in this analysis.

Addressing cumulative environmental effects will involve considering:

- emissions from any one-site generation of power;
- temporal and spatial boundaries;
- interactions among the project's environmental effects;
- interactions between the project's environmental effects and those of existing projects and activities;
- interactions between the project's environmental effects and those of planned projects and activities; and,
- mitigation measures employed toward a no-net-loss or net-gain outcome (e.g., recovery and restoration initiatives pertinent to a VEC that can offset predicted effects).

## 7. ENVIRONMENTAL PROTECTION

### 7.1 *Mitigation*

Mitigative measures that are technically and economically feasible, that have or will be taken, to avoid, minimize or eliminate the negative, and enhance the positive environmental effects, will be described and discussed with emphasis on pollution prevention, avoidance of environmental effect and BMPs. Mitigation includes the elimination, reduction or control of the adverse effects or the significant environmental effects of the project and may include restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.

Mitigation will be evaluated based on the use of BACT and BMPs for minimizing adverse environmental effects.

Mitigative measures specific to the following must be addressed in particular:

- air quality including dust emissions from crushing operations, aggregate and overburden stockpiles, unpaved roadways and cleared areas. Emissions from any on-site generation of power. Include dust control.
- water quality and quantity: outline siltation, erosion and run-off control features, storm drainage management procedures and measures, including specific reference to seasonal variation, that will be used in the following situations: (a) installation of watercourse structures; (b) construction of service roads; and (c) any in water works
- process effluent and sewage
- flora species: discuss measures to be taken to minimize effects. Include any plans for landscaping and preservation of existing vegetation. Demonstrate

how priority will be placed on the use of native species for revegetation efforts.

- fauna species: describe measures to be taken to minimize effects on terrestrial and aquatic fauna (including avifauna). Two caribou mitigation strategies must be proposed, one for woodland animals and one for migratory animals. The EIS should include a commitment to apply the mitigation plan developed for woodland caribou while a monitoring plan is undertaken to determine the identity of any caribou using the area. Include any plans for preservation of existing habitat and compensation for loss or degradation of aquatic and terrestrial habitat (i.e., habitat rehabilitation or replacement);
- Fish and fish habitat: Mitigation measures that will be employed to protect fish and fish habitat during construction and upgrading of the railway line and access road and operation of the mine should be outlined in detail. A detailed sediment and erosion control plan should also be provided. If necessary, details on compensation for losses that cannot be mitigated should also be included.
- Blasting operations.

Proposed mitigative strategies integral to the phases of the project (construction, operation, maintenance and decommissioning) will be clearly identified and addressed. The effectiveness of the proposed mitigative measures will be discussed and evaluated. Where possible and appropriate, compensation for losses that cannot be mitigated by any other means, will be examined. Mitigation failure will be discussed with respect to risk and severity of consequence.

There must be full consideration for the precautionary principle which states, “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 best available technology and best management practices must be considered. Consideration must be given for impact avoidance through implementation of scheduling and siting constraints and pollution prevention opportunities.

## ***7.2 Emergency Response/Contingency Plan***

An emergency response plan will be outlined that details measures to be taken to effectively respond to any foreseeable mishap that may occur as a result of the undertaking. In addition the outline will describe any partnering opportunities with area communities and other industry that may be affected by any emergency or be expected to respond to, and recover from, an emergency response.

A contingency plan will be outlined that details measures to be taken to effectively respond to a terrestrial spill event in a timely manner. The plan should reflect a consideration of the risk of spills associated with construction, operation and maintenance and the environmental sensitivities to such a spill. The contingency plan must specifically address contamination or drainage to surface water and/or groundwater resources and protection of water quality as well as contingency and remediation plans

for drainage to aquatic and terrestrial habitat as a result of accidental events. The contingency plan must also include information regarding worst case scenario during blasting operations and for the Factory Site (plant and magazines) (i.e. accidental explosion.) In addition the outline will describe any partnering opportunities with area communities and other industry that may be affected by any contingency or be expected to respond to, and recover from, a contingency response.

### ***7.3 Environmental Monitoring and Follow-up Programs***

Environmental compliance, effectiveness and effects monitoring programs for construction, operation, maintenance and decommissioning phases of the project will be described. Compliance monitoring is conducted to ensure compliance with appropriate legislation and/or ensure commitments made in the EIS are fulfilled. Monitoring and follow-up programs must allow for testing of the accuracy of effects prediction and effectiveness of mitigation measures. Programs must support an adaptive management approach and demonstrate preparedness for a range of potential outcomes to be confirmed through follow-up.

Important aspects of monitoring programs include:

- elements of the environment (i.e., air emissions, freshwater quantity and quality, habitat, etc.) that are to be monitored
- where monitoring will occur
- frequency and duration of monitoring
- identification of resource agencies that will review program design and results
- detailed statement of objectives
- submission of results, and
- protocols for the interpretation of results and subsequent actions to be taken based on findings

Details of a proposed environmental effects monitoring program for effluent discharge must be presented. It is expected that the effluent discharge environmental effects monitoring program will incorporate a commitment to full community disclosure.

Details of a proposed environmental effects monitoring program for fish habitat.

Known or planned follow-up programs specifically related to detecting and monitoring cumulative environmental effects are to be described. Objectives, methodology, duration and reporting covered by the program evaluating effectiveness of avoidance and mitigation measures on long-term effects from the project are to be described. Programs may be proposed specifically for wildlife (including migratory birds) and their habitats, species-at-risk and their habitat, air quality and water quality.

A monitoring plan for employment, contracting and procurement, education and training will be required. This monitoring plan should include succession planning and opportunities for advancement and training upgrades.

## **7.4 Rehabilitation**

A plan of proposed rehabilitation measures for the activities associated with the project will be given with an explanation of how the measures will reduce or eliminate various negative effects during construction, operation, maintenance and decommissioning.

## **8. RESIDUAL EFFECTS AND SELECTION CRITERIA FOR PREFERRED OPTION**

### **8.1 Residual Effects**

All remaining effects after mitigation has been applied should be presented. The residual effects should be defined in terms of nature, spatial extent, frequency, duration, magnitude (qualitative and quantitative), significance, and level of certainty. Irreversible impacts should be clearly identified.

### **8.2 Effects Evaluation and Selection of Preferred Alternative**

This section (as compared to Section 3.3 - Alternatives) is intended to provide a detailed discussion and comparison of the residual effects relative to the preferred option and viable alternatives (as applicable).

All selection criteria, including biophysical, socio-economic and technical, will be presented and discussed in sufficient detail to allow a comparative analysis with regard to costs, benefits and environmental risks associated with both the preferred and alternative options.

## **9. PUBLIC PARTICIPATION**

A proposed program of public information will be outlined. Open House Public Information Sessions will be held to present the proposal and to record public concerns. The proponent will hold public information sessions in the Town of Labrador City-Wabush. Public concerns will be addressed in a separate section of the EIS. Protocol for these sessions will comply with Section 10 of the Newfoundland and Labrador Environmental Assessment Regulations, 2000. Public notification specifications are outlined in Appendix B.

## **10. ENVIRONMENTAL PROTECTION PLAN**

A site specific Environmental Protection Plan (EPP) for the proposed undertaking must be submitted to, and approved by, both the Minister of Environment and Conservation and Fisheries and Oceans Canada before any construction on the project begins. For the purposes of the EIS, an outline of the EPP will be included. The EPP will be a "stand alone" document with all relevant maps and diagrams. Statements regarding the commitment to and philosophy of environmental protection planning and self-regulatory

and compliance monitoring will be restricted to the EIS. The target audience for the EPP will be the resident engineer, site foreman/supervisor, proponent compliance staff and the provincial environmental inspector(s). Therefore the EPP will concentrate on addressing such issues as construction/operation mitigation, permit application and approval planning, monitoring activities, contingency planning for accidental and unplanned events and contact lists. In addition, the EPP will contain a tabular breakdown of major construction and operational activities into sub-components, followed by permits required, field mitigation and contingency planning where appropriate. The objective is to present concise, comprehensive and easily accessed environmental protection information for field use by the target audience.

## **11. REFERENCES CITED**

Provide a bibliography of all citations in the EIS. Provide a bibliography of all project-related documents already generated by or for the undertaking.

## **12. PERSONNEL**

Brief descriptions of the expertise and qualifications of personnel involved in the completion of the EIS will be provided.

## **13. COPIES OF REPORTS**

Copies of reports produced for any studies undertaken specifically in connection with this Environmental Impact Statement/Comprehensive Study Report will be submitted.

## **APPENDIX A**

### ***Public Notices***

Under the provisions of the Environmental Assessment Regulations 2003, Section 10, and where the approved Guidelines require public information session(s), the following specified public notification requirements must be met by the proponent prior to each meeting:

**PUBLIC NOTICE**

Public Information Session on the Proposed

*Name of undertaking*  
*Location of undertaking*

shall be held at  
*Date and Time*  
*Location*

This session shall be conducted by the Proponent,  
*Proponent name and contact phone number,*  
as part of the environmental assessment for this Project.

The purpose of this session is to describe all aspects of the proposed Project,  
to describe the activities associated with it, and to provide an opportunity for all interested  
persons to request information or state their concerns.

**ALL ARE WELCOME**

Minimum information content of public advertisement - (Proponent to substitute appropriate information for italicized items):

Minimum newspaper ad size: 2 column widths.

Minimum posted ad size: 7" x 5"

Minimum newspaper ad coverage: Weekend preceding meeting and 3 consecutive days prior to meeting date; to be run in newspaper locally distributed within meeting area or newspaper with closest local distribution area.

Minimum posted ad coverage: Local Town or City Hall or Office, and local Post Office, within town or city where meeting is held, to be posted continually for 1 full week prior to meeting date.

Any deviation from these requirements for any reason must receive prior written approval of the Minister of Environment and Conservation.