5.0 PUBLIC CONSULTATION AND ISSUE SCOPING

The Newfoundland Environmental Assessment Regulations require that, during the preparation of an EIS, the Proponent must meet with interested members of the public in the local area to provide information on the proposed undertaking, and to record and respond to any concerns regarding the environmental effects of the Project. In accordance with this requirement, and as specified in the EIS Guidelines, public information sessions were held as part of the scoping exercise. These were the culmination of a comprehensive program of community engagement initiated by LIM in 2005, prior to the start up of any exploration or development work on the Project (Appendix O).

5.1 Public Information Sessions

5.1.1 Session Schedule

Public information sessions were held from November 26 to 28, 2008 (Table 5.1). As specified in the EIS Guidelines, this saw a session in Labrador West and, as recommended in the Guidelines, one in Schefferville, Québec. In addition, LIM held a session in Happy Valley-Goose Bay.

Table 5.1 Public Information Session Schedule

Date	Location	Venue
November 26, 2008	Happy Valley-Goose Bay	Hotel North 2, Goose Bay
November 27, 2008	Labrador West	Wabush Hotel, Wabush
November 28, 2008	Schefferville	Community Centre

During the course of its community consultation process since December 2005, the Proponent has held many other public information sessions, and meetings with community and business leaders, in Wabush, Labrador West, Happy Valley-Goose Bay, Schefferville, Sept-Iles and Kawawachikamach.

Aboriginal consultations are discussed in Section 5.2 and in Section 6.

5.1.2 Public Notifications

As required under the provisions of the Newfoundland Environmental Assessment Regulations, and as specified in the EIS Guidelines, the public information sessions were advertised in local newspapers. Public notifications for the session in Labrador West appeared in the Aurora newspaper on November 24, 2008, and for the session in Happy Valley-Goose Bay in the Labradorian newspaper on November 24, 2008. In addition, public notifications of the Labrador sessions were posted in the Town Halls of Wabush, Labrador City and Goose Bay, as well as at a number of other prominent public areas.

The public notices described the nature and purpose of the information sessions, and stated the date, location, and time of the events. These advertisements also included contact information for the Proponent so that interested members of the general public who were not able to attend could forward any questions or comments that they might have about the Project (Appendix P).

5.1.3 The Sessions

The public information sessions provided an opportunity for local residents to obtain information on the Project, and to ask questions and raise any issues or concerns that they might have directly with the Proponent. Project representatives in attendance included Terence McKillen (Executive Vice-President, LIM), Linda Wrong (Vice-President Environment and Permitting, LIM) and Joseph Lanzon (Manager Government and Community Affairs, LIM). Mr. Lanzon and Ms. Wrong coordinated the sessions, distributed handouts and recorded any questions and comments raised. Mr. Paul Rideout (Newfoundland and Labrador Department of Environment and Conservation), Chairperson of the Environmental Assessment Committee, was present at the Happy Valley-Goose Bay, Labrador City-Wabush and Schefferville meetings to address questions related to the environmental assessment process.

Each of the sessions began at 7:00 p.m. The sessions in Labrador were conducted in English, while that in Schefferville was conducted in French. Visitors were requested to sign a guest book as they entered the venue, and were given a handout consisting of a summary of the Project (Appendix Q). Participants were encouraged to call the Proponent using a toll-free number or to write by email, mail or fax with any comments, questions or concerns relating to the Project.

The sessions featured a PowerPoint presentation by Mr. McKillen and a series of display panels which provided information on the proposed Project (including its location and development schedule, design details, mining and processing methods, and employment), the environmental assessment process and the existing aquatic, terrestrial and marine environments (Appendix R). This was followed by an informal question and answer session. Following this, attendees were invited to view the information panels, and to ask questions and provide comments on the Project to any of the LIM representatives in attendance. Refreshments were provided at each of the sessions. The sessions continued for as long as members of the public remained.

A debriefing session for the Project representatives was held at the end of each public information session. This gave the team members an opportunity to review discussions from the session, and ensured that all issues, concerns, and questions were recorded.

5.1.4 Attendance

Table 5.2 summarizes the attendance at the information sessions. The number of completed comment sheets includes those completed during the sessions, and those received by e-mail, fax or mail following the events.

Table 5.2 Public Information Session Attendance

Community	Visitor Count	Comments Received
Happy Valley-Goose Bay	25*	Positive interest expressed in: • procurement; • business opportunities; • contracting; and • potential employment.
Wabush-Labrador City	12*	Statement of positive support from the Mayor of Wabush: • hopes that the provincial government approves the Project in a timely manner; and • attended by miners from Wabush Mines interested in potential work opportunities to offset layoffs.
Schefferville	15*	Statement of positive support by Administrator of Schefferville: Identified opportunity for Schefferville to be a positive support to the Project while recognizing that it is a Newfoundland and Labrador Project.
Total	52	
*Some visitors attended the sessions without signing the guest book.		

5.1.5 Issues and Questions Raised

The issues and questions raised during each of the public information sessions are summarized below.

5.1.5.1 Happy Valley-Goose Bay

Attendees at the Happy Valley-Goose Bay public information session included representatives from the business community, representatives from the Innu Development Corporation, and representatives of individual Innu business. There were a number of questions regarding the business opportunities that might be available to residents of Upper Lake Melville. There were no negative comments made and the general impression received was one of support.

5.1.5.2 Wabush-Labrador City

Attendees at the Labrador West public information session included the Mayor of Wabush, a representative from the Economic Development Bureau, representatives from the business community and individual residents. There were questions regarding the employment and business opportunities that might be available to residents of Labrador West. The Mayor made a very supportive statement for the Project. There were no negative comments and the general impression was one of support.

5.1.5.3 Schefferville

The attendees included the Administrator of the Municipality of Schefferville and representatives from the business community and individual residents. There were questions regarding the business opportunities that might be available to residents of Schefferville. The Municipal Administrator noted that the community wanted to indicate its support of the Project and to advise LIM that, subject to discussion and planning, it was prepared to provide municipal services to the Project.

5.1.6 Summary

The public information sessions indicate that the proposed Project is generally viewed as a positive development for Western and Central Labrador, and in Schefferville. Most of the attendees were relatively well informed about mining in general and about the history of the Project. The majority of the questions asked during the sessions related to the employment and business opportunities, and the specifics of the mining, beneficiation and transportation processes. No bio-physical environmental issues were raised and the potential socio-economic benefits associated with the proposed Project were favourably received.

5.2 Aboriginal Consultations

As part of the consultation process, extensive consultations were held with the Aboriginal communities in the Québec-Labrador Peninsula. These communities have overlapping land claims issues or traditional rights issues covering this part of western Labrador. Consultations with the aboriginal communities also started in 2005 (Appendix O). They were conducted with:

- The Innu Nation of Labrador representing the Sheshatshiu Innu First Nation and the Mushuau Innu First Nation, respectively located at the communities of Sheshatshiu and Natuashish, Labrador;
- The Innu Nation of Matimekush-Lac John, located at Schefferville, Québec;
- The Naskapi Nation of Kawawachikamach, located at Kawawachikamach, Québec; and
- The Innu Nation of Takuaikan Uashat Mak Mani-Utenam, living in the communities of Uashat and Maliotenam, near Sept-Îles, Québec.

In July 2008, LIM entered into an IBA with the Innu Nation of Labrador, replacing an earlier Memorandum of Understanding. This life of mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation. In return for their consent and support of the Project, the Innu Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

LIM has also entered into memoranda of understanding with the Innu Nation of Matimekush-Lac John and the Naskapi Nation of Kawawachikamach, and is in discussion with the Innu Nation of Takuaikan Uashat Mak Mani-Utenam respecting a similar memorandum of understanding. These memoranda relate to the development of an ongoing positive relationship between LIM and each First Nation relating to the development and operation of the Project.

A full description of all aspects of the Aboriginal consultation conducted in association with this Project is provided separately in Chapter 6.

5.3 Other Consultation

During the course of its community consultation process since December 2005, the Proponent held many other public information sessions, and meetings with community and business leaders, in Wabush, Labrador West, Happy Valley-Goose Bay and St. John’s. Similar consultations took place in Schefferville, Matimekush-Lac John, Kawawawachikamach, Sept-Iles, and Uashat Mak Mani-Utenam in Québec.

5.4 Selection of Valued Environmental Components

Based on the results of the issues scoping exercise described above, a thorough understanding of the Project activities and the existing environment, the requirements of the EIS Guidelines and the professional judgment of the Study Team, the following VECs have been selected for consideration in this environmental assessment:

- **Fish and Fish Habitat**: This includes the physical and biological components of the freshwater environment such as substrate type, water depth, and fish species composition and distribution. Fish habitat has the potential to be adversely affected by Project activities resulting in physical disturbance of the water bodies or through Project effluents. As DFO requires loss of fish habitat to be compensated, a full assessment of the nature and extent of potential Project effects is required.
- **Caribou**: This will include consideration of woodland and/or migratory caribou and habitat in Newfoundland and Labrador and Québec. Woodland caribou are protected under both federal and provincial legislation, and any potential Project effects will require full assessment.
- **Employment and Business**: This will include consideration of hiring policies, training initiatives, employment of under-represented groups, potential for effects on existing industry and services and the ability of existing infrastructure to service the proposed construction and operation. The provincial government has requested that the Proponent demonstrate a goal of maximizing industrial benefits for the Province and the discussion around this VEC will be important in demonstrating this commitment.
- **Communities**: This will include the social and physical infrastructure and services of Labrador communities. As required by the EIS Guidelines, this EIS also provides a focus on healthcare.

A description of the environmental assessment methods used to assess the environmental effects of the Project is provided in Appendix S.

6.0 ABORIGINAL CONSULTATIONS

The Aboriginal groups of the Québec -Labrador Peninsula most directly affected by the Project are the Innu Nation of Labrador, the Naskapi Nation of Kawawachikamach (NNK), the Innu Nation of Matimekush-Lac John (MLJ), and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam (ITUM) (Figure 6.1). These four groups may have overlapping land claims issues or traditional claims covering western Labrador.

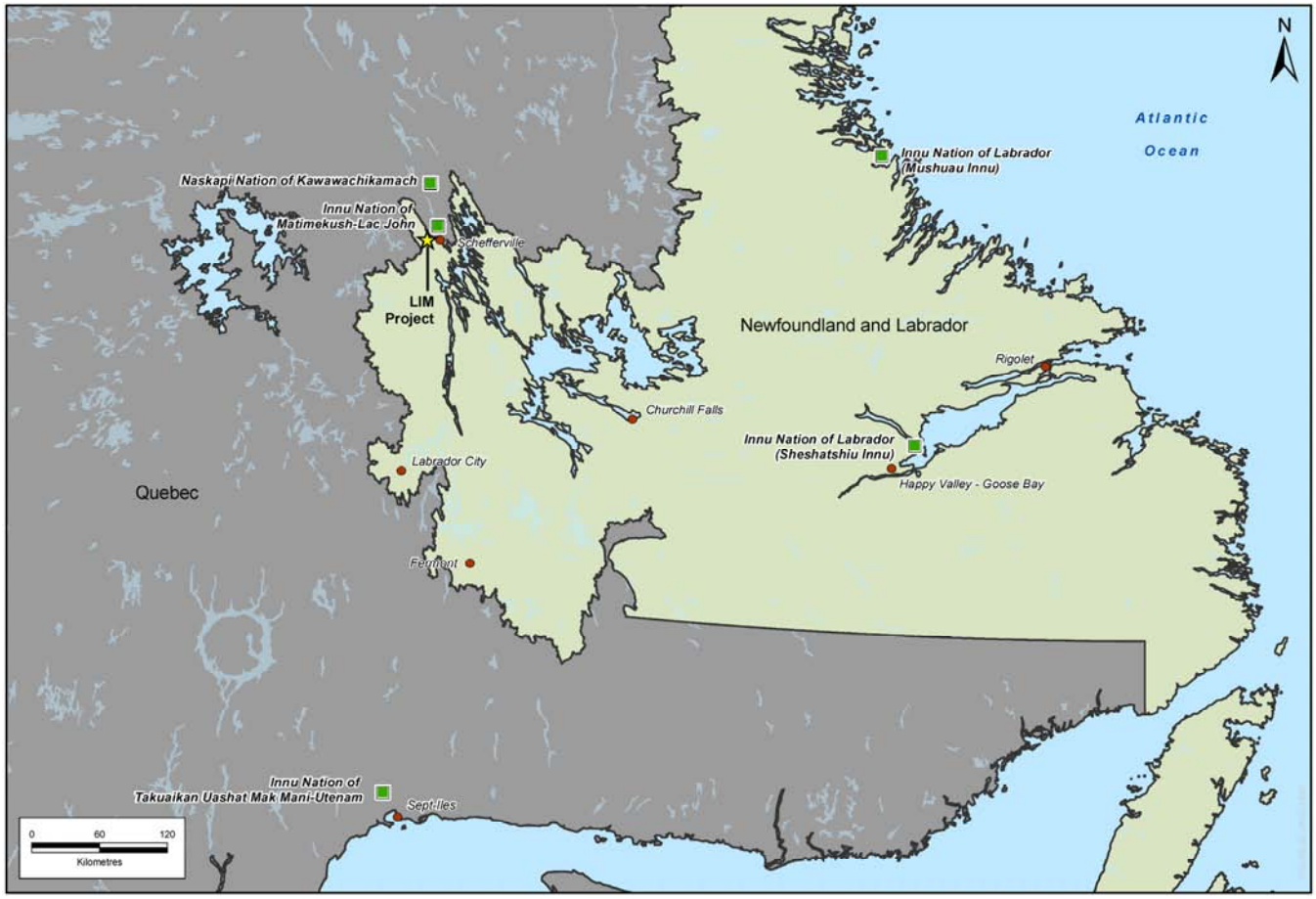

Figure 6.1 Aboriginal Communities

LIM has pursued an extensive and proactive engagement with all of the Aboriginal communities living close to the Project location or having traditional claims to the surrounding territory. LIM commenced consultations respecting the Schefferville Area Iron Ore Mine (Western Labrador) Project with a meeting between LIM and Naskapi Nation in Kawawachikamach in May 2005. Between May 2005 and July 2009, numerous consultation meetings were held in Newfoundland and Labrador (Labrador City/Wabush, Happy Valley-Goose Bay and St. John's), Nova Scotia (Halifax), Québec (Schefferville, Kawawachikamach, Uashat, Matimekush, Montreal and Québec City) and Ontario (Ottawa and Toronto). Participants and summaries of each meeting are provided in Appendix O.

These consultations have resulted in the signing of an IBA with the Innu Nation of Labrador and Memoranda of Understanding with two Aboriginal groups in Québec. These memoranda relate to the

establishment of a positive ongoing relationship between LIM and these First Nations relating to the development and operation of the Project.

6.1 Innu Nation of Labrador

The Innu of Labrador live primarily in two communities in central and coastal Labrador: the coastal community of Natuashish (formerly located on Iluikoyak Island/Davis Inlet), and the Upper Lake Melville community of Sheshatshiu. Residents of Natuashish are known as the Mushuau Innu, and residents of Sheshatshiu as Sheshatshiu Innu. Each community is administered by an elected Chief and Band Council. Politically, the two communities are represented by the Innu Nation, which is led by an elected Grand Chief.

The Labrador Innu claim Aboriginal rights and title to most of Labrador, referring to it as Nitassinan. Their land claim was accepted for negotiation by the federal and provincial governments, with formal negotiations beginning in 1991. An Agreement-in-Principle is presently being negotiated.

In 1998, the Mushuau and Sheshatshiu Band Councils formed Innu Development Limited Partnership, a for profit corporation registered with the Province. It is committed to creating opportunities for employment and economic development for private Innu businesses by creating and managing equity ownership and partnerships in strategic industries.

The Honourable Danny Williams, Premier of Newfoundland and Labrador, and Mark Nui, Grand Chief of Innu Nation, announced on September 26, 2008 the signing of the Tshash Petapen Agreement (The New Dawn Agreement). This Agreement resolves key issues relating to matters between the province and Innu Nation surrounding the Innu Rights Agreement, the Lower Churchill IBA and Innu redress for the upper Churchill hydroelectric development. This is described more fully below; however, final agreements based on the Tshash Petapen Agreement will be subject to ratification by the Innu people.

The agreement lays out the areas and location of Innu lands, and establishes economic areas to assure Innu participation in resource projects in the region. The agreement also provides compensation to the Labrador Innu for impacts associated with the Churchill Falls development. This Agreement settles the outstanding grievance of Innu Nation with respect to damages suffered to Innu lands and properties as a result of the flooding caused by the upper Churchill River development in the 1960s. The Agreement also contains the details of the commercial terms of the Lower Churchill IBA, which include a structured royalty regime and implementation funding to support Innu Nation's involvement in the Project during construction. Negotiations will continue in order to execute formal agreements. Once final agreements have been reached, Innu Nation will present the details to the Innu people for ratification, which is planned for 2009.

6.1.1 Issues

The main issues raised by the Innu Nation of Labrador regarding the Project are:

- Economic benefits and revenue sharing;
- Provision of sustainable economic development within the region in order to provide employment and business opportunities for its members. ;
- Protection for the environment;

- Training and education programmes so that Innu Nation members might fully participate in available opportunities; and
- Cultural and heritage protection and development.

Through discussion and negotiation during the Memorandum of Understanding and IBA process, the parties have reached satisfactory agreement on all of these issues, including the processes for implementation, coordination and oversight of mitigation strategies to address these issues. The communities will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Financial participation

6.1.2 Impact Benefits Agreement

In July 2008, LIM entered into an Impact Benefits Agreement with the Innu Nation of Labrador, replacing an earlier Memorandum of Understanding. This life-of-mine agreement establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between the LIM and the Innu Nation. In return for their consent and support of the Project, the Innu Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

6.2 Innu Nation of Matimekush-Lac John

The Innu Nation of Matimekush-Lac John, also known as the Montagnais Innu, live primarily in the northeastern Québec towns of Matimekush and Lac-John, near Schefferville. The community is governed by an elected Band Council consisting of a Chief and Councillors.

The Montagnais Innu of Matimekush and Lac-John voluntarily moved to the Schefferville region from Sept-Iles in the early 1950s when the Québec North Shore & Labrador (QNS&L) Railroad was completed. Initially they shared the community at Lac-John with the Naskapi, who arrived in the region at the same time. The Montagnais have historical and traditional interests in the region, having historically travelled to the region from Sept-Iles to trap and hunt. The community includes the reserve of Matimekush, adjacent to Schefferville, and the reserve of Lac-John, 3.5 kilometres from Matimekush and including the centre of Schefferville. When the Schefferville IOC mines closed in the early 1980s, the Montagnais extended the reserve of Lac-John into the town of Schefferville, to avail of the existing infrastructure no longer in use by the town (sewer and water system, school, arena).

The Montagnais Innu's comprehensive land claim, filed in association with the Atikamekw of southern Québec, was accepted federally in 1979 and provincially in 1980. The two Aboriginal groups were represented by the Atikamekw-Montagnais Council (AMC) until 1994. After dissolution of the AMC, the Montagnais Innu formed three negotiation groups: the Mamuitun mak Natashquan Tribal Council, the Mamu Pakatatau Mamit Assembly, and the Ashuanipi Corporation. The Ashuanipi Corporation presently represents the Innu communities of Matimekush-Lac John and Uashat Mak Mani-Utenam in comprehensive land claim negotiations.

Together with the NNK and Innu Nation of ITUM, the Montagnais Innu have acquired in interest in Tshiuetin Rail Transportation Inc (TSH), an aboriginal-owned corporation which owns and operates the northern portion of the QNS&L between Ross Bay Junction and Schefferville. Operations include passenger service twice weekly and weekly freight service between Schefferville and Sept-Iles. The Montagnais Innu are also partially responsible for maintenance at the Schefferville Airport and operate construction businesses.

Gestion Innu is an incorporated Canadian company. The main function of Gestion Innu is to run the day to day garage operations, snow removal contracts, and business development support for the Band office of Matimekush Lac-John. Gestion Innu has a board of directors and a President appointed from the Band Council and a regular community member.

6.2.1 Issues

The main issues raised by the Innu Nation of Matimekush-Lac John regarding the Project are:

- Sustainable economic development in order to provide employment and business opportunities for its members. The community comprises a significant un- or under-employed young population with little or no available employment base;
- Economic benefits;
- Environmentally and culturally sustainable development;
- Desire to see the commercial development of TSH Railway without impact on the existing passenger service; and
- Training and education programmes so that members of the community might fully participate in available opportunities.

Through discussion and negotiation during the Memorandum of Understanding process, the parties have openly discussed all of these issues and a cooperation and impact agreement currently being negotiated will include the processes for implementation, coordination and oversight of mitigation strategies to address these issues. It is expected that the communities will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;

- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

6.2.2 Memorandum of Understanding

In March 2008, LIM signed a Memorandum of Understanding with the Innu Nation of Matimekush-Lac John and current discussions are underway for the development of an Impact and Benefits Agreement with the Nation.

6.3 Naskapi Nation of Kawawachikamach

The Naskapi Nation of Kawawachikamach was originally a small nomadic tribe, settling in Fort Chimo in the mid-1800s, before moving to Schefferville in the 1950s. The Naskapi relocated to the present site of Kawawachikamach, approximately 16 kilometres north of Schefferville in the 1980s following the James Bay Settlement.

Between 1981 and 1984, self-government legislation was negotiated with the federal government. These negotiations resulted in the *Cree-Naskapi (of Québec) Act* and led to the formation of the Naskapi Band of Québec in 1984. The Naskapi Band of Québec was one of the first self-governing Bands in Canada. The name was changed to Naskapi Nation of Kawawachikamach in 1999.

The community of Kawawachikamach is administered by the Band Council, consisting of an elected Chief and Councillors. In addition to typical municipal duties, the Band Council is responsible for maintaining the local police force, the local volunteer fire department, local childcare centre, and local school.

The Naskapi Nation, through the Band Council, operates several corporate entities within Kawawachikamach and Schefferville including the Naskapi Landholding Corporation, Garage Naskapi, Kawawachikamach Energy Services Inc., Naskapi Imun Inc (an internet service and software company), Naskapi Caribou Meat Inc., and Naskapi Development Corporation. In addition, they hold contracts for maintenance of the Schefferville Airport, local road maintenance, and own interests in Tshiuetin Rail Transportation Inc.

6.3.1 Issues

The main issues raised by the Naskapi Nation of Kawawachikamach regarding the Project are:

- Economic benefits;
- Provision of sustainable economic development in order to provide employment and business opportunities for its members. The community comprises a significant un- or under-employed young population with no significant employment base;
- Environmentally and culturally sustainable development including specific emphasis on the protection of any caribou observed;
- Training and education programmes so that its members might fully participate in available opportunities;

- Interest in the commercial development of TSH Railway; and
- Cultural and heritage protection and development.

Through discussion and negotiation during the Memorandum of Understanding process, the parties have openly discussed all of these issues and a cooperation and impact agreement currently being negotiated will include the processes for implementation, coordination and oversight of mitigation strategies to address these issues. It is expected that the community will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

6.3.2 Memorandum of Understanding

In April 2008, LIM signed a Memorandum of Understanding with the Naskapi Nation of Kawawachikamach and current discussions are underway for the development of an Impact and Benefits Agreement. On April 3, 2009, representatives of the Naskapi Nation met with LIM representatives to discuss the EIS and their environmental concerns with the Project. LIM representatives addressed all of the concerns expressed at this meeting.

6.4 Innu Nation of Takuaikan Uashat Mak Mani-Utenam

The Innu Nation of Takuaikan Uashat Mak Mani-Utenam are closely related to the Montagnais Innu of Matimekush-Lac John. They have historical and traditional interests in the Project area, having traditionally used the area for hunting and trapping. They are one of the largest Innu communities in Québec, living in two settlements within their reserve, Uashat and Maliotenam, both on the Québec North Shore, near Sept-Iles. The communities are administered by a Band Council comprised of an elected Chief and Councillors. In addition to typical administrative duties, the Band Council also operates the local police force.

The Innu of Takuaikan Uashat Mak Mani-Utenam joined the Matimekush-Lac John Innu in 2005 to create the Ashuanipi Corporation to represent them in comprehensive land claims negotiations. This corporation also pursues economic development opportunities and has entered into joint ventures and local partnerships with other businesses.

6.4.1 Issues

The main issues of concern to the Innu Nation of Takuaikan Uashat Mak Mani-Utenam are:

- Economic benefits;
- Employment and business development opportunities for its members;
- Commercial development of TSH Railway;
- Environmentally and culturally sustainable development;
- Protection of the trapping activities of the Uashaunnaut families holding Beaver Lots in the region; Training and education programmes so that its members might fully participate in available opportunities; and
- Cultural and heritage protection and development.

The parties have openly discussed all of these issues and are currently working on a cooperation and impact agreement which will include the processes for implementation, coordination and oversight. It is expected that the community will directly participate and/or be actively consulted as follows:

- Implementation committee;
- Community collaboration committee;
- Training and education committee;
- Establishing employment and workplace conditions;
- Business and contracting opportunities;
- Environmental monitoring committee;
- Traditional knowledge collection;
- Heritage resource and cultural protection; and
- Economic benefits.

6.4.2 Impact and Benefit Agreement

Negotiations toward an IBA between LIM and the Innu Nation of Takuaikan Uashat Mak Mani-Utenam have been ongoing since September 2005. It is anticipated that the IBA will be signed by both parties in 2009.

7.0 ENVIRONMENTAL EFFECTS ASSESSMENT

The environmental assessment (EA) methods employed in this EIS are intended to:

- focus on issues of greatest concern;
- address regulatory requirements, including those identified through the Project-specific EIS Guidelines;
- address issues raised by the public and other stakeholders during Project-specific consultation; and
- integrate engineering design, mitigation, and monitoring programs into a comprehensive environmental management planning process.

The approach and methods used for the EIS are based largely on the work of Beanlands and Duinker (1983), the CEA Agency (1994; 1999), and Barnes et al. (2000), as well as the study team's experience in conducting environmental assessments. The EA methods provide a systematic evaluation of the potential environmental effects that may arise from each Project phase (construction, operation, and decommissioning) as well as malfunctions and accidents, with regard to each of the identified VECs. Project related environmental effects are assessed within the context of temporal and spatial boundaries established for each VEC. The evaluation of potential cumulative environmental effects includes past, present and likely future projects and activities that may interact with Project-related environmental effects. The specific steps involved in the environmental assessment for each VEC include:

- determination of the assessment boundaries;
- description of the existing conditions for each VEC;
- identification of potential Project-VEC interactions;
- overview of existing knowledge and mitigation or effects management measures;
- definition of the significance criteria for residual environmental effects;
- assessment of the environmental effects and mitigations or effects management measures;
- determination of the significance of Project residual environmental effects;
- cumulative effects assessment; and
- identification of any monitoring or follow-up requirements.

Additional information on the methods used to assess potential environmental effects of the Project to the VECs are presented in Appendix S.

7.1 Fish and Fish Habitat

Many of the waterbodies onsite comprise fish habitat and several species of fish are present in the lakes and streams on and adjacent to the James, Silver Yard, Redmond locations and the interconnecting access roads for the Project. Some of the riparian habitats adjacent to these waterbodies have been modified by previous mining activities.

Despite historical mining, some areas of fish habitat support fish communities that sustain themselves and interconnect with other communities downstream in the same watersheds. Surveys have identified the current distribution of these species in the waterbodies and riparian habitats associated with the James and Redmond mining activities.

7.1.1 Environmental Assessment Boundaries

Assessment area boundaries for fish and fish habitat are discussed in Section 4.2.4.2.

7.1.2 Existing Fish and Fish Habitat Environment

Section 4.2.4 summarizes the existing conditions for fish and fish habitat and the existing fisheries in the Project area. The assessment in this section focuses on fish and fish habitat that may be affected by the Project.

7.1.3 Potential Project-Fish and Fish Habitat Interactions

The potential Project interactions with fish and fish habitat are expected to be very limited as there is no direct construction or operation related impacts to fish-bearing waterbodies if standard and enhanced mitigations are applied. Potential interactions that could have an adverse effect on fish and fish habitat by the Project phases are summarized below.

7.1.3.1 Construction

Site clearing and construction activities near waterbodies have the potential to disturb riparian vegetation and resulting erosion or dust could introduce sediment into fish-bearing waters.

No new stream crossings are required for the construction and operation phases. No infilling of fish-bearing waterbodies are required. No materials (waste rock or reject fines) are to be deposited into areas of direct fish habitat.

While discharges to fish habitat have the potential to contain deleterious substances, such as hydrocarbons, suspended solids, and various potentially toxic substances (e.g., metals, solvents, or concrete products), no such discharges are planned.

7.1.3.2 Operation

Again, operational discharges are similar to those outlined for the construction period, with the addition of substances related to operation (e.g., reject fines and blast residue (ammonia)). The potential for acid rock drainage has been determined through testing to not be present in the Project area (Section 4.1.3.6).

Water withdrawal from fish-bearing waters has the potential to dewater habitats and affect survival or migration. There are no plans to withdraw water from the naturally-occurring surface water systems in the Project area. The groundwater dewatering system at the James Deposit is designed to pull the water table down enough to reduce groundwater accumulation in the active pits. This will also affect the water table, which feeds the two springs that maintain flows in the unnamed tributary on the James Property. The tributary downstream of the Project development footprint contains fish habitat (See Appendix N).

Beneficiation washwater will be directed to the historical Ruth Mine Pit, which will serve as a settling pond. Currently, existing pit water from Ruth Pit flows to, and is the origin of, James Creek. As shown in Figure 3.8 the added volume to Ruth Pit is an estimated 20 percent of the baseflow in James Creek and will only be added during the seven months of operation each year for an estimated total operation period of 5 years. This increase in flow is not expected to affect fish habitat in James Creek.

Blasting near fish-bearing waters has the potential to injure fish or developing eggs and fry; however, none is planned during the construction phase of the project and minimal blasting is expected during mine operation due to the presence of soft rock in the Project area. Should localized blasting be required during operations, it will be conducted to minimize potential impacts on any nearby surface water systems and work will be conducted in accordance with DFO's Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador (Gosse et al. 1998).

7.1.3.3 Decommissioning

Decommissioning activities, including the removal of facilities and equipment, grading, and site revegetation, will have limited interaction with fish and fish habitat. Buffer zones of 15 metres will have already been established to protect fish habitat during operations as required by the Province. Revegetation of the site during decommissioning will provide additional buffering and erosion control for adjacent water bodies. No new stream crossings are required for the decommissioning phase and no infilling of fish-bearing waterbodies is required. No materials (waste rock or reject fines) are to be deposited into areas of direct fish habitat during decommissioning.

7.1.3.4 Summary

A summary of the potential interactions between the Project and fish and fish habitat is shown in Table 7.1.

Table 7.1 Potential Project-VEC Interactions for Fish and Fish Habitat

Project Activities and Physical Works	Potential Environmental Effects	
	Stress, Avoidance, or Mortality	Degradation of Habitat
Construction (Project activities in 2009)		
Site Preparation (grubbing, clearing, and excavating)	X	X
Placement of Infrastructure (reinstatement of rail spur, utilities)		
Placement of Equipment and Buildings		
Operations (on-site power generation, solid waste, grey water, human presence, and transportation)	X	X
Employment and Expenditures	X	
Operation (Project activities starting in 2010)		
Iron Ore Extraction (excavation – mechanical, blasting)	X	X
Iron Ore Beneficiation (crushing, washing, screening, stockpiling, hazardous and mining waste disposal)	X	X
Stormwater and Washwater Management	X	X
Transportation (on-site trucking, rail loading)		
Operations (on-site power generation, solid waste, grey water, human presence)	X	X
Employment and Expenditures	X	
Decommissioning		
Removal of Facilities and Equipment		
Site Reclamation (grading, re-vegetation)	X	X

7.1.4 Existing Knowledge and Mitigations

DFO has issued Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador (Gosse et al. 1998), which provides a concise summary of the effects of poor environmental practices and the protective measures, or mitigations that protect fish habitat by limiting adverse effects from construction, operations, and decommissioning near waterbodies. The implementation of these and other guidelines, in concert with the application of LIM environmental policies and procedures, will mitigate the potential adverse interactions between the Project and fish and fish habitat. The potential effects span the Project phases (construction, operation, and decommissioning) and are described by category rather than phase. The categories that apply to this Project include: direct habitat destruction, pollution prevention, water management, and current and future fisheries.

7.1.4.1 Direct Habitat Destruction

As stated above there is no requirement for direct habitat destruction through any need to construct or operate in fish-bearing waters as all culverts and stream crossings are already in place. No infilling is required for the Project and no materials such as waste rock or reject fines will be deposited in fish-bearing waters.

Blasting activities will be limited in nature as little blasting may be required in the mine pits. All blasting will be distant from fish habitat as per DFO guidelines (Gosse et al. 1998; Wright and Hopky 1998); otherwise appropriate precautions will be implemented.

7.1.4.2 Pollution Prevention

The DFO guidelines detail measures for the control of clearing, grubbing, and the prevention of erosion in nearby waterbodies. These guidelines in conjunction with the maintenance of undisturbed vegetated buffer zones will control potential sediment releases into fish habitats. Other controls include suppression of dust (i.e., lift-off from exposed soils and generated from transport and crushing activities), and reduction of suspended solids in drainage channels through the use of geofabric, ditch dams, and proper layout of site drainage. Settling ponds will also be effective in reducing suspended solids from being released to the environment.

Other pollutants that could potentially be released into waterbodies include waste water/wash water, metals, blast residue (ammonia), concrete products and minor hydrocarbons from vehicle use. All of these can be controlled under normal circumstances through proper handling and disposal, site management and housekeeping practices, treatment where necessary (e.g., oil/water separators), and adequate emergency spill response equipment and training to address unplanned events.

7.1.4.3 Water Management

The Project may have the potential to affect fish and fish habitat by the withdrawal and release of dewatering activities. The plan for water management at the James site is comprised of two circuits.

Groundwater dewatering will be conducted continuously to reduce groundwater intrusion to the active mine pits at James. Although the initial groundwater dewatering may have elevated TSS, it is currently designed to incorporate source filtration at the well heads and it is further expected that well water upon full development will be clear. Clear groundwater dewatering will meet provincial water quality regulations and will be released, in part, to the unnamed tributary via a constructed settling pond to feed into the unnamed tributary on the James Property to maintain existing fish habitat. Any extra

dewatering water will be directed into James Creek, with the groundwater potential being used at the Silver Yard for use in beneficiating the rock.

Pit water with elevated TSS will be pumped from the active pits to a settling pond at the SP1 settling pond area, prior to being pumped to the Silver Yard for use in the beneficiation process and then directed to the Ruth Pit.

There will be a storm water management pond at the Silver Yard to collect and manage site drainage.

Water for the Silver Yard beneficiation may come from two sources: clean water from the groundwater dewatering circuit, or residual pit water via the pit water settling pond at the SP1 settling pond area.

This water management plan is designed to protect fish habitat from dewatering activities and the potential of accidental washwater releases.

The Redmond Site will have a much simpler plan as pit dewatering requirements are reduced by a lower water table and because water from the active pit can be pumped directly to an exhausted nearby historical pit (Redmond 2). There is no surface flow connection between Redmond 2 and the unnamed stream nearby. To maintain this hydraulic isolation, the water level in Redmond 2 will be monitored during operations and once the water level reaches a pre-determined level, waste rock disposal from the proposed pits into Redmond 2 will cease and be stockpiled in other locations. In this manner, no overflow will occur.

7.1.4.4 Current and Future Fisheries

New developments in previous unpopulated or sparsely populated areas bring two potential pressures on existing fish resources and existing fisheries. First, anytime a new area of wilderness is opened, access is provided for others to come in and pursue the 'new' fishery. In extreme cases, the adult fish stocks can be depleted to the point that future recruitment is in jeopardy. This is not the case for this Project as all roads are already in place and resulting access provided to local fishers.

The second pressure is that Project personnel may pursue angling in the local streams and ponds to a level that again depletes the adult fish stocks. To mitigate this possibly, LIM will implement and enforce a no fishing policy for workers, including workers staying at the work camp seasonally during operations, and this policy will be effective in limiting angling pressure on the adjacent streams and ponds.

7.1.5 Environmental Effects Assessment, Management, and Residual Effects Determination

The potential effects of the Project on fish and fish habitat are summarized above by the three phases. Mitigative measures will be applied to the potential effects and the results are the residual effects, which are examined to determine their significance.

7.1.5.1 Residual Environmental Effects Significance Criteria

Residual environmental effects are those which are predicted to affect fish and fish habitat, once mitigation measures have been applied to a Project. Each prediction is described according to:

- geographic extent (i.e., site-specific, within the Assessment Area, throughout the Assessment Area and beyond);
- frequency of occurrence (i.e., once, infrequently, continuous, not likely to occur);

- duration (i.e., less than one generation, over several generations, permanent);
- magnitude (i.e., low - no measurable change relative to baseline conditions, moderate - measurable change that does not cause management concern, high - measurable change that does cause management concern);
- reversibility (i.e., reversible or irreversible);
- confidence (i.e., low or high confidence regarding the significance prediction); and
- likelihood (i.e., significant effect is likely or unlikely).

A significant adverse residual environmental effect is one in which the Project would cause a population decline, such that the viability or recovery of the local/regional fish species is threatened.

7.1.5.2 Summary of Residual Environmental Effects Prediction

A summary of the mitigation measures, and the significance of residual effects once mitigation is applied are provided in Tables 7.2, 7.3, and 7.4 for the three phases of the Project. Follow-up and monitoring requirements are indicated near the bottom of each table. An outline of monitoring activities is provided in Section 8.3 Environmental Monitoring and Follow-Up Programs.

Table 7.2 Summary of Residual Environmental Effects for Fish and Fish Habitat: Construction

Mitigation	
• Retain vegetated buffer zones where possible • Sediment control measures (settling ponds, geofabric, ditch dams, dust control) • Proper handling of waste, hazardous waste, waste water, wash water, • Implementation of emergency measures to respond to spills and other accidental events • Pit and site water to Ruth Pit • No fishing by Project personnel	
Significance Determination	
Geographic extent	Within the Assessment Area
Frequency of occurrence	1-2 years
Duration of impact	Less than one generation
Magnitude of impact	Low
Permanence/reversibility	Reversible
Significance	**Not Significant**
Confidence	Not applicable
Likelihood of occurrence	Not applicable
Follow-up and monitoring	
• Effluent monitoring under provincial and federal approvals and regulations	
Note – Confidence and Likelihood of Occurrence are Not Applicable when residual environmental effect is not significant	

Table 7.3 Summary of Residual Environmental Effects for Fish and Fish Habitat: Operation

Mitigation	
• Maintenance flow in Unnamed Tributary (James Deposit) to protect fish habitat • Erosion and sediment control as in Construction • Waste control as in Construction • Implementation of emergency measures to respond to spills and other accidental events • No fishing by Project personnel • No blasting near water • Pit and site water to Ruth Pit • Control of release from Ruth Pit	
Significance Determination	
Geographic extent	Within the Assessment Area
Frequency of occurrence	Continuous
Duration of impact	Over several generations
Magnitude of impact	Low
Permanence/reversibility	Reversible
Significance	**Not Significant**
Confidence	Not applicable
Likelihood of occurrence	Not applicable
Follow-up and monitoring	
• Effluent monitoring under provincial and federal approvals and regulations • EEM under provincial and federal approvals and regulations	
Note – Confidence and Likelihood of Occurrence are Not Applicable when residual environmental effect is not significant	

Table 7.4 Summary of Residual Environmental Effects for Fish and Fish Habitat: Decommissioning

Mitigation	
• Maintenance flow in Unnamed Tributary (James Deposit) to protect fish habitat • Erosion and sediment control as in Construction/Operation • Waste control as in Construction/Operation • Implementation of emergency measures to respond to spills and other accidental events • No fishing by Project personnel	
Significance Determination	
Geographic extent	Within the Assessment Area
Frequency of occurrence	Period of decommissioning
Duration of impact	Less than one generation
Magnitude of impact	Low
Permanence/reversibility	Reversible
Significance	**Not Significant**
Confidence	Not applicable
Likelihood of occurrence	Not applicable
Follow-up and monitoring	
• Effluent monitoring under provincial and federal approvals and regulations • EEM under provincial and federal approvals and regulations	
Note – Confidence and Likelihood of Occurrence are Not Applicable when residual environmental effect is not significant	

7.1.6 Cumulative Environmental Effects

The environmental effects assessment for fish and fish habitat has considered the potential effects resulting from the Project, compared with existing (much of which has resulted from past mining activities) and potential disturbances. Cumulative environmental effects result from other ongoing or foreseeable projects or activities that may interact cumulatively with the effects of the Project. The boundaries for cumulative environmental effects assessment are the same temporal and spatial boundaries for fish and fish habitat as defined above, i.e., the watersheds at the James and Redmond Deposits.

Existing projects, disturbances and activities considered to contribute cumulative effects include activities associated with the development of associated roads and the operation of the TRH railroad. Future projects for this area include the expansion of the existing Elross Lake Iron Ore Mine and the expansion of the current Project to include six additional deposits.

Cumulative effects may accrue from increased use of existing roads and the railway. An expansion of the Project to include the development of other pits at Knob Lake, Houston, Astray Lake, Sawyer Lake, Howse, or Kivivic will lead to increased traffic on the local roads and increased processing at the Silver Yard.

The potential cumulative effects are ones that have been described for the current Project and the same mitigative measures can be applied to reduce adverse environmental effects on fish and fish habitat. A summary of these potential cumulative environmental effects is shown in Table 7.5 along with the anticipated significance.

Table 7.5 Summary of Residual Environmental Effects for Fish and Fish Habitat: Cumulative Effects

Mitigation	
Other projects are subject to applicable Federal and Provincial regulations	
Significance Determination	**Fish and Fish Habitat at James & Redmond**
Geographic extent	Within the Assessment Area
Frequency of occurrence	Continuous
Duration of effect	Over several generations
Magnitude of effect	Low
Reversibility	Reversible
Significance	**Not Significant**
Confidence	Not Applicable
Likelihood of occurrence	Not Applicable
Follow-up and monitoring	
Monitoring limited to that directly connected with current Project	
Note – Confidence and Likelihood of Occurrence are Not Applicable when residual environmental effect is not significant	

7.2 Caribou

Caribou was chosen as a VEC based on the knowledge that the large and migratory George River Herd (GR Herd) occurs in the Project area on a seasonal basis, although their movements locally are difficult to predict year to year. This large herd has important cultural, recreational and economic benefit for residents and supports an extensive outfitting industry.

There is no tangible evidence to suggest that other caribou herds overlap the Project area at this time. Perhaps the nearest other herd of consequence, is the Lac Joseph herd, a sedentary population of Labrador, that exists over 100 km south of the Project area. This population, along with Labrador's other sedentary populations located at greater distances, is designated as "Threatened" by the Committee on the Status of Endangered Wildlife in Canada since May 2002 (COSEWIC 2008; SARA 2008) due the population decrease throughout most of the range. Formerly sedentary caribou existed also to the west and were known as the McPhayden and Caniapiscau Herds (Bergerud et al. 2008). The results of the aerial survey in May 2009 indicated that some caribou were still in the area (LIM and NML 2009) despite the fact that residents indicated the GR Herd had not been observed during the winter (R. McKenzie, pers. comm.). At the time of writing the herd affiliation of these caribou is unknown. Thus, for the purposes of the assessment and as a conservative measure, it will be assumed that woodland caribou do occur within the Assessment Area although they are at a low density.

The sensitivity of caribou to Project interactions and the importance of this species are key reasons why caribou was chosen as a VEC. The herd will be assessed because the Project overlaps with its range (i.e., during winter) and because of its socio-economic and cultural relevance to surrounding communities. Because of the unknown affiliation of the caribou observed in May 2009, woodland caribou will also be assessed in terms of Project interactions. The Project may affect caribou through changes in habitat availability or effectiveness, changes in movement patterns, and increased mortality through influences affecting predation/poaching/hunting and vehicle collisions.

A full description of the existing conditions regarding caribou including population, seasonal movements, and habitat use is presented in Section 4.2.2.1.

7.2.1 Environmental Assessment Boundaries

Environmental assessment boundaries for caribou are discussed in Section 4.2.2.1.

7.2.2 Potential Project-VEC Interactions

The potential interactions between caribou (whether from the GR Herd or possibly woodland caribou from one of the sedentary herds) and each Project activity during construction, operations, and decommissioning comprise the scope of the environmental assessment for this VEC (Table 7.6).

7.2.2.1 Construction

Project activities that involve some level of alteration and/or loss of habitat in the vicinity of the deposits may potentially interact with caribou; this includes site preparation, placement of infrastructure, and placement of equipment and buildings. The re-establishment of the Silver Yard as a beneficiation and load out area, construction of pipelines, and rehabilitation of site roads are all examples of activities that will, to some degree, change the already disturbed landscape in the Assessment Area. In addition, the re-establishment of the railway spur line along the existing rail bed increases the area of potential disruption. These activities may result in some habitat loss through clearing and removal of vegetation or through disturbance associated with noise, dust and/or visual changes that can displace caribou from suitable habitats that may exist near the development sites. However, it is noted that most of the surface areas of the current Project Area were previously disturbed by historical mining operations. Caribou also react to vehicle movements based on the rate of approach, and proximity (Horesji 1981).

In most instances, caribou flee for a short period, once the perceived threat is removed. Potentially temporary or longer-term displacement can result in a functional loss of habitat.

Mortality of caribou related to the Project may occur as a result of collisions with increased rail and vehicular traffic and may also occur in association with transportation during operations. Related to this potential interaction, is the possibility of an increased harvest of caribou with the increased accessibility due to road re-establishment, however, there are already numerous roads in the area remaining from the historical development.

Table 7.6 Potential Project-VEC Interactions for Migratory and Woodland Caribou

Project Activities and Physical Works		
Environmental Effects		
	Habitat Change	**Mortality**
Construction (Project activities in 2009)		
Site Preparation (grubbing, clearing, excavating)	X	
Placement of Infrastructure (reinstatement of rail spur, utilities)	X	
Placement of Equipment and Buildings	X	
Operations (on-site power generation, solid waste, grey water, human presence, transportation)	X	X
Employment and Expenditures		
Operation (Project activities starting in 2010)		
Iron Ore Extraction (excavation – mechanical, blasting)	X	X
Iron Ore Beneficiation (crushing, washing, screening, stockpiling, hazardous and mining waste disposal)	X	
Stormwater and Wastewater Management		
Transportation (on-site trucking, rail loading)	X	X
Operations (on-site power generation, solid waste, grey water, human presence)	X	
Employment and Expenditures		
Decommissioning		
Removal of Facilities and Equipment	X	
Site Reclamation (grading, re-vegetation)	X	

7.2.2.2 Operation

During the operation phase of activity, there is further potential for interactions with caribou, especially given the relative length of operation in comparison to the more short-term construction phase. Activities such as blasting and beneficiation will create noise levels that can be expected to have disturbance effects on caribou.

7.2.2.3 Decommissioning

During decommissioning, removal of facilities and equipment will result in further sensory disturbance to caribou in the area. In addition, site reclamation, including grading and re-vegetation, will result in conditions that would eventually be attractive to caribou. Following decommissioning, the quality of habitat for caribou will improve over the long-term.

7.2.3 Potential Effects and Review of Existing Knowledge

Issues and concerns relating to caribou and the proposed Project can be considered within two effects:

- Change in Habitat – related to the loss or reduction of caribou habitat from site clearing, and/or sensory (e.g., noise) disturbance associated with the presence and operation of people and equipment. This change in habitat can also result in an alteration of movements and distribution into lower quality habitat, and enhanced susceptibility to predation; and
- Mortality – directly related to increased hunting pressure as a result of improved access, and collisions with vehicles or other equipment.

7.2.3.1 Change in Habitat

Lichen is the primary winter food for caribou and thus influences abundance and distribution (Dzus 2001). Activities (natural and anthropogenic) that cause the removal of this important food source usually result in adverse effects for this species. Foster (1985) reported that lichen may take up to 40 years to recover in post-fire black spruce forests in Labrador. Caribou habitat may require more than 50 years for recovery following fire (Review by Bergerud et al. 2008). Forest harvesting, particularly of stands with relatively high lichen content (e.g., black spruce forest) also directly influence caribou use.

Mining and similar resource development projects on the landscape have been the subject of many assessments in relation to caribou. Bergerud et al. (1984) studied eight caribou populations exposed to industrial activities or transportation corridors and found that there was no evidence that disturbance activities or habitat alteration affected caribou productivity. They observed caribou's resilience to human disturbance and also concluded that seasonal movement patterns and extent of range occupancy appear to be a function of population size as opposed to disturbance (Bergerud et al. 1984). Weir et al. (2007) looked at the impacts of Hope Brook gold mine in southwest Newfoundland on the La Poile Caribou Herd and concluded that prior to mine development, caribou were dispersed throughout the study area, but the number of caribou increased linearly with distance away from the mine over all five seasons during both construction and operation phases. Within 6 km of the mine center, group size and the number of caribou decreased as mine activity increased, indicating an avoidance of the development (Weir et al. 2007).

Monitoring of another Newfoundland caribou herd (Buchans Plateau Caribou Herd) during the development of a hydroelectric project in Newfoundland indicated that caribou densities were lower within 3 km of the site during the first year of construction (Mahoney and Schaefer 2002). The lowered caribou densities of this herd (particularly females with calves) within 3 km of the site persisted for at least two years after the construction phase had been completed. In addition to the change in distribution, they concluded that the development caused a disruption of migration timing during the construction phase and longer-term through operations (Mahoney and Schaefer 2002).

In addition to the 4-6 km reported for Hope Brook mine (Weir et al. 2007) and 3 km for the Star Lake hydroelectric development (Mahoney and Schaefer 2002), other reported distances of lower density around developments for caribou (usually females) include: 100 to 150 m for seismic lines (Dyer et al. 2001); and 1.2-50 km regarding forest harvesting (Chubbs et al. 1993, Smith et al. 2000, Schaefer and Mahoney 2002, Vors et al. 2007). This avoidance is cited as being related to the removal of suitable forage, increased susceptibility to predation particularly by wolves, and/or sensory disturbance associated with the presence of workers and equipment. Studies on the impacts of noise on wildlife indicate that the threshold above which potential negative effects are expected is 90 dBA (Manci et al.

1988). Noises at this level are associated with a number of behaviours such as retreat from the sound source, freezing, or a strong startle response. Harrington (2003) suggested that the most important reactions to noise are difficult to discern and often result in no overt reaction. However, observable reactions provide insight into the potential concerns of noise. Caribou react to noise and display startle reflexes, such as running or ceasing feeding, but these reactions are relatively short-term, resuming normal activities 5 to 15 minutes later (Harrington 2003). It is the extended period of noise that bring about concerns such as “masking”, or the inability of an animal to hear important environmental signals, such as noises made by potential mates, predators, or prey (Manci et al. 1988).

CEAA (1997) stated that noise and human presence associated with development would disturb caribou less than alteration of habitat, and would last for a shorter time - caribou would habituate to routine events. However, disruption of caribou may occur where anthropogenic influences are prolonged in space or time; habituation may not necessarily occur, even if the degree of human activity is not too high (Mahoney and Schaefer 2002). In addition to displacement, change in habitat may also result in the disruption of movements across linear features and/or move them into areas of higher predator exposure (Dyer et al. 2002). Additionally, linear facilities (e.g. roads, rail lines, right of ways) may reduce caribou crossings with increasing width, presence of vertical structures, increasing number of vehicles, and/or if aligned adjacent to each other (Curatolo and Murphy 1986, Wolfe et al. 2000, Dyer et al. 2002, Vistness et al. 2004). Bergerud (1996) and Ferguson and Elkie (2004) identify movement, low density distribution and the availability of high quality habitat as important factors for the avoidance of predation.

7.2.3.2 Mortality

Increased access through the development of expanding road networks or other linear corridors such as railways may result in increased legal and illegal hunting (Dzus 2001, Vistnes and Nelleman 2001). However, it is noted that LIM will not construct new rail lines as part of the Project as the existing railbed is already in place, having been constructed by historical mining operations. Hunting is normally not considered to be a population limiting factor but could become so if the caribou herd is in decline (Messier et al. 1988, Thomas and Gray 2002). Most mortality from hunting is therefore considered additive and not compensatory to other mortality factors (Bergerud et al. 2008).

Although statistics are unavailable, Nalcor Energy (2009) report that caribou are known to be struck by vehicles when attempting to cross the Trans-Labrador Highway. Collisions with trains are cited by Goldwin (1990) as a significant source of mortality for woodland caribou in northwestern Ontario. Forest fires may cause change in habitat through the availability of lichen (Foster 1985), but are not expected to cause mortality.

7.2.4 Residual Environmental Effects Significance Criteria

Residual environmental effects are those which are predicted to affect caribou populations, once mitigation measures have been applied. Each prediction is described according to:

- geographic extent (i.e., site-specific, within the Assessment Area, throughout the Assessment Area and beyond);
- frequency of occurrence (i.e., once, infrequently, continuous, not likely to occur);
- duration (i.e., less than one generation, over several generations, permanent);

- magnitude (i.e., low - no measurable change relative to baseline conditions, moderate - measurable change that does not cause management concern, high - measurable change that does cause management concern);
- reversibility (i.e., reversible or irreversible);
- confidence (i.e., low or high confidence regarding the significance prediction; and
- likelihood (i.e., significant effect is likely or unlikely).

A significant adverse residual environmental effect is one in which the Project would cause a population decline, such that the viability or recovery of the herd is threatened.

7.2.5 Mitigation Measures

In order to mitigate potential effects of the Project on caribou, activities during all phases of the Project will be planned with three main considerations:

- The recently completed caribou survey (May 2009) is considered inconclusive regarding the determination of the ecotype of caribou which were present in the project area. As such, LIM will undertake a caribou mitigation strategy which protects all caribou, including the potential for sedentary caribou to exist, although their presence/absence in the project area is currently unconfirmed. Additional associated survey data, such as outstanding DNA analyses, satellite collar data, and ongoing monitoring are anticipated to be of assistance in the near future in the determination of caribou type. LIM proposes that the mitigation strategy and supporting data be re-assessed at the end of Year 1 of operation for appropriateness and effectiveness including clarification of caribou ecotype;
- In the event that caribou are observed within the Assessment Area or in the vicinity of Project activities, a set of procedures will be incorporated to reduce or eliminate disturbance and encounters with caribou; and
- Any activity that may potentially affect caribou habitat or mortality in some manner will be implemented with appropriate mitigation regardless of whether caribou are actually present.

Specific mitigation measures that apply to woodland caribou will include:

- Woodland caribou typically occur in small groups (1-6 animals), whereas migratory caribou such as the George River, may exist in large herds (>100). Should small groups of caribou (e.g., 1-6 animals) be observed at Project facilities and/ or by Project personnel (i.e., essentially within 3 km of the mine area), LIM will take such actions as are deemed necessary or appropriate so as to ensure that there is no harm to caribou, including such actions as to modify/restrict any activities that could result in harm to caribou until LIM has contacted the Provincial Wildlife Division to review the information. To support Wildlife's evaluation, LIM will provide information including the number of animals, location and direction of their movement on a topographic map, as well as the location of ongoing Project activities, although the identification of the actual ecotype of caribou may not be possible at that time.LIM will work with the Wildlife Division to review the information and provide guidance on activity modifications or adjustments on a case by case basis that will eliminate any potential for harm or harassment until these animals are outside of this area. There will be no hunting or other harassment of these animals at any time within a 3 km radius of Project facilities/activities.
- If caribou are observed at a distance of 3 to 5 km from Project infrastructure and activities, LIM will issue an advisory of their proximity to personnel to be alert and that activities may need to be modified until these animals have left the area; and

- Sightings of caribou or reports of same within a 20 km radius will be included in regular advisories and briefing documents such as the Environmental Protection Plan (EPP). Project personnel will be able to document potential observations of caribou (and other wildlife) during daily commuting, and throughout the road network connecting the ore bodies of this Project.

Specific mitigation measures that apply to caribou from the GR Herd will include:

- Encounters between these caribou and personnel/equipment will be addressed through a non-harassment policy that will include no hunting, pursuit or other chasing, vehicles will yield to wildlife, and if in the event blasting was scheduled, details of the proposed location of this activity as well as the location of the caribou will be provided to Wildlife Department for their review and instruction;
- Should caribou from this herd approach the Project area (i.e., within 5 km), an advisory will be issued to Project personnel, to be alert and exercise caution;
- Should animals from this migratory herd enter the 50 km radius [as indicated by observations within the community, co-ordination with Provincial authorities (e.g., monitoring of satellite collars via the internet) and other stakeholders], management staff will be advised; and,
- Ongoing traditional knowledge reports, including documentation of animal movements and activities, will be conducted by LIM with local communities to provide further information on caribou behaviour and locations.

Other mitigation measures to be implemented with Project activities are outlined in Table 7.7.

Table 7.7 Proposed Mitigation Measures for Caribou

Project Activities	Mitigation Measures
Construction (Project activities in 2009)	
General	When caribou are observed within 3-5 km of the site, modify or restrict any activities that could result in harm to caribou until LIM has contacted the Provincial Wildlife Division to review the information.
Site Preparation (grubbing, clearing, excavating)	Clear vegetation in a pattern that does not leave a recognizable trail, where practical. This reduces accessibility and visibility to humans and predators. These activities would be restricted to the physical footprint of the Project. Fire prevention and response procedures, training and equipment will be implemented.
Placement of Infrastructure (reinstatement of rail spur, utilities)	The width, density and length of access roads and rail lines will be minimized. Where possible, any new disturbance will be reduced by locating these facilities adjacent to existing areas of surface disturbance. Ensure that linear facilities such as rail lines and roads are separated by more than 100 m, where practical.
Placement of Equipment and Buildings	Fence hazardous construction areas such as open pits, or any locations with blasting activities
Operations (on-site power generation, solid waste, grey water, human presence, transportation)	Personnel authorized to operate company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on seasons of greater risk of wildlife-vehicle collisions Speed limits of 50 km/hr (daylight) and 30 km/hr (darkness) and wildlife caution signs will be posted and enforced along Project roads and rail lines. Traffic reduction/convoying would be implemented through sensitive caribou areas such as crossings in the event of caribou being reported in the area; Approach ramps would be installed at strategic locations such as crossings along linear disturbances. A "bear-aware" waste management plan will be developed and implemented to reduce the likelihood of bears (predators) in the Project areas. All observations of caribou by staff will be recorded (including observer, time and location) and

Project Activities	Mitigation Measures
	submitted to wildlife monitors and LIM management to determine appropriate mitigation. Hazardous material handling procedures, training and response in the event of a spill will be implemented.
Employment and Expenditures	No hunting and firearms policies will be enforced among all personnel. Monitors will be used to keep construction staff and management informed on the presence of caribou at the mine site as described above.
Operation (Project activities starting in 2010)	
Iron Ore Extraction (excavation – mechanical, blasting)	In the event that caribou are observed near the site when blasting is scheduled, details of the proposed location of this activity as well as the location of caribou will be provided to Wildlife Department for their review and instruction.
Iron Ore Beneficiation (crushing, washing, screening, stockpiling, hazardous and mining waste disposal)	Fence hazardous construction areas, such as locations with open pits or any explosive activities. Fire prevention and response procedures, training and equipment will be implemented. Hazardous material handling procedures, training and response in the event of a spill will be implemented.
Stormwater and Wastewater Management	Ensure materials are handled and disposed consistent with federal and provincial regulations
Transportation (on-site trucking, rail loading)	Personnel operating company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on potential for and strategies for avoiding, wildlife-vehicle collisions Speed limits of 50 km/hr (daylight) and 30 km/hr (darkness) and wildlife caution signs will be posted along Project roads and rail lines
Operations (on-site power generation, solid waste, grey water, human presence)	A "bear aware" waste management plan will be developed and implemented to reduce the likelihood of bears (predators) in the Project areas. Observations of caribou (and other wildlife) by staff will be recorded (including observer, time and location) and submitted to monitors and LIM management to determine appropriate mitigation.
Employment and Expenditures	No hunting and firearms policies will be enforced among all personnel while onsite. Monitors will be used to keep operations staff and management informed on the presence of caribou at the mine site.
Decommissioning	
Removal of Facilities and Equipment	Modify or restrict activities while caribou are in the Project area to assure no harm or harassment. Personnel operating company vehicles will possess a valid driver's license, undergo employee orientation and safety training, and be briefed on potential for and strategies for avoiding wildlife-vehicle collisions. No hunting and firearms policies will be enforced among all personnel while onsite. Monitors will be used to keep staff and management informed on the presence of caribou at the mine site. Speed limits of 50 km/hr (daylight) and 30 km/hr (darkness) and wildlife caution signs will be posted along Project roads and rail lines.
Site Reclamation (grading, re-vegetation)	Reclamation techniques will emphasize the revegetation of the site with local plants that would encourage growth of caribou winter forage. Fire prevention and response procedures, training and equipment will be implemented. Hazardous material handling procedures, training and response in the event of a spill will be implemented.

7.2.6 Environmental Effects Assessment, Management, and Residual Effects Determination

The determination of residual environmental effects examines the potential change in habitat or mortality as a result of the interactions identified in Table 7.6, for each phase of the Project.

7.2.6.1 Construction

Most of the construction-affected area will occur immediately adjacent to (or within) already disturbed locations from the previous mining activity. The interaction is further reduced as this portion of the GR Herd range is used seasonally if at all. As the results of the May 2009 survey (LIM and NML 2009) are inconclusive, the mitigation measures for woodland caribou described above (including modification or reduction of activities if Project personnel or others observe caribou) would apply. The measures identified in Table 7.7 to limit the amount of surface disturbance (e.g., limit the width, density and length of access trails and rail lines) and to implement no harassment policies will reduce the potential amount of physical and sensory displacement associated with the Project during construction. Based on the literature, it is reasonable to assume caribou may avoid cleared areas or active work locations by at least 3 km.

Mortality associated with the construction phase is anticipated to be unlikely. Several measures will be in place to restrict personnel from hunting on the property and to restrict others from accessing, should caribou be present. If caribou do enter the work area, and the woodland caribou mitigation is in place; LIM will take such actions as are deemed necessary or appropriate so as to ensure that there is no harm to caribou, including such actions as to modify/restrict any activities that could result in harm to caribou until LIM has contacted the Provincial Wildlife Division to review the information. The surrounding terrain will alleviate visual and auditory stimuli from the Project should other wildlife occur to the west of such activities. If the migratory caribou enter the work area, vehicle operators will be instructed to yield to all wildlife. Reduced speed limits will be maintained regardless of the presence of caribou. Potential entrance points at open pits and steep slopes will be fenced.

7.2.6.2 Operation

No further habitat loss will occur during operation. Sensory disturbance around work areas will continue that could represent at least 3 km avoidance, should caribou enter the area. Linear corridors for vehicle or rail transport would potentially reduce or prevent crossing by caribou depending on the level of activity. Controlled speed limits, yielding to wildlife and no-harassment policies will limit this sensory disturbance. Furthermore, alerts when caribou enter the Assessment Area and communication with the Provincial Wildlife Division, particularly when blasting activities are planned, will limit disturbance during operations.

As with construction, the mitigation measures (Table 7.7) to reduce the possibility of mortality related to the Project will be in place. Speed limits will be posted, a no harassment policy will remain in place, no hunting in work areas, and onsite access will be restricted to personnel. If the woodland caribou mitigation is in place, LIM will take such actions as are deemed necessary or appropriate so as to ensure that there is no harm to caribou, including such actions as to modify/restrict any activities that could result in harm to caribou until LIM has contacted the Provincial Wildlife Division to review the information. If it is assumed that the migratory caribou mitigation applies, LIM will co-ordinate with Provincial Wildlife Division officials when caribou enter the Assessment Area and possibly approach the Project infrastructure. This will allow for advance planning and communication to further reduce the

possibility of mortality to the GR Herd. If larger numbers of migratory caribou (i.e., >100 are present, activities may need to be delayed or modified until the caribou have moved out of the area.

7.2.6.3 Decommissioning

One of the main objectives of decommissioning will be to restore the LIM Project work areas to a more natural state, including those areas within the LIM development area that were previously abandoned by others without remediation. Areas will be sloped and/or revegetated, and/or left in a situation that would allow revegetation such that there would be a net gain in available habitat. There will be some ongoing sensory disturbance associated with the site reclamation but this will be temporary. Should caribou be present at the time, a similar avoidance of at least 3 km could be expected. Again, if the woodland caribou mitigation is in place, as with construction, the mitigation measures (Table 7.7) to reduce the possibility of mortality related to the Project will be in place. Speed limits will be posted, a no harassment policy will remain in place, no hunting in work areas, and onsite access will be restricted to personnel. If the woodland caribou mitigation is in place, LIM will take such actions as are deemed necessary or appropriate so as to ensure that there is no harm to caribou, including such actions as to modify/restrict any activities that could result in harm to caribou until LIM has contacted the Provincial Wildlife Division to review the information. If it is assumed that the migratory caribou mitigation applies, LIM will co-ordinate with Provincial Wildlife Division officials when caribou enter the Assessment Area and possibly approach the Project infrastructure. This will allow for advance planning and communication to further reduce the possibility of mortality to the GR Herd. If larger numbers of migratory caribou (i.e., >100 are present, activities may need to be delayed or modified until the caribou have moved out of the area.

If the migratory caribou mitigation applies, the same mitigation measures related to the operation of equipment and responsibility of LIM and its workforce regarding wildlife will be in place throughout the decommissioning period (Table 7.7). Active work sites will continue to be posted as no hunting areas and staff will abide by the no hunting or other harassment policy until the area is returned to a natural state to the satisfaction of Provincial officials.

7.2.6.4 Summary of Residual Environmental Effects Prediction

During construction, the monitoring program and on-site mitigation measures will reduce both the physical extent of activities, and the associated disturbance and possibility of mortality related to the Project. The geographic extent of this activity will be site specific and occur in a continuous manner during this phase. The clearing associated with the Project is minimal as the development area is within a historically disturbed former mining area and would require several generations to recover. As a result, this effect as well as the unlikely possibility of mortality is not at a level that would cause management concern. The effects associated with the LIM Project development are considered reversible and are not significant (Table 7.8).

Table 7.8 Summary of Residual Environmental Effects for Caribou Construction

Mitigation		
• Monitor movements of the GR and/or possible woodland Herds. Reduce speed limits, fencing construction sites, patterns of vegetation clearing, no hunting policy, reduce construction activities while caribou are present		
Significance Determination	**George River Caribou Herd**	**Possible Woodland Caribou Herd**
Geographic extent	Site-specific	Site-specific
Frequency of occurrence	Continuous (throughout construction)	Continuous (throughout construction)
Duration of effect	Less than one generation	Less than one generation
Magnitude of effect	Moderate	Low
Reversibility	Reversible	Reversible
Significance	**Not Significant**	**Not Significant**
Confidence	Not Applicable	Not Applicable
Likelihood of occurrence	Not Applicable	Not Applicable
Follow-up and monitoring		
• See Section 8.3.3		
Note – As residual environmental effect is not significant, description of Confidence and Likelihood of Occurrence is Not Applicable		

The operation phase will also have the same monitoring program and on-site mitigation measures in place as proposed during construction. LIM will proceed with the woodland caribou mitigation in place until the end of Year 1 of operation, at which point additional outstanding data will be assessed to provide additional information regarding the identification of ecotypes in the area and this information will be submitted for review to Provincial Wildlife representatives to assess the appropriateness of the strategy selected. As there will be no further surface disturbance, but sensory disturbance would remain, the geographic extent of this phase will continue to be site specific and occur in a continuous manner. The mine workings associated with the Project during operations are considered minimal when compared to the current state of historical disturbance, which already would take several generations to recover (without mitigation). Therefore, the effect of the LIM Project development as well as the unlikely possibility of mortality is not at a level that would cause management concern. These effects are considered reversible and are not significant (Table 7.9).

Table 7.9 Summary of Residual Environmental Effects for Caribou: Operation

Mitigation		
Monitor movements of GR and/or possible woodland Herds. Reduce speed limits, fence hazardous work areas, no hunting policy, delay blasting while caribou are present		
Significance Determination	**George River Caribou Herd**	**Possible Woodland Caribou Herd**
Geographic extent	Site Specific	Site Specific
Frequency of occurrence	Continuous (throughout operations)	Continuous (throughout operations)
Duration of effect	Over Several Generations	Over several Generations
Magnitude of effect	Moderate	Low
Reversibility	Reversible	Reversible
Significance	**Not Significant**	**Not Significant**
Confidence	Not Applicable	Not Applicable
Likelihood of occurrence	Not Applicable	Not Applicable
Follow-up and monitoring		
• See Section 8.3.3		
Note – As residual environmental effect is not significant, description of Confidence and Likelihood of Occurrence is Not Applicable		

Decommissioning activities will be of a relatively short-term nature, and once completed, no further presence of vehicles or personnel will occur. During this relatively brief period, appropriate monitoring and mitigation measures regarding woodland caribou will remain in place unless it has been demonstrated that caribou are associated with the GR Herd. The surface disturbance during the reclamation and associated sensory disturbance would continue to be site specific in terms of geographic extent. The continuous activities during this phase would result in enhanced conditions for encouraging a return to natural conditions. While the recovery would take several generations, the eventual natural state would be permanent. While measurable, these activities will not be at a level that would cause management concern particularly in light of the conservative mitigation strategy (i.e., assuming woodland caribou until proven otherwise) that would be in place. The positive outcome of this phase will be reversible in terms of creating natural conditions and assisting in reducing some of the existing areas of historical mine disturbance and are therefore not significant (Table 7.10).

Table 7.10 Summary of Residual Environmental Effects for Caribou: Decommissioning

Mitigation		
• Monitor movements of GR and/ or possible woodland Herds during decommissioning. Reduce speed limits, and implement no hunting policy		
Significance Determination	**George River Caribou Herd**	**Possible Woodland Caribou Herd**
Geographic extent	Site Specific	Site Specific
Frequency of occurrence	Continuous (throughout decommissioning)	Continuous (throughout decommissioning)
Duration of effect	Permanent	Permanent
Magnitude of effect	Moderate	Low
Reversibility	Reversible	Reversible
Significance	**Not Significant**	**Not Significant**
Confidence	Not Applicable	Not Applicable
Likelihood of occurrence	Not Applicable	Not Applicable
Follow-up and monitoring		
• No longer required following decommissioning		
Note – As residual environmental effect is not significant, description of Confidence and Likelihood of Occurrence is Not Applicable		

7.2.7 Cumulative Environmental Effects

The environmental effects assessment for caribou has considered the potential effects resulting from the Project, compared with existing and potential disturbances at a regional level. The cumulative environmental effects assessment considers how other ongoing or foreseeable projects or activities may interact cumulatively with the effects of the Project. The boundaries for cumulative environmental effects assessment are the same temporal and spatial boundaries for caribou as defined above.

The effects of existing projects, disturbances and activities such as the activities associated with the Municipality of Schefferville, the Québec North Shore & Labrador Railroad, the Iron Ore Company of Canada Mine (operations ceased in 1980 at this location), and the Menihek Dam are captured and reflected in the baseline environment conditions for caribou. Future projects for this area include the construction of the Elross Lake Iron Ore Mine and the possible development of LIM's additional six deposits (Table 7.11).

Table 7.11 Projects and Activities Considered in Cumulative Environmental Effects Assessment

Project	Status
Elross Lake Iron Ore Mine (NMCC): • Proponent: New Millennium Capital Corporation • New Millennium Capital Corporation is planning to develop an iron ore mine in Québec and Western Labrador, approximately 30 kilometres northwest of Schefferville, Québec. Ore will be transported via rail to Sept-Îles, Québec, for shipment to customers.	Reasonably Foreseeable Project
Bloom Lake Railway • Proponent: Consolidated Thompson Iron Mines Ltd. • Consolidated Thompson Iron Mines proposes to construct and operate a new 31.5 km long single-track railway line to connect the company's new load-out facilities within Labrador with the existing railway line between Wabush Mines and the Québec North Shore & Labrador Railway.	Reasonably Foreseeable Project

As discussed in Section 7.2, caribou observed in the Assessment Area are expected to be part of the GR Caribou Herd (Schmelzer and Otto 2003, Bergerud et al. 2008); however, for the purpose of this environmental assessment, it will be assumed that woodland caribou may also be present until the full results of the May 2009 survey (LIM and NML 2009) confirm otherwise. The Assessment Area of 7,850 km^2 represents approximately 1 percent of the range of the GR Herd, and the physical disturbance associated with the Project would represent less than one percent of the Assessment Area. The Assessment Area would overlap most of the former range of the McPhadyen Herd indicated by RRCS (1989). The other projects will collectively represent a larger proportion of the Assessment Area. Each other foreseeable project will be subject to the same scrutiny, regulatory environment and codes of best practice as LIM and therefore would reduce their respective effects as much as possible. These activities would be continuous, and persist over several generations. Regardless, and based on the extensive range of the GR Herd and the location of the Assessment Area at its periphery, it is expected that the development of the already disturbed James and Redmond deposits within the context of other regional activities would result in a measurable change that would not cause management concern. Ultimately, the reclamation and remediation of the previously disturbed and abandoned properties will eventually enhance the quality and quantity of habitat. In terms of the possibility of woodland caribou remaining in this area, strict mitigation measures that reduce and eliminate any associated disturbance would apply to LIM and other initiatives in the area. These effects are considered reversible and not significant (Table 7.12).

Table 7.12 Summary of Residual Environmental Effects for Caribou: Cumulative Effects

Mitigation		
• Both projects would be subject to applicable Federal and Provincial regulations		
Significance Determination	**George River Caribou Herd**	**Possible Woodland Caribou Herd**
Geographic extent	Assessment Area	Assessment Area
Frequency of occurrence	Continuous (throughout Project)	Continuous (throughout Project)
Duration of effect	Over several generations	Over Several Generations
Magnitude of effect	Measurable Change that does not cause management concern	Low
Reversibility	Reversible	Reversible
Significance	**Not Significant**	**Not Significant**
Confidence	Not Applicable	Not Applicable
Likelihood of occurrence	Not Applicable	Not Applicable
Follow-up and monitoring		
• See section 8.3.3		
Note – As residual environmental effect is not significant, description of Confidence and Likelihood of Occurrence is Not Applicable		

7.3 Hydrology

Hydrology was not identified as a VEC; however, the impacts of the proposed Project on the natural hydrology of the area are presented in this section as the impacts are considered 'environmental effects'. The following subsections describe the impact of the proposed Project on the existing hydrological regime.

7.3.1 James Property

The existing James Property hydrology is described in Section 4.1.4.1 and the proposed development of this property is described in Chapter 3. The primary hydrology impacts will result from the dewatering of the open pits which will alter the groundwater levels in these areas and will add flow to existing surface water features on the James Property.

7.3.1.1 James North and James South Springs

Pit dewatering will be required to lower the water table in the immediate vicinity of the active pits to allow mining to occur. Dewatering will be achieved using in pit sumps and perimeter dewatering wells. The lowering of the water table in response to pit dewatering is expected to affect the flow from the James North and James South Springs, and will likely lead to a reduction and perhaps even complete cessation of flow from the unnamed tributary unless steps are taken to replace the lost flow.

The steps that will be taken to prevent this will involve diverting a portion of the perimeter well dewatering water to the unnamed tributary. Development of the pumping wells to a sediment-free state may take several weeks; therefore water from the wells may need to be put through a settling pond/filter system as a temporary measure until well development has been achieved. The targeted redirected water flow rate during operations would be the maximum rate measured from the tributary (SG4 flow data) during the 2008 monitoring period, while the average flow rate measured would be used during winter shutdown periods. Pumping will be continued during the winter months.

The maximum, minimum, and mean flows from the James North and James South Springs over the June to October recording period are summarized below (Table 7.13).

Table 7.13 Maximum, Minimum and Mean Flows, June to October

Flow	James North Spring – SG1	James South Spring – SG2
Maximum (m^3/min)	3.4	2.7
Minimum (m^3/min)	1.1	1.6
Mean (m^3/min)	2	2.1

Flow from the James North Spring forms the upper end of an unnamed tributary that flows southeast, accepts additional flow from the James South Spring, and ultimately discharges into Bean Lake (Figure 7.1). Flow rates for the unnamed tributary were also recorded from June to mid October 2008 at a location just before it discharges to Bean Lake (SG4). The maximum, minimum, and mean flow rates for this location are summarized below (Table 7.14).

Figure 7.1 James Springs and Unnamed Tributary

Table 7.14 Maximum and Mean Flows, Unnamed Tributary

Flow	Unnamed Tributary at Bean Lake – SG4
Maximum (m^3/min)	3.2
Minimum (m^3/min)	0.9
Mean (m^3/min)	1.6

The flow rate from SG4 (downstream end of the tributary) was always less than the combined flow from the two springs, indicating that water in the tributary infiltrates into the ground as it flows toward Bean Lake.

7.3.1.2 James Creek

Flow monitoring of James Creek in 2008 determined a mean flow of 42 m^3/min. The washwater discharge rate to Ruth Pit is estimated to be 8.4 m^3/min, therefore the washwater discharge will add 20% flow to James Creek. Historically, dewatering water from Ruth Pit was discharged to James Creek when Ruth Pit was operational. Discussions with a former IOC engineer (Don Hindy), who was involved with the IOC dewatering operations, indicate that the dewatering rates for the former pits was significant and, as an example in the case of French Pit, as high as 20,000 gallons per minute (75.7 m^3/min). The additional discharge of water from Ruth Pit to James Creek from the ore washing facility will be very minor in comparison to these historical flows. The outflow from Ruth Pit will not adversely affect existing fish habitat observed within James Creek, and monitoring of the Ruth Pit outflow and James Creek water levels during all phases of the operation will be conducted to ensure stable conditions. The noted additional flows to be added to Ruth Pit from the washwater will not significantly increase flows within James Creek and, therefore, will not have the potential to destroy existing fish habitat. As past mining operations have historically used James Creek as the discharge location from pit dewatering at a much greater rate, as noted above, the increase in flow from Ruth Pit will have insufficient energy to physically alter the channel structure.

7.3.1.3 Bean Lake

An analysis has been conducted of the expected change in water level of Bean Lake from the introduction of water from the James (North and South) pit perimeter dewatering wells. The outlet from Bean Lake is the controlling factor. This outlet consists of a corrugated steel culvert having a diameter of 3.65 m.

The hydraulic radius of the culvert was calculated at increments of 5% of the total diameter of the culvert (or increments of 0.183 m). Velocity was calculated for each increment using the Manning Equation with an estimated slope of 0.0048 and a roughness coefficient of 0.020 for corrugated steel pipe (Hornberger et al. 1998). Velocity was then converted to discharge by multiplying it by the flow area. This allowed a stage-discharge curve to be developed for the culvert, which could then be used for predictive purposes. The stage-discharge curve was validated by plotting the flow through the culvert measured in June, July, and September 2008 on the curve and comparing the measured and predicted values. A numerical comparison is presented in Table 7.15 and the stage-discharge curve is presented in Figure 7.2.

The average total discharge at the Bean Lake outlet (170.7 m^3/min or 248,808 m^3/d) was estimated using the average natural flow (57.7 m^3/min) plus the estimated dewatering flow (113 m^3/min). The incremental depth of Bean Lake as a result of this flow would be approximately 0.72 m, which is

approximately 0.29 m deeper than the average depth in the culvert between June and September 2008.

Table 7.15 also presents the maximum flow possible through the culvert as predicted using the stage-discharge curve described above and presented in Figure 7.2. The maximum flow that could be maintained by the culvert was estimated to be 2,214 m^3/min (36.91 m^3/s, 3,188,869 m^3/d), which is approximately 13 times the estimated flow under dewatering conditions.

Table 7.15 Measured and Predicted Discharge due to Natural Conditions, Dewatering, and Maximum Possible Flow

	June		July		Sept		Dewatering + Avg. Natural Flow*	Max.
	M	P	M	P	M	P		
Diameter of pipe (D; m)	3.66	3.66	3.66	3.66	3.66	3.66	3.66	3.66
Radius of pipe (D; m)	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
Circular Segment Height (h; m)	0.42	0.42	0.43	0.42	0.42	0.43	2.95	0.18
Central Angle (θ; radians)	1.38	1.39	1.41	1.38	1.39	1.41	4.46	0.90
Circular Segment Area (K; m^2)	0.67	0.68	0.70	0.67	0.67	0.71	9.08	0.20
Arc Length (s; m)	2.53	2.54	2.58	2.53	2.54	2.58	8.15	1.65
Flow Area (A; m^2)	0.67	0.68	0.70	0.67	0.67	0.71	1.44	10.32
Wetted Perimeter (Pw; m)	2.53	2.54	2.58	2.53	2.54	2.58	3.34	9.85
Hydraulic Radius (RH; m)	0.26	0.27	0.27	0.26	0.27	0.27	0.43	1.05
Velocity (V; m/sec)	1.41	1.43	1.30	1.43	1.52	1.46	1.98	3.57
Discharge (Q; m^3/s)	0.94	0.97	0.92	0.95	1.03	1.03	2.85	36.91
Discharge (Q; m^3/min)	56.65	58.12	54.91	57.21	61.57	61.83	170.73	2,214.49
Discharge (Q; m^3/d)	81,571	83,692	79,068	82,383	88,659	89,035	245,844	3,188,869

Notes:
* Average natural flow is average of measured flows in June, July, and September (57.7 m^3/min) plus estimated flow due to dewatering (113 m^3/min), which totals 170.7 m^3/min.
M = Measured
P = Predicted

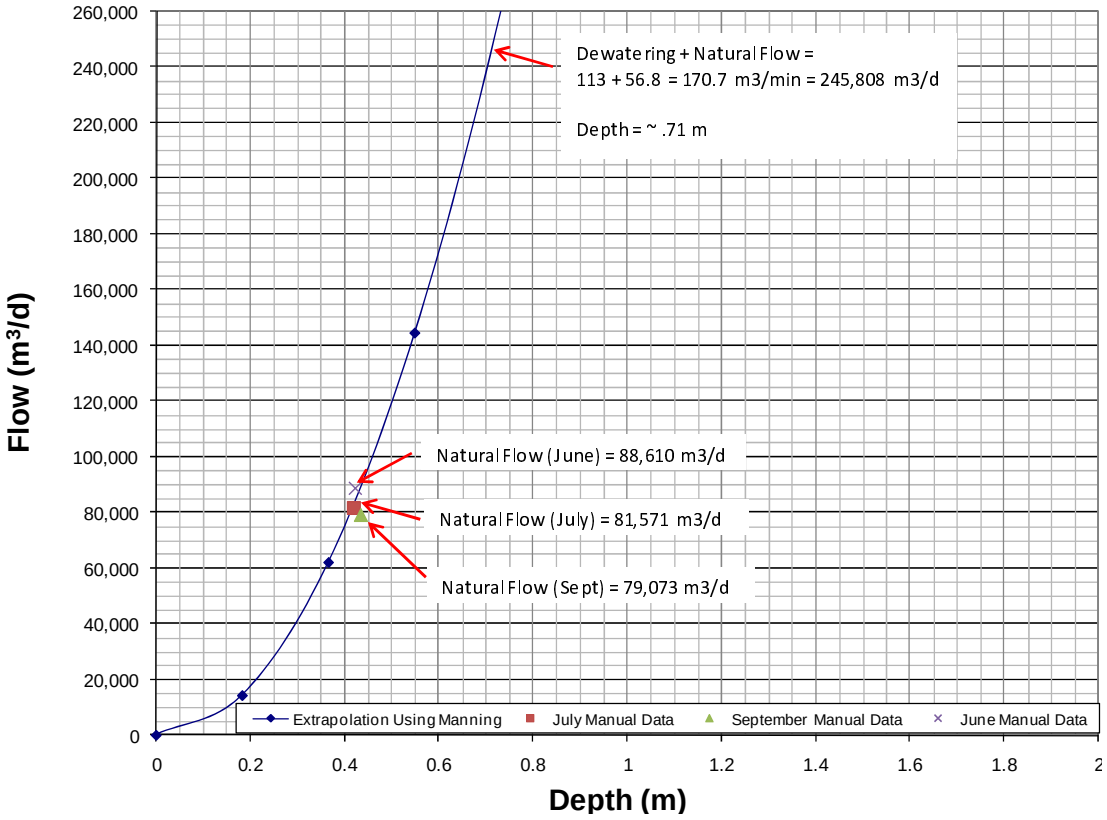

Figure 7.2 Stage-Discharge Curve for Bean Lake Outlet (BL OUT SG-5)

Based on site baseline work, the groundwater contribution to Bean Lake is expected to be greater from the west than from the north, east, or south because of the topography of the area around Bean Lake and the orientation of Bean Lake within this topography, and because of the presence of other lakes to the east and south of Bean Lake. There is a large bedrock ridge located west of the James property and west of Bean Lake. This ridge has a significant influence on groundwater flow in the area and is likely the reason why there are springs located on the James property. The direction of groundwater flow is approximately orthogonal to this ridge, with flow to the east/southeast from the ridge toward Bean Lake. The ridge is a large driving force for groundwater flow to the east. This flow direction is also orthogonal to the long axis of Bean Lake, thereby maximizing the potential groundwater flux to Bean Lake. The presence of lakes nearby to the east and south of Bean Lake (at lower elevations than Bean Lake) limits groundwater flow toward Bean Lake from those directions. There is likely some groundwater discharging to Bean Lake from the north, but the east/west cross-sectional area of Bean Lake is much less than the north/south cross-sectional area, so the potential flux would be much less. The cross-sectional area of groundwater discharge to Bean Lake in an approximate north/south direction (i.e., orthogonal to groundwater flow direction) was estimated based on the length of the lake and the estimated depth of the groundwater discharge zone. This depth was based on bathymetric information collected in Bean Lake. This is a standard method for estimating groundwater flux.

7.3.1.4 Ruth Pit

An additional item in the James Creek/Bean Lake water balance includes process water used to wash the ore in preparation for shipment. It is estimated that up to 8.4 m^3/min of water will be required for this purpose and the water will be taken from the James Property pit dewatering system. The reject fines

wash water will contain approximately 21 percent solids after washing and will be pumped to Ruth Pit for settling. This additional volume will have a negligible hydraulic impact on Ruth Pit, which has an area of 61 hectares (hydraulic loading of 0.001 cm/min).

The volume of Ruth Pit is roughly estimated to be 50,000,000 m^3 based on the area of the pit and the average depth of the pit determined from a bathymetric survey conducted by AECOM in September 2008. At a fines washwater input rate of 8.4 m^3/min, and based on the expected operational period of washing (the anticipated annual beneficiation duration), the resulting flow to Ruth Pit equates to approximately 2,187,000 m^3/year. This results in a theoretical maximum residency time for this wash water in Ruth Pit is approximately 23 years. The actual residency time will likely be less than this as a result of short-circuiting through the pit; however the residency time should be on the order of years.

The only change to the existing water balance of this water body will be the fines washwater incremental flow into Ruth Pit at a rate of 8.4 m^3/min and the balancing incremental outflow from the Pit (conservatively assumed to be 8.4 m^3/min). The outflow from Ruth Pit will be controlled by an outlet structure which will decant water from the pit and prevent fish from migrating from James Creek into Ruth Pit. LIM is evaluating the existing outlet structure at Ruth Pit and it is anticipated that upgrades to this structure may be required. The details of the upgrades will be developed with the overall design of the Project, and the final design will be provided as part of the Development Plan which will be reviewed by WRM prior to approval of the Project. LIM also acknowledges that permitting, if work is required, will be undertaken subject to Section 48 of the WRA and that monitoring will be required.

Ruth Pit will act as a wet detention pond (i.e., a retention pond that always has water in it). These types of ponds are very effective for the removal of Total Suspended Solids (TSS) and can generally achieve 90% TSS removal with a detention time of 24 hours. The degree of thermal stratification of the water in Ruth Pit is expected to be limited due to the short summer season in this area. Even if a thin stratification layer forms (warmer water at surface), there is not expected to be thermal shortcircuiting of the washwater because the ore washwater will be introduced into Ruth Pit at depth, and at a relatively slow flow rate (volume) compared with the volume of water in the pit, and therefore the washwater will mix with the cold pit water quickly before it will short circuit due to thermal stratification.

The discharge location for the washwater into Ruth Pit will be selected to optimize the retention time within the pit. The exact location of the discharge will be determined during detailed design and will take into account the nature of the proposed Ruth Pit outlet structure and flow patterns within the pit. During the detailed design process, other measures such as hanging silt curtains, groin channels, etc. may be incorporated if required to prevent short-circuiting. The outflow from Ruth Pit will be controlled by an outlet structure which will decant water from the pit and prevent fish from migrating from James Creek into Ruth Pit.

A detailed design of Ruth Pit effluent treatment process will be provided at the permitting stage (Development Plan as required under the *Newfoundland and Labrador Mining Act* and reviewed by Water Resources).LIM is aware that once in operation, the discharge from Ruth Pit will trigger the MMER and LIM will thus be responsible for completing all regulatory requirements under that regulation. It is acknowledged that the MMER will apply and that LIM is aware of the triggers that enable regulation to be enacted during LIM operations.

7.3.1.5 Summary

Overall, the cumulative amount of water pumped by the pit dewatering system is estimated to be up to 113 m^3/min (SNC 2008). Approximately 8.4 m^3/min of this water will be diverted to the unnamed tributary to offset water lost from the springs by dewatering, therefore approximately 105 m^3/min of dewatering water will be sent directly or indirectly to James Creek and Bean Lake via settling ponds and the beneficiation process. The area of Bean Lake is approximately 54 ha; therefore, the estimated discharge rate only adds about 0.02 cm/min to the hydraulic loading of Bean Lake. The hydraulic impact to Bean Lake is considered to be negligible.

7.3.2 Redmond Property

The existing Redmond Property hydrology is described in Section 4.1.4.2 and the proposed development of this property is described in Chapter 3. The primary hydrology impacts will result from the dewatering of the active open pits which may temporarily alter the groundwater levels in these areas.

7.3.2.1 Redmond 2B Pit Development

The approximate location of the proposed Redmond 2B Pit is shown on Figure 4.12. The depth to groundwater in the proposed pit area is approximately 25 metres below ground surface and the maximum depth of the proposed pit is 40 metres. Therefore, pit dewatering may be required after the first year of mining, when extraction approaches the water table, to lower the water table in the immediate vicinity of the pit to allow mining to occur to the base depth of the proposed pit.

Dewatering is planned to be conducted using in pit sumps and perimeter dewatering wells. Pit dewatering may affect the rate of groundwater discharging to the area north of the proposed Redmond 2B pit if it falls within the dewatering zone. After initiation of mining at Redmond 2B, water levels will be measured regularly in the groundwater monitoring wells and flow rates at location SG-7 will be monitored to track potential effects, if any.

Redmond 2 pit, which currently has no surface connectivity to nearby surface water bodies, will be used as a settling pond for pit dewatering from the proposed Redmond 2B open pit. It will also be a waste rock storage area for some portion of the waste rock from Redmond 2B. It is planned to maintain the non-connectivity of Redmond 2 to nearby surface water bodies. To maintain this hydraulic isolation, the water level in Redmond 2 will be monitored during operations and once the water level reaches a pre-determined level, waste rock disposal from the proposed pits into Redmond 2 will cease and be stockpiled in other locations. In this manner, no overflow will occur.

Hydrogeological studies are continuing at the Redmond area to supplement current data and to refine information relating to pit dewatering rate estimates for Redmond 2B and additional design details, including but not limited to retention times, flow rates, and hydraulic controls, which will be provided at the permitting stage.

7.3.2.2 Redmond 5 Pit Development

Pit dewatering water from the Redmond pits will be pumped to the historical Redmond 2 pit for suspended solids settling. This process will be the same as discussed for Redmond 2B in Section 7.3.2.1. Similar to Redmond 2B, dewatering rates for Redmond have not been fully determined yet, but will be provided at the permitting stage.

Further discussions on dewatering activities are presented in Section 3.3.5.

7.4 Employment and Business

Employment and business was chosen as a VEC based on public concern that economic benefits accrue to local communities, Labrador and the Province. This includes benefits to the population and economy as a whole, and to such under-represented groups as the Innu and women. The effects on employment and business have been assessed on other recent projects and such an assessment is required under the Project-specific EIS Guidelines.

7.4.1 Potential Project-VEC Interactions

Issues relating to employment and business and the Project include:

- The creation of employment for residents of the Province, including Labradorians, the Innu and women;
- Training requirements associated with Project employment, in support of the above employment objective;
- The creation of business for Newfoundland and Labrador companies, and especially those located in Labrador; and
- Inflationary effects on the costs of labour, goods and services.

7.4.2 Employment and Business Assessment

There will be direct and indirect employment and business impacts resulting from, first, the construction of the Project and, second, from its operation. These will include the employment of, and income to, those working directly on the Project, indirect employment and income impacts to workers providing goods and services to the Project, and induced impacts, which are generated when those working directly and indirectly on the Project spend their incomes in the economy. These Project and Project-related expenditures have the potential to have inflationary effects. The effects management for this VEC, primarily through the Project Benefits Policy (Section 2.2.3) and related Benefits Plan (Appendix D) initiatives, is and has always been intended as part of the Project and hence in is an inherent part of this assessment. As such, there is no separate section on effects management.

As required by the EIS Guidelines, this section includes employment and business goals for both the construction and operating phases of the Project.

7.4.2.1 Construction Phase

Direct Impacts

There will be substantial short-term employment benefits during the construction phase of the Project. This will involve a total of approximately 40 workers employed over the approximately eight-week duration of construction. The direct construction phase employment is described, by NOC Code, in Table 3.4. The majority of these positions will be filled from within Labrador, which will receive hiring preference under the LIM Benefits Policy (Section 2.2.3) and through implementation of the associated Benefits Plan (Appendix D). LIM will fill all positions not filled locally by using a commute system. All

workers will be employed in Newfoundland and Labrador. Workers will commute by air and rail from Goose Bay, Wabush and Labrador City as appropriate.

The employment of the Labrador Innu and women will be promoted through the IBA with the Innu Nation of Labrador and Project Women's Employment Plan (Appendix D) respectively.

The IBA is a life-of-mine agreement that establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between LIM and the Innu Nation. In return for their consent and support of the Project, the Innu Nation and their members will benefit through training, employment, business opportunities and financial participation in the Project.

The Project Women's Employment Plan details LIM's approach to employment equity; establishes appropriate initiatives and targets; and, describes a process for achieving these targets, monitor success in meeting them, and reviewing and revising women's employment initiatives. This plan will apply to LIM and its Project contractors.

LIM will continue to liaise with the College of the North Atlantic to investigate training local residents for these construction positions. However, it is recognized that the opportunities for training specifically for this Project will be very limited, given the small number of positions and short duration of employment.

Project construction will be completed in advance of the construction labour requirements of other proposed Labrador projects such as the Lower Churchill Hydroelectric Generation Project (peak employment 1,700, construction period 2010 to 2018) and Aurora uranium mine (peak employment 700, construction period 2011 to 2014), and it will therefore not compete with them for labour. A discussion of other projects planned for Western Labrador is included in the assessment of cumulative effects, Section 7.4.3. Indeed, the Project will provide employment to some workers in Labrador West who are currently unemployed, as a result of the economic downturn. The Project will also provide these and other Labrador residents with an opportunity to further develop their skills and employment experience, thereby assisting in the development of the labour force for subsequent projects.

It is anticipated that a small number of the Project-specific engineering, design and specialized Project management positions will be filled from outside the Province. Targets and initiatives with respect to Project employment are discussed in the NL Benefits Plan and Women's Employment Plan (Appendix D).

Indirect Impacts

The local share of supply and services contracts will be maximized through the LIM Benefits Policy (Section 2.2.3) and associated strategy. This policy will build on, and is consistent with, LIM's past performance in delivering local benefits. LIM has spent $5.0 million on goods and services from Newfoundland and Labrador companies since 2004.

For example, the following contracts have been awarded to Newfoundland and Labrador companies in the past:

- SNC-Innu conducted an engineering study on the Project;
- Cartwright Drilling carried out an exploration drilling program in 2006;
- Jacques Whitford was retained to prepare this environmental assessment; and
- RSM Engineering carried out a bulk-sampling and crushing and screening program in 2008.

In addition, preliminary discussions have been conducted with other Newfoundland and Labrador-based companies and this work may be awarded at the appropriate phase of the Project. Examples include:

- Land Surveying: N.E Parrot Surveys Ltd, to execute the legal land surveys; and
- Provincial Airlines/Innu – Mikun Partnership to provide air transportation services.

As was noted above, under the terms of its IBA with LIM, the Innu Nation of Labrador and their members will benefit through Project business opportunities.

The construction of the mine will see the procurement of a wide range of goods and services, the majority of which are available in the Province. They include:

- earthworks;
- site construction;
- buildings construction;
- plant construction;
- mine preliminary works and overburden stripping;
- fuel and refuelling services;
- welding and machining goods and services;
- land surveying;
- taxi and car rental;
- hotel accommodations;
- blasting;
- pipe-laying;
- road construction;
- electrical and mechanical contracting;
- miscellaneous tools and small equipment;
- heavy equipment rental (cranes, excavators, loaders); and
- independent environmental monitoring.

In some cases, Project materials and services are not available in Labrador or, indeed, the Province, and there is no reasonable expectation of this being changed as a result of the Project, or any foreseeable level of provincial demand. For example, the following materials and services will in all likelihood need to be brought to the Project site from outside the Province:

- crusher and beneficiation plant unit supply;
- mine engineering consulting services;
- rails, rail ties and other track materials; and
- rail cars and power units.

Induced Impacts

The use of a commute system will deliver Project-related economic benefits to those parts of the Province in which workers and their families live. Similarly, expenditures by the employees of companies contracted to work of the Project will benefit the Province and the region and communities in which they live.

7.4.2.2 Operation Phase

The Project will also help build the capacity of, and support, the local labour market and businesses during operations. For example, the operating plan of the mine will generate a smaller level of longer-term (an estimated five years duration) seasonal employment benefits to Labrador. In total, the mine will directly require 109 positions (Table 3.6), mostly for about seven months per year. The majority of these workers will be employed by contractors.

Given the nature of the occupations involved, the lead time available to train local people for them, and the LIM Benefits Policy, the majority of the mine operation workers will be hired from Labrador. The Benefits Policy (see Section 2.2.3), which will apply to LIM and Project contractors, will give employment preference to, first, qualified residents of Labrador, and then qualified residents of the Province as a whole.

As is the case for the construction phase, the employment of the Labrador Innu and women will be promoted through the IBA and Project Women's Employment Plan respectively.

Specific targets for operations employment and with respect to women's employment are provided in the NL Benefits Plan and Women's Employment Plan (Appendix D).

LIM will continue to liaise with the College of the North Atlantic to investigate training local residents for these positions. However, it is recognized that there are few senior and experienced mine operation personnel in Labrador, and these positions may have to be filled from elsewhere.

While some workers will be hired from, and live in, Schefferville, most of the Project operations workers and their families will be hired from Labrador and contribute to its economy and community life. As during construction, these Labrador residents will commute from Goose Bay, Wabush, and Labrador City as appropriate.

Mine operations will also require a range of goods and services, the majority of which are available locally. For example, a review of local capabilities indicates that the following will be available on a commercial basis from within Western Labrador:

- fuel and refuelling services;
- welding and machining goods and services;
- catering services and camp management;
- vehicle rental, rail passenger and air transportation services;
- maintenance operations;
- hardware stores miscellaneous tools and small equipment;
- heavy equipment rental (e.g. cranes, excavators and loaders);
- local contracting services (e.g. construction, electrical and mechanical);

- Mine contractors;
- Beneficiation Equipment operation; and
- Power Supply.

Some other goods and services will be available from elsewhere in the Province. Specific targets with respect to procurement of goods and services are provided in the NL Benefits Plan (Appendix D).

7.4.2.3 Decommissioning

The amount of employment and business associated with decommissioning will depend upon the specific techniques employed, but will likely involve grading, material transportation, monitoring and other activities that Labradorians and Labrador companies are well qualified to undertake. These opportunities will only be clear closer to decommissioning.

7.4.2.4 Summary

The Project will make a significant contribution to the further economic development of the Province and, in particular, Labrador, by:

- providing local employment and incomes during construction and operations;
- providing local business during construction and employment;
- providing an important opportunity for participation by the Innu Nation of Labrador and women in the provision of services, businesses, employment and training;
- increasing the capacity and skills of local labour force and businesses, in advance of Lower Churchill and other projects; and
- facilitating further mining development by putting in place these new labour and business capabilities and new transportation infrastructure, thereby making existing and new Labrador projects more competitive globally.

No significant adverse effects are expected. The numbers of workers and scale of expenditures are not sufficient for there to be a danger of inflationary effects, especially given the current downturn in the economy, which is forecast to continue through the Project construction phase.

The residual environmental effects of the Project on Employment and Business are summarized in Table 7.16.

Table 7.16 Summary of Residual Environmental Effects for Employment and Business (All Phases)

Effects Management	
• LIM and its contractors will include a copy of the LIM Benefits Plan in all Project calls for expressions of interest, requests for proposals, and contracts • LIM will liaise with provincial, and especially Labrador, educational institutions and human resources agencies so that they are informed about employment requirements and plans • LIM will liaise with provincial, and especially Labrador, business groups and economic development agencies so that they are informed about goods and services requirements and plans • LIM will monitor the Project labour force to establish the percentage of positions held by residents of the Province • LIM will monitor the award of Project contracts to establish the percentage of the work, by value, awarded to companies based in the Province • LIM will, on a quarterly basis, compile the above monitoring data, assess them relative to Project benefits targets and, if necessary, review and revise its benefits approach, initiatives and targets • LIM will, make the above annual compilation of benefits data available to government departments and agencies, upon request • LIM will, implement the provisions of its Project Women's Employment Plan	
Significance Determination	
Geographic extent	Regional
Frequency of occurrence	Continuous
Duration of impact	Long-term
Magnitude of impact	Low
Permanence/reversibility	Reversible
Significance	**Not Significant**
Confidence	Not applicable
Likelihood of occurrence	Not applicable
Follow-up and monitoring	
• LIM will monitor the Project labour force to establish the percentage of positions held by residents of the Province; • LIM will monitor the award of Project contracts to establish the percentage of the work, by value, awarded to companies based in the Province; • LIM will, on an annual basis, compile the above monitoring data, assess them relative to Project benefits targets and, if necessary, review and revise its benefits approach, initiatives and targets; • Make the above annual compilation of benefits data available to government departments and agencies, upon request; and • LIM will implement the provisions of the Project Women's Employment Plan.	
Note – Confidence and Likelihood of Occurrence are Not Applicable when residual environmental effect is not significant	

7.4.3 Cumulative Environmental Effects

The assessment of the effects of the Project on employment and business is based on the baseline conditions (Section 4.3.3). Future projects in this area include the possible construction of the Elross Lake Iron Ore Mine and the Bloom Lake Railway.

As has been described above, the Project will employ approximately 40 workers for a construction period of eight weeks. The Elross Lake Project could employ an estimated total of 150 people over a 15-month construction phase, originally scheduled to start in 2009 (New Millennium, 2008), but the project still awaits regulatory approval and final sanction. Bloom Lake Railway construction is in progress and will involve an average total of 160 workers (Consolidated Thompson, 2008). It is anticipated that a maximum of 250 construction workers will be required at any one time across these

projects. Furthermore, the occupations required will vary across the three projects, and the schedules of them may permit workers in some occupations to work on more than one project.

While it is expected that all three operations will draw on the existing labour force resident in Labrador (there were 800 workers in construction occupations in Labrador at the time of the 2006 Census), any possible shortage can be addressed through employing workers living on the Island of Newfoundland, which had a total 2006 construction labour force of nearly 17,000 workers. It is noted that the current economic situation in Labrador West will facilitate hiring for that region.

The numbers employed in operations are smaller than construction for the other projects. It is has been indicated that during the operation of Phase 1 of Elross Lake, between 2010 and 2013, 150 people will be employed (New Millennium, 2008). The operation of the Bloom Lake Railway project is tentatively scheduled to begin in late-2009 and require only 12 full-time positions (Consolidated Thompson, 2008). In conjunction with the Project, this results in a total operations employment of only about 260 jobs. This should make a valuable contribution to the economy while not resulting in labour shortages or wage inflation.

The cumulative business effects of the three projects will be important to the contracting companies involved, but not place any undue demands resulting in wage and price inflation, especially the recent economic downturn, which is forecast to last for some years. Given the duration of the operations phases, activity on these projects may also result in some expansion of business capabilities.

7.5 Communities

The communities most likely to be affected by the Project are the primary places of residence of the Project labour force: Labrador West, Upper Lake Melville, Schefferville, and Kawawachikamach. Labrador West is also the home of many contracting companies providing goods and services to the Project. LIM has an office in Happy Valley-Goose Bay and will open an office in Labrador West. In addition, the Goose Bay and Wabush Airports and the TSH railroad from Emeril Junction will be used in the provision of some labour and supplies.

7.5.1 Potential Project-VEC Interactions

As required by the EIS Guidelines, this assessment focuses on the effects on health services in Labrador. These are discussed in the context of the broad demographic and other effects of the Project.

7.5.2 Communities Assessment

7.5.2.1 Construction

The construction of the Project will have a negligible short-term direct effect on the communities of Labrador West and Upper Lake Melville. It will only employ approximately 40 workers for eight weeks (Section 3.2.8), and some of these workers will already be residents of these communities when hired. As a result, it is very unlikely that any workers will move to them as a result of Project construction, and hence that there will be an effect on public or community health services, or other community social or physical infrastructure or services, as a result of Project-related population increase.

The commute system for construction workers will be designed to transport construction workers to and from their communities as efficiently as possible. As a result, there will be few occasions when commuting workers will spend more than a short period in Labrador West and Upper Lake Melville communities while en route to or from the workplace. There is a very small likelihood of negative interactions between workers and local residents that might place demands on policing or healthcare services and infrastructure.

Most workers will continue to receive general healthcare in their home communities. Any minor injuries or health problems will be addressed through the provision of first-aid at the worksite. If additional care is required, workers will utilize the health clinic in Schefferville, Québec. If more specialized care is needed, workers will be transported to the Captain William Jackman Memorial Hospital in Labrador City.

However, the effects of the construction phase on local healthcare services and infrastructure will also be minor because the labour force will be small, the workers will mostly be in the prime of life, and accidents will be minimized through rigorous enforcement of LIM's occupational health and safety standards. As a result, no significant new Project-related demand on health services and infrastructure is anticipated.

7.5.2.2 Operation

The Project will also help build the capacity of, and support, local labour market and businesses during operations. In total, the mine will directly require 109 positions (Table 3.6), mostly for about seven months per year. These employees will be largely employed by contractors.

While there will be some multiplier effects of operations, these will have an even smaller incremental effect, especially as most of this employment will go to local residents working for supply and service companies, retail outlets, restaurants, etc. While it will make a minor long-term contribution to the economy of Western Labrador, it is very unlikely that the operations phase spin-off employment will need to be met through in-migration into the region, resulting in additional demand for community and public healthcare services and infrastructure.

As during the construction phase, the commute system for non-locally resident workers will be designed to minimize the possibility of negative interactions between workers and local residents that might place demands on policing or healthcare services and infrastructure. Furthermore, most workers will continue to receive general healthcare in their home communities, minor injuries or health problems will be addressed through worksite first-aid, and if additional care is required, workers will utilize the health clinic in Shefferville, Québec. Only when more specialized care is needed, workers will be transported to the Captain William Jackman Memorial Hospital in Labrador City, but the workers will again mostly be in the prime of life, and accidents will be minimized through rigorous enforcement of Labrador Iron Mines' occupational health and safety standards.

As a result, no significant new Project-related demand on health services and infrastructure is anticipated.

7.5.2.3 Decommissioning

The amount of employment associated with decommissioning will depend upon the specific techniques employed, but Labradorians are likely to be well qualified for this work. However, the scale of such employment will likely be smaller and of shorter duration than operations, and hence is not expected to

result in significant new Project-related demand on health, or other community, social or physical, services and infrastructure.

7.5.2.4 Summary

The residual environmental effects of the Project on communities are summarized in Table 7.17.

Table 7.17 Summary of Residual Environmental Effects for Communities (All Phases)

Effect Management	
• Use a commute system and camp accommodations for most Project workers • Minimize time commuting workers spend en route in communities • Rigorous occupational health and safety provisions and implementation	
Significance Determination	
Geographic extent	Regional
Frequency of occurrence	Continuous
Duration of impact	Long-term
Magnitude of impact	Low
Permanence/reversibility	Reversible
Significance	**Not Significant**
Confidence	Not applicable
Likelihood of occurrence	Not applicable
Follow-up and monitoring	
• The monitoring of demands on community services and infrastructure is the responsibility of the relevant government departments and agencies, as part of their normal planning processes. LIM will assist by liaising with them, as requested, and through the timely provision of information about Project activity and plans.	
Note – Confidence and Likelihood of Occurrence are Not Applicable when residual environmental effect is not significant	

7.5.3 Cumulative Environmental Effects

The assessment of the effects of the Project on communities is based on the baseline conditions (Section 4.3.3.4). Future projects in this area include the construction of the Elross Lake Iron Ore Mine and the Bloom Lake Railway. Given the preliminary scale of these projects and their assumed use of commute employment, it is not expected that they will have significant effects on healthcare or other community services or infrastructure in Labrador West or Upper Lake Melville.

7.5.4 Implications for Other Mining Projects, Railways and Mineral Exploration

LIM has been holding discussions with railroad and port operators for an extensive period. To date these have resulted in a number of confidential Memoranda of Understanding regarding the supply of such services.

During 2008, LIM reached agreement with the railroad operators TRH and QNSLR, and with two port and stevedoring companies, regarding the transport, unloading and storage of its bulk sample products over the railroad lines and port facilities. During 2008 these tonnages were transported from the Silver Yard site to port. LIM expects that, subject to completing confidential commercial negotiations, these arrangements will be extended to cover the periods included by the Project production scenario.

LIM notes that each of the railroads over which its iron ore will be transported to port are covered by the application and provisions of the *Canada Transportation Act* 1996, and accordingly are required under the terms of that *Act* to provide a level of service.

LIM continues to be in discussion regarding ongoing port facilities under various Memoranda of Understanding, and expects to conclude successful and friendly negotiations with various port operators to provide a sufficient level of stevedoring service in the general Port of Sept-Îles area well before the commencement of commercial production. LIM also expects to extend these agreements to cover the expected life of this Project.

7.6 Accidental Events

7.6.1 Fish and Fish Habitat

Accidental events that could have consequences for fish and fish habitat include: sedimentation events due to slope failure, flooding; pollution from vehicular accidents, spills; and fire. Accidents leading to sedimentation events can vary in origin, area, intensity and duration, however the results are usually restricted to the site of the event and the downstream habitat. These events are usually localized in nature and reversible if the intensity is not extreme. Sometimes habitat can be rehabilitated if natural restoration is not evident.

Spills are also usually limited to a local area with various downstream effects within the same watershed. The effects of accidental introductions of pollutants into fish habitat will vary with the material and intensity (i.e., amount and duration). Fish kills may result from exposure to acutely lethal substances. Sub-lethal effects from less toxic materials may result in stress, lack of condition, impairment of growth or reproduction, or avoidance.

Forest fires can spread from watershed to watershed, moving with the prevailing wind. Fires can consume riparian vegetation, destabilize shore area soils, and lead to erosion and sedimentation events. Habitat can be degraded by the removal of riparian vegetative cover and associated food and nutrient input.

The adverse environmental effect would be reversible and localized and would be not significant.

7.6.2 Caribou

Accidental events and malfunctions for this Project could result in change in habitat and/or mortality for both migratory caribou or woodland caribou (if they are present). Provided that the effects management measures outlined in Section 7.2.5 are adhered to, the risk of an accidental event and the extent of its influence would be reduced to an unlikely event. The most probable of accidental events would be that of a forest fire related to Project activities or a hazardous material spill. Fire prevention and response measures will remain in place throughout the Project. The geographic extent of a forest fire could extend beyond the site (within the Assessment Area), but is not likely to occur also due to the presence and implementation of Project-specific Environmental Protection Plans. The effects could last for several generations (Foster 1985, review by Bergerud 2008), and of a magnitude that would cause management concern although overall for this population, large fires occur naturally and result in extensive changes in habitat and associated distribution. These effects are natural and would be reversible, but would be considered as significant. There is a high degree of confidence that a large fire

would result in a significant effect but the measures in place and design of the Project would infer this is an unlikely event.

A hazardous material spill would be confined to the site and would not be expected to interact in a meaningful manner (if at all) with caribou from the GR Herd or possibly in association with a woodland herd. This event would be considered not likely to occur and would result in no measurable change to baseline conditions. The adverse environmental effect would be reversible and not significant.

7.6.3 Employment and Business

Any cessation of Project activity as a result of accidental effects and malfunctions will have a negative effect on Project employment and business. However, such cessations would be anticipated to be short-term and resulting adverse socio-economic effects would be not significant.

7.6.4 Communities

All Labrador communities are at such a distance from the Project site that they will not be directly affected by any accidental effects and malfunctions. However, any cessation of Project activity as a result of such effects and malfunctions will have a negative effect on Project employment and business, and these may have secondary effects on Labrador communities. The adverse effect would be not significant; conversely, there may be secondary community affects resulting from employment and business associated with dealing with the consequences of such effects and malfunctions.

7.7 Effects of the Environment on the Project

The EIS Guidelines specifically requires that the effects of the environment on the mine be assessed, considering in particular the vulnerability and potential risk to the mine from climatic elements (including wind, weather and global climate change). The following section evaluates the potential effects of extreme and other climate events on the mine in consideration of future climate change.

Climate change considerations for the Project are assessed following guidance issued by the Canadian Environmental Assessment Agency Guidelines (CEAA 2003). Considerations focus on the longer operating phase of the Project as opposed to the construction phase, and include analysis of climate parameters that could change over the period influencing Project operating conditions, and magnifying or buffering Project related environmental effects.

The range of effects on the Project due to the physical environment can range from minor facility improvement to catastrophic failure. The primary mitigation tool is the use of sound planning. All engineering design must be done to National Building Code Standards. These standards document the proper engineering design for site specific extreme physical environmental conditions and provide design criteria, which the federal government considers satisfactory to withstand potential physical environmental conditions. These codes consider physical environmental criteria such as wind, snow, wave and ice loading and drainage. In addition, the design life is taken into consideration so that materials are chosen with sufficient durability and corrosion resistance.

A significant effect of the environment on the Project has been defined as one that results in:

- A substantial delay in construction (e.g., more than one season);
- A long-term interruption in mining operations;

- Damage to infrastructure that compromises public safety; or
- Damage to infrastructure that would not be economically and technically feasible to repair.

The potential effects of the environment on the Project are assessed below.

7.7.1 Climate Change Predictions

General Circulation Models (GCM) are considered to be the most comprehensive models for predicting the effects of GHG emissions on the global climate. However, these models become less accurate when attempting to predict regional changes in climate. Climate projections for more specific locations require the development of models that will incorporate specific regional and local climate variables with broader-scale climate change scenarios from the GCM (Lines et al. 2005). Downscaling techniques have begun to emerge over the last decade to meet this requirement. Downscaled climate model predictions for Goose Bay, NL were used assess the potential changes in temperature and precipitation at the LIM sites.

Climate can be described in terms of average temperature and precipitation, as well as day-to-day and year-to-year variations and extremes that define weather. The baseline climate (1971 – 2000) for this region is described in Section 4.1.1.

7.7.1.1 Temperature and Precipitation

Downscaled model results are available for Goose Bay, NL which is southeast of Schefferville. Results tend to differ between a Statistical Downscaling Model (SDSM) and Global Climate Model (GCM). Monthly, seasonal, and annual SDSM results were typically indicating higher temperature and precipitation changes than those of the Canadian coupled global climate model version 1 (CGCM1).

The overall increases in the annual average minimum temperatures projected for Goose Bay between 2020 and 2080 range from 1.3 C° to 4.1 C°, and from 1.7 C° to 5.0 C° for the SDSM and CGCM1 model results respectively. These results are consistent with projected changes to the annual average maximum temperature for the same time period at Goose Bay, expected to range from 1.8 C° to 4.7 C° and 1.6 C° to 3.8 C° for the SDSM and CGCM1 model results respectively (Lines et al. 2005) (Table 7.18)

Table 7.18 Projected Mean Annual Maximum and Minimum Temperature Increases, and Percent Precipitation Change for the 2020s, 2050s, and 2080s

	T max Change C º		T min Change C º		Precipitation Change (%)	
	SDSM	CGCM1	SDSM	CGCM1	SDSM	CGCM1
2020s	1.8	1.6	1.3	1.7	2	-3
2050s	2.3	2.1	2.2	2.9	3	3
2080s	4.7	3.8	4.1	5.0	5	9

The SDSM predictions for maximum temperatures for the 2050s at Goose Bay for summer, fall and winter increases are 2.2 C° to 4.3 C°, while for the spring, slight cooling is anticipated (-0.8 C°). By the 2080s, temperatures are projected to increase in all seasons, with greater warming in the summer, fall and winter (4.6 C° to 7.1 C°) than the spring (1.2 C°) (Lines et al. 2005). This average temperature change will be gradual over the period and will change precipitation types and patterns. The SDSM predictions for precipitation change for the 2050s are for spring, summer, and fall increases (1 percent to 8 percent), while for the winter, decreasing precipitation is anticipated (-6 percent). By the 2080s,

precipitation is projected to increase more in the fall and summer (9 percent to 12 percent), and decrease in the spring and winter (-2 percent) (Lines et al. 2005).

The warmer fall and winter could cause later freeze up and earlier spring break up, wetter and heavier snow, more liquid precipitation occurring later into the fall, more freezing precipitation, and a longer growing season (and hence, vegetation growth). With little change in spring temperatures, differences in ice formation and breakup patterns will likely be slight. The decrease of precipitation (snow) in the winter months could increase the area and depth of the permafrost. However, since there is overall warming predicted for all seasons, it is likely that the permafrost area and depth will decrease overall.

7.7.1.2 Water Table and Lake Levels

Based on the predicted changes in temperature and precipitation, it is also expected that the water distribution and resources will be altered. Between now and the 2080s, the temperature is expected to increase during all seasons. This increase in temperature, particularly in the summer, is expected to increase evapotranspiration. By the 2080's overall precipitation is also predicted to increase. Water runoff available to lakes, streams, bogs, and groundwater is determined by the levels of precipitation and evapotranspiration. Since it is predicted that the evapotranspiration will increase and that the precipitation will also increase, it is possible that these two effects will counteract one another. However, if either of these effects dominates, water levels and soil moisture could be affected.

7.7.1.3 Wind Speed

By the 2050s, it is predicted that on an annual basis there will generally be a decrease in mean sea level pressure (MSLP) across Canada, with the exception of the east coast, west coast, and south-eastern regions where there are small increases predicted (Barrow et al. 2004). These changes in MSLP will result in a higher pressure gradient across Canada and may result in increased annual mean wind speeds (Barrow et al. 2004). With the exception of the coastal areas, most areas in Canada are predicted to have increased wind speed, particularly Northern regions (Barrow et al. 2004). The greatest increase is predicted to reach 25 percent over north-eastern regions of the country (Barrow et al. 2004). Thus, in the area of the LIM properties, wind speeds are predicted to increase substantively by 2050.

7.7.1.4 Extreme Weather

Severe weather incidents are generally projected to be more frequent and more intense over the next 100 years, a continuation of current global trends, and based on projections of additional energy and moisture in the atmosphere as it warms. Such events will typically result in more intense precipitation events and more rapid surface runoff. Extreme weather events have the potential to disrupt transportation, electricity transmission, communications, as well as damage equipment and buildings on the LIM property.

7.7.2 Project Sensitivity to Climate Change

The effect of projected climate change on the Project was assessed qualitatively following the CEAA guidelines (CEAA, 2003). This assessment was based on the analysis of predicted changes to present climate over the period of operation of the Project to predict whether or not there is a risk to the public or the environment.

The sensitivity of various phases of the Project to these predicted changes was ranked (see Table 7.19). These rankings reflect the effect of climate change on the Project in terms of productivity or additional environmental management required. A ranking of Nil or Low indicates that no or very small changes are expected with respect to productivity or environmental management. A ranking of Medium indicates some intervention may be necessary to mitigate against decreased productivity.

Table 7.19 Project Sensitivities to Direct and Indirect Climate Influences

Climate Parameter	Project Phase		
	Construction	Operation	Decommissioning
Mean temperature	Nil	Low	Nil
Extreme temperature	Nil	Low	Low
Mean rainfall	Nil	Low	Nil
Mean snowfall	Nil	Low	Nil
Extreme precipitation	Low	Low	Low
Extreme winds	Low	Nil	Low
Earthquakes	Nil	Nil	Nil
Lake Levels and Streamflows	Nil	Low	Low
Soil moisture and groundwater	Nil	Nil	Low
Evaporation rate	Low	Low	Nil
Permafrost extent/levels	Low	Low	Low
Extreme weather events	Low	Low	Low

Project sensitivity for the construction phase is ranked as nil to low because weather conditions are likely to affect transportation of materials and construction activities only modestly in the period between approval and completion of construction.

Project sensitivity for operations is low overall. An increase in mean air temperature should not have a significant effect on the Project. An increase in precipitation and runoff may have an effect on surface storage ponds, though a larger design that incorporates potential future precipitation events would keep this sensitivity low. If there is a considerable increase in precipitation, additional excavation and/or construction of runoff water containment and sedimentation control structures will be required. Currently the pond capacity is designed for the highest precipitation in the past 50 years. To reduce the likelihood of an adverse effect, pond capacities should be designed for the highest precipitation event projected for the operating period. This could be achieved by adding the predicted increase in precipitation to the present design and then adding an additional safety factor since it is predicted that there will be more intense storms in the future.

Changes in multiple parameters (e.g., increased evapotranspiration and increased precipitation) may have additive effects or may have the effect of cancelling out a negative effect. Project sensitivity is ranked as nil for all other parameters (e.g., extreme winds, which may increase in magnitude and frequency) since the Project will be constructed to meet extreme weather criteria.

Project sensitivity for decommissioning is ranked as low overall based on the assumption of remediating the site to non-industrial land use following the life of the facility. The nature and the success of revegetation activities at the site would depend on climate conditions at that time.

As a result of this analysis, it is recommended that all components of this Project (ponds, buildings, equipment, etc.) are designed to avoid any adverse affect to the public or the environment due to the predicted future climate. Safety design factors will be incorporated where appropriate. In particular, settling ponds should be designed with consideration for the predicted increase in extreme precipitation events and overall increase in precipitation.

7.7.3 Summary of Effects of the Environment on the Project

The Project will be designed and built to safely withstand current climatic conditions in accordance with building codes and standard good practice. All materials specified for this Project will be in compliance with applicable building codes for anticipated temperatures, winds and precipitation levels and as such will maintain the integrity and ductility to function as they were designed. All components of the mine will also be designed to support the structural loadings created by extreme snow and ice events. All erosion and sediment control measures for the mine will be designed to handle extreme participation and sudden snow melt. Weather forecasts will be monitored during mine construction and operations. If extreme weather conditions in any way compromise a safe operation, accident prevention measures will be taken, including the temporary suspension of operations, as required. Prior to and following extreme precipitation events, all erosion and sediment control structures will be inspected to ensure integrity. Permafrost has been considered in this assessment and is not predicted to affect mine operations as it was not observed in the Project area.

The above discussion of climate change has ensured that the assessment has also considered future climatic conditions and their potential effects on the Project. As a result of this analysis, it is recommended that all components of this Project (ponds, buildings, equipment, etc.) are designed to avoid any adverse affect to the public or the environment due to the predicted future climate. Safety design factors will be incorporated where appropriate. In particular, settling ponds should be designed with consideration for the predicted increase in extreme precipitation events and overall increase in precipitation.

The mitigative strategies described above, can adequately address potential effects of the environment on the Project such that there will not be:

- a substantial delay in construction (e.g., more than one season);
- a long-term interruption in mining operations;
- damage to infrastructure that compromises public safety; or
- damage to infrastructure that would not be economically and technically feasible to repair.
- Therefore the effects of the environment on the Project are predicted to be not significant.

8.0 ENVIRONMENTAL PROTECTION

8.1 Mitigation

8.1.1 Blasting

Although blasting is not planned during the construction phase of the Project, minimal blasting for rock removal will be conducted during the operations phases of the Project. Ground vibration, air blast, and fly rock resulting from blasting operations can have an impact on the surrounding environment. Vibration and air blast overpressures can impact wildlife, cause slope failures, and create avalanches. Fly rock can damage vegetation.

Blasting can have physical and chemical effects on fish and fish habitat. Shock waves and vibrations from blasting can damage a fish's swim bladder and rupture internal organs, and may kill or damage fish eggs or alevins (DFO 1994). Blasting can cause the re-suspension of sediments (Munday et al. 1986), bank failure and resultant sedimentation, and habitat avoidance. Nitrogen-based explosives can affect aquatic life through direct toxicity of the compounds, reducing dissolved oxygen during nitrification and providing nutrients for aquatic plants. Nitrite is toxic to fish and can reduce the oxygen carrying capacity of blood. Ammonia can cause gill damage and nitrate promotes algal growth. Pommen (1983) provides detailed information on the potential chemical effects of blasting. Guidelines for blasting near waterbodies, including specifications for blasting materials, their use, time of year and additional precautions, are outlined by DFO (1994) and, where applicable, will be employed.

Blasting operations at the Project will be designed to control vibration and air blast, to minimize/contain flyrock, and to minimize ammonia and nitrate levels in mine water.

In areas of blasting (i.e., James North and South Pits and Redmond Pit), water (precipitation and groundwater) will be collected in in-pit sumps and directed to a dedicated settling pond for treatment.

8.1.2 Reject Fines Wash Water Slurry

Reject fines washwater generated from crushing, washing, and separation processes will contain an estimated 21 percent by weight of suspended solids. No chemicals will be used in the beneficiation process. Reject fines wash water will be controlled within the beneficiation area and will be directed to the former historical Ruth Mine Pit, which will provide sufficient storage capacity for solids and retention time for settling of suspended solids prior to release to the environment.

All diversions and settling ponds will be designed and constructed with appropriate dimensions and controls to ensure that all discharges are retained and treated to achieve the required quality prior to release to the environment.

Ruth Pit will act as a wet detention pond (i.e., a retention pond that always has water in it). These types of ponds are very effective for the removal of TSS and can generally achieve 90% TSS removal with a detention time of 24 hours. The degree of thermal stratification of the water in Ruth Pit is expected to be limited due to the short summer season in this area. Even if a thin stratification layer forms (warmer water at surface), there is not expected to be thermal short-circuiting of the washwater because the

reject fines washwater will be introduced into Ruth Pit at depth, and at a relatively slow flow rate (volume) compared with the volume of water in the pit, and therefore the washwater will mix with the cold pit water quickly before it will short circuit due to thermal stratification.

The discharge location for the washwater into Ruth Pit will be selected to optimize the retention time within the pit. The exact location of the discharge will be determined during detailed design and will take into account the nature of the proposed Ruth Pit outlet structure and flow patterns within the pit. During the detailed design process, other measures such as hanging silt curtains, groin channels, etc. may be incorporated if required to prevent short-circuiting. A detailed design of Ruth Pit effluent treatment process will be provided at the permitting stage (Development Plan as required under the *Newfoundland and Labrador Mining Act* and reviewed by Water Resources).

LIM is evaluating the existing outlet structure at Ruth Pit and it is anticipated that upgrades to this structure may be required. The details of the upgrades will be developed with the overall detailed design of the Project, and the final design will be provided as part of the Development Plan which will be reviewed by WRM prior to approval of the Project. LIM also acknowledges that permitting will be required under Section 48 of the *Water Resources Act* and that monitoring will be required

8.1.3 Stormwater Management

Stormwater will be collected and directed to a settling pond in the Silver Yard area. The Silver Yard Stormwater Pond (SWM-1) will serve three functions:

- The primary function of the Pond will be to collect and treat stormwater from the beneficiation plant area.
- The secondary function of the Pond will be to receive the flush of water from the regular maintenance of the pumping/pipeline system. In order to complete regular Plant and/or pipeline maintenance (approximately once a week), the reject fines discharge pipeline to Ruth Pit will be flushed with clean water to push all reject fines wash water in the system to Ruth Pit. Once the pipeline is flushed and contains only clear water, the water will either be left in the pipe (typical for Plant maintenance under warm ambient temperatures) or the water will be released from the pipeline (as required for pump and pipeline maintenance or plant maintenance during freezing ambient conditions). The pipeline cannot be pumped dry; therefore, in order to clear the pipeline of water, it must be released to drain via gravity. The low point on the line is the Silver Yard Stormwater Pond and this clean water will be released into this pond prior to discharge to the environment. Discharge to the SWM-1 will consist of clear water and will not require significant retention time in the pond.
- The third function of the pond will be to receive the emergency discharge from the pipeline during a power or pumping failure. The Beneficiation Plant will be interrupted during this event and therefore the volume of effluent discharge to the pond should only be the volume of effluent in the pipeline. In this case, the effluent discharged into the pond will be the same quality as the effluent being deposited in Ruth Pit except that due to the decrease in pumping pressure and therefore pipeline velocities, some larger fines particles will settle in the pipeline and not be discharged with the effluent.

In a general risk analysis, the probability of pipeline/pumping malfunction is typically low. In the case of the Silver Yard- Ruth Pit pipeline, the risk of malfunction is associated with freezing conditions and with the continuity of pumping operations. There is no backup pipeline proposed for the Project. The pumping system will include a backup pump and backup power source. In the case of failure of either,

the operation of the Beneficiation Plant will be interrupted and the pipeline will be automatically drained to the Silver Yard Stormwater Pond.

The Silver Yard stormwater pond will be designed as a multi-cell settling system to treat each of these effluent flows, to accommodate the varying effluent flows, and to ensure that release of the water/effluent to the environment (James Creek and the unnamed tributary) will meet the discharge requirements under the Certificates of Approval and MMER. This multi-cell design will also ensure maximum retention time and allow pond maintenance operations (removal and disposal of reject fines) to be carried out while the pond is still being used. Pumping the emergency discharge back to Ruth Pit is technically and economically impractical.

A detailed design of Silver Yard Stormwater Pond, which will integrate all effluent treatment requirements hydraulic design and controls to ensure discharge water quality to James Creek in compliance with all regulatory requirements, will be provided at the permitting stage (Development Plan as required under the *Newfoundland and Labrador Mining Act* and reviewed by Water Resources)..

8.1.4 Mine Dewatering

Water collected in in-pit sumps due to precipitation and groundwater inflow and pumped from perimeter dewatering wells at James Pit will be pumped to Settling Pond Area SP1 to be constructed near James Pit prior to release to the environment.

Water collected in in-pit sumps due to precipitation and groundwater inflow and pumped from perimeter dewatering wells at the Redmond 2B and 5 pits will be pumped to the historic Redmond 2 Pit. There is no surface flow connection between Redmond 2 and the unnamed stream nearby. To maintain this hydraulic isolation, the water level in Redmond 2 will be monitored during operations and once the water level reaches a pre-determined level, waste rock disposal from the proposed pits into Redmond 2 will cease and be stockpiled in other locations.

8.1.5 Grey Water/Domestic Sewage Management

The primary concern with domestic sewage is the potential to increase nutrient loading, suspended sediment or the introduction of oil and grease or other contaminants into a watercourse. These introductions can lead to oxygen depletion, eutrophication of waterbodies, adverse sediment effects or water quality contamination.

Sewage effluent will be collected and treated on site using a sterilization system and management of grey water and sewage will comply with the Newfoundland and Labrador Water and Sewage Control Regulations.

Water effluent quality will be monitored in accordance with the Environment Control Water and Sewage regulations and pursuant to the Certification of Approval required from the Pollution Prevention Division.

8.1.6 Air Quality

The main sources of emissions during both the construction and operation phases at the site include the products of combustion (NO_X, CO, SO_2) and fugitive dust (PM) from the operation of equipment. LIM will implement mitigation measures efficiently and effectively to ensure that no significant adverse environmental effects will occur due to Project-related emissions. With the appropriate mitigation

implemented, off-site fugitive dust levels will be reduced to below ambient air quality standards. Mitigation techniques for these main source types are examined in more detail in the following sub-sections.

8.1.6.1 Emissions from Combustion

The main sources of combustion-related emissions during both the construction and operation phases are related to the operation of diesel generators in the first one to two years of operation (including at the workers camp), and from on-site road traffic. Although the generators are required for daily operations at the site, emissions from these sources will be reduced through the use of emission control technologies. Combustion emissions from on-site vehicle traffic will also be mitigated through:

- an anti-idling policy to limit emissions from vehicles that are not in use; and,
- a policy regarding the proper maintenance of equipment and vehicles operating in work areas.

8.1.6.2 Emissions from Fugitive Dust

Fugitive dust emissions during construction can occur during land clearing, ground excavation, and from equipment traffic on site. Potential sources of fugitive dust during operation include ore loading/unloading, ore crushing, stockpile erosion and dust from conveyor systems around the site.

Generally, fugitive dust emissions are:

- proportional to the disturbed land area and the level of activity;
- limited to periods of the day and week when the activities take place; and
- vary substantially from day to day with varying meteorological conditions.

Fugitive dust emissions occurring during construction are expected to be localized in extent, limited in duration, and smaller in magnitude than those occurring during operation.

During construction and operation, the following measures will be implemented at the site to mitigate fugitive dust emissions:

- wet suppression to control open dust sources; wetting or covering of transported borrow or fill; and,
- limiting the maximum speed of vehicles travelling along unpaved roadways.

8.2 Emergency Response/Contingency Plans

LIM has developed and implemented a Health and Safety (H&S) Program and a site-specific Environmental Protection Plan or EPP to meet corporate health, safety and environmental objectives and to ensure compliance with related Regulations for the Province of Newfoundland and Labrador. The site specific EPP will be submitted to, and approved by, the Minister of Environment and Conservation before any construction on the Project begins. A copy of LIM's Health and Safety Policy is presented in Section 2.2 (Environmental Management and Corporate Responsibility Policies).

The EPP will be a "stand alone" document with all relevant maps and diagrams. The target audience for the EPP will be the resident engineer, site foreman/supervisor, Proponent compliance staff and the provincial environmental inspector(s) and, 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 of the EPP will be to present concise, comprehensive and easily accessed environmental protection information for field use by the target audience.

It is worth noting that the LIM H&S program was successfully implemented at the start of the 2008 geological drilling and field exploration program and the 2008 field program was successfully completed without any lost time incident.

8.2.1 Hazard Identification and Risk Assessment

A preliminary written assessment of all existing or potential health, safety or environmental hazards will be performed before work begins on any work site under LIM control. This assessment will further identify necessary management and / or worker action that may be required to eliminate or mitigate such identified hazards.

The objective in all cases is to ensure that all identified hazards have been eliminated or mitigated to the lowest practicable level. Any remaining hazards that cannot be eliminated or mitigated will be subject to defined safe work procedures, combined with extensive worker training, in order to minimize the potential for worker injury or an environmental incident.

As part of the hazard assessment process the local natural environment will be recognized and assessed as it relates to possible wildlife encounters or possible exposure to extreme weather conditions that periodically occur in the Project area.

Examples of hazards and related emergencies that could potentially occur on a mining site in the Schefferville area are as follows:

- fire or explosion;
- equipment collision;
- collapse of mining slope;
- man overboard / water rescue;
- rescue, extrication or recovery of a worker;
- injury incident or medical emergency;
- wildlife encounter;
- extreme meteorological condition or natural disaster;
- an environmental spill;
- toxic or flammable gas leak;
- mining site evacuation; and
- public complaint regarding the environment or a health and safety concern.

8.2.2 Emergency Response Plan

Emergency Response Plans will be developed to deal with all potential incidents that could occur during Project construction, operation and closure activities. Once the Project has received regulatory

approval, and the 2009 phase of Project construction has begun, LIM will monitor the programs and further update and refine its existing Emergency Response Plans to meet future Project requirements as well as implement corrective action, as required. Related plans will include:

- procedures for dealing with identified emergencies;
- available communication devices to summon emergency assistance;
- on-site availability of fire-fighting equipment (such as fire extinguishers, water hydrants and protective gear);
- on-site location of emergency facilities;
- resources and procedures for rescue and evacuation (including means of conveyance, such as an emergency vehicle or helicopter, as applicable);
- an emergency call list containing:
  - The names and contact numbers of emergency personnel
  - The names of all other persons to be informed in case of an emergency (e.g. owner, contractor and regulatory agencies)
  - The names and contact numbers of any external “mutual aid” resources that can provide additional assistance in any case where such assistance is necessary
  - The contact number and the location of any medical facilities capable of treating an injured worker
- an Environmental Response trailer fully equipped to address any environmental incident (including absorbent materials, fabrics and booms, etc);
- first aid services available at each individual work site, compliant with the First Aid Regulation for Newfoundland and Labrador;
- list of available first aid supplies for each work site, compliant with First Aid Regulation for Newfoundland and Labrador; and
- defined accident / incident investigation process for any incident that may occur at an LIM mining site.

8.2.3 Mutual Aid Agreement

Subject to permitting, LIM will proceed to develop mutual aid agreements with local communities and business located within reasonable response distance of the Project area.

It is a mining industry tradition that mutual aid is voluntarily extended in case of dire need and a request for assistance. To date, preliminary discussions have been conducted with the Town of Schefferville Administrator, as well as representatives of the nurses at the Schefferville medical facilities to advise of proposed activities.

At this time the principal parties with whom further discussions will be conducted to provide mutual assistance include, but are not limited to, the following:

- Municipality of Schefferville regarding fire fighting, police, and ambulance service;
- Schefferville Health Clinics for medical aid;
- possible: New Millennium Capital Corporation for potential emergency response on any major mining or environmental incident;

- Wabush Iron (Wabush) for potential emergency response on any major mining incident or environmental incident;
- IOC (Labrador City) for potential emergency response on any major mining incident or environmental incident; and
- Helicopter Services, for medical evacuation.

8.2.4 Contingency Plan

The Contingency Plan, which will be required under the Certificate of Approval for the operation of the mining and beneficiation process for the Project, must be submitted to the NLDEC, Pollution Prevention Division.

The purpose of the Contingency Plan is to outline information and procedures regarding emergency preparedness and response related to the storage and use of fuel, propane, and hazardous spills at the site. The Contingency Plan will also satisfy requirements under the *Canadian Environmental Protection Act* (1999) regarding environmental emergency plans. The plan will define the roles of individuals and departments having particular responsibilities under the plan, and identify an action plan for spill response in any part of the operation.

A copy of the plan will be provided to representatives of the Schefferville Fire Department team. This will ensure cooperation and understanding of responsibilities and emergency response measures to be followed.

8.3 Environmental Monitoring and Follow-Up Programs

LIM will develop details of monitoring and follow-up programs when more information (i.e., conditions of release) becomes available. Objectives, methods, duration, and frequency of the programs will be provided to the Minister of Environment and Conservation as the programs are developed.

8.3.1 Air Quality

If required, an air quality monitoring program will be instituted at the site to determine changes in ambient air quality. This monitoring program would focus on measuring ambient dust level concentrations around the processing area and along the hauling routes between the ore deposits and beneficiation area. Further consultation with the NLDEC is required to discuss and confirm the detailed requirements of a proposed ambient air quality monitoring program.

A monitoring program designed as per the requirements defined under the “National Air Pollution Surveillance Network: Quality Assurance and Quality Control Guidelines” (NAPS) and focusing mainly on particulate emissions, could involve the following:

- measurement of ambient dust concentrations will be made using portable, battery-powered dust monitors. The monitors will be installed at suitable locations near each deposit and the beneficiation area (three stations in total). These samplers will run over a 24-hour period every six days, and the samples will be analyzed at a certified laboratory, similar to that required by the federal NAPS monitoring program; and
- dustfall (mass per unit time per unit area) will be measured using a network of dustfall jars along the roadway connecting the Redmond and James sites to the beneficiation area. Total dustfall will be

determined by laboratory analysis of the jar liners. Dustfall samples will be collected on a monthly basis, for a three month period during the summer months, when production levels would be at their greatest and when meteorological conditions would allow for the highest potential emissions of particulate matter.

8.3.2 Water Quality and Environmental Effects Monitoring

Provincial regulations (Environmental Control, Water and Sewer Regulations) and permits (Certificate of Approval) will require effluent quality monitoring and toxicity testing on a regular basis. Effluent and receiving water quality monitoring and reporting will also be required under the federal MMER. Monitoring details will be determined at the permitting stage in consultation with the Water Resources Management Division. Monitoring will also be coordinated to meet DFO requirements. Preliminary discussions have been held with the Water Resources Management Division and DFO regarding monitoring, and LIM acknowledges that monitoring will be required. The flow rates from Ruth Pit will likely exceed the MMER trigger, and LIM is aware of the monitoring requirements of MMER. Detailed monitoring programs will be developed in consultation with the Water Resources Management Division, and DFO during the permitting stage of the Project. The monitoring programs will involve water quality and quantity measurements.

It is acknowledged that a Site Characterization and Study Design will require Environment Canada's prior approval to completing the biological monitoring components of the MMER for James Creek, as the creek will be the receiving waterbody from Ruth Pit.

LIM is also aware of the regulatory requirements that the Pollution Prevention Division applies to mining operations via the Certificate(s) of Approval. The absence of reference to PPD's jurisdiction and requirements does not imply that PPD does not have jurisdiction and was not a lack of understanding of the requirements. In lieu of the recent change to the Environmental Control Water and Sewage Regulations under the *Water Resources Act*, LIM will meet with the PPD to discuss the PPD's specific permitting requirements as they relate to the Project and water monitoring.

A generic real-time monitoring MOU was provided to LIM by the Water Resources Management Division. This MOU is general in nature and does not contain any specifics with respect to the nature of the monitoring that will be required. These monitoring details are currently being discussed between the Pollution Prevention Department, the Water Resources Management Division, and LIM and further details will continue through the permitting. Monitoring will also be coordinated to meet DFO requirements.

8.3.3 Caribou

Effects of mining activities on caribou is "fragmentary" (Wier et al. 2007) and it is therefore important to understand herd affiliation, distribution of caribou within and around the Project, and to understand the usage of these areas - whether as a travel corridor, overwintering foraging area, or as year-round habitat in the event that sedentary woodland caribou occur.

In May 2009, the Project conducted a strip-transect aerial survey of a 12,900 km^2 area that included the 7,850 km^2 Assessment Area that overlaps both Labrador and northeastern Québec. The objective of the survey was to determine if caribou are present in this area at a time when the GR Herd was not expected to be present (Figure 4.19). The satellite telemetry-collared caribou from this survey and tissue samples retained for genetics analyses will provide information on movements and possible herd

affiliation (i.e., whether of the GR Herd or possibly a woodland herd) of the caribou encountered. Morphological measurements suggested the few animals observed were of the migratory ecotype however their behaviour was consistent with woodland caribou. Regardless, the outcome of this ongoing effort will be used to determine if the woodland caribou mitigation should remain or be replaced by that proposed for the migratory caribou of the GR Herd.

Throughout the life of the Project, LIM proposes to maintain liaison with the Provincial Wildlife Division, community representatives and Elders, and other stakeholders and officials regarding the movements of the GR Herd and/or possible woodland caribou in the Project area. Mitigation strategies will be implemented to ensure no harm or harassment of caribou occurs. Through satellite collar and other monitoring and ongoing data collection, LIM will continue to enhance the understanding of caribou activities in the Project Area and will implement an advisory to mine management staff should any herd enter the Assessment Area. Caribou movements, and LIM observations and actions implemented will be recorded and communicated to the Wildlife Division.

8.3.4 Other Wildlife

Consistent with standard procedures advocated by the provincial Wildlife Division, clearing of vegetation around active nests of Osprey or Bald Eagle that may be breeding in the Project area, will be limited to 800m. Should such a nest site occur within the footprint of the Project, it would not be removed until after the breeding season. An alternative artificial nest structure would be established in the immediate area. The existing Osprey nest observed on the existing transmission line corridor to Menihek less than 150 m from the active roadway (connecting the James and Redmond Properties) will not be approached by Project personnel. Standard mitigation measures regarding construction and operation related activities for active Osprey nests are to avoid such areas by at least 200 m.

8.3.5 Employment and Business

LIM will monitor Project employment and expenditures, including the proportions of work going to Labrador and the Innu of Labrador. This information will be compiled on an annual basis and made available to government upon request.

Provisions respecting the employment of women are specified in the Women's Employment Plan (Appendix D).

8.3.6 Communities

The monitoring of demands on community services and infrastructure is the responsibility of the relevant government departments and agencies, as part of their normal planning processes. LIM will assist by liaising with them, as requested, and through the timely provision of information about Project activity and plans.

8.4 Rehabilitation

Closure rehabilitation, carried out once mining operations have ceased, includes all activities required to fully restore or reclaim the property as close as reasonably possible to its former condition or to an approved alternate condition. This would include demolition and removal of site infrastructure,

revegetation and all other activities required to achieve the requirements and goals detailed in the Rehabilitation and Closure Plan.

The primary objective of the rehabilitation and closure planning and implementation is to return the site to pre-mining land contours and drainage patterns, matching the adjacent lands as closely as practical while maintaining long term physical and chemical stability. LIM's approach to rehabilitation at the proposed Silver Yard, James North, James South, and Redmond deposits will be to employ advanced progressive and closure rehabilitation techniques through integrated development, operational, and closure technology and design.

All aspects of mine development including mine design, infrastructure location and design, and operations planning have and will be conducted with full consideration of available progressive rehabilitation opportunities and closure rehabilitation requirements.

8.4.1 Beneficiation Infrastructure

All buildings and surface infrastructure will be dismantled and removed/disposed. All surface buildings and infrastructure to be demolished or removed will be cleaned of process materials and potentially hazardous material.

8.4.2 Salvage

Material and equipment with salvage value will be removed and sold. This expected salvage value will not be used to reduce the decommissioning cost estimate. Equipment and demolition debris with no marketable value will be disposed of in a manner consistent with relevant legislation and guidelines.

8.4.3 Roads, Pipelines and Power Distribution Lines

Roads and culverts will remain intact for post-decommissioning and emergency situations. Water and reject fines wash water pipelines will be emptied and removed from site. Any pipelines deemed necessary to be left in place will be cleaned, and capped.

8.4.4 Stormwater Management Settling Pond and Diversion Ditches

The sediment contained within the settling pond will be left in place unless removal is required to re-establish drainage. The remaining material will be graded and vegetated to reduce erosion and sedimentation.

Diversion ditches will be engineered to permit the re-establishment of natural drainage. On-going assessment of vegetation growth and the general health of the established vegetation will determine if any rehabilitation methods need to be pursued.

8.4.5 Overburden and Waste Rock Stockpiles

The peat and organics stockpile will be active over the life of the Project for use in progressive site reclamation and in the final closure phase. Overburden and waste rock (non-ARD generating) will be used in reclamation throughout the site for regrading or fill where required. Stabilization of remaining waste rock areas by grading and contouring to a stable slope angle to reduce erosion and

sedimentation will be performed. The storage pad will be removed and reclaimed through regrading that will promote long term stability. Revegetation will be established on portions of the disposal facilities through a program of top dressing and seeding or transplanting as necessary to encourage the growth of indigenous plant species. Excess non-mineralized mine rock at surface stockpiles will remain on the surface at closure.

8.4.6 Open Pits

Open pits will be decommissioned through a sequence of events designed for their long-term stability. Following the termination of open pit operations, waste rock may be deposited into the pit. Flooding of the pit will be allowed to occur naturally from groundwater inflows, snowmelt and rainfall within the pit catchment area. As per engineering specifications, the pit walls will be excavated to a stable slope angle. Pit water will be monitored on a regular basis as flooding proceeds, and, if required, treated prior to discharge.

8.4.7 Fuel and Hazardous Materials Storage Facilities

All fuel and chemical storage tanks and containers will be emptied and removed from the site by licensed and experienced contractors. Connecting pipelines will be drained, cleaned and removed or capped as required. Any areas of major hydrocarbon or chemical contamination will be remediated through excavation and removal of the soil for off-site disposal in accordance to applicable regulations. Contaminated areas will be graded and contoured to reduce erosion and sedimentation from surface runoff. The areas will be stabilized to allow for revegetation.

8.4.8 Borrow Pits

Overburden that was removed during development of the borrow pits will be used in pit rehabilitation and slope regrading to promote site revegetation.

8.4.9 Explosives Storage

When decommissioned, all explosives in the storage facility will be removed, as well as all equipment that will be emptied, cleaned and removed. Other inert construction debris or materials will be disposed underground with the waste rock. Reclamation methods for the explosives storage facility is similar to that of any plant site building where surficial disturbances have occurred.

8.4.10 Revegetation

In general, site drainage patterns will be re-established, as near as practical, to natural, pre-development conditions.

Grading and/or scarification of disturbed areas to promote natural revegetation will take place. Where natural revegetation is not sufficiently rapid to control erosion and sedimentation, placement and grading of overburden for revegetation in areas may be necessary.

8.4.11 Monitoring

A post-closure monitoring program will continue from the operational monitoring program incorporating appropriate changes to the program. The post-closure monitoring program will continue for a minimum of two years after final closure activities are completed or until LIM and the appropriate regulatory bodies are satisfied that all physical and chemical characteristics are stable. When the site is considered physically and chemically stable, the land will be relinquished to the Crown.

8.5 Environmental Protection Plan

Environmental protection procedures and measures will be implemented for all stages of the Project. The environmental protection measures summarized below will provide the basis for environmental planning and design of the various physical aspects and environmental characteristics of the Project. Detailed environmental protection procedures will be described in the EPP which will be developed prior to commencement of construction for the Project. The following measures will be considered:

- erosion protection measures will be applied for all exposed soil during site earthworks related to site development and construction, quarry and open pit excavation, and rehabilitation and closure activities. Additional measures such as ditch blocks, settling ponds and filter fabrics will be applied in problematic conditions, where high TSS, steep gradients or high volumes of run-off are expected;
- vegetation buffers will be maintained around natural water bodies where alterations or crossings are not required. Maintaining vegetated buffer zones will aid in managing suspended solids in watercourses and reduce erosion and sedimentation;
- open pit design (wall angles and benching) will incorporate erosion control measures;
- access road and rail bed design and construction will focus on protection of the aquatic environment by incorporating buffer zones, drainage and erosion control features and very conservative culvert design criteria. Culverts crossings will be designed and installed with consideration for road and stream gradient, ice conditions, bank stability and, where warranted, protection of fish habitat;
- road maintenance activities, such as grading and ice control (sand/gravel application), may cause sediment to be introduced into watercourses. Reasonable care in the application of sand and controlling erosion from grading will reduce this risk substantially;
- wildlife encounters may impose risk to both wildlife and Project personnel. There will be no fishing, hunting, or trapping by personnel at the Project site. Additional measures will be in place to reduce attraction of wildlife such as black bears to the site (e.g., proper storage and disposal of waste). Prior to site clearing, migratory bird nests will be identified and appropriate buffers applied. To help reduce impacts of vegetation clearing during nesting periods, vegetation clearing will be undertaken outside of breeding season. If this is not possible and a nest is found, the nest and neighbouring vegetation will be left undisturbed until nesting is completed and or, construction activities will be minimized in the immediate are until nesting is completed;
- To address potential interaction with nest sites of bird species, an Avifauna Environmental Management Plan (EMP) to address incidental take (the inadvertent disturbance of a nest site) will be completed consistent with the *Migratory Birds Convention Act*. This Avifauna EMP would be prepared and implemented prior to the start of construction;
- Disturbance to wetlands will be avoided or minimized;

- hydrocarbon (fuels) and hazardous materials required during construction and operation will be stored pursuant to all applicable regulations. Fuel tanks will be located within an impervious berm, founded on compacted sand and will include an impermeable membrane that covers the entire area to prevent seepage of petroleum-based products. Hazardous materials will be stored in appropriate locations/facilities with proper containment and ventilation as required for each product;
- grey water and sewage will be managed in accordance with all applicable regulations. Sewage from the Silver Yard facilities will be treated using biological oxidation technology and the resulting grey water will be disinfected and discharged with the reject fines wash water;
- mine, process and stormwater will be controlled, collected, and treated as follows:
  - reject fines wash water will be pumped via pipeline to Ruth Pit where sufficient retention time is available to allow settlement of solids prior to discharge to the environment (there is no chemistry anticipated);
  - mine dewatering water (precipitation, groundwater) will be pumped to the surface and retained in constructed settling ponds prior to release to the environment;
  - blasting, when required, will be conducted in such a manner as to reduce the potential presence of ammonia and nitrates in pit water;
  - stormwater from the Silver Yard area will be collected and directed to a stormwater management pond located adjacent to the facility for treatment prior to release to the environment. This pond will also serve as the emergency discharge point for reject fines wash water; and
  - for all aspects of the development and operation, measures will be taken to divert water (stormwater runoff, etc.) away from developed areas.
- solid waste produced by site personnel and operations will be collected, hauled, and placed in a landfill facility in Labrador West, in accordance with applicable regulations. Bear-resistant containers will be used on site to prevent environmental or health hazards or conflict with wildlife. A Waste Management Plan will be developed and implemented for the Project to address all aspects of solid waste handling and disposal (except for mine and process waste materials – rock and washwater);
- dust from construction activities will be controlled by using water if required;
- environmental concerns that may arise from the use of mobile or remote pumps and generators will be addressed through the use of drip pans, proper storage of fuel, and routine inspection of equipment;
- noise associated with blasting and heavy equipment will be addressed by adherence to all permits, and approvals; and,
- the location and storage of explosive magazines will abide by the appropriate regulations.

These general environmental protection methods, which have been applied to many resource development and construction projects, will be applied to the specific design and construction criteria to develop a fully integrated EPP for this Project prior to development. The table of contents for the EPP is provided as an outline of how the plan will be structured (Table 8.1)

Table 8.1 Environmental Protection Plan Table of Contents

9.0 SUMMARY AND CONCLUSION

The following sections provide a summary of proposed mitigation measures, the anticipated residual environmental effects of the Project, and environmental monitoring commitments in relation to the VECs that were considered as part of this assessment.

9.1 Mitigation

Based on the Project-VEC interactions and issues and concerns identified, and existing knowledge regarding these interactions and issues, mitigation measures to reduce or eliminate the potential adverse effects of the Project were identified. Mitigation included the incorporation of environmental considerations into Project design and planning, the implementation of LIM's EMS, and mitigation measures specific to particular VECs.

Where possible, a proactive approach to mitigating the potential environmental effects of the Project has been taken by incorporating environmental considerations directly into Project design and planning. Specific planning initiatives include:

- EPPs;
- Emergency Response and Contingency Plans;
- Occupational Health and Safety Plans;
- Reclamation Plan;
- Caribou mitigation strategy and monitoring development and implementation;
- Other terrestrial and aquatic mitigation strategies and monitoring development and implementation, including avifauna and fish;
- Education and Orientation Plan;
- Mutual Aid Agreement; and
- Monitoring and Follow-up Plans.

A mine decommissioning plan will be developed for the Project site upon mine closure. Progressive reclamation in work areas will occur throughout the life of the Project. The site will be rehabilitated to a safe and environmentally stable condition. LIM is also committed to complying with all relevant environmental legislation and regulations, and the conditions of required permits and approvals. Where required, other measures have been identified in relation to specific VECs. Mitigative measures which are applicable to each of the VECs under consideration are summarized in Table 9.1.

Table 9.1 Mitigative Measures Applicable to Each VEC

VEC	Mitigation/Effects Management Measures
Fish and Fish Habitat	• Erosion and sediment/erosion control (e.g., ditch dams, settling ponds, filter fabric) • Collection and treatment of contaminated water and site drainage • Clean water drainage will be diverted away from active work areas to reduce water treatment requirements • Design and implementation of fuel and other hazardous materials spill/contingency plans and emergency response in the event of an accident • Fishing by Project personnel while at site will be strictly prohibited; • Construction activities around watercourses will not occur during sensitive periods for fish • Maintenance of buffers along watercourses • Use of covered trucks and conveyors
Caribou	• Monitoring movements by the George River Herd, advisory to personnel when herd within Assessment Area; • Reporting observations to Provincial Wildlife Division; • Communicating with the Provincial Wildlife Division about planned blasting activities if caribou are observed within 3 km of the Project site;
Communities	• Use a commute system and camp accommodations for most Project workers • Minimize time commuting workers spend en route in communities • Rigorous occupational health and safety provisions and implementation
Employment and Business	• LIM and its contractors will include a copy of the LIM Benefits Policy in all Project calls for expressions of interest, requests for proposals, and contracts • LIM will liaise with provincial, and especially Labrador, educational institutions and human resources agencies so that they are informed about employment requirements and plans • LIM will liaise with provincial, and especially Labrador, business groups and economic development agencies so that they are informed about goods and services requirements and plans • LIM will monitor the Project labour force to establish the percentage of positions held by residents of the Province • LIM will monitor the award of Project contracts to establish the percentage of the work, by value, awarded to companies based in the Province • LIM will, on an annual basis, compile the above monitoring data, assess them relative to Project benefits targets and, if necessary, review and revise its benefits approach, initiatives and targets • Make the above annual compilation of benefits data available to government departments and agencies, upon request • Implement the provisions of LIM's Project Women's Employment Plan

Mitigative measures will be put in place to minimize emissions and resultant fugitive dust near the property limits. These measures will include wet suppression of roads and storage piles to minimize fugitive dust. With such mitigation measures in place, fugitive dust emissions (and resultant off-property PM concentrations) would be reduced to below ambient air quality standards. LIM will implement mitigative measures efficiently and effectively to ensure that no significant adverse environmental effects occur due to Project-related emissions during operation. Follow-up ambient monitoring (as discussed in Section 8.3 of the EIS) will confirm Project-related emissions during construction and operation for additional mitigation development and implementation, if appropriate.

9.2 Residual Environmental Effects

Residual environmental effects predictions were made taking into consideration the identified mitigation measures. Predicted adverse environmental effects were evaluated as significant or not significant based on a set of significance definitions developed for each VEC. The residual effects of each Project phase on each of the VECs under consideration are summarized in Table 9.2 and discussed below.

Table 9.2 Summary of Residual Environmental Effects

VEC	Construction	Operation	Decommissioning	Accidental Events
Fish and Fish Habitat	Not Significant	Not Significant	Not Significant	Not Significant
Caribou	Not Significant	Not Significant	Not Significant	Not Significant
Employment and Business	Not Significant	Not Significant	Not Significant	Not Significant
Communities	Not Significant	Not Significant	Not Significant	Not Significant

The residual adverse environmental effects of the Project's construction, operation and decommissioning phases and those resulting from accidental events on Fish and Fish Habitat and Caribou are evaluated as not significant. The residual environmental effects of the Project's construction, operation and decommissioning phases on Employment and Business, and Communities will be positive. The residual adverse environmental effects on Employment and Business, and on Communities resulting from Project construction, operation, decommissioning, or accidental events is not significant. The Project is therefore not likely to result in significant adverse environmental effects on the environment.

The environmental assessment also considers the likely cumulative environmental effects of the Project in combination with other projects and activities in the area. The Project will not occur in a pristine environment; the natural and human environments in the area have been affected by past mining activities. These existing effects have been considered as part of the baseline environment, and the assessment and evaluation of the cumulative environmental effects of the Project in combination with other projects and activities considers the nature and degree of change from these existing environmental conditions. The cumulative environmental effects of the Project in combination with other projects and activities in the area will be not significant.

9.3 Follow-up and Monitoring

Environmental monitoring (or follow-up) programs ensure that any unforeseen environmental problems can be identified and addressed in an effective and timely manner. Anticipated monitoring includes the following:

- water quality and quantity will be monitored in the receiving environment;
- ambient air quality (particulate matter) will be monitored during Operation to confirm if emissions are causing off-property particulate matter levels to be above regulatory standards.
- toxicity testing may be required on discharges;
- environmental effects monitoring (water, fish, and benthic invertebrates) may be required to determine effects of the discharges;
- implementation of a woodland caribou mitigation strategy pending confirmation of ecotype (anticipated to be at end of Year 1 once outstanding May 2009 survey data is available).

Observations of caribou, as discussed in mitigation strategies, will continue to be reported to the Provincial Wildlife Division during the Project;

- LIM will develop and implement an Avifauna EMP to address the potential disturbance to nesting avifauna;
- progressive site reclamation measures, including the use of native plant species to enhance site revegetation, will be monitored throughout the Project;
- LIM will monitor the Project labour force to establish the percentage of positions held by residents of the Province;
- LIM will monitor the award of Project contracts to establish the percentage of the work, by value, awarded to companies based in the Province;
- LIM will, on an annual basis, compile the above monitoring data, assess them relative to Project benefits targets and, if necessary, review and revise its benefits approach, initiatives and targets;
- make the above annual compilation of benefits data available to government departments and agencies, upon request; and
- LIM will implement the provisions of the Project Women's Employment Plan.

9.4 Conclusion

Based on the environmental effects assessment taking into consideration the mitigation and effects management measures, overall Project construction, operation and decommissioning are not likely to result in significant adverse environmental effects on any of the VECs identified for the environmental assessment. The potential residual effects of accidental events will be not significant, and unlikely to occur. No significant adverse cumulative effects have been identified for the Project.

The Project will, however, result in considerable socio-economic benefits. It will create considerable direct and indirect employment and business opportunities, and contribute substantially to the economy of the local area, as well as that of the Province of Newfoundland and Labrador as a whole by providing local employment and incomes as well as local business during construction and operation.

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APPENDIX A

EIS Guidelines and Table of Concordance

Government of Newfoundland and Labrador
Department of Environment and Conservation

Honourable Charlene Johnson
Minister

December 9, 2008

GUIDELINES

for

Environmental Impact Statement

Schefferville Area Iron Ore Mine

INTRODUCTION

Labrador Iron Mines Limited is required through the provincial environmental assessment process to prepare an Environmental Impact Statement (EIS) for the Schefferville 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 the residual and unmitigable effects. The EIS will contain a review of all available pertinent 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.

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 town 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; 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.

2. Introduction

2.1 Name of Undertaking

The undertaking has been assigned the Name "Schefferville 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 showing the entire project with principle structures and appurtenant works;

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 Alternative Means of Carrying Out the Project

A detailed discussion of technically and economically feasible alternative means of carrying out the project, and the environmental effects of such alternative means must be provided with supporting argument.

A detailed summary is required of the possible alternatives to the project and/or individual project components which were or could have been considered including but not limited to tailings disposal options If only one alternative is viable or possible, a statement will be made to this effect with supporting argument.

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(s) or other water bodies to be dewatered
- residue ponds and/or clarification ponds
- stream crossings, including culverts, bridges and fording sites
- temporary stream diversions
- exact locations of mineral licenses and ore bodies to be mined in relation to Newfoundland and Labrador and Quebec provincial geographic boundaries
- borrow pits, major excavations, waste rock disposal locations and their 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
- plant and storage facility for manufacturing and storing explosives
- 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
- construction schedule, including proposed time frames for right-of-way clearing, slash disposal, construction adjacent to watercourses, utility placement, processing and storage facilities
- worker housing, providing a detailed overview of the housing for workers to be used during the construction and operation phases, including but not limited to location(s), capacity and facilities
- solid waste disposal and disposal of construction waste, as well as identified opportunities for waste recycling

- worker transportation, including details on the methods of transportation used to get workers to and from camps/worksites
- 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, effluent discharges, storm drainage works or infilling and any stream activities
- design and information regarding the upgrading of any existing watercourse crossing associated with new or existing roads or railway
- location of blasting activities in relation to watercourses/waterbodies
- stream crossing structures: location of watercourse crossings for access and service roads, transmission lines, railroads, as well as any 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. To avoid impacts on fish and fish habitat it is recommended that all watercourse crossings be designed and installed such that abutments are above the high water mark.
- proposed locations for any de-watering wells, pipelines, and discharge infrastructures
- electrical systems: location of substations, transmission
- estimate all significant emissions during construction, including but not limited to sources from generators, heaters, vents, storage tanks, stockpiles, vehicles, road surfaces, effluent treatment systems, and mobile sources.
- excavations
- blasting operations
- vehicle types, truck routes, hours of operation of vehicles
- transport, storage and use of hazardous materials
- 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 and grubbing , including locations of any currently known or planned disposal sites
- plans for harvested wood fibre 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 strategy 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 on, 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, contracting and procurement, and education and training opportunities which will be available to Newfoundland and Labrador residents, contractors, 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 journeypersons, apprentices, engineering and technology students during construction and also those initiatives to increase opportunities for under-represented 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

All aspects of the operation and maintenance of the proposed development will be presented in detail, including but not limited to information on the 75 operation and maintenance positions by National Occupational Classification (NOC-2006), gender and period of employment. Operation includes, but is not limited to, product excavation, product processing, product delivery, value-added secondary processing, product export and waste residue disposal. The analysis is to include all positions associated with the project, listing the province in which they are located.

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 on, but not limited to the 75 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, contracting and procurement, and education and training opportunities which will be available to Newfoundland and Labrador residents, contractors, 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.

Direct and indirect impacts 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's of way will be provided. An analysis of the direct and indirect impacts the project may 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 New Millennium Capital Corporation and the capacity of the QNS&L, Tshiuetin Rail Transportation and Wabush Mines Arnaud railways, will be required.

Estimate all significant emissions during operation, including but not limited to, sources from ore crushing screening and washing facilities, heaters, vents, storage tanks, stockpiles, ponds, basins, vehicles, road surfaces, cooling towers, effluent treatment systems, and mobile sources. Emissions from on-site thermal generation of supplied power must be incorporated if such a power source is being considered

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 emission source.

All sources of effluent must be identified and characterized, including handling methods, flow rates and treatment efficiencies for each component of the treatment system. Effluent includes, but is not limited to, process tailings and water, storm water, sewage, pit de-watering 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.

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 domestic and non-domestic purposes, including water used in the ore beneficiation process under consideration. 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 locations of the intake structure and proposed dams. 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 required to meet its required water quality.

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

Initiatives through such measures as training initiatives and skills upgrading for the hiring of journeypersons, 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.

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) and 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.

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 Labrador Iron Mines iron ore and agreement of associated parties for access to port facilities in the Sept Isles region will be provided. This analysis is to consider the cumulative increased railway traffic from the proposed Bloom Lake Railway and the Elross Lake Mine.

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. The maintenance and management of residue ponds left after closure will be described. 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 (VEC's) (as defined by Beanlands and Duinker, 1983). In addition, the EIS will describe environmental interrelationships and sensitivity to disturbance. The identification of known data gaps is imperative.

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. Particular attention is to be paid to ambient dust levels in areas where construction 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 any fisheries, commercial, recreational or aboriginal, 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 to be used for water extraction and residue disposal and the stream on James Property which has the potential to be dewatered due to mining activities
- identify the type, location, and magnitude/extent of existing, past and potential commercial, recreational and aboriginal fisheries within the proposed project area. Address the extent to which these fishing activities will be disrupted during both the construction and operation phases of the project

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 will be included in this analysis.
- Fish and fish habitat
- Caribou species and habitat, including the applicability of the Endangered Species Act. In consideration of the predicted effects of the mine and associated infrastructure on woodland and/or migratory caribou, the potential impact of rail

traffic and blasting operations will be included. The potential effects on woodland caribou in Labrador as well as in Quebec will be described.

4.2 Data Gaps

Information gaps from a lack of previous research or practice will be described.

4.3 Future Environment

The predicted future condition of the environment described under 4.1 within the expected life span of the undertaking, if the undertaking were not approved, will be described. This information is required when attempting to distinguish project-related environmental effects from environmental change due to natural processes.

5. 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 mine. In particular the EIS must identify the vulnerability of the mine to climatic elements (including wind, weather and global climate change) and describe the provisions for minimizing any identified risk.

The EIS 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.

Identify the potential impacts of ammonia discharges from blasting operations and prepare an ammonia control strategy.

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 processing and transport 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.

A discussion of 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.

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.

5.1 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 industrial activity in the area) will be discussed in the EIS. Other projects or activities that should be considered include the New Millennium proposal for the Elross Lake area and increased railway traffic as a result of the proposed Bloom Lake Railway.

Addressing cumulative environmental effects will involve considering:

- 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).

6. Environmental Protection

6.1 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 best management practices. 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 best available and economically achievable technologies (BATEAs) and best management practices (BMPs) to minimize adverse environmental effects.

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

- air quality including dust emissions from crushing operations, emissions from any on-site generation of power, aggregate and overburden stockpiles, unpaved roadways and cleared areas. 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;
- blasting operations
- 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: describe measures to be taken to minimize effects on freshwater fish and fish habitat, including, if necessary, compensation for losses that cannot be mitigated.

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 pollution prevention opportunities.

6.2 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.

6.3 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 ingredients 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 must be provided.

Details of a proposed caribou monitoring program must be provided.

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

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, wetlands, air quality and water quality.

6.4 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.

It is recommended that the use of native vegetation (seed) that is natural to the area be used in all revegetation efforts.

7. Residual Effects and Selection Criteria for Preferred Option

7.1 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. Those effects that cannot be mitigated or avoided will be clearly distinguished from those effects that will not be mitigated or avoided.

7.2 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.

8. 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. Consideration should also be given to the holding of public information sessions in Schefferville, P.Q. 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.

8.1 Consultation with Aboriginal Groups and Communities

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 the EIS provides the necessary information to address issues of potential concern, the Proponent shall consult with Aboriginal groups for the purpose of:

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

If the Proponent is not able or cannot address any particular issue(s), the EIS will include supporting information.

The results of these consultations are to be presented in a separate chapter of the EIS with individual sections for each of the affected Aboriginal groups. The Proponent must refer readers to the relevant sections of the EIS as appropriate.

9. Environmental Protection Plan

A site specific Environmental Protection Plan (EPP) for the proposed undertaking must be submitted to, and approved by, the Minister of Environment and Conservation 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.

10. 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.

11. Personnel

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

12. Copies of Reports

Copies of reports produced for any studies undertaken specifically in connection with this Environmental Impact Statement 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.

Table of Concordance

EIS and Guidelines

Guideline Requirement		EIS Section
Section 1: Executive Summary		
1	Executive Summary	Executive Summary
2	Table of Concordance	Appendix A
Section 2: Introduction		
1	Name of Undertaking	Section 1.1
2	Identification of Proponent	Section 1.2
3	Purpose of the Environmental Impact Statement	Section 1.4
Section 3: The Proposed Undertaking		
1	The Prospective Site and Study Area	Section 2.1.1
2	Rationale/Need/Purpose of the Project	Section 2.1.3
3	Alternative Means of Carrying out the Project	Section 2.3
4	Relationship to Legislation, Permitting, Regulatory Agencies and Policies	Section 2.4
5	General Project Description: 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.	Section 3.0
	(a) Access road(s), and intersections, including those which may require upgrading, as well as service roads.	Section 3.1.4
	(b) Lighting	Section 3.1.4.8
	(c) Stream(s) or other water bodies to be dewatered	Section 3.1.3
	(d) Residue ponds and/or clarification ponds	Section 3.1.4
	(e) Stream crossings, including culverts, bridges and fording sites	Section 7.1.3.3
	(f) Temporary stream diversions	N/A
	(g) Exact locations of mineral licenses and ore bodies to be mined in relation to Newfoundland and Labrador and Quebec provincial geographic boundaries	Section 3.1.1
	(h) Borrow pits, major excavations, waste rock disposal locations and their rehabilitation	Sections 3.1.2 and 3.1.7.5
	(i) Temporary sewage and waste disposal facilities	Section 3.1.7.1
	(j) Methods of handling waste and refuse at work and camp locations	Section 3.1.7.2

	Guideline Requirement	EIS Section
	(k) 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)	Sections 3.1.3 and 3.1.4
	(l) Railway infrastructure, including railcar loading station, ties, rails and ballast on rail bed	Section 3.1.4.9
	(m) Ownership of new railway infrastructure, regulatory governing body and designation of common carrier status	Section 3.1.4.9 and 3.1.4.11
	(n) Plant and storage facility for manufacturing and storing explosives	Section 3.1.4.4
	(o) Support buildings, including but not limited to, administrative and engineering offices, warehouses, maintenance buildings and laboratory.	Section 3.1.4
	(p) Effluent treatment plant components, as well as effluent discharge locations and configuration and including anticipated effluent plume(s)	Section 3.3.5
	(q) Planned feasibility studies associated with the project, proposed mineral resources included within the feasibility studies and completion dates	Section 3.1.1
	(r) Clearance/condemnation work in areas underlying proposed waste piles, including in pit or on land disposal of fines and other infrastructure	Section 3.1.6
6	Construction	
6.1	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	Section 3.2
	(a) General construction practices incorporating erosion and sedimentation control	Section 3.2
	(b) Construction schedule, including proposed time frames for right-of-way clearing, slash disposal, construction adjacent to watercourses, utility placement, processing and storage facilities	Section 3.2.1
	(c) Worker housing, providing a detailed overview of the housing for workers to be used during the construction and operation phases, including but not limited to location(s), capacity and facilities	Section 3.2.5
	(d) Solid waste disposal and disposal of construction waste, as well as identified opportunities for waste recycling	Section 3.1.7
	(e) Worker transportation, including details on the methods of transportation used to get workers to and from camps/worksites	Section 3.2.5
	(f) Site preparation (i.e., grubbing/clearing of right-of-way, cut and/or fill operations, etc.)	Section 3.2.2
	(g) 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, effluent discharges, storm drainage works or infilling and any stream activities	Section 3.3.5
	(h) Design and information regarding the upgrading of any existing watercourse crossing associated with new or existing roads or railway	Section 3.1.4.9

Guideline Requirement		EIS Section
	(i) Location of blasting activities in relation to watercourses/waterbodies	Section 7.1
	(j) Stream crossing structures: location of watercourse crossings for access and service roads, transmission lines, railroads, as well as any 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. To avoid impacts on fish and fish habitat it is recommended that all watercourse crossings be designed and installed such that abutments are above the high water mark.	Section 7.1.3.3
	(k) Proposed locations for any de-watering wells, pipelines, and discharge infrastructures	Section 3.3.5
	(l) Electrical systems: location of substations, transmission	Sections 3.1.3 and 3.1.4
	(m) Estimate all significant emissions during construction, including but not limited to sources from generators, heaters, vents, storage tanks, stockpiles, ponds, basins, vehicles, road surfaces, effluent treatment systems, and mobile sources.	Section 3.2.6
	(n) Excavations	Section 3.1.2 and 3.3.1.1
	(o) Blasting operations	Section 3.3.1.3
	(p) Vehicle types, truck routes, hours of operation of vehicles	Sections 3.2.3 and 3.3.1.2
	(q) Transport, storage and use of hazardous materials	Section 3.1.7.3
	(r) Establishment, operation and removal of construction camp and yard areas including their water, sewage and food handling provisions	Section 3.2.3 and 3.2.5
	(s) Sources and estimated volumes of acceptable types of aggregate, ballast and pitrun material with identification of any currently known sources likely to be used	Section 3.2.2.4 and 3.2.3
	(t) Disposal areas for excess/waste rock and overburden, including locations of any currently known or planned disposal sites	Section 3.1.2.5 and 3.1.5.5
	(u) Disposal areas for organic soil, slash and grubbing, including locations of any currently known or planned disposal sites	Section 3.2.2.2
	(v) Plans for harvested wood fibre associated with the project	Section 3.2.2.1
	(w) Removal of temporary operations	Section 3.2.7
	(x) Site rehabilitation and monitoring	Sections 3.2.7 and 3.4
6.2	The proponent shall present a strategy to ensure Full and Fair Opportunity and First Consideration for employment, contracting and procurement, education and training.	Sections 2.2 and 3.2.10
6.3	Included will be a Women's Employment Plan as a tool to aid the gender equity objective of the corporate hiring strategy.	Sections 7.4.2, 2.2.3, 9.3 and Appendix D
6.4	Employment and benefits	Sections 3.2.10 and 7.3
	(a) Including local allocation	Section 7.3
	(b) Identify any measures to be implemented that may require contractors and sub-contractors to include employment equity considerations.	Section 7.3
	(c) Initiatives for the hiring of journeypersons, apprentices, engineering and technology students during construction	Section 7.3
	(d) Initiatives to increase opportunities for under-represented groups will be described	Section 7.3

Guideline Requirement		EIS Section
6.5	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. Include all positions associated with the project, listing the province in which they are located.	Section 3.28, 3.2.10 and 4.3.3
7	Operation and Maintenance	
7.1	All aspects of the operation and maintenance of the proposed development will be presented in detail, including but not limited to information on the 75 operation and maintenance positions by National Occupational Classification (NOC-2006), gender and period of employment. Operation includes, but is not limited to, product excavation, product processing, product delivery, value-added secondary processing, product export and waste residue disposal. The analysis is to include all positions associated with the project, listing the province in which they are located.	Section 3.3.7
7.2	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.	Sections 2.2 and 3.2.10
7.3	In order to properly assess the socio-economic impacts in the province specific information on, but not limited to the 75 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, contracting and procurement, and education and training opportunities which will be available to Newfoundland and Labrador residents, contractors, 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	Section 7.3
7.4	Direct and indirect impacts 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's of way will be provided. An analysis of the direct and indirect impacts the project may 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 New Millennium Capital Corporation and the capacity of the QNS&L, Tshiuetin Rail Transportation and Wabush Mines Arnaud railways, will be required.	Sections 1.1 and 2.1.3
7.5	Estimate all significant emissions during operation, including but not limited to, sources from ore crushing screening and washing facilities, heaters, vents, storage tanks, stockpiles, ponds, basins, vehicles, road surfaces, cooling towers, effluent treatment systems, and mobile sources. Emissions from on-site thermal generation of supplied power must be incorporated if such a power source is being considered 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 emission source.	Section 3.3.2

Guideline Requirement		EIS Section
7.6	All sources of effluent must be identified and characterized, including handling methods, flow rates and treatment efficiencies for each component of the treatment system. Effluent includes, but is not limited to, process tailings and water, storm water, sewage, pit de-watering 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.	Sections 3.1.3.5, 3.2.4, 3.2.6, 3.3.3, and 3.3.5
7.7	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.	Section 3.3.4
7.8	Include in operational details water use for domestic and non-domestic purposes, including water used in the ore beneficiation process under consideration. 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 locations of the intake structure and proposed dams. 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 required to meet its required water quality.	Section 3.3.5
7.9	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 information on any food handling provisions during both construction and operation as well as disposal provisions for associated wastes.	Section 3.3.5.6
7.10	Initiatives through such measures as training initiatives and skills upgrading for the hiring of journeypersons, 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.	Sections 3.2.10 and 3.3.7
7.11	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.	Section 8.2
7.12	Maintenance includes, but is not limited to, routine ongoing maintenance of the mine and site infrastructure (including redeveloped railway) and 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.	Section 3.1

Guideline Requirement		EIS Section
7.13	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 Labrador Iron Mines iron ore and agreement of associated parties for access to port facilities in the Sept Isles region will be provided. This analysis is to consider the cumulative increased railway traffic from the proposed Bloom Lake Railway and the Elross Lake Mine.	Section 3.1.4.9
8	Abandonment	
8.1	The predicted lifespan of temporary facilities and the mine, processing facilities, and railway will be indicated. Details regarding decommissioning and abandonment will be presented. The maintenance and management of residue ponds left after closure will be described. 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.	Section 3.4
9	Worker's Accommodation Camp	
9.1	A written and graphic description of the proposed work camp(s) and any related appurtenances	Section 3.1.4.6 Figure 3.9
9.1	A detailed overview of the work camp(s) to be used during the construction and operation phases, including location, capacity, facilities, solid waste and sewage disposal of construction waste, as well as identified opportunities for waste recycling	Section 3.1.4.6
9.2	Methods of transportation used to get workers to and from camps;	Section 3.1.4.6 and 3.1.4.7
9.3	Water and food handling provisions	Section 3.1.4.6
Section 4: Environment		
1	Existing Environment	
1.1	The EIS will identify the study area and will describe the existing biophysical and socioeconomic environment of the study area, and the resources within it, emphasizing Valued Ecosystem Components (VEC's) (as defined by Beanlands and Duinker, 1983). In addition, the EIS will describe environmental interrelationships and sensitivity to disturbance. The identification of known data gaps is imperative.	Section 4.0
1.2	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:	Section 4.2
	(a) Meteorological conditions, including weather patterns as they relate to processing operation and routine and periodic maintenance	Section 4.1.1
	(b) Atmospheric conditions, including wind speeds and directions, precipitation amounts. Particular attention is to be paid to ambient dust levels in areas where construction activities may contribute to increased dust levels	Section 4.1.1
	(c) Ambient air quality baseline assessment for common air contaminants prior to construction.	Section 4.1.2.1
	(d) Ambient water quality baseline assessment for common water quality parameters prior to construction.	Section 4.1.5

Guideline Requirement		EIS Section
	(e) 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.	Section 4.1.4
	(f) 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.	Section 4.2.1.4
	(g) 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.	Section 4.2.1
	(h) 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.	Sections 4.2.2 and 4.2.3
	(i) Fish and fish habitat, which includes a description of fish species and any fisheries, commercial, recreational or aboriginal, 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 to be used for water extraction and residue disposal and the stream on James Property which has the potential to be dewatered due to mining activities	Section 4.2.4
	(j) Identify the type, location, and magnitude/extent of existing, past and potential commercial, recreational and aboriginal fisheries within the proposed project area. Address the extent to which these fishing activities will be disrupted during both the construction and operation phases of the project	Section 4.2.4.4
1.3	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:	Section 4.0
	(a) 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 will be included in this analysis.	Section 4.3
	(b) Fish and fish habitat	Section 4.2.4

Guideline Requirement		EIS Section
	(c) Caribou species and habitat, including the applicability of the Endangered Species Act. In consideration of the predicted effects of the mine and associated infrastructure on woodland and/or migratory caribou, the potential impact of rail traffic and blasting operations will be included. The potential effects on woodland caribou in Newfoundland and Labrador as well as in Quebec will be described.	Section 4.2.2.1
2	Data Gaps	Section 4.4
3	Future Environment	Section 4.5
Section 5: Environmental Effects		
1	Comprehensive analysis of the predicted environmental effects of each project alternative for the VEC's.	Section 2.3
2	The effects of the environment on the mine. In particular the EIS must identify the vulnerability of the mine to climatic elements and describe the provisions for minimizing any identified risk.	Section 7.7.3
3	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.	Section 4.1.4
4	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.	Sections 4.1.3.6, 4.1.4, and 7.1
5	Identify the potential impacts of ammonia discharges from blasting operations and prepare an ammonia control strategy.	Sections 7.1, 8.1.1
6	Boundaries of the assessment which includes the following considerations:	See below
6.1	VEC within the study boundaries and the methodology used to identify the VEC	Section 5.4
6.2	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	Sections 4.2.2, 4.2.4.2, 7.1.1, 7.2.1, 7.4, and 7.5
6.3	The temporal boundaries for construction and operation	Section 3.2.1
6.4	The strategy for investigating the interactions between the project and each VEC and how that strategy will be used to coordinate individual studies undertaken	Appendix S Environmental Assessment Methods Sections 7.1.3, 7.1.5.1, 7.2.2, 7.2.4, 7.4.1, 7.4.2, 7.4.1, and 6.5.2
6.5	The strategy for assessing the project's contribution to cumulative effects on each VEC	
6.6	The strategy for predicting and evaluating environmental effects, determining necessary mitigation, remediation and/or compensation, and for evaluating residual effects	
6.7	Definition of impact significance criteria against which to evaluate the potential impact of interactions	
6.8	Description of potential interactions	
6.9	Discussion of issues and concerns which relate to specific interactions	Appendix R
6.10	Discussion of the existing knowledge on information related to the interactions	Sections 7.1.4, 7.2.6.4, 7.4, and 7.5
6.11	Analysis of potential effects (significance, positive or negative, etc.)	Sections 7.1.5.2, 7.1.5, 7.4.2 and 7.5.2

	Guideline Requirement	EIS Section
7	Definition of significance for each category examined	Sections 7.1.5.1, 7.2.4, 7.4, and 7.5
8	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.	Sections 7.1, 7.2, 7.4, and 7.5
9	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	Section 7.6
9.1	Discussion of accidents and malfunctions that could occur related to processing and transport 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	Section 7.6
9.2	Reference to the standards, codes and regulations applicable to governance of the project	Section 1.3.2, 2.4, and 3.1.6
10	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.	Section 4.1.2.5
11	A discussion of 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.	Section 7.1 and 7.3
12	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.	Sections 7.4 and 7.5
13	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.	Section 7.1
14	Cumulative Environmental Effects	See below
14.1	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 industrial activity in the area) will be discussed in the EIS.	Sections 7.1.6, 7.2.7, 7.4.3 and 7.5
14.2	Temporal and spatial boundaries;	
14.3	interactions among the project's environmental effects;	

Guideline Requirement		EIS Section
14.4	interactions between the project's environmental effects and those of existing projects and activities;	
14.5	interactions between the project's environmental effects and those of planned projects and activities; and,	
14.6	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).	Section 8.1
Section 6: Environmental Protection		
1	Mitigation	See below
1.1	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 best management practices. Mitigative measures specific to the following must be addressed in particular:	Section 8.1
1.2	Air quality including dust emissions from crushing operations, emissions from any on-site generation of power, aggregate and overburden stockpiles, unpaved roadways and cleared areas. Include dust control;	Section 8.1.6
1.3	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;	Sections 8.1.2, 8.1.3, 8.1.4, and 8.1.5
1.4	Blasting operations	Section 8.1.1
1.5	Process effluent and sewage;	Section 8.1.3 and 8.1.5
1.6	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.	Sections 4.2.1, 8.4.10 and 8.5
	(a) 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);	Sections 8.3.3 and 7.2.5
	(b) Fish and fish habitat: describe measures to be taken to minimize effects on freshwater fish and fish habitat, including, if necessary, compensation for losses that cannot be mitigated.	Section 7.1.5
2	Emergency Response/Contingency Plan	Section 8.2
3	Environmental Monitoring and Follow-up Programs	Section 8.3
3.1	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 ingredients of monitoring programs include:	Section 8.3

Guideline Requirement		EIS Section
	(a) Elements of the environment (i.e., air emissions, freshwater quantity and quality, habitat, etc.) that are to be monitored;	
	(b) Where monitoring will occur;	
	(c) Frequency and duration of monitoring;	
	(d) Identification of resource agencies that will review program design and results;	
	(e) Detailed statement of objectives;	
	(f) Submission of results; and	
	(g) Protocols for the interpretation of results and subsequent actions to be taken based on findings.	
3.2	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.	Section 8.3.2
3.3	Details of a proposed environmental effects monitoring program for fish habitat must be provided.	Section 8.3.2
3.4	Details of a proposed caribou monitoring program must be provided.	Section 8.3.3
3.5	A monitoring plan for employment, contracting and procurement, education and training will be required. This plan should include succession planning and opportunities for advancement and training upgrades.	Sections 8.3.5 and 8.3.6
3.6	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, wetlands, air quality and water quality.	Sections 8.3
4	Rehabilitation	Section 8.4
Section 7: Residual Effects and Selection Criteria for Preferred Option		
1	Residual Effects	Sections 2.3, 7.1, 7.2, 7.4 and 7.5
2	Effects Evaluation and Selection of Preferred Alternative	
Section 8: Public Participation		
1	Consultation with Aboriginal Groups and Communities	Sections 5.0 and 6.0
1.1	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.	Section 5.1.6
1.2	To assist in ensuring the EIS provides the necessary information to address issues of potential concern, the Proponent shall consult with Aboriginal groups for the purpose of:	Section 5.2 and 6.0
	(a) Familiarizing Aboriginal groups with the Project and its potential environmental effects;	Section 5.2 and 6.0
	(b) Identifying any issues of concern regarding potential environmental effects of the Project; and	Section 5.1.6

Guideline Requirement		EIS Section
	(c) Identifying what actions the Proponent is proposing to take to address each issue identified, as appropriate.	Section 8.0
Section 9: Environmental Protection Plan		
1	An outline of the EPP will be included	Section 8.5
Section 10: Reference Cited		
1	Provide a bibliography of all citations in the EIS	Section 10
2	Provide a bibliography of all project-related documents already generated by or for the undertaking.	Appendix C
Section 11: Personnel		
1	Brief descriptions of the expertise and qualifications of personnel involved in the completion of the EIS will be provided.	Appendix B
Section 12: Copies of Reports		
1	Copies of report produced for any studies undertaken specifically in connection with this Environmental Impact Statement Report will be submitted.	Appendices

APPENDIX B

EIS Study Team

EIS Study Team

Key Personnel

Labrador Iron Mines Limited

John F. Kearney, Chairman & CEO

Mr. Kearney has 30 years experience in the mining industry. He is currently the Chairman of Canadian Zinc Corporation, Conquest Resources Limited, Scandinavian Minerals Limited, Sulliden Exploration Inc. and Anglesey Mining plc. In addition, Mr. Kearney is currently a director of Avnel Gold Mining Limited and Minco plc. Previously, he was Chairman, President and Chief Executive Officer of Northgate Exploration Limited; Campbell Resources Inc. and Sonora Gold Corp. He also currently serves as a director of the Mining Association of Canada. Mr. Kearney holds degrees in law and economics from University College Dublin and an M.B.A. degree from Trinity College Dublin. He qualified as a solicitor in Ireland and as a chartered secretary with the Institute of Chartered Secretaries and Administrators in London. Mr. Kearney is also a member of the Canadian Institute of Mining and Metallurgy, the Prospectors and Developers Association of Canada and the Law Society of Ireland.

Bill Hooley, Director, President & COO

Mr. Hooley is currently Executive Director of Anglesey Mining plc. Previously, he was the Managing Director of Micon International Ltd from 2000 to 2005. In addition, he held various management and executive posts with mining and service companies in the UK and Australia from 1975 to 1999. Mr. Hooley is a professionally qualified mining engineer and has 39 years of experience in the world-wide mineral industry. He holds a degree in mining engineering from the Royal School of Mines, Imperial College London. Mr. Hooley is also a Fellow of the Australasian Institute of Mining and Metallurgy.

Terence McKillen, Director & Vice-President

Mr. McKillen is a professional geologist and has 39 years of experience in the mining industry. He holds degrees in geology from the University of Dublin (Trinity College) and a Masters degree in mining geology and mineral exploration from the University of Leicester. He is a registered Professional Geoscientist in the Provinces of Ontario and Newfoundland and Labrador. Mr. McKillen is currently Director, President and CEO of Conquest Resources Limited and Director of Exploration and Business Development for Minco plc. He was formerly Vice-President Exploration of Northgate Exploration Limited and Vice President Exploration and Development of Campbell Resources Inc. He was Director, President and CEO of Rift Resources Ltd., and Director of EXP Resources Inc.

Mathew Coon Come, Director

Dr. Mathew Coon Come is a Board Member of the Grand Counsel of the Crees (Eeyou Istchee) and the Cree Regional Authority. He was National Chief of the Assembly of First Nations from 2000 to 2003 and previously was Grand Chief of the Grand Counsel of the Crees in Québec for 12 years from 1987 to 1999. Earlier he served two terms as Chief of the Mistassini First 66 Nation. Mr. Coon Come is a Founding Member of the Board of

Compensation of the Cree Nation and has been a director of Creeco; AirCreebec, Cree Regional Intercompany Enterprise Company and Cree Construction Company and Chairman of Cree Housing Corporation and James Bay Native Development Corporation. He was a founding director of the First Nations Bank of Canada. In 1998 he was awarded the Goldman Prize (Environmental Award) in recognition of his leadership in northern Québec. He was awarded Honorary Doctorate of Laws degrees by Trent University in 1998 and by the University of Toronto in 2000.

Don Hindy, P.Eng

Don Hindy is a professional engineer and manager with over 30 years of experience in the Canadian mining industry, including oil sands, iron ore, base metals and coal. A longtime former resident of Schefferville, Mr. Hindy worked for the Iron Ore Company for over 16 years, during which occupied various mine operations and engineering positions including Supervisor of Mine Engineering, Mine Operations General Foreman, Mine Foreman, Supervising Engineer of Mine Planning, Supervising Engineer of Mines, Dewatering Engineer, Ore Grading Engineer, Pit Engineer and Surveyor. During this period, Mr. Hindy was personally involved in deposit assessment and overall surface mine design for many of the iron ore mines in the Schefferville area of the Labrador Trough.

He has extensive experience in engineering and operational positions, covering most aspects of mining, from project planning through project start up and full production operations. Senior management positions occupied include Manager of Mine Operations, Manager of Mine Maintenance and Manager of Mine Engineering/Chief Mine Engineer. Recently retired from his position as Mines Health and Safety Program Coordinator and designated Director of Mines for the Province of Alberta, Mr. Hindy was responsible for the application and enforcement of mine-related safety regulations in Alberta. In addition, as the Director of Mines, he represented the Province of Alberta on a Committee of Provincial Chief Mine Inspectors and on the Western Regional Mine Rescue Committee and fulfilled the role of Chair of the Board of Examiners - Mining, under the Alberta Occupational Health Regulation.

Linda Wrong, P.Geo., Vice-President Environment & Permitting

Linda Wrong is a professional geoscientist with an Honours B.Sc. (Geol.) from the University of Toronto. Linda is a former senior exploration geologist with over 20 years experience in remote and northern locations and specific experience over the last five years in Labrador, including work relating to the Company's project. Complementing her direct experience in the mining industry, she has over 15 years experience in the fields of environmental assessment, environmental baseline program development, community consultation, hydrogeology, environmental management system design and implementation and contaminated site assessment and management with major international consulting firms and mining companies, most recently as Mining Technical Program Lead, North America, with Earth Tech Canada and Manager Environmental Baseline and Engineering Liaison with Aurora Energy Resources Inc.

Marc Duclos, Vice-President Transportation Services

Mr. Marc Duclos, MBA, brings over 30 years experience in rail, port, and truck transportation management to Labrador Iron Mines. Amongst his extensive experience, Mr. Duclos was previously General Manager for the Sept-Iles operations of the Iron Ore Company of Canada and, as such, was responsible for the overall operations of the 600 km Sept-Iles to Schefferville railroad and the Sept-Iles port terminal. Marc was also previously employed by both Canadian National Railway and Via Rail. In addition to Marc's invaluable and extensive site-specific experience, he also brings a strong background in regulatory knowledge, project management, planning and successful project execution to the Labrador Iron Mines Project team.

Erick Chavez, Senior Geologist

Mr. Chavez is a professional geologist with 14 years international exploration experience. He is a graduate of Universidad Nacional de San Agustin de Arequipa, Peru and holds a M.Sc. degree from the University of Toronto. He has been Senior Exploration geologist with Conquest Resources Limited since 2003. Prior to 2000, Mr. Chavez was an exploration geologist with Cominco (Peru) SRL.

Joseph Lanzon, Government & Corporate Affairs

Mr. Lanzon has extensive experience in governmental affairs and in facilitating the development of community partnerships in the natural resource sector. Mr. Lanzon is Senior Advocate, Homeland Security for Canadian Advanced Technology Alliance. He has held management positions at CGI and General Electric with mandates for business development and government affairs. Mr. Lanzon has worked for the Federal Government of Canada, the NWT Government, the House of Commons and the Senate of Canada and has held senior positions as advisor and executive assistant. He has extensive knowledge of the workings of government at all levels.

Joanne Robinson, Senior Mine Engineer

Ms. Robinson is a professional engineer (P.Eng.) and a graduate of Queen's University (B.Sc. Mining Engineering) with 11 years experience in the Canadian mining industry. She has most recently been Senior Mine Engineer with the Ledcor Group in charge of an open pit metallurgical coal mine. Prior to 2006, Joanne held progressively senior engineering positions with Quintette Operation Corp., Trow Associates Inc., Huckleberry Mines Ltd. and Century Mining Corp.

Jacques Whitford Ltd.

Colleen Leeder, M.Sc.

Colleen Leeder is a Principal with Jacques Whitford in St. John's, NL, where she is the Environmental Planning and Permitting Group Leader, and Practice Director for Environmental Assessment. She has over 20 years experience in federal and provincial environmental assessment procedures and policies, including cumulative environmental effects assessment. Ms. Leeder was the EIS Manager for the Voisey's Bay Mine/Mill EIS, and the Liquefied Natural Gas Receiving, Storage and Processing Facility in Saint

John, New Brunswick. Both of these projects were subject to federal and respective provincial environmental assessment legislation. Ms. Leeder was also part of the environmental assessment team that prepared the Development Application and Comprehensive Study for Husky Energy's White Rose oilfield development, providing direction on environmental assessment methods, and support to Husky Energy. Prior to joining Jacques Whitford in 1995, she worked with the Environmental Assessment Division of the Newfoundland and Labrador Department of Environment and Labour. As Section Head, Ms. Leeder was responsible for the administration of the environmental assessment process and supervised the assessment of numerous developments.

Bruce Bennett, B.Sc. Hons.

Bruce Bennett is a Principal and senior scientist with Jacques Whitford St. John's office, who has a solid background in environmental assessments – including site inspections, feasibility studies, land and resource use reviews, baseline surveys, regulatory (and permitting) reviews and environmental protection planning. He was involved in provincial and federal environmental assessments of Hope Brook Gold mine/mill, Voisey's Bay mine/mill, IOC's Luce Pit Development, IOC's Tailings Management Plan, Nugget Pond Gold mine/mill, and Duck Pond Copper-Zinc Mine. Mr. Bennett has completed the one-day CEAA Training Course that is provided by the federal office. Since the enactment of CEAA, several of the assessments have been screening, comprehensive study and panel level assessments. Beyond Mr. Bennett's assessment experience for mining clients, he has been involved in baseline studies for: Voisey's Bay Mine/Mill Project, Voisey's Bay (Proposed) Smelter, Voisey's Bay Pilot Hydrometallugical Facility, Voisey's Bay (Proposed) Long Harbour Commercial Nickel Processing Facility, Hope Brook Gold Mine, Cape Ray (Proposed) Mine; Tally Pond (Proposed) Mine and Duck Pond Copper-Zinc Project.

As part of the assessment process, or complementary to the process, Mr. Bennett has developed environmental protection plans (EPPs) for Pine Cove Gold Mine, Nugget Pond Gold Mine, Hammerdown Gold Mine, Beaver Brook Antimony Mine, IOC Luce Pit and Duck Pond Copper-Zinc Mine.

Among the mine projects that have progressed to an operational stage, Mr. Bennett has assisted in the permitting stage and performed or managed EEM studies for: Voisey's Bay Mine, Hope Brook Gold Mine, Nugget Pond Gold Mine, Hammerdown Gold Mine, Wabush Mines, Iron Ore Company of Canada Carol Project, ASARCO Mine at Buchans, Rambler Mines, Ming Mines and Beaver Brook Antimony Mine.

With the recent formalization of EEM requirements under the Metal Mines Effluent Regulations (MMER) in June 2002, Mr. Bennett has participated in two working sessions with Environment Canada aimed at familiarizing the mining sector with the MMER requirements. Mr. Bennett has provided strategic advice regarding the implementation of MMER and regulatory liaison on behalf of, or for, mining clients such as Aur Resources, Iron Ore Company of Canada, Richmont Mines, Anaconda Gold Corp, Crew Gold Corp. and Voisey's Bay Nickel Company Limited. He participated in the design of the Voisey's Bay Mine/Mill Cycle 1 Marine EEM and later he managed the implementation of that program as well as the Cycle 1 for Nugget Pond Gold Mine. He

has managed programs to design and implement Cycle 1 EEM for Duck Pond Project and Cycle 2 for Voisey's Bay and Nugget Pond mines. Mr. Bennett has worked with the Jacques Whitford team that developed the decommissioning plans for Duck Pond Mine and Pine Cove Gold Mine.

Mark Shrimpton, M.A.

Mark Shrimpton (Principal, Jacques Whitford) has over 25 years experience in socio-economic consultant research, assessing, planning and managing the impacts of resource industry activities. This has included work for the mining, petroleum and hydro-power industries, and for governments, international agencies and communities.

In Canada, Mark has played a lead role in preparing: socio-economic impact assessments of the Voisey's Bay mine/mill and processing plant, LabMag iron ore mine, Lower Churchill hydro project, and the Hibernia, Terra Nova, White Rose, Hebron, Newfoundland Transshipment Terminal and Newfoundland LNG petroleum projects; industrial benefits, human resources and diversity plans for the White Rose project; infrastructure and labour requirements studies for various mining, petroleum and hydro projects; and, studies monitoring the socio-economic effects of resource development activity. He has also worked in the US, Iceland, the Faroe Islands, France, Switzerland, the Falkland Islands and Australia, including managing the preparation of socio-economic impact assessments of the smelter and hydro projects in Iceland. Mark has also completed various studies of the effects of remote mines, including research into operations in Canada, US and Australia. The clients for this work have included: Labour Canada; Energy, Mines and Resources Canada; Health and Welfare Canada; the Centre for Resource Studies, Queen's University; the Government of the Yukon; the Australian Mines and Metals Association; and, the UN International Labour Office. These studies involved site visits to remote mines and adjacent communities across Canada and in Western Australia, South Australia and Queensland.

Mark has published widely and made presentations on his research at conferences in Canada, the US, the UK, France, Norway, Lithuania, Russia, Malaysia and Australia. In addition to his consulting work, he is an Adjunct Professor of Geography and Associate of the Centre for International Business Studies at Memorial University.

Michael C. Murphy, PhD, P.Eng.

Dr. Mike Murphy is a Principal of Jacques Whitford AXYS Ltd. and the Senior Service Director for the Atmospheric Environment Group company-wide, working out of the Fredericton, New Brunswick office. He graduated from the University of Waterloo in 1987 with a Ph.D. in Chemical Engineering, specializing in energy analyses, fluid modelling and boiling heat transfer. With more than 23 years of experience in Canada, USA and international, Dr. Murphy has managed air quality and engineering studies on: emissions inventories of air pollutants and greenhouse gases, source emissions testing, dispersion modelling, dispersion and deposition modelling for human health and ecological risk assessments, ambient air quality, noise, odour, climate analysis, greenhouse gas management, flow profiling, indoor air quality and environmental assessments.

Dr. Murphy has worked on large environmental assessment (EA) projects including the NB Power Coleson Cove Refurbishment and the largest natural gas treatment plant in the world in Qatar, in the Middle East. He has conducted air quality studies for the shipping industry in Atlantic Canada (Saint John Port Authority), N.B. Power, Irving Oil Limited and in British Columbia (Vancouver Port Authority).

Dr. Murphy participated in the full EA for the LNG facility proposed for New Brunswick, and a similar one in Kitimat, B.C., including dispersion modelling, air quality assessments and public consultation on all air quality aspects. He acted as senior reviewer on the air quality and human health and ecological risk assessment for a pulp mill in Crofton, B.C. Recently, he has conducted a comprehensive review of the Draft Air Pollution Rules (2005) for the Government of Trinidad and Tobago and is assisting with policy development to protect the environment in light of continued industrial expansion. He is a member of the Environment Committee for the Road Builders Association of New Brunswick. Dr. Murphy maintains close ties with the University of New Brunswick and has given courses on air pollution, process safety, and mass and energy balances.

Benjamin Coulson, M.A.Sc., P.Eng.

Benjamin Coulson joined Jacques Whitford in 2005 as the Atmospheric Environment Group Leader and a Senior Engineer specializing in air quality, climate change, noise and acoustics issues. He has conducted dozens of environmental impact studies and regulatory compliance projects for a variety of industry sectors, including: institutions; power generation; manufacturing; medical research and health care; and transportation. His air quality experience includes numerical and physical dispersion modeling, regional airshed and photochemical modeling, emission inventory development, field measurement, and public and agency consultations. Ben has given lectures and presentations on a variety of air quality issues, including the development and teaching of training courses on air quality theory and dispersion modeling.

Benjamin Burkholder, B.Sc.

Benjamin Burkholder is an Air Quality Specialist with Jacques Whitford Limited. He has over six years experience conducting boundary layer meteorological and air quality dispersion modelling, ambient air quality monitoring and assessment, and emissions inventories. He has provided air quality emissions/modelling support for numerous environmental impact and risk assessment projects. Mr. Burkholder specializes in High Performance Computing (HPC) technology and has substantial experience running advanced dispersion, meteorological, and photochemical models on such platforms. He has worked on emissions and dispersion modelling assessments for a wide range of industries including the oil and gas, mining, power generation utility, pipeline utility and forest products sectors. Prior to joining Jacques Whitford, Mr. Burkholder worked as an Air Quality Scientist with the University of British Columbia and the British Columbia Ministry of Environment.

Jim Knight, P.Eng.,

Mr. Knight is Jacques Whitford's Senior Climate Specialist. As a former air quality and energy regulator, Mr. Knight has designed and implemented national and provincial emissions inventory, ambient air quality and acid rain programs. He has managed databases and progress tracking mechanisms and developed air quality, energy and energy efficiency legislation. He has lead public consultations on diverse issues including a national acid rain program, permitting of a coal-fired power plant, mining operations, the Petitcodiac Causeway and others. He recommended environmental priorities for a municipality (*A View of the City* (Saint John)), created Air Resource Management Areas (ARMA) across New Brunswick and drafted the Climate Change Action Plan for New Brunswick. He represented New Brunswick nationally and internationally on air quality, acid rain, ozone depleting substances and climate change matters. While at NB Executive Council, in 2001, he was a key Policy Analyst in the completion of a government-wide, department by department, program review. He co-authored the New Brunswick Energy Policy (1990; 2001) and worked directly with legal drafters on significant energy and environmental legislation (Clean Air Act, Electricity Act). He developed policy support documentation for the creation of Efficiency New Brunswick and the Renewable Portfolio Standard Regulation. He is an engineer, meteorologist, and a trained GHG Emissions Validation and Verification auditor with experience with the federal and provincial governments and with an electric utility.

At Jacques Whitford, Jim has worked with municipalities, institutions, commercial operations and heavy industries to establish and verify their GHG emissions inventories / intensities, identify potential emission reduction opportunities and quantified carbon offset credits, while assisting clients to prepare for proposed GHG and air pollutant regulations. He has worked with industries to address Climate Change and GHG Management Plans in Environmental Assessments on large construction projects (fossil and hydro-electric generation, LNG, pipelines, oil sands). He has assisted the Government of Trinidad and Tobago to develop new air quality standards and emissions regulations. He is responsible for the development and staffing of Jacques Whitford's Climate Services Line.

AECOM

Gary Epp Ph.D. (Project Manager)

Dr. Epp is the Technical Practice Group Leader for AECOM's Ecological Services Practice Group with the responsibility of coordinating global ecological services. He is also the Manager of Ecological Services for AECOM Kitchener and a senior ecologist, with the overall responsibility for providing comprehensive and integrated ecological assessment services to our clients. As head of the Ecological Services Group, Dr. Epp is directly responsible for the management and coordination of a wide range of ecological assessment assignments including natural heritage studies, environmental impact studies, watershed management plans, wetland evaluations & assessments, re-vegetation plans, aquatic & terrestrial habitat studies, natural resources screening, and bio-monitoring studies. Dr. Epp's experience has frequently involved an integrated approach where ecological studies have been strategically coordinated with a variety of

other scientific, engineering and planning disciplines. Dr. Epp has extensive experience negotiating with a wide range of review agencies, naturalist groups, and the public. Dr. Epp is recognized as an expert in ecological assessment before the Ontario Municipal and Environmental Assessment Boards.

Derek Parks, B.Sc. (HON), M.Sc. (Fish habitat, water quality, sediment, wildlife, field work, report preparation and logistical support)

Mr. Derek Parks is currently employed as a senior aquatic specialist within AECOM, with more than ten years of experience and whose specialties and interests include fisheries and fish habitat, water-quality, environmental effects monitoring, bioengineering and habitat assessment and enhancement. These skills provide Mr. Parks the ability to complete permitting approvals from various government agencies. He also has experience in the use of GIS to evaluate a range of fisheries issues. His previous employment includes AMEC Earth and Environmental, the Ontario Ministry of Natural Resources, the Township of Goulbourn and Niblett and Associates. He is also certified by MNR in the use of electrofishers and the Southern Ontario Rapid Stream Assessment Protocol and has extensive experience with a wide range of environmental studies. With a strong technical and academic background in fisheries resources, Mr Parks has applied this knowledge to plan, design and monitor a variety of projects to meet the needs of the client. He acted as a liaison for the client between regulatory agencies such as; Department of Fisheries and Ocean, Ontario Ministry of Natural Resources, and several Conservation Authorities, to provide the required information to be submitted to the appropriate agency. Once approvals have been granted, Mr. Parks has carried out over 15 monitoring programs to confirm work proposed and compensation and mitigation measures used were successful in protecting fish and fish habitat.

Jillian deMan (B.Sc.). (Vegetation field work, laboratory plant identification and report preparation) is a terrestrial ecologist with AECOM's Environmental Division based out of Kitchener, Ontario. With the company for over 12 years, her expertise has a wide range of scope within the environmental, engineering and waste management fields enabling her to be involved with numerous projects across Canada that incorporate natural heritage issues/planning and restoration. Consequently gaining familiarity with the Mixed wood Plains, Boreal Shield, Taiga Shield, Atlantic Maritime and Hudson Plains ecozones of Canada. Her technical skills include; wetland boundary delineation, evaluation, monitoring and restoration, soils identification, air-photo interpretation, multi-scale floral inventories, amphibian surveys, woodland evaluations and biomass fish sampling through seine net, minnow trap or electrofishing methods. These skills facilitate in the preparation of comprehensive Environmental Baseline studies.

James Holdsworth (Avifauna field work and report preparation)

James Holdsworth has over 33 years of field based experience with special emphasis on population dynamics in South Western Ontario. He possesses a wide variety of skills and specializes in point-counts, breeding and migratory bird surveys, and butterfly, dragonfly, mammal, reptile and amphibian surveys. Mr. Holdswroth has also co-authored " Checklist of the Birds of Oxford County " published in spring 2007, serves as sub-regional editor, Oxford County, for American Birds, Field Notes and North American

Birds magazines, has participated in both Ontario Breeding Bird Atlas projects, providing survey data on the breeding birds of Oxford County and is currently compiling and editing "The Birds of Oxford County", a definitive work on the history, abundance and diversity of the birds in the county of Oxford. He has worked on numerous projects including a sub-watershed study of the Greensville area, for the City of Hamilton, which included a migrant and breeding bird study, as well as inventories of butterflies, dragonflies, mammals, reptiles and amphibians in the Alvar communities. The design and implementation of a breeding and migratory bird survey for a proposed CPR rail extension in PIttock Lake, near Woodstock and served as a consulting breeding bird surveyor for the Red Hill Expressway project within the City of Hamilton.

David Praskey, B.Sc. (Fish habitat, water quality and sediment field work and data summarization)

Mr. Praskey is an aquatic ecologist with AECOM's Ecological Services group in Kitchener, Ontario. He has over six years experience in the aquatic biology field including lake and stream fisheries and habitat assessments, Lake Ontario wetland fish sampling, aquatic habitat mapping, Ontario Benthos Biomonitoring Network sampling, BC stream classification, and aquatic biological toxicity testing. Mr. Praskey's fish sampling experience includes index trapnetting and gillnetting, backpack and boat electrofishing, as well as seine and fyke netting. He also has more than 20 years of safe boating experience and has operated various sized boats for several professional and volunteer projects. He also has experience preparing project and client reports.

Intermesh Enterprises

Paul Thibaudeau, Ph.D

Paul Thibaudeau is an anthropologist (PhD Anthropology, University of Toronto), consultant (Intermesh Enterprises) and adjunct research professor (Department of Sociology/Anthropology and the School of Industrial Design at Carleton University) with a background in native ethno-history, archaeology and contemporary political affairs as well as experience in researching product design. He has provided consultation to both the private and public sector on different aboriginal and socio-economic issues including self-government, land claim resolution, litigation and history of residential school abuse and Aboriginal literacy and essential skills development. Paul also teaches courses on product design and anthropology and provides lectures and graduate advisement in the Master's of Design program.

SNC-Lavalin

Claude Beaulé

Mr. Claude Beaulé is an Engineering Project Manager and Team Leader. He's driven towards results with more than 20 years of relevant experience. His more important career accomplishments were in industrial process and utilities engineering: power plants – steam – natural gas – pumping and heat transfer.

His communication skills and leadership motivation abilities were key benefits in multidisciplinary team work.

Daniel Dufort

Mr. Daniel Dufort is a Project Manager in the Mining and Metallurgy Division of SNC-Lavalin, based in Montreal. Prior to his current appointment, he held Senior Executive positions in the mining industry and possesses more than 25 years of experience in production, operations, sales, marketing and project management. He has earned a solid reputation as an experience hands-on professional who can quickly motivate and rally a team around a common vision and business goals. Driven by continuous improvements, he focused on delivering strong results.

Stéphane Rivard

Mr. Stéphane Rivard has 14 years of experience as an engineer in the mining and metallurgy sector. He has extensive experience in copper; from chalcopyrite flotation to copper metal smelting, as well as in hydrometallurgy and production of copper rods. He also has over 7-year experience with zinc flotation (sphalerite). He has been involved in three plant start-ups, specifically the concentrator at the Bouchard-Hébert mine, the concentrator at the Horne smelter for the Gallen mine and the slag milling circuit for Fondicion Altonorte in Chile. He is a Six-Sigma Black Belt and took DFSS training with the Bismuth input/output management team including business modeling for Altonorte, Antamina, Gaspé, Horne and Kidd Creek (regarding minor elements in concentrates, smelters and refineries). More recently he has been involved either as Process Lead and Process Manager for several studies for SNC such as Mine Raglan Phase 2, Canadian Royalties Bankable Feasibility Study on their nickel project in Nunavik, Guelb El-Aouj (BFS) iron ore project in Mauritania and Silvermet's zinc fuming BFS in Turkey. Since 1994, Mr. Rivard has risen from Production Metallurgist to Senior Metallurgist, Head Metallurgist and Black Belt. More recently, he was an Engineer part of the production management team with a copper rod producer.

Jean Routhier

Mr. Jean Routhier has over 24 years of experience in the following process industries: petrochemical, mining, aluminum and pulp and paper. He has worked on multidisciplinary projects having undertaken numerous assignments in design, engineering, procurement, project controls, project management, construction management, commissioning and start-up. He has been involved in major capital projects in Canada, USA and overseas, including EPC projects.

Michaela Ilie

Mrs. Michaela Ilie has over 10 years of experience at increasing levels of responsibility in the Health, Safety and Environment field for industrial firms.

Her experience has mainly been gained in managing corporate Health, Safety and Environment programs and the development of HSE programs in both the operations and construction phases of projects. She is familiar with leading systems and procedures used in implementing and monitoring HSE, including behavioural based safety program (STOP), OSHA, OHSAS, ISO 14001, and in carrying out Job Safety Analysis, Process Safety Analysis, HAZOP and FMEA.

Her core skills include her experience in the implementation of management systems, environmental permitting, strategic planning, providing supporting to higher management and teamwork supervision in unionized environments. In continuously undertaking more challenging mandates, she has proven her capability to provide multi-unit support, to multi-task and to work independently in a fast-paced environment.

Jean-Sébastien Tremblay

Mr. Jean-Sébastien Tremblay, M. Eng., is a mining engineer with 8 years of experience in the mining and metallurgy field. He worked as much on the building sites, the existing mining installations and with the design of the future mines. In the 3 last years, it contributed to the development of a database making it possible to accelerate the calculation of the costs of operation relative to a plan of mining. He can measure the improvement of this tool for 3 different projects. He also integrated the design of the infrastructures relating to the supply of fuels and water for the periods of construction and operation for a mine and a mill. Moreover, Mr. Tremblay is familiar with the Whittle software of GEMCOM allowing optimizing the methods of mining. He also has acts as controller of project within the framework of a feasibility study adding up nearly 20000 hours.

WESA

Byron O'Connor, P.Eng.

Byron O'Connor is a Principal with WESA Inc. and licensed professional engineer in the Provinces of Ontario, New Brunswick, the Northwest Territories and Nunavut, and Newfoundland and Labrador. He has degrees in geology and geological engineering from the University of New Brunswick. He has worked in the mineral exploration and environmental fields since 1987. He has conducted environmental work at mine sites, industrial facilities and other sites throughout Ontario, across the Arctic, in Quebec, Alberta, Northwest Territories, New Brunswick, Labrador, Missouri, Delaware, Jamaica, Turks and Caicos, and St Lucia.

APPENDIX C

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APPENDIX D

Newfoundland and Labrador Benefits Policy and Women’s Employment Plan

Labrador Iron Mines Limited

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Schefferville Area Iron Ore Mine
(Western Labrador)

Newfoundland and Labrador Benefits Plan

August 21 2009

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1.0 INTRODUCTION

Labrador Iron Mines Limited ("LIM") understands the importance of the Schefferville Area Iron Ore Mine Project in Western Labrador (the "Project") to the people of the Province of Newfoundland and Labrador (the "Province"). LIM is committed to the maximization of associated benefits – including employment, procurement, education, training and economic development - to the Province and, in particular to Labrador, and is committed to providing full and fair opportunity and giving first consideration to residents and businesses of the Province to participate in, and benefit from, the Project.

LIM has accordingly established a **Labrador Iron Mines Limited Newfoundland and Labrador Benefits Policy** (Benefits Policy) that will apply to LIM and to all Project contractors and subcontractors and has developed this Newfoundland and Labrador Benefits Plan to implement the Benefits Policy.

LIM has entered into an Impact Benefits Agreement with Innu Nation of Labrador under which LIM has agreed to commitments and undertakings with regard to business opportunities, employment and other matters.

LIM has committed to project employment targets and goods and services procurement targets within the Newfoundland and Labrador Benefits Plan. The targets represent minimum levels of participation by residents of the Province in Project employment and for business opportunities for Newfoundland and Labrador companies in Project activity and LIM commits to achieve or exceed these targets.

Regardless of any other provision or statement set out in this Newfoundland and Labrador Benefits Plan, LIM shall, in all cases, meet or exceed all specific targets provided for in this Newfoundland and Labrador Benefits Plan relating to employment and procurement of goods and services.

This Newfoundland and Labrador Benefits Plan presents the **Benefits Policy** in Section 2.0 and describes the **processes and procedures** that will be used in implementing the Benefits Policy in Section 3.0, outlines specific initiatives with respect to opportunities for **employment** in Section 4.0 and with respect to the **procurement of goods and services** in Section 5.0.

The Project has been planned with the objective of maintaining a small footprint to minimise environmental and social impacts. To achieve this, the Project has been deliberately designed with the following specific characteristics:

- Small size of the operation.
- Phased development: LIM holds eight different properties in the area at varying stages of exploration and evaluation. The James and Redmond properties, which comprise the first phase of what it is hoped will become a multi–phase long term development, are located in an area of existing historical mining impacts with extensive existing infrastructure (access roads, existing water crossings, rail, etc). This existing infrastructure reduces the need for extensive new construction typically associated with new mine development. By using a phased development approach, starting with the James and Redmond properties, LIM hopes to facilitate the

adjustment by the community and regional support systems to the reintroduction of sustainable mining in the Schefferville Area of Western Labrador.

- Commute Operation: It is not intended that there will be a Project mining community where employees and their families will live. Instead, most workers will alternate between periods working at the site, living in LIM-provided accommodations in Labrador, and periods at home with their families.
- Staffed by contractors: The development and operation of the James and Redmond mines will be conducted using mining contractors that have knowledge and experience in the region. Labrador West has a long history of mining and related expertise and many experienced contractors are available.
- Mobile and semi-mobile equipment: There will be no permanent buildings on the mine sites. Equipment and structures will be mobile and semi-mobile, allowing these to be moved to where they are needed, reducing transportation-related impacts and facilitating progressive rehabilitation.
- Seasonal: During the five years of planned operations in the First Phase, mining operations will be carried out on a seasonal basis, from mid-April to mid-November each year. Project construction will be very short-term (approximately 8 weeks) and is planned to occur during the ice-free period.

In the foregoing respects, the Project differs in scale and character from the historical mining activities in Western Labrador, and is very different from most other mines currently operating in the Province of Newfoundland and Labrador.

LIM's commitment to delivering economic benefits to Newfoundland and Labrador is set out in this Newfoundland and Labrador Benefits Plan under which LIM has committed to several strategies summarised as follows:

Employment and Training:

LIM will implement an employment strategy that ensures residents of the Province are given full and fair opportunity and first consideration for employment. LIM will also implement training programs that allow for employment of residents within all levels of the Project.

Procurement Policies and Procedures:

LIM will establish and implement procurement policies and procedures to ensure opportunities for provincial benefits. Provincial suppliers will be provided full and fair opportunity and first consideration to participate on a competitive basis for the supply of goods and commercial services.

Construction Facilities:

LIM recognizes the existence of significant construction, fabrication and assembly infrastructure within the Province and will maximise its use whenever possible. This includes requiring that potential contractors bid work on the basis of using competitive qualified provincial suppliers of construction, fabrication and assembly services, where available on a full and fair opportunity and first consideration basis.

Engineering:

LIM will ensure that management, engineering, procurement and service activities are to the greatest extent possible carried out in the Province. This work will be undertaken by, or have significant participation of, provincial suppliers on a full and fair opportunity and first consideration basis.

Supplier Development:

LIM recognizes that the availability of competent and competitive suppliers in the Province is a key element in the long term success of the Project and will implement procedures and practices that will enhance supplier capability on the basis of full and fair opportunity and first consideration to participate.

Labrador Offices:

LIM will establish and maintain two offices in the Province to serve as information centres and facilitate communication and will staff these offices with appropriate skilled residents appropriate to the nature of the Project and, so far as possible, provide management to the Project from these offices.

This Newfoundland and Labrador Benefits Plan reflects the distinctive nature of the Project and the specific opportunities and some constraints that the Project creates for the provision and delivery of benefits, including employment, education, training, business opportunities and economic development, to the Province of Newfoundland and Labrador.

2.0 LABRADOR IRON MINES – NEWFOUNDLAND AND LABRADOR BENEFITS POLICY

Labrador Iron Mines understands the importance of the Project to the Province of Newfoundland and Labrador and in line with the principles and targets described in this Policy will provide full and fair opportunity and first consideration for the people, businesses and companies of the Province to secure employment and to participate in and benefit from the business opportunities associated with the Project.

Specifically, LIM is committed to:

- the delivery of associated benefits, including employment, education, training and business and economic development to the Province and in particular to Labrador on a full and fair opportunity and first consideration basis;
- the encouragement and assistance of residents of the Province, and in particular of Labrador, to receive the education and training necessary to maximize their opportunities for employment, retention and advancement on the Project;
- the procurement of goods and services from within the Province and, in particular from Labrador, and provincial suppliers will be provided full and fair opportunity and first consideration for the supply of goods and commercial services to the Project on a competitive basis;
- the implementation of policies and practices in connection with the procurement of goods and services for the project that enhance economic and business opportunities in Labrador, including the identification and support of industry businesses that would generate long-term economic benefits to Labrador;
- the provision of timely Project-related information to encourage the participation of all potential employees, businesses and contractors in the economic opportunities of the Project;
- and in all cases, LIM will attain or exceed minimum project employment targets and goods and services procurement targets as set out in this Newfoundland and Labrador Benefits Plan.

In addition LIM will also comply with the undertakings, commitments and obligations of the Impact and Benefits Agreement (IBA) entered into with the Innu Nation of Labrador, and with the provisions of LIM's Women's Employment Plan.

The IBA is a life of mine agreement that establishes the processes and sharing of benefits that will ensure an ongoing positive relationship between LIM and the Innu Nation, through which the Innu Nation and their members will benefit through employment, training, business opportunities and financial participation in the Project.

The Women's Employment Plan details LIM's approach to employment equity, identifies occupations in which women are under-represented, uses this to establish appropriate initiatives and targets and describes a process for achieving these targets, monitor success in meeting these targets, and reviewing and revising equity initiatives where appropriate.

3.0 BENEFITS PROCEDURE - TO BE USED IN IMPLEMENTING THE BENEFITS POLICY

The provisions of this Newfoundland and Labrador Benefits Plan apply to LIM itself, and all contractors and subcontractors undertaking Project construction or operations work. The Newfoundland and Labrador Benefits Plan will be implemented and administered by LIM with the support of the selected contractors.

In implementing the Newfoundland and Labrador Benefits Plan, LIM will:

- Ensure that all contractors and subcontractors working on the Project abide by this Newfoundland and Labrador Benefits Plan.

- Communicate all material (greater than $100,000) Project labour, contracts, goods and services requirements on its website and in newspapers in the Province, and especially in Labrador, and require its contractors and subcontractors to comply with this Policy.

- Ensure that full and fair opportunity and first consideration principles and procedures for Newfoundland and Labrador residents and businesses are applied to any Project labour, contracts, and goods and services requirements with a dollar value of less than $100,000.

- Meet targets for Project employment and for goods and services procurement, for both Project construction and operations. The targets represent minimum levels of participation by residents of the Province in Project employment and for business opportunities for Newfoundland and Labrador companies in Project activity and LIM commits to achieve or exceed these targets. Residents of Newfoundland and Labrador, at point of hire, will be determined according to the principles established in The Elections Act, SNL 1992, CE-3.1 as being “ordinarily resident.”

- Include a copy of this Newfoundland and Labrador Benefits Plan in all Project calls for expressions of interest, requests for proposals or contracts, and require that its contractors do the same.

- Require that prospective contractors indicate in bids how they would address the requirements of this Newfoundland and Labrador Plan.

- Monitor Project employment and the supply of goods and services and, on a monthly basis for construction and initial operations and on a frequency to be agreed with the Government of Newfoundland and Labrador for subsequent operations, prepare concise reports assessing actual outcomes relative to the Benefits targets.

- Provide copies of the above-noted employment and business reports to the Department of Human Resources, Labour and Employment and to the Department of Natural Resources on this agreed basis and be available to discuss these reports, including LIM’s level of success in meeting targets, and appropriate responses.

- Review and, as necessary, revise LIM's benefits procedures and initiatives to ensure that LIM's commitments under this Benefits Plan including the attainment of minimum targets, have been achieved.

Information Centres and Communication:

In support of its commitment to the maximization of benefits to Newfoundland and Labrador, LIM will establish and maintain offices in Labrador West and Happy Valley-Goose Bay to serve as centers of information about the Project and about requirements for labour and requirements for goods and services and also to provide local administration and procurement services to LIM.

LIM will provide Project employment and business opportunity information and computer and internet facilities and personnel at its offices in Happy Valley Goose Bay and Labrador West to assist provincial suppliers and/or residents of the Province to access applicable information and will also post information on its website and make applicable information available by mail to potential employees, provincial suppliers and residents of the Province at their request.

LIM will establish an Information Centre in Happy Valley – Goose Bay to make available to the general public of the Province information concerning the status of and major developments relating to the Project. The Information Centre will also provide information relating to employment and supplier participation opportunities for the Project and will also serve as a receiving point for resumes and pre-qualification documentation. The Goose Bay office will also coordinate LIM's partnership with the Innu of Labrador and will focus on business, training and employment opportunities for Aboriginal participation in the Project.

LIM will also establish and maintain an office in Labrador City / Wabush which, to the greatest extent possible, will provide management services to the Project, and will staff such office with residents having skills appropriate to the stage of development, construction and operation activities taking place at the Project. The primary function of the Labrador City office will be to focus on procurement activities and on personnel, and on human resource management including, training and coordinating the fly-in-fly-out transportation arrangements and contractor's procurement activities.

4.0 EMPLOYMENT

In order to recruit, develop and maintain the highest levels of commercial, technical, environmental and personnel management at all times, it is LIM's general policy to employ people of the highest possible calibre available for each position, consistent with sound economic and management principles.

LIM will provide full and fair opportunity and first consideration to residents of the Province of Newfoundland and Labrador for Project related employment, recognizing its legal obligations under the Canadian Charter of Rights and Freedoms and applicable laws, including those relating to accommodation of Aboriginal First Nations, and complying with its commitments under the Impacts Benefits Agreement signed with the Innu Nation of Labrador.

It is estimated that the Project will employ approximately 40 people during the Construction Phase and approximately 109 people during the Operations Phase. Overall, LIM has committed to achieving a minimum of 78 percent of Construction, 78 percent of Operations Phase employment and corresponding person-days accruing to residents of Newfoundland and Labrador.

Regardless of any other provision or statement set out in this Newfoundland and Labrador Benefits Plan, LIM shall, in all cases, meet or exceed all specific targets provided for in this Newfoundland and Labrador Benefits Plan relating to employment.

Consistent with its legal and corporate social responsibilities it is expected that LIM and its contractors will offer employment to Aboriginal First Nations throughout all phases of the Project. LIM has entered into an Impacts Benefits Agreement with the Innu Nation of Labrador that amongst other matters includes commitments for Aboriginal employment.

LIM has also entered into Memoranda of Understanding with other adjacent First Nations who claim traditional and aboriginal rights in the area and who may be impacted by the Project. The other First Nations, based in Quebec, are the Innu Nation of Matimekush, located immediately adjacent to the Project area in or around the town of Schefferville, and the Naskapi Nation located at Kawawachikamach about fifteen kilometers from the Project area. LIM has also entered into negotiations with the Innu Nation of Uashat, who also claim traditional Aboriginal rights in the Project area. LIM expects to convert these MOUs to formal co-operation agreements in the near future and these agreements will address employment opportunities for those Aboriginal First Nations.

It is expected that during both the Construction Phase and Operations Phase approximately 25 percent of total employees will be Aboriginal First Nations comprising all of the various Aboriginal groups noted above including the Innu Nation of Labrador. Success in achieving this will be dependent on progress in implementing the employment related provisions of the IBA Agreement with the Innu Nation of Labrador.

It is expected that the great majority of both construction and operations workers will commute to and from the mine site using a 'fly-in' rotation, alternating between periods of work, during which they will live in LIM provided camp accommodation in Labrador and periods living in their home communities.

During the Construction Phase ahead of Operations some commute workers will be temporarily housed in LIM provided accommodation while a new trailer camp with accommodation for up to sixty operations personnel is erected in or near to the Silver Yards area in Labrador, and which will be in service ahead of mine Operations.

In the Operational phase of the Project the commute schedule will generally see most workers following a standard rotation of four weeks on and two weeks off. The commute system will be designed based on the residential locations of the labour force, and is expected to include the provision of air transportation to and from Labrador City – Wabush and Happy Valley - Goose Bay and from the island of Newfoundland, if so required, and the use of the railway from Labrador City. LIM expects to employ workers from the adjacent communities of Matimekush and Kawawachikamach on a daily commute basis.

LIM intends to follow an adjacency policy in selecting commute employees. First priority in the employment of these commute workers will be given to qualified residents of Western and Central Labrador. Second priority will be given to qualified residents of other parts of Labrador, and third priority to qualified workers from elsewhere in the Province of Newfoundland and Labrador.

In keeping with LIM's commitment to providing full and fair opportunity and giving first consideration for employment to residents of the Province, LIM will:

- communicate information on the Project job opportunities and labour requirements in a timely manner;
- develop and implement a human resources plan and appropriate training programs;
- develop and implement policies and procedures to encourage the participation of Aboriginal First Nations and disadvantaged individuals and groups;
- develop an employment equity policy and implementation plan that addresses recruitment, training and advancement of women.

In order to encourage and facilitate the training and skill development of Labradorians and Newfoundlanders, LIM will:

- Implement human resources initiatives (e.g. mentoring, succession planning, orientation and cultural diversity programs and work schedules) that will facilitate the hiring, retention and promotion of Labrador and Newfoundland resident employees, including the Innu of Labrador.
- Ensure that Project human resources initiatives address any labour market under-representation of Labradorians and Newfoundlanders, including the Innu of Labrador and women, in engineering, design, management, skilled trades and other occupations.
- Implement the employment-related provisions of its IBA with the Innu Nation of Labrador. LIM will work with the Innu Nation to develop pre-employment and training programs that meet both the specific needs and the culture of the Innu of Labrador. LIM will also work with the Innu schools to develop specific Aboriginal employment programs.

- Maintain an ongoing liaison and communication with the Labrador Regional Economic Development Zone Boards and the Department of Human Resources, Labour and Employment, and the Innu Nation, so that they are informed about Project employment requirements, opportunities and plans.

- Work with the above institutions and agencies to help them develop and implement training initiatives that will facilitate the availability of qualified Labradorians and Newfoundlanders, including the Innu of Labrador, to work on the Project.

- Develop and implement training initiatives for all phases of the Project in co-operation with the Government of Newfoundland and Labrador, provincial suppliers and educational and training institutions in the Province. These initiatives will include pre-employment and employment training programs utilizing in house expertise and external training organizations. LIM will make maximum use of existing provincial education facilities in Labrador City and Happy Valley Goose Bay and establish specific programs for training at the mine site.

- LIM will work with the College of North Atlantic to develop technical courses specific to LIM and initially will focus training programs on an Environmental Monitoring program and a Health and Safety Training program.

- Work together with Labrador schools and colleges to establish scholarships in mining and geology-related subjects with eligibility for Labrador residents.

LIM has adopted a Women's Employment Plan.

- The Women's Employment Plan details LIM's approach to employment equity, identifies occupations in which women are under-represented, uses this to establish appropriate initiatives and targets and describes a process for achieving these targets, monitor success in meeting these targets, and reviewing and revising equity initiatives where appropriate.

The Women's Employment Plan describes:

- the LIM women's employment planning process, including: the responsibilities of LIM and its main contractors; the process for identifying and implementing targets and initiatives; and, the process for monitoring and reporting the implementation of those initiatives and success in achieving targets;

- the types of information and communications; employee recruitment and selection; employee development; working environments and community outreach initiatives that LIM and its contractors will use to achieve employment equity for women;

- specific LIM initiatives such as an anti-harassment program; community sensitivity program and a review of childcare services available; and

- LIM will maintain an ongoing liaison and communication with the Women's Policy Office, the Department of Natural Resources Women's Policy Group and the Women in Resource

Development Committee (WRDC), so that they are informed about Project employment requirements, opportunities and plans.

4.1 Construction Phase Employment

Project construction will be of limited duration (approximately eight weeks) and will overlap with the initial year of operations. It is estimated that the Project will employ approximately 40 people during the Construction Phase from several occupational categories, including direct and indirect building and technical trades, engineering, procurement and construction management (Table 4.1). It is intended that most of these positions will be supplied by the main contractors or subcontractors.

Overall, LIM has a target commitment of having a minimum of 78 percent of construction phase employment and corresponding person-days accruing to Newfoundland and Labrador residents, most of it to Labrador. Specific targets with respect to women's employment are outlined in the Women's Employment Plan.

LIM will require its contractors and subcontractors to abide by the provisions of this Newfoundland and Labrador Benefits Plan with regard to maximizing employment of construction personnel from within the Province.

There is an adequate supply of labour in the Province to meet most project construction demands. However it is recognized that there are specific skill shortages throughout the construction industry and, with the limited size of the mining industry in the Province and the short duration of the Construction Phase of the Project, it is anticipated that a number of Project specific specialized positions may not be able to be filled by residents of the Province. Not withstanding this, the 78 percent minimum Newfoundland and Labrador resident employment commitment will apply.

The Project Construction labour force is described in Table 4.1. It should be noted that, with the exception of the General Site Management, the positions that will be required throughout the Construction Phase will involve short periods of work (i.e. between about two days and four weeks) on site.

Given the small numbers of trades-persons involved, it may be difficult to employ apprentices for some trades, in the journeyperson to apprentice ratios determined in accordance with the provincial general conditions concerning apprenticeship. However, LIM will strive to maintain the journeyperson to apprentice ratios where possible.

The labour demand for the Construction Phase of the Project is not expected to affect labour supply in the Province. Potential labour demands from other major projects could affected skilled construction labour supply.

The labour market in Canada for skilled trades is facing shortages and there is competition for labour across the country, given the compounding effects of an aging population, declining birth rates and a general lack of interest in skilled trade occupations. All existing and new major industrial projects are expected to experience skilled labour shortages. It is expected that there will be a shortage of civil engineers, electricians, plumbers, iron workers, welders, concrete finishers, carpenters and engineers in particular. The skilled labour market in Canada and particularly in Newfoundland and Labrador is dynamic and labour supply and demand present difficulties across the country. Emigration of skilled

workers from Newfoundland, especially to Alberta, has been noticed in recent years but this has declined in the current year.

It is planned that Construction Phase of the Project will be completed by mid-2010. As such, it is expected that construction of the Project will be completed in advance of the anticipated construction labour requirements of other major proposed Labrador projects, such as the Lower Churchill Hydroelectric Generation Project (peak employment 1,700, construction period 2010 to 2018) and Aurora Energy project (peak employment 700, construction period 2011 to 2014). Additional projects planned for development in Western Labrador include the Elross Lake DSO iron ore project and Consolidated Thompson's Bloom Lake railway. Given its short construction duration LIM's Project will therefore not be in competition for labour with these other Labrador construction projects.

The Project will provide some Labrador residents, including some workers in Labrador West who have recently become unemployed, with an opportunity to further develop their skills and employment experience, thereby assisting in the development of the labour force for subsequent construction projects in the Province.

Table 4.1 Construction Phase Employment

POSITION	NUMBER	NOC
Site Manager	1	
Clerk	1	
Lead Foreman	1	0721
Surveyor	1	2254
Equipment Operator – heavy	4	7421
Equipment Operator – light	3	7421
Truck Drivers	3	7411
Labourers-specialized	2	7611
Labourers	6	7612
Carpenter	2	7215
Welders	2	7265
Electricians	1	7241
Electrical Helper	1	7611
Crane Operator	1	7371
Boilermakers	1	7262
Ironworkers - steel reinforcement	1	7264
Ironworkers - steel reinforcement-helper	1	7611
Cement Finisher	2	7282
Structural Steel Workers	2	7263
Structural Steel Worker – apprentice	1	7611
Pipe Fitters	2	7252
Pipe Fitter-helper	1	7611
TOTAL - CONSTRUCTION	**40**	

4.2 Operations Phase Employment

It is expected that during mine operations the Project will provide employment for a total of approximately 109 personnel (100 on mine operations + 9 spur line operations), including allowance for the commute roster (Table 4.2).

LIM will provide full and fair opportunity and first consideration to residents of the province of Newfoundland and Labrador for operations related employment. LIM is committed to a minimum of 78

percent of employment and corresponding person-days accruing to residents of Newfoundland and Labrador, together with approximately 25 percent Aboriginal First Nation employment participation.

Operations will generate an important level of longer-term (estimated five-year duration) seasonal (approximately seven months per year) employment benefits to Labrador and the Province as a whole. Table 4.2 includes the total workforce including those personnel away from the site, on rostered time-off, at any time. It is expected that most workers will generally be employed on a four weeks on and two week off schedule. With the exception of the owner management positions, which will be full-time office positions, these personnel will be employed on a full-time seasonal basis.

Given the small numbers of trades-persons involved, it may be difficult to employ apprentices for some trades, in the journeyperson to apprentice ratios determined in accordance with the provincial general conditions concerning apprenticeship. However, LIM will strive to maintain the journeyperson to apprentice ratios where possible.

In addition to direct project employees there will be significant indirect employment created in both Labrador West and in Happy Valley-Goose Bay as a result of the supply of goods and services. Using a conservative economic multiplier of 2, it is estimated that at least an additional 100 operations phase jobs would be created across both Labrador communities.

LIM will use every effort to provide ongoing training and development for its employees and will:

- maintain a safe work environment that provides employees with the opportunity to achieve their career goals, and the training and support they need to meet personal objectives;
- provide competitive wages and benefits and a progressive work environment;
- create a welcoming and respectful work place, and adopt policies and initiatives that incorporate the Company's commitment to support training and development;
- work with Government, education institutions, women's organizations and industry associations to advance gender diversity on the Project;
- develop a human resources plan in support of its commitment to women's employment which will include targets and initiatives with respect to women as specified in the Women's Employment Plan.

Table 4.2 Operation Phase Employment

Positions	Number	NOC Code
Mine Operations		
Mine Operation Foreman	1	8221
Foreman	3	8221
Drill Operator	3	7372
Blaster	2	7372
Blaster Helper	1	8411
Loader Operator	3	7421
Haulage Truck Operator	9	7411
Dozer Operator	3	7421
Grader Operator	3	7421
Sampler	3	8614
Subtotal	31	
Mine Engineering		
Mine Engineer	2	2143
Mine Technician	1	2212
Surveyor	2	2254
Draftsman CAD	1	2253
Subtotal	6	
Beneficiation Operation		
Plant Manager	1	0721
Process Technician	1	2243
Chemical Technician (Lab)	3	2211
Labourer	1	7612
Administrative Assistant	1	1441
Warehouse Person	3	1472
Maintenance Foreman	1	7211
Utility Crew (pipeline, pumps, etc.)	1	
Primary Crusher Operator	6	9411
Secondary Crusher Operator	3	9411
Secondary Crusher Helper	2	9611
Belt Filter & Load-out Operator	6	9411
Mechanic	2	7312
Mechanic Helper	1	7612
Safety/First Aid personnel	3	
Electrician/Instrumentation	2	7241
Locomotive Engineers	3	7361
Brakemen	3	7362
Yard Workers	3	7432
Subtotal	46	
Owner Management		
General Manager	1	0721
Geologist	3	2113
Environmental Technician	1	
Clerk	1	
Mine Engineer	1	2143
Innu Liaison	1	
Labrador offices	3	
Subtotal	11	
Contractor Management		
Site Manager	1	0711
Secretary	1	1241
Bookkeeper/Accountant	1	1231
Camp operations	12	
Subtotal	15	
TOTAL - OPERATION	**109**	

5.0 PROCUREMENT OF GOODS AND SERVICES

Overall, LIM has committed to achieving a minimum of 85 percent of total value of construction and 85 percent of total value of operations phase contracts and goods and services being awarded/procured through companies and suppliers based in the Province.

Regardless of any other provision or statement set out in this Newfoundland and Labrador Benefits Plan, LIM shall, in all cases, meet or exceed all specific targets provided for in this Newfoundland and Labrador Benefits Plan relating to procurement of goods and services.

Labrador Iron Mines will require a wide range of goods and services during both the construction phase and the subsequent ongoing operation of the Project. LIM's policy in the procurement of goods and services will be on a basis which will enable the Project to be and remain competitive.

As a general principle, suppliers that maintain business operations and employees in the Province of Newfoundland and Labrador will be provided full and fair opportunity and first consideration on a competitive basis for the supply of goods and services for the Project during both the construction and operation phase.

The IBA signed with the Innu Nation of Labrador provides first opportunity to Innu Businesses for the supply of goods and services It is also anticipated that some goods and services will be procured from the Aboriginal communities of Matimekush and Kawawachikamach close to the mine site, and from the town of Schefferville. It is expected that substantially all of both construction and operations goods and services will be procured from business and suppliers in the Province of Newfoundland and Labrador.

LIM will use an adjacency policy in selecting suppliers to provide goods and services. First priority, in terms of supply of goods and services, will be given to qualified businesses located in Central and Western Labrador, second priority will be given to qualified companies in other parts of the Labrador, and third priority to qualified companies from elsewhere in the Province of Newfoundland and Labrador.

LIM will select the businesses and suppliers based on criteria which will provide best overall value and service to the Project and the Province taking all factors into consideration, including technical expertise, experience, quality of work, environmental and social responsibility, track record, health and safety record and localized sourcing of goods and services. LIM will retain the right to make decisions in a businesslike manner, relating to the qualifications, competence and suitability of any prospective supplier or contractor. In all cases, selection of suppliers for goods and services will be made based on such goods and services meeting the required specifications and availability on a commercially reasonable and timely basis. LIM may award contracts for goods and services from outside the Province where no provincial supplier can supply such goods and services on competitive terms, including LIM's required delivery schedule.

Procurement Procedures:

In furtherance of the principle of full and fair opportunity and first consideration to residents and business of the Province, LIM will implement procurement policies which reflect the following:

- Identify on a timely and ongoing basis, opportunities for the supply of goods and commercial services during all phases of the Project and communicate these to potential Provincial suppliers to enable such suppliers to identify and evaluate those opportunities of interest;

- Commit to work co-operatively with the Government agencies and industry organizations to jointly identify suppliers of goods and commercial services;

- For all Major Contracts (defined as any contract for the supply of goods or services with a price or value of more than $250,000), excluding iron ore transportation on the existing TSH, QNS&L and Arnaud railways, LIM will develop and apply a competitive bidding process incorporating the pre-qualification of the potential suppliers. LIM may award a major contract for goods and commercial services without a competitive bidding process where the contract is awarded under the terms of the IBA with the Innu Nation of Labrador.

- Include in each contract provisions requiring the supplier to adhere to this Benefits Policy. Suppliers will be required to incorporate similar provisions in any sub-contract arrangements;

- Ensure that LIM's procurement personnel are familiar with the capacities and capabilities of Newfoundland and Labrador suppliers;

- Ensure that LIM's procurement policies and procedures are posted on its website to promote supplier awareness;

- Ensure that the names and locations and contact details of LIM's procurement personnel are known to local business organizations and economic development groups and are available on the Company's website and at LIM's Labrador offices;

- Participate in trade shows, business conferences, and other business promotion events in the Province.

- Ensure the inclusion of qualified Newfoundland and Labrador suppliers on appropriate bid lists.

- Provide business groups, economic development agencies and the Innu Nation of Labrador with information on upcoming contracts, pre-qualification lists, and final bid lists.

- Meet and maintain an ongoing liaison with provincial, and especially Labrador, business groups and economic development agencies, and with the Innu Nation of Labrador, so that they are informed about goods and services requirements and plans, and to help identify potential Newfoundland and Labrador suppliers.

- Provide feedback to all unsuccessful bidders on Project contracts.

- Monitor, review and, as necessary, revise LIM's benefits procedures and initiatives to ensure that LIM's commitments under this benefits plan including the attainment of minimum targets have been achieved.

Supplier Development:

- LIM recognizes that the availability of competitive and competent suppliers in the Province, and particularly Labrador, is a key element in the long term success of the Project. LIM is committed to enhancing the capability of Provincial suppliers where possible.

- LIM will work with the Government of Newfoundland and Labrador to identify the capabilities of provincial suppliers and provide recommendations to, and assist the Government of Newfoundland and Labrador to develop, initiatives to improve the capacity of provincial suppliers to provide goods and services to the Project.

- LIM will develop, and update, lists of potential requirements for the supply of goods and commercial services for the operation phase of the Project and will communicate these lists in a timely manner.

5.1 Construction Phase Procurement

The construction phase of the Schefferville Area Iron Ore Project will see the procurement of goods and services, most of which are available in Newfoundland and Labrador. They include:

- earthworks;
- site construction;
- buildings construction;
- camp supply;
- plant construction;
- mine preliminary works and overburden stripping;
- fuel and refuelling services;
- welding and machining goods and services;
- land surveying;
- catering services
- vehicle rental;
- blasting;

- pipe-laying;
- road construction;
- electrical and mechanical contracting;
- miscellaneous tools and small equipment;
- heavy equipment rental (cranes, excavators, loaders);
- independent environmental monitoring; and
- air transportation.

LIM will ensure that construction management, engineering, procurement and project service activities for the construction phase of the Project shall, to the greatest extent possible, be carried out in the Province. LIM recognizes the existence of significant construction, fabrication and assembly infrastructure within the Province and will encourage utilization of such infrastructure. Specifically, LIM will require that potential contractors bid work on the basis of utilizing, qualified, competitive provincial suppliers of construction, fabrication and assembly services, where available. All material and major construction and supply contracts will be advertised within the Province and potential provincial based contractors and suppliers will be given every opportunity to provide competitive quotations.

Some Project materials and services are not available in Labrador or, indeed, elsewhere in the Province, and there is no reasonable expectation of this changing as a result of the Project or any foreseeable level of demand. The following materials and services may in all likelihood need to be brought to the Project site from outside the Province:

- crusher and beneficiation plant and major open-pit mining equipment;
- rails, rail ties and other track materials;
- rail cars and power units; and
- specialized mine engineering and consulting services.

Where it is not possible to source any of these items from within the Province these goods or services will be procured through Newfoundland and Labrador based distributors or agents whenever economically available.

LIM will make potential contractors from outside the Province aware of the Province's construction, fabrication and assembly infrastructure and provide qualified provincial suppliers of construction, fabrication and assembly services a full and fair opportunity to bid on construction, fabrication and assembly services. Where any such contract for construction, fabrication and assembly services is performed in the Province, LIM will require the supplier carrying out such services to locate, where possible, its fabrication, engineering and procurement activities relating to such contract in the Province.

Based on the Project parameters LIM has established a Benefits Plan target commitment of having 85 percent of the total value of construction contracts and supply of goods and services , excluding the four items noted above, being awarded to companies and suppliers based in the Province.

5.2 Operations Phase Procurement

Mine and railway spur line operations will require a wide range of goods and services, substantially all of which are available in Newfoundland and Labrador.

A review of local capabilities indicates that the following will be available on a commercial basis from within Newfoundland and Labrador:

- fuel and refuelling services;
- welding and machining goods and services;
- catering services and camp management;
- vehicle rental, rail passenger and air transportation services;
- maintenance operations;
- hardware stores miscellaneous tools and small equipment;
- heavy equipment rental (e.g. cranes, excavators and loaders);
- local contracting services (e.g. construction, electrical and mechanical);
- Mine contractors;
- Beneficiation Equipment operation; and
- Power Supply.

LIM has established a Benefits Plan target commitment of having 85 percent of the total value of operations phase contracts, goods and services (excluding iron ore transportation on the existing TSH, QNS&L and Arnaud railways, locomotive and rail car maintenance and port operations) being procured from companies or businesses based in Newfoundland and Labrador.

Should locomotive and rail car maintenance facilities or services become available in Labradror, LIM commits to ensure that these facilities/services be provided every opportunity to offer competitive quotations for these services.

All material and major construction and supply contracts will be advertised within the Province and potential provincial based contractors and suppliers will be given every opportunity to provide competitive quotations.

For those items that it is not possible to source directly from within the Province then these goods or services will be procured through Newfoundland and Labrador based distributors or agents whenever possible and whenever economically available.

Schefferville Area Iron Ore Mine
Western Labrador
Women's Employment Plan

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1.0 INTRODUCTION

This Women's Employment Plan covers the construction and operations phases of the Schefferville Area Iron Ore Mine Project (the "Project"). It has been prepared in response to the Guidelines for the Project environmental assessment, and describes how Labrador Iron Mines Limited (LIM) will ensure that the employment of women on the Project is fully promoted and supported throughout the Project.

The Plan is in four main sections. The first (Section 2.0) describes the Project and the occupations required for the construction and operations phases. This is followed, in Section 3.0, by a description of the women's employment planning process, including: the responsibilities of LIM and its main contractors; the process for identifying and implementing women's employment goals and initiatives, including the initial goals; and, the process whereby the implementation of those initiatives, and success in achieving these goals, are monitored and reported. Section 4.0 identifies and describes possible initiatives that LIM and its contractors can use to achieve employment equity for women. Lastly, Section 5.0 summarizes a number of initiatives LIM has already adopted with the aim of delivering employment equity on the Project.

The encouragement of women in the workplace is an important goal of LIM. In respect of LIM's commitment to employment equity, it should be noted that 33% of technical and management positions at the company are currently occupied by women.

2.0 THE PROJECT

The Project is being developed by LIM, which is a wholly-owned subsidiary of Labrador Iron Mines Holdings Limited, a public company listed on the Toronto Stock Exchange. LIM has identified eight separate ore grade deposits located across a 100km strike length all in Labrador. The first phase of the Project involves the development and mining of four 'direct shipping' iron ore deposits in western Labrador in an area of previous iron ore mining.

The James North, James South, Redmond 2B and Redmond 5 deposits are all located within 10 kilometres of the Silver Yard, Labrador, which is some three kilometres west of Schefferville, Quebec. Mining will be carried out in a sequential manner using conventional open pit mining methods. When mined, the rock will be crushed and washed (beneficiated) at Silver Yard. The resultant products will include lump ore and sinter fines for direct rail transport to port and shipping to end users in Europe and possibly Asia. The size of the operation proposed for this Project is modest by world-wide iron ore standards and as compared to other iron ore projects carried out elsewhere in the Province and previously in this area.

Subject to approval, construction of the Project is scheduled to start in 2009/2010, and has an estimated five-year operational life. The LIM operation has been planned with the objective of maintaining a reduced footprint. To achieve this objective, the proposed development has been planned as a small phased seasonal operation, staffed primarily by contractors, and using primarily mobile to semi-mobile equipment. In this respect, the Project differs in scale and character from the historical mining activities in the area as well as other current mines operating in the Province of Newfoundland and Labrador. With the exception of the owner management positions, which will be full-time management positions, operational positions will be held on a seasonal and rotational fly-in fly-out basis. This will limit the opportunities for the employment of apprentices and some other groups. It will

also mean that families associated with the Project are unlikely to settle in the Project area. Although the small numbers of trades-persons involved will make it unlikely to employ apprentices in the journeyperson to apprentice ratios identified by the provincial general conditions concerning apprenticeship, LIM will establish and maintain communication with the Office to Advance Women Apprentices in the event that future opportunities present themselves.

The required LIM and contractor construction phase labour force, by occupation including NOC-2006 codes, is presented in Table 1. The construction phase of the program is expected to last for only a short period of time, currently estimated at eight weeks.

Table 1 Construction Phase Employment

POSITION	NUMBER	NOC
Site Manager	1	0711
Clerk	1	1441
Lead Foreman	1	0721
Surveyor	1	2254
Equipment Operator – heavy	4	7421
Equipment Operator – light	3	7421
Truck Drivers	3	7411
Labourers-specialized	2	7611
Labourers	6	7612
Carpenter	2	7215
Welders	2	7265
Electricians	1	7241
Electrical Helper	1	7611
Crane Operator	1	7371
Boilermakers	1	7262
Ironworkers - steel reinforcement	1	7264
Ironworkers - steel reinforcement-helper	1	7611
Cement Finisher	2	7282
Structural Steel Workers	2	7263
Structural Steel Worker –assistant	1	7611
Pipe Fitters	2	7252
Pipe Fitter-helper	1	7611
TOTAL - CONSTRUCTION	**40**	

The Project operation phase employment, by occupation including NOC-2006 code, is presented in Table 2. Most workers will be employed on a rotational basis for about seven months a year during operations.

Table 2 Operation Phase Employment

Positions	Number	NOC Code
Mine Operations		
Mine Operation Foreman	1	8221
Foreman	3	8221
Drill Operator	3	7372
Blaster	2	7372
Blaster Helper	1	8411
Loader Operator	3	7421
Haulage Truck Operator	9	7411
Dozer Operator	3	7421
Grader Operator	3	7421
Sampler	3	8614
Subtotal	31	
Mine Engineering		
Mine Engineer	2	2143
Mine Technician	1	2212
Surveyor	2	2254
Draftsman CAD	1	2253
Subtotal	6	
Beneficiation Operation		
Plant Manager	1	0721
Process Technician	1	2243
Chemical Technician (Lab)	3	2211
Labourer	1	7612
Administrative Assistant	1	1441
Warehouse Person	3	1472
Maintenance Foreman	1	7211
Utility Crew (pipeline, pumps, etc.)	1	
Primary Crusher Operator	6	9411
Secondary Crusher Operator	3	9411
Secondary Crusher Helper	2	9611
Belt Filter & Load-out Operator	6	9411
Mechanic	2	7312
Mechanic Helper	1	7612
Safety/First Aid personnel	3	
Electrician/Instrumentation	2	7241
Locomotive Engineers	3	7361
Brakemen	3	7362
Yard Workers	3	7432
Subtotal	46	
Owner Management		
General Manager	1	0721
Geologist	3	2113
Environmental Technician	1	
Clerk	1	
Mine Engineer	1	2143
Innu Liaison	1	
Labrador offices	3	
Subtotal	11	
Contractor Management		
Site Manager	1	0711
Secretary	1	1241
Bookkeeper/Accountant	1	1231
Camp operations	12	
Subtotal	15	
TOTAL - OPERATION	**109**	

3.0 THE PLANNING PROCESS

The Schefferville Area Iron Ore Mine Western Labrador Project Women's Employment Plan process requires the involvement of LIM and its Project contractors. This section of the Plan describes the planning process, including: the ways in which it is reflected in the selection of Project contractors; the involvements and responsibilities of contractors; equity goals and initiatives; and, monitoring and reporting.

It should be noted that, as part of its initiatives with the Aboriginal peoples of the region, LIM will promote gender equality in the Project workforce and increase participation of Innu Nation of Labrador women and those of the participating First Nations. The company will develop in cooperation with these Aboriginal groups, and enforce, a policy with respect to all employees that will ensure zero tolerance for discrimination on the basis of race ethnicity, gender, sexual orientation or origin on the Project.

3.1 Selection of Project Contractors

LIM is committed to employment equity. Employment equity involves a systematic approach to achieving fairness in employment, including the elimination of systemic, structural and attitudinal discrimination. Furthermore, LIM's policy is that no one should be denied access to employment opportunities for reasons unrelated to ability. In support of this, LIM:

- Requires the same commitment to employment equity from its contractors; and
- Will take account of employment equity considerations in the awarding of contracts.

This Women's Employment Plan, and hence this commitment and preference, will be attached to relevant Project requests for proposals (RFPs), and all bidders will be required to outline their approach to employment equity.

3.2 Selection of Contractors for Women's Employment Planning Purposes

LIM will identify its main contractors for employment equity planning purposes based on their share of Project employment. This will normally be measured in terms of the person-years of employment involved. The list of main contractors will be reviewed and, as necessary, revised on an annual basis.

3.3 Women's Employment Plan Responsibilities

LIM and each of the main contractors will identify a senior member of their staff responsible for implementing the Women's Employment Plan. Project equity will be monitored and tracked by these representatives in accordance with the commitments of this Plan and requirements of the IBAs.

It is important that employment equity is a consideration of the Project employers from the outset. Experience with other projects has demonstrated the positive impact of early employer engagement in making equity a priority throughout the project. This Project will be greatly assisted by having this Women's Employment Plan in place in advance of the start of work. In addition, LIM will liaise with the Women in Resource Development Committee (WRDC) prior to and throughout the Project, including inviting the WRDC representatives to meet with them within 30 days of Project sanction and periodically

thereafter. During this initial period, LIM will work with WRDC to identify the occupations in which women are under-represented and will, on an ongoing basis, update this information and re-evaluate goals accordingly.

3.4 Women's Employment Goals and Initiatives

LIM has established overall goals for women's employment during construction and operations of the Project, consistent with the approach adopted in the Province's Energy Plan. However, the most recent such report uses data from the 1990s, so the Project goals have been established based on more recent occupational and industry data, adjusted to reflect the nature of the Project. These goals will be communicated to all potential and selected contractors.

LIM and each of its main contractors will identify actions for achieving the goal levels of employment for women. When new main contractors are identified, they will be asked, as part of the tendering process, to provide information concerning their programs to promote employment equity for women.

3.4.1 Construction Phase

Construction occupations have long had small proportions of women workers. In 2001, only 1% of the membership of the Newfoundland and Labrador Construction Trades Council were women, and labour force survey estimates show that women held just 3.4% of construction trades occupations in 2006, somewhat lower than the national average.[1] There are currently a total of 214 females tradespersons registered with the Office to Advance Women Apprentices, including 21 journeypersons and 179 apprentices (G. Hickey, pers. comm.)[2]. Within the Province, participation by women in trades programs at the College of the North Atlantic (CNA) has been approximately 20% between 2006 and 2008. Participation has been greater in Labrador than on the island, and has increased from 24% female graduates in 2006 to 54% in 2008, with the largest numbers of female graduates from the Industrial Mechanic Millwright and Mining Technology programs. The CNA's Labrador campuses also offer the Career Exploration for Women and Orientation to Trades and Technology – Women programs, which are introductory programs designed to introduce women to trades careers (I. Pye, pers. comm.)[3]. However, the Project will require work at a remote location with a projected construction phase of only approximately eight weeks duration, resulting in limited opportunities to train workers.

Accordingly, LIM has established no overall goal for women's employment during the construction phase of the Project.

It is recognized that opportunities may be identified to hire female employees in some employment categories and hence LIM and its contractors will work with the WRDC in order to determine the employment categories where these improvements would be most appropriate.

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[1] Statistics Canada. *Table 282-0008 Labour Force Survey Estimates (LFS), by North American Industry Classification System (NAICS), Sex and Age Group, Annual* (Table). CANSIM (database). Using CHASS (distributor). Version updated April 20, 2007. http://dc2.chass.utoronto.ca.qe2a-proxy.mun.ca/cansim2/ (accessed April 25, 2007).

[2] G. Hickey Executive Director, Office to Advance Women Apprentices, St. John's, NL

[3] I. Pye Policy, Planning and Research Analyst, College of the North Atlantic, St. John's, NL.

The participation of women in design and engineering positions is also traditionally low. In 2008, Memorial University reported that women comprised only 18% of graduates from the Bachelor of Engineering program[4]. Additionally, Professional Engineers and Geoscientists of Newfoundland and Labrador membership data show that as of December 2008 women comprise 9% of professional engineers and engineers-in-training, up from 7% in 2007. This is consistent with female participation in engineering nationally, which was 9% for professional engineers and 19% for engineers-in-training in 2007 (L. Pinsent Parsons, pers. comm.)[5].

Based on this information and the short term period of construction, LIM has established a goal of over 30% (3 women in a workers group total of 8) for women's employment in Project design and engineering during construction.

3.4.2 Operations Phase

It is estimated that the operations phase of the Project will last five years and it will only employ approximately 109 people for about seven months a year.

Mining has traditionally employed relatively small numbers of women, although this is less the case with open pit operations. The most recent employment data from Statistics Canada shows that although women represent approximately 47.5% of total employment across all industries in Newfoundland and Labrador in 2008, women comprised only 15.4% of the workforce in occupations unique to primary industry.[6] In Labrador, female graduates from the CNA's Mining Technology trades program has been 66% between 2006 and 2009 (I. Pye, pers. comm.)[3].

Accordingly, LIM has established an initial 15% goal for women's employment by the end of the second year of Project operations and will strive to increase this during the remaining years of the project.

Operations phase employees will be provided training through a post-employment on-the-job training program. This will provide LIM an opportunity to incorporate goals for women's employment into the initial intake of employees. This has the potential to both increase the opportunity for success in achieving overall goals for employment in the early phase of Project operations and to have a lasting impact on employment equity over its life.

3.4.3 Review of Goals

The above goals will be reviewed and, as necessary, revised after two years of operations, in consultation with the Women's Policy Office, Department of Natural Resources and WRDC. Any revisions will take into consideration women's participation in identified occupational groups as well as labour market conditions generally. It is expected that the employment equity initiatives established by

[4] Memorial University. 2008. Fact Book 2008. Memorial University, St. John's, NL.

[5] L. Pinsent Parsons Registrar and Director of Administration, Professional Engineers and Geoscientists Newfoundland and Labrador, St. John's, NL

[6] Statistics Canada. 2009. CANSIM Table 282-0010 Labour Force Survey Estimates by National Occupational Classification for Statistics (NOC-S) and Sex, Annual 1987-2008. CANSIM Database using CHASS (Distributor) http://dc2.chass.utoronto.ca.qe2a-proxy.mun.ca/cansim2/ (accessed April 25, 2007).

LIM and its major contractors will facilitate an increase in the number of women employed in these positions over the life of the Project.

3.5 Monitoring and Reporting

The performance of the Women's Employment Plan will be reviewed at least every six months. During this review LIM and its main contractors will each: review its employment equity initiatives; discuss its success in implementing them; report on the employment equity of its current Project workforce, by main employment types (e.g. numbers and percentage who are managers, administrative staff, professionals and technicians, and others); and discuss the progress that has been made towards the established goals. Outside resource people, with specialist information about employment equity issues, may be invited to present to the Committee.

Within one month of every second review period (i.e. on an annual basis), LIM and its main contractors will compile an up-to-date list of Project employment equity initiative commitments, together with a short summary report on the employment equity in its current Project workforce. LIM will maintain a file of these commitments and reports, which will be available to the Women's Policy Office, Department of Natural Resources and WRDC. LIM accepts responsibility for the Women's Employment Plan including the consistent application of the plan by any Project Contractors or Subcontractors.

4.0 ACTIONS

This part of the Women's Employment Plan identifies and describes required and optional actions that are designed to achieve employment equity for women. These are:

- Information and Communications;
- Employee Recruitment and Selection;
- Employee Development;
- Working Environments; and
- Community Outreach.

LIM and its main contractors will consider and report on these actions in their own employment equity planning. For each of them, this section of the Women's Employment Plan provides a description of appropriate actions, based on best practice experiences elsewhere.

The scope and scale of actions required of each Project contractor varies according to such things as its size, current labour force composition and activities, and the policies and practices it has already implemented. Other possible initiatives may be identified by companies.

4.1 Information and Communications

Information content and its communication have a major role to play in achieving employment equity. Appropriate actions LIM and its main Project contractors may take in addressing this topic include:

- Hold information sessions specifically targeted at women;

- Ensure women are equitably represented in text and illustrations the companies use for promotional, motivational and information purposes, including handbooks, newsletters, posters and websites; and
- Review all text they use internally and externally to see that it uses gender-inclusive language.

4.2 Employee Recruitment and Selection

The characteristics of the Project workforce will to some degree reflect those of the labour market as a whole and of prospective new entrants to it. However, the recruitment process can serve to either reinforce or counter any under-representation of women. There is, accordingly, a need to use recruitment procedures that actively encourage women to apply for all positions, including full-time, part-time, temporary and co-op student ones. To support an increase in female employment in all phases of the project, LIM will seek to consult with women in the area and/or in related work environments to determine beneficial policies and procedures.

Appropriate other actions LIM and its main Project Contractors might take in addressing this topic include:

- Establish guidelines for writing model job advertisements that aim to reach female candidates;
- Review job descriptions and collective agreements for the use of gender-inclusive titles and text;
- Establish relationships with training institutions and work with them to include female candidates in regular and co-op student positions;
- Implement a system to document outreach recruitment initiatives;
- Initiate and implement a gender-sensitivity and anti-harassment training program for all management, workers and contractors, to encourage equitable selection and treatment of women in the workplace;
- Encourage an environment of mutual respect;
- Implement programs targeted at eliminating violence in the workplace;
- Include an assessment of goal achievements as part of management performance reviews;
- Establish relationships with women's groups and work with them to identify and encourage female candidates; and
- Implement a system to monitor the gender of persons with resumes on file.

4.3 Employee Development

It is important that women be encouraged to develop, and assisted in developing, their capabilities and achieving promotion within LIM and its main contractors. Appropriate actions LIM and its main contractors might take in addressing this topic include:

- Consider the participation of women in all training initiatives; and
- Develop a strategy to increase women's representation in management through mentoring, special assignments, management training, creation of junior management bridging positions, and gender-sensitivity and anti-harassment training.

4.4 Working Environments

During both the construction and operations phases of the Project, LIM will work diligently to create a work environment that is conducive to employment equity. Gender sensitivity training will be required by all LIM and contract employees. LIM's goal is to create a culture that fosters equity and is encouraged by successful implementation of this Women's Employment Plan.

The work environment, and the presence of policies that address harassment and other concerns, can be critical to retaining women in the workforce. Appropriate actions LIM and its main contractors might take in addressing this topic at Project workplaces include:

- Establish respectful workplace guidelines and an anti-harassment and anti-violence in the workplace policies;
- Establish, distribute and publicize the anti-harassment policy and procedures; and
- Provide gender-sensitivity and anti-harassment training for managers and supervisors.

4.5 Community Outreach

The numbers of women in and interested in entering, construction and technical occupations will be a significant constraint to the employment of women on the Project. In the longer term, this is best addressed by initiatives that promote such occupations to girls and young women. Currently, LIM has an active outreach program in local area schools, providing information about the project and encouraging educational activities in schools, both near the Project area and its Toronto-based corporate office. Additional appropriate actions LIM and its main Project contractors may take in this area include:

- Participation in career days and facilitating workplace visits; and
- Support of, or mentoring, Techsploration and other WRDC programs.

5.0 LABRADOR IRON MINES INITIATIVES

In support of the above-noted process (Section 3.0), LIM has already adopted a number of initiatives aimed at delivering women's employment equity on the Project. These will serve, not least, as a demonstration of LIM's equity commitment to its contractors and other stakeholders. Specifically, LIM will:

- Review home community childcare services available to qualifying personnel in Labrador;
- Implement arrangements and policies at the worker accommodations that ensure a respectful living environment for all employees. This will include an anti-harassment program and community sensitivity program, endeavouring to accommodate women in a specific part of the camp, providing women-only access to exercise facilities at some times, and adopting a zero-tolerance policy with respect to harassment at both the workplace and accommodations facility;
- Provide a cultural and gender awareness orientation to all employees; and
- Include in Project-related job advertisements, and require all contractors advertising for positions largely or entirely related to the Project to include, statements encouraging applications from women.

APPENDIX E

Correspondence from DFO

From: Yetman, Dana [mailto:Dana.Yetman@dfo-mpo.gc.ca]

Sent: Thursday, September 25, 2008 1:22 PM

To: Linda Wrong

Cc: Grant, Carole

Subject: Labrador Iron Mines - Schefferville Project

Hi Linda,

This email is in reference to your letter dated September 9, 2008 in which you provided a summary of gill-netting activities for the Schefferville project. Based upon the results, Habitat Management has determined that the historic pits, specifically Redmond Pit 1, Redmond Pit 2, Wishart Pit, and Ruth Pit, do not constitute productive fish habitat that supports, or potentially supports, a commercial, recreational or aboriginal fishery. Therefore a Section 35(2) Fisheries Act Authorization will not be required. Please note that this determination only applies to the aforementioned pits; an official determination regarding all other water bodies within the project area will be forth coming once all requested habitat information has been received and assessed by Habitat Management.

Please do not hesitate to contact me if you require further clarification.

Thanks,

Dana Yetman

Senior Regional Habitat Biologist | Biologiste Principal Régional des Habitats

Fisheries and Oceans Canada | Pêches et Océans Canada

Marine Environment and Habitat Management Division | Division De l'Environnement Marin et de la Gestion de l'Habitat

Oceans and Habitat Management Branch | Direction de la Gestion des Océans et de l'Habitat

Northwest Atlantic Fisheries Centre | Centre des Pêches de l'Atlantique Nord-Ouest

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Dana.Yetman@dfo-mpo.gc.ca

PLEASE NOTE MY EMAIL ADDRESS HAS CHANGED

APPENDIX F

New Millennium News Release

NEWS RELEASE 08-05

NEW MILLENNIUM ANNOUNCES PRODUCTION DEVELOPMENT UPDATE OF ITS DIRECT SHIPPING ORE PROJECT

Not for Distribution to US newswire services or dissemination in the United States

CALGARY, Alberta, Canada – February 5, 2008 – New Millennium Capital Corp. ("NML" or "the Company") (TSX-V: NML), announced today that it has completed the proposed development plans and schedule for its Direct Shipping Ore ("DSO") Properties in the Schefferville region of Quebec and Newfoundland and Labrador.

Mr. Robert Martin, New Millennium CEO and President, said, "We are very pleased to start development of our DSO Project. With our current robust iron ore markets, there have been many inquiries from potential consumers concerning our intentions. Our plan is to establish a brownfield mining operation that can be developed sooner and with less capital than the KéMag deposit. The expedient and cost effective development of the DSO Project can potentially produce substantial cash flow for the Company while the larger KéMag Project is being developed. Successful development of the DSO Project is aided by management's intimate familiarity with the properties and we are also fortunate in being able to assemble a strong project team with past experience in the Schefferville operations."

NML's DSO holdings are contained in 27 deposits that were previously owned by the Iron Ore Company of Canada ("IOC"). These deposits are outlined on the attached map. They consist of 145 mineral claims in Quebec covering 6,344 hectares and 155 mineral claims in Labrador covering 3,875 hectares. Based on historical estimates, these claims cover approximately 100 million tonnes of direct shipping quality iron ore. The grade of this ore, based on historical operations as published by the American Iron Ore Association in 1978, is in the order of 60% iron (dry analysis).

The historical estimates contained in this news release of quantities of direct shipping quality ore are not in accordance with the mineral resources or mineral reserves classifications contained in the CIM Definition Standards on Mineral Resources and Mineral Reserves, as required by National Instrument 43-101 ("NI 43-101"). Accordingly, NML is not treating these historical estimates as current mineral resources or mineral reserves as defined in NI 43-101 and such historical estimates should not be relied upon. A qualified person has not done sufficient work to date to classify the historical estimates as current mineral resources or mineral reserves. The term "ore" in this release is being used in a descriptive sense for historical accuracy, and is not to be misconstrued as representing current economic viability. A feasibility study has not been completed in respect of the DSO properties and there is no certainty the proposed operations will be economically viable.

The DSO holdings controlled by NML are sub-divided into four areas designated Area 1, Area 2, Area 3 and Area 4. The Company's conceptual plan is to consider mining these areas in two phases.

The first phase, which represents about 20% of the Company's DSO historical estimated resources, includes Area 2 and Area 3. This brownfield phase has semi-developed infrastructure which will permit rapid development. The conceptual plan is to transport the crude ore by haulage truck from the 10 open pit deposits in Area 2 (10 km north of Schefferville) and Area 3 (20 km north of Schefferville) to a wash plant to be built and installed in Area 3. The wash plant is expected to produce two products, a lump ore and a fines product. It is planned to transport these products by rail to a marshalling yard near Schefferville prior to shipment on the main line to Sept Iles.

One of the mines in area 3, Timmins 3, was partially mined and two others, Timmins 4 and Timmins 7 were partially stripped by IOC at the time of closure in 1982. All three would be expected to be reopened by NML.

The second phase, about 75% of NML's DSO historical estimated resources, will entail mining in Area 4. This area, which is about 50 km north of Schefferville is devoid of infrastructure and, as a consequence, will take longer to develop than Area 2 and Area 3. The conceptual mining plan is to transport the crude ore by haulage truck from the 9 open pit deposits in Area 4 to an overland conveyor for transport to the wash plant in Area 3, then via the phase 1 infrastructure to the Port of Sept-Iles.

NML anticipates the startup of its Phase 1 production (Areas 2 and Area 3) in 2010 and its Phase 4 production (Area 4) in 2013. There are nine Area 1 open pit deposits, about 5% of NML's DSO historical estimated resources. Seven of these are jointly owned with Labrador Iron Mines (TSX-V: LIR). Seven of these, the James, the Knob Lake 1, the Redmond 5, the Houston 1, the Houston 2S and the Houston 3 would most likely be mined in accordance with the LIR mining schedule which currently plans to commence production in area 1 in 2009. To date there has not been any agreement reached with LIR regarding NML's claims that partially cover seven of their deposits. As part of this year's program, NML will attempt to negotiate some mutually satisfactory agreement with LIR regarding the mining of NML's ore and the possible cost sharing of infrastructure.

NML's DSO development is being fast-tracked to take advantage of current shortages of iron ore in the world market place. The project is expected to be a relatively low cost capital venture owing to the existence of significant infrastructure in the form of air, rail and hydroelectric links with the Town of Schefferville and, in most cases, road links from Schefferville to the Company's deposits.

Phase 1 development is currently in progress with the commencement of planning related to geology, mining and resource, metallurgy, environmental and pre-feasibility studies. Negotiations with effected First Nations and the TRT railroad are also in progress.

The Company's 2008 DSO Project objectives are: 1) to initiate development drilling and trenching in Area 2, Area 3 and Area 4 in order to publish a NI 43-101 compliant resource estimate; 2) to complete metallurgical testing and finalize the wash plant flowsheet; 3) to complete phase 1 environmental assessment; 4) to finalize Impact and Benefit Agreements ("IBA") with the First Nations, tariff agreements with three railways, land and dock use agreements with the Sept-Iles Port Authority, infrastructure sharing at Pointe Noire with Wabush Mines and the leasing of rolling stock and mining equipment; and, 5) to complete a preliminary feasibility study and financial evaluation.

Approximately 4,000 metres of reverse circulation drilling and 2,000 metres of trenching are scheduled. The drilling and trenching program will be done for twinning purposes. This is expected to supplement and verify the use of the extensive drilling and trenching previously performed on these properties by IOC. It is also expected to upgrade the historical results to current NI 43-101 standards. Results are expected by the end of December 2008.

To complete metallurgical testing, several bulk samples will be taken for crushing and screening tests to determine the amount of lump ore in the run of mine materials along with their respective grades. Samples of both lump and fines will be sent to an outside testing lab for washing and iron recovery tests including product grades which may be expected. This work is expected to be completed by the end of September 2008.

The environmental impact assessment has started and the DSO Project description is currently being prepared. Contracts will be awarded to consultants by the end of March and the Environmental Impact Statement is expected to be sent to the appropriate governmental authorities by the end of October. Government review and approval is expected for Area 2 and Area 3 by the end of March 2009.

IBA meetings have recently started with some of the effected First Nations. Discussions with the Tshiuetin Railway, which requires a major upgrade to its track structure, the QNS&L Railway and the Arnaud Railway will be initiated to plan the railway transportation agreements required to move the ore from the mine sites near Schefferville to the Port of Sept-Iles. Initial discussions with The Port Authority of Sept-Iles have begun and discussions with Wabush regarding the joint use of their ship loading terminal will be scheduled as soon as the Wabush facilities are turned over to its new owner. All agreements are expected to be in place by the end of December 2008.

A Preliminary Feasibility Study will be initiated once the summer program is completed and the sample analysis results start to arrive. The final report and financial analysis is scheduled for completion by the end of December 2008 and the feasibility study is expected by the end of May 2009.

As previously announced, the Corporation, with the assistance of it's financial advisors Credit Suisse ("CS") and Miller Mathis ("MM:"), is actively seeking investment and offtake commitments from potential strategic partners that will permit the Corporation to develop one or more of its iron ore projects located in the provinces of Quebec and Newfoundland and Labrador, Canada. This process includes the DSO Properties. While this process continues, no agreements have been achieved in respect of such commitments. However, this process has elicited a number of expressions of interest, and now can be advanced to a further stage where firm offers are solicited.

Moulaye Melainine, Eng. and Bish Chanda, Eng. are the Qualified Persons as defined in NI 43-101 who have reviewed and verified the scientific and technical mining disclosure contained in this news release on behalf of NML.

About New Millennium

New Millennium holds a 100% interest in the KéMag Property (Quebec) and an 80% interest in the LabMag Property (Newfoundland and Labrador). Both properties are located within the Millennium Iron Range, the centre of which is located approximately 230 km north of Labrador City, NL and 40 km northwest of Schefferville, QC. The Company also has a 100% interest in 300 DSO claims in Quebec and Labrador that contain, based on historical estimates that are not in compliance with NI 43-101, in excess of 100 million tons of direct shipping quality ore. A qualified person has not done sufficient work to classify the historical estimate as current mineral resources. The Company is not treating the historical estimate as current mineral resources and the historical estimate should not be relied upon.

Subject to the completion of positive feasibility studies, project financing and project construction, the concentrate from the KéMag Project would be pumped from the property through a slurry pipeline, about 750 kilometres, to Pointe-Noire, near the Port of Sept-Iles, QC, where it would be both pelletized and sold as concentrate. The concentrate from the LabMag Project would be pumped from the property through a slurry pipeline, about 230 kilometres, to Emeril, NL where it would be pelletized prior to rail transportation via an existing railroad about 390 km to Pointe-Noire, near the Port of Sept-Iles. DSO products are envisioned to be transported by rail to a Port at Pointe-Noire.

These projects envision the construction and operation of ship loading facilities and related infrastructure at the Pointe-Noire terminus from where the various iron ore products would be shipped by ocean vessels to markets in Canada, the United States, Western Europe, North Africa, the Middle East and Asia.

The Corporation's mission is to add shareholder value through the responsible and expeditious development of the Millennium Iron Range and other mineral projects to create a new large source of raw materials for the world's iron and steel industries. For further information, please visit www.nmlresources.com.

This release may contain forward looking statements within the meaning of the "safe harbor" provisions of US laws. These statements are based on management's current expectations and beliefs and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those described in the forward looking statements. New Millennium does not assume any obligation to update any forward looking information contained in this news release.

NO REGULATORY AUTHORITY HAS APPROVED OR DISAPPROVED THE CONTENT OF THIS RELEASE. THE TSX VENTURE EXCHANGE DOES NOT ACCEPT RESPONSIBILITY FOR THE ADEQUACY OR ACCURACY OF THIS RELEASE.

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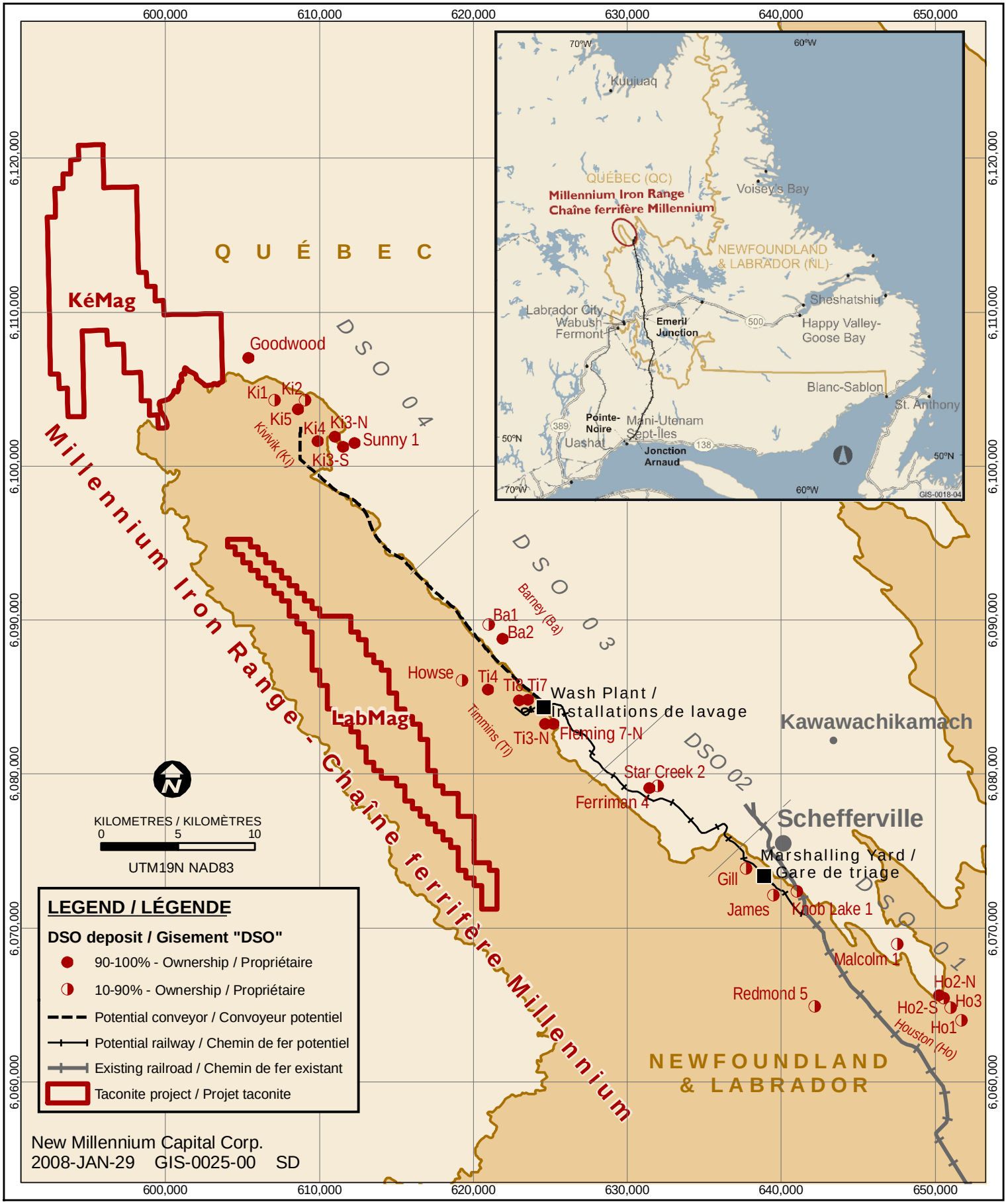
600,000
610,000
620,000
630,000
640,000
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6,120,000
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6,070,000
6,060,000
Q U É B E C
KéMag
Goodwood
Ki1
Ki2
Ki5
Ki4
Ki3-N
Sunny 1
Ki3-S
Kivivik (Ki)
DSO 04
Millennium Iron Range - Chaîne ferrifère Millennium
DSO 03
Barney (Ba)
Ba1
Ba2
Howse
Ti4
Ti8
Ti7
Ti3-N
Timmins (Ti)
Wash Plant / Installations de lavage
Fleming 7-N
LabMag
Star Creek 2
Ferriman 4
DSO 02
Kawawachikamach
Schefferville
Marshalling Yard / Gare de triage
Gill
James
Knob Lake 1
Malcolm 1
Redmond 5
Ho2-N
Ho3
Ho2-S
Ho1
Houston (Ho)
DSO 01
NEWFOUNDLAND & LABRADOR
KILOMETRES / KILOMÈTRES
0
5
10
UTM19N NAD83
LEGEND / LÉGENDE
DSO deposit / Gisement "DSO"
90-100% - Ownership / Propriétaire
10-90% - Ownership / Propriétaire
Potential conveyor / Convoyeur potentiel
Potential railway / Chemin de fer potentiel
Existing railroad / Chemin de fer existant
Taconite project / Projet taconite
New Millennium Capital Corp.
2008-JAN-29 GIS-0025-00 SD
70°W
60°W
50°N
Kuujuaq
QUÉBEC (QC)
Millennium Iron Range
Chaîne ferrifère Millennium
Voisey's Bay
NEWFOUNDLAND & LABRADOR (NL)
Sheshatshiu
Labrador City
Wabush
Fermont
Emeril Junction
500
Happy Valley-Goose Bay
Blanc-Sablon
St. Anthony
Pointe-Noire
389
Uashat
Mani-Utenam
Sept-Îles
138
Jonction Arnaud
GIS-0018-04

APPENDIX G

Beneficiation Process

APPENDIX G – BENEFICIATION PROCESS

Primary Crushing Circuit

The raw ore from the pits will be delivered via off-highway end dump trucks to the Primary Mobile Crushing Plant and either directly dumped into the feed hopper or stockpiled nearby for subsequent reclaiming into the feed hopper by a Front End Loader or a loader and truck.

The primary mobile crushing plant includes a hopper, vibrating grizzly feeder, jaw crusher, various chutes, bins, and conveyors, lubricating system and hydraulic power pack.

The ROM feed will have a top size of 600mm. It is expected that approximately 50% of the feed will bypass the primary crushing as it will already be minus 100mm.

The primary crushing plant will not be enclosed. There will be a dust collector system accompanying the Primary Crushing circuit. The specifications on the dust collector are not yet available; however the small unit will be designed to meet Newfoundland and Labrador Regulation 39/04.

Tumbling Scrubber Circuit

The discharge from the Primary Crushing will be conveyed to the Tumbling Scrubber circuit. The purpose of this step is to beneficiate the ore by incorporating water to wash the clay materials from the ore materials. It is anticipated that the scrubber will be mounted on a portable chassis.

Primary Screening Circuit

The discharge from the Tumbling Scrubber proceeds to the Primary Screening circuit. This is the first stage of classification.

The oversize material (> 50 mm) on the top deck is sent to the secondary crushing circuit, the undersize material (< 6 mm) from the bottom deck is sent to the Secondary Screening circuit, and the remaining material (> 6 mm, < 50 mm) is conveyed to the Lump Ore Stockpile.

Secondary Crushing Circuit

The oversize (> 50 mm) from the primary screening circuit is transferred to the secondary crushing circuit. The secondary crusher will be a standard cone crusher, GP300 or equivalent. The product from the cone crusher will be transferred back to the primary screening circuit.

Secondary Screening Circuit

The undersize (< 6 mm) from the Primary Screening circuit will be pumped to the Secondary Screening circuit.

The oversize material (> 0.325 mm) on the top deck is conveyed to the Sinter Fines Stockpile, the oversize material (> 0.150 mm, < 0.325 mm) on the bottom deck is pumped to the dewatering circuit equipment for dewatering. The undersize material (< 0.150 mm) from the bottom screen is pumped to the reject rock fines disposal area.

Dewatering Circuit

Material from the Secondary Screens that is less than 0.325 mm and greater than 0.150 mm in size will be transferred to the dewatering circuit via chutes. The purpose of this circuit is to dewater the sinter fine product to a maximum 8% moisture content. The overflow material from this circuit will be conveyed to the Sinter Fines Stockpile. The underflow will be pumped to the reject rock fines disposal area.

Product Storage

The iron ore products from the beneficiation process will be conveyed from the enclosure to the respective radial stackers. The lump ore product and the sinter fines product will be stockpiled separately. An area of approximately 4,300 m^2 is available for clean ore storage. Drainage from the ore stockpiles will be managed through site grading and ditching. The surface run-off will be directed to the Silver Yard Stormwater Management Pond (SWM-1) as shown on Figure 3-4 (site layout).

Reject Fines Handling

The undersize material from the Secondary Screening circuit (< 0.150 mm) and the filtration filtrate will be combined and pumped as a slurry to the reject rock fines disposal area. The reject fines slurry is estimated at 21% solids and will be pumped at an estimated flow rate of 520 m^3/h. The options for the reject fines disposal will include the following:

1) The reject fines slurry will be pumped approximately 3 km via an above ground, 300 mm diameter HDPE pipeline to the Ruth Pit. The Ruth Pit is an exhausted mine that is now flooded. The surface area of the Pit is 61.5 ha and the depth of the pit is 120 m.
2) An emergency disposal/storage area within the Silver Yards area is also designed to provide room in the case the reject fines pipeline or beneficiation process equipment needs to be purged. Its location is coincident with the Silver Yards Stormwater Management Pond (SWM-1).

Rail Loadout

The material from the Sinter Fines stockpile and the Lump Ore stockpile will be reclaimed with front end loaders.. Further details of the rail loadout process are presented under Section 3.1.5.