



## Fire Lake North Iron Mine

Description of Designated Projects as per the Canadian  
Environmental Assessment Act (2012) - Summary

O/Réf. : 063133.002-500

March 2015



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# 1 General Information and Contacts

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## 1.1 Nature of Project

Champion Iron Mines Ltd is a Canadian-based mining exploration and development company. Champion is one of the largest landholders of highly prospective iron ore claims, with holdings located southwest of Fermont and northeast of Schefferville, Quebec.

Champion Iron Mines Ltd intends to develop the deposit located on its Fire Lake North property near Fermont, Quebec. The project also includes the construction of an access road linking the site to Route 389.

## 1.2 Proponent Contact Information

Project Title: Fire Lake North Iron Ore Project

Proponent Name: Champion Iron Mines Ltd

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18th Floor – 1850  
Montreal QC H3B 1S6

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President and Chief Executive Officer  
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Project Manager: David Cataford  
Vice-President, Engineering  
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Phone: 514-316-4858  
Fax: 514-393-9069

## 1.3 Consultations

Consultations have been held with local and regional stakeholders to gather as much information as possible on the local and regional biophysical environment as well as the social environment. Solid relationships and partnerships have been forged as a result of these discussions with the City of Fermont.

Relations with the Innu Uashat mak Mani-Utenam (ITUM<sup>1</sup>) First Nation are progressing, although it has not yet been possible to gather information that would be directly useful for the environmental assessment of the project. Consultations with ITUM have been held on a regular basis since 2009, consisting first of information sessions and discussions on various potential joint business opportunities. In May 2012, moreover, Champion met with representatives of families with traplines in the project area. At the same time, discussions continued with the Band Council regarding the development of an Impact Benefit Agreement (IBA).

Additional information on consultations is provided in chapters 6 and 7 of this project description.

## **1.4 Other Relevant Information**

### **1.4.1 Environmental Assessment in other Jurisdictions**

The Fire Lake North mining project is subject to Quebec legislation.

Under Division IV.1 of the *Environment Quality Act* (c. Q-2) (EQA), any person or group is required to follow the environmental impact assessment and review procedure before undertaking a project indicated in the *Regulation respecting environmental impact assessment and review* (c. Q-2, r.23). Given that iron ore production is expected to exceed 7,000 t/d, the Fire Lake North mining project is subject to this procedure. A certificate of authorization from the Quebec government will also be required under Section 31.5 of the EQA.

Once the EIS is deemed acceptable by the MDDELCC, the Minister will mandate the Bureau d'audiences publiques sur l'environnement (BAPE) to hold a public information and consultation period. If a request for a public hearing addressed to the Minister is deemed valid, BAPE will be awarded a mandate to hold public hearings under Section 31.3 of the EQA. The final decision by the Minister to authorize the project will be based on the BAPE's Inquiry and Public Hearing Report and the MDDELCC's Environmental Assessment Report.

### **1.4.2 Other Regional Environmental Assessments**

Based on information provided by the CEA Agency, no regional environmental assessment under the *Canadian Environmental Assessment Act* (2012) has been performed in this region.

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<sup>1</sup> ITUM: Innu Takuikan Uashat mak Mani-Utenam



## **2 Information on the Project**

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### **2.1 General Description and Objectives**

#### **2.1.1 General Description**

The Fire Lake North mine project consists of an open pit mine and an iron ore concentrate processing facility at the site of the mining property south of Fermont.

#### **2.1.2 Objectives**

The main objective of the project is to produce high grade iron oxide (essentially hematite) for use in the steel industry. Specular hematite on the Fire Lake North property occurs in coarse-grained form. The deposits at the Fire Lake North property are also low in impurities such as phosphorus and aluminum. The resulting concentrate will therefore be ideal for blast furnace production of steel.

The construction of the facilities and project operations should generate many direct and indirect well-paying jobs, and provide the various levels of government with substantial revenues through taxes, duties and royalties.

### **2.2 Provisions of the Regulation modifying the Regulations Designating Physical Activities**

The following provisions from the Regulation modifying the Regulations Designating Physical Activities apply to the Fire Lake North iron mine project:

- 16. The construction, operation, decommissioning and abandonment of
  - (a) metal mine, other than a rare earths or gold mine, with an ore production capacity of 3,000 t/d or more;
  - (b) a metal mill with an ore input capacity of 4,000 t/d or more.

### **2.3 Project Components and Activities**

#### **2.3.1 Fire Lake North Mine**

##### **2.3.1.1 Related structures**

The main elements of the Fire Lake North project outlined in the February 2013 Preliminary Feasibility Study include:

- Two open pit mines (east and west);
- Three waste rock piles;
- One overburden pile;
- Temporary ore storage area;
- Ore processing facility;
- A tailings pond;

- Concentrate silo;
- A water treatment system with sedimentation basins;
- Process water treatment system;
- Housing and services complex;
- A mine garage;
- Water supply system;
- Wastewater treatment system;
- A residual and hazardous materials storage, management and recycling area;
- Trench landfill site;
- Explosive storage site;
- Secondary roads on site;
- Rail facilities of less than 10 km to link the mine site with a railway that would connect Fermont to Sept-Îles, the latter not being part of this project;
- Electrical facilities;
- Fuel tank farm and service stations.

### 2.3.1.2 Operations

Conventional open pit mining operations will be used. The two open pits, the West and East pits, correspond to two deposits. Drilling and blasting will be used to extract the ore and waste rock required to release the ore. The material will be loaded onto off-road trucks then transported to their respective storage areas.

The preliminary dimensions of the pits are:

- West pit: 4,600 m by 900 m and 564 m deep;
- East pit: 4,200 m by 900 m and 488 m deep.

A conventional gravity-separation circuit will be used to increase the iron concentration and produce iron concentrate. The circuit consists of primary crushing in a gyratory crusher, autogenous (AG) mill grinding, three-stage spiral gravity separation, and concentrate dewatering in pan filters. The final concentrate will be dewatered in the winter months using steam to prevent ice forming in the concentrate.

The Preliminary Feasibility Study is based on the production of tailings that would be dewatered and then stored in a tailings pond. Most of the process water will come from the tailings thickener. In such case, the rest of the water used in the concentrator would come from surplus water in the polishing pond.

However, it should be noted that the production of filter-pressed tailings to be dry stacked along with waste rocks (co-disposal) is also being studied. In such case, the construction of a dam, and therefore the containment of water behind that dam, would not be required.

Finally, an area, which will also include crushing equipment, will be developed for stockpiling the ore. The crushed ore will be stored temporarily in a dedicated pile. Belt conveyors will transfer the ore to the concentrator.

### **2.3.2 Production Capacity**

The Fire Lake North mine project will have a production capacity greater than the thresholds defined in paragraphs (a) and (b) of Section 16 of the Regulation modifying the Regulations Designating Physical Activities. The daily production rate is expected to be in the range of 65,000 t for the projected life of mine.

The deposit potential of the mining property was upgraded in compliance with the Regulation 43-101 respecting standards of disclosure for mineral projects (regulation pursuant to the Securities Act). The total combined proven and probable reserves were estimated in February 2013 at 464.6 million tonnes (Mt) with 32.4% Fe for all the deposits in the West and East sectors of the Fire Lake North property.

### **2.3.3 Related Infrastructure**

Electricity will be supplied at 161 kV by Hydro-Québec via a tap off the existing line between the Normand and Hart-Jaune substations to the west of the mining property. This line follows Highway 389. The project includes the installation of a substation on the mine site to step down the power to 34.5 kV, along with the construction of a power transmission line between the substation and the existing line. The connection will be done by Hydro-Québec. A feasibility study is underway, one of the objectives of which is to establish a project schedule. Note that the existing 161 kV transmission line is not currently in use. Hydro-Québec confirmed its potential use for the Fire Lake North project.

A road will link the main infrastructure to Highway 389, which crosses the western side of the mining property. The exploration camp and permanent dormitory complex will be located near Route 389.

## **2.4 Emissions, Discharges and Waste**

### **2.4.1 Management Approach**

The main wastes likely to be produced during the various phases of the project are: materials from mining operations (overburden, waste rock and tailings), domestic wastewater, mine effluent, residual materials and air contaminants.

These wastes will all be subject to a detailed characterization in compliance with recognized methods, specifically those used by the MDDELCC's Centre d'expertise en analyse environnementale (CEAEQ). The essential focus of solid waste characterization will be on metal content, acid generating potential and leaching potential. For domestic wastewater, the characterization will primarily examine loadings of organic matter, nutrients and certain metals. Mine effluent will be characterized on the basis of the *Canadian Water Quality Guidelines for the Protection of Aquatic Life* established by the Canadian Council of Ministers of the Environment (CCME) and the MDDELCC's Directive 019.

Management plans will be put in place for all discharges and waste. They will essentially entail various containment facilities and treatment systems at discharge points in compliance with applicable legislation.

Clarifications required with respect to waste characterization and management will be set out in the environmental assessment report.

Included among the major emissions, discharge and waste management components are:

- Development and management of the tailings pond and other accumulation and storage areas;
- Water management;
- Site restoration.

## **2.4.2 Tailings Pond and Stockpile Areas**

### **2.4.2.1 Tailings pond and polishing pond**

At the Preliminary Feasibility Study level, the tailings pond was to be located on the southeast side of the mining property, and a polishing pond was to be installed downstream of the tailings pond. In such case, water would be recirculated to the concentration plant from the polishing pond.

Not all the water from the tailings and polishing ponds could be recirculated. Effluent from the polishing basin would be treated before being released into the environment in compliance with applicable regulations and requirements, specifically those specified in *Directive 019 for the Mining Industry*.

As noted in Section 2.3.1.2 of this document, it should be noted that the production of filter-pressed tailings to be dry stacked along with waste rocks (co-disposal) is also being studied. In such case, the construction of a dam, and therefore the containment of water behind that dam, would not be required.

Ore and waste rock samples generated from the pilot plant for mineralogical testwork was examined in the exhaustive characterization program undertaken in the summer of 2012. Water treatment will most probably be limited to sedimentation of suspended solids.

### **2.4.2.2 Waste rock disposal areas**

At the Preliminary Feasibility Study stage, three preliminary waste rock disposal areas were defined. The planned geotechnical and hydrogeological studies at the site will enable a refinement of those parameters and thereby ensure the appropriate structures are in place for environmental protection at the site. Other studies to be performed as part of the social and environmental assessment will help define appropriate structures to ensure environmental protection on the site. Given the results of the ore and waste rock testwork, it is improbable that the waste rock will be acid generating.

### **2.4.2.3 Overburden disposal area**

An overburden disposal area is planned. It was located in the northwest section of the West Pit as part of the Preliminary Feasibility Study.

#### **2.4.2.4 Temporary ore storage area**

A small area will be set up to stockpile ore near the concentrator. Ore samples were examined in the exhaustive characterization program undertaken in the summer 2012 and the results indicate that it is improbable that the ore will be acid generating.

### **2.4.3 Water Management**

To maintain a dry pit while mining, dewatering wells can be installed around the pit or water pumped from a low point at the bottom of the pit. A hydrogeological study will be undertaken as part of the feasibility study to identify the most appropriate method. Rainwater that accumulates in the pit during operations will be pumped to designated retention ponds. The water will be controlled and treated as necessary before being released into the environment.

### **2.4.4 Site Restoration**

Upon completion of the project, restoration activities will be undertaken to return the site to a satisfactory condition. The restoration activities primarily address the pits, accumulation areas (tailings and polishing ponds or co-disposal pile, waste rock and overburden stockpiles and basins, etc.) along with the dismantling of infrastructure. Where feasible, a gradual restoration process will be undertaken. In compliance with the *Mining Act*, a restoration plan will be prepared and submitted for approval.

## **2.5 Project Steps and Activities**

### **2.5.1 Schedule**

The schedule for the Fire Lake North mining project includes:

- Feasibility study: Mid-2016;
- Environmental impact assessment: 2016;
- Inquiry and public hearings procedure: 2016-2017;
- Permit application: 2017;
- Construction: 2017;
- Operation: 2018;
- Estimated Life of Mine: 20 years according to the February 2013 Preliminary Feasibility Study.

The feasibility study currently under way will precise the anticipated life of mine as well as the approximate date of decommissioning. These timeframes will be taken into consideration in the environmental assessment of the project.

Also note that the Fire Lake North project could feasibly extend over a longer timeframe given the additional resources and reserves that are likely to be identified in exploration work on the Fire Lake North property and other Champion Iron Mines Ltd properties, including the Oil Can and Midway mining projects immediately north of the Fire Lake North site.

## 2.5.2 Primary Activities:

Typical activities involved in the preparatory phase of the project:

- Clearing work;
- Stripping
- Earthwork and levelling activities;
- Blasting and drilling;
- Drainage work;
- Dewatering of specified bodies of water;
- Development of borrow pits;
- Installation of facilities and amenities;
- Road travel.

The following activities are anticipated during mine operations:

- Extraction, handling and storage of ore;
- Ore processing;
- Rail transportation from the mine site to a nearby railway connecting Fermont to Sept-Îles, the latter not being part of this project;
- Various facilities and machinery maintenance activities;
- Road transportation of workforce and goods;
- Management of materials produced by mining operations (tailings and waste rock);
- Water management;
- Residual materials stockpiling and management;
- Hazardous materials and fuel storage and management;
- Mine decommissioning and site rehabilitation work.

These activities, all of which are potential sources of environmental and social impact, will be described in detail in the environmental assessment.

## 3 Project Location

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### 3.1 Project Coordinates

The centre point of the mining facilities is located at:

- 52° 27' 07" north latitude
- 67° 19' 21" west longitude

### 3.2 Mapping

This report contains maps illustrating the location of Fire Lake North mining project components and activities:

- Map 3.1 Facilities on the Fire Lake North mining property
- Map 3.2 Location of Champion Iron Mines Ltd holdings

### 3.3 Project Site Features

The above maps identify most of the features of the locations where the mine is to be developed.

#### 3.3.1 Watercourses and Water Bodies

Hippocampe, Demi-Mille and Éva lakes are located on the mine site. A total of 20 lakes and watercourses are present on the Fire Lake North property.

#### 3.3.2 Linear and Other Transportation Components

The city of Fermont is accessible in three ways: by car, taking Highway 389 from Baie-Comeau (565 km), by train (Tshiuetin Rail Transportation) from Sept-Îles via Emeril Junction in Labrador (90 km east of Fermont) and by plane from the Wabush airport located in Labrador (35 km east of Fermont). Highway 389 connects the airport to the Fire Lake North property.

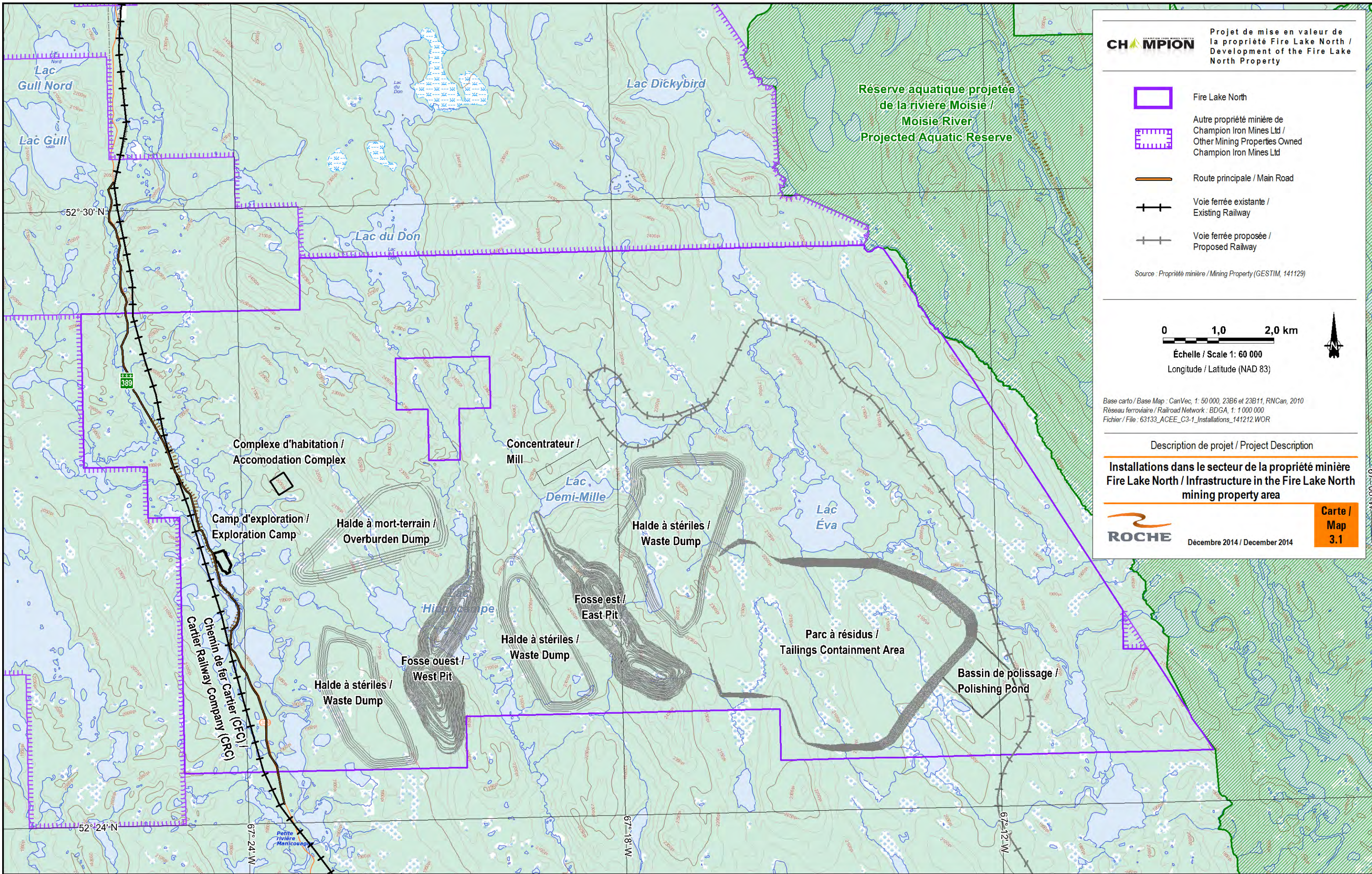
The Fermont region is supplied with electricity from the Normand substation, via a 315 kV power line coming from the Montagnais substation. Also, Hydro-Québec anticipates construction of a new single-circuit 315 kV power line (Montagnais-Normand) (Hydro-Québec, 2011). There is also a 161 kV line along Highway 389, which is however not currently in use.

#### 3.3.3 Other Features related to Current or Past Land Use

Currently there are no known archaeological sites within the limits of the Fire Lake North project.

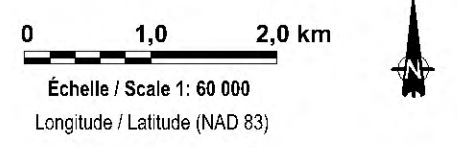






- Fire Lake North
- Autre propriété minière de Champion Iron Mines Ltd / Other Mining Properties Owned Champion Iron Mines Ltd
- Route principale / Main Road
- Voie ferrée existante / Existing Railway
- Voie ferrée proposée / Proposed Railway

Source : Propriété minière / Mining Property (GESTIM, 141129)



Base carto / Base Map : CanVec, 1: 50 000, 23B6 et 23B11, RNCan, 2010  
 Réseau ferroviaire / Railroad Network : BDGA, 1: 1 000 000  
 Fichier / File : 63133\_ACEE\_C3-1\_Installations\_141212.WOR

Description de projet / Project Description

**Installations dans le secteur de la propriété minière Fire Lake North / Infrastructure in the Fire Lake North mining property area**

**ROCHE** **Carte / Map 3.1**  
 Décembre 2014 / December 2014

Complexe d'habitation / Accomodation Complex

Camp d'exploration / Exploration Camp

Chemin de fer Cartier (CFC)

Halde à mort-terrain / Overburden Dump

Concentrateur / Mill

Halde à stériles / Waste Dump

Fosse est / East Pit

Halde à stériles / Waste Dump

Fosse ouest / West Pit

Halde à stériles / Waste Dump

Parc à résidus / Tailings Containment Area

Bassin de polissage / Polishing Pond

Réserve aquatique projetée de la rivière Moisie / Moisie River Projected Aquatic Reserve





### **3.3.4 Permanent, Seasonal and Temporary Housing**

The Fire Lake North mining property is in an area where there are a number of active mining claims. IN the vicinity of the Fire Lake North property there are two claims held by ArcelorMittal Canada Inc, to the south and others held by Quinto Mining Corporation, Fancamp Exploration Ltd and Cliffs Natural Resources to the west. The Fire Lake mine, an ArcelorMittal property, operates in summer immediately south of the Champion Iron Mines Ltd property

The Fire Lake North study area includes three leased holiday resort sites (cabins) and two temporary forest shelters, which are mostly used for hunting and sport fishing. Except for the forest shelter at the north end of the study area, the other leaseholds are along Highway 389. In the northwest area of the study area there are four vacation leaseholds and one temporary forest shelter. Three of these cottages are on Lake Gull Nord.

### **3.3.5 Location of Aboriginal Groups**

The Fire Lake North mine project is located on the traditional territory of the Innu of Uashat mak Mani-Utenam, known as the Uashaunnuat.

There are also various traplines in the Sept-Îles division of the Saguenay Beaver Reserve, which are reserved for the Innu of Uashat mak Mani-Utenam. This beaver reserve was created by the Quebec government in 1954. This form of land allocation is superimposed on the traditional distribution of land practised by the Innu families on the territory.

The Uashaunnuat are divided into two reserves: Uashat, which is physically integrated into the urban core of the city of Sept-Îles, and Mani-Utenam, which is located east of the city.

### **3.3.6 Federal Lands**

The mine site is not located on land constituting a federal Crown land.

### **3.3.7 Fisheries and Fishing Areas**

No fishing area is located near the mine site.

### **3.3.8 Environmentally Sensitive Areas**

The project does not affect any protected area. To the east, however, the Moisie River Aquatic Reserve is planned.

A number of small wetland areas are present on the property, specifically ponds, riparian marshes and peatbogs. Also, on the banks of some streams there are monospecific and relatively dense alder stands. The peatbogs are small, but relatively numerous, especially on stream banks. This specific vegetation has been thoroughly analyzed and will be considered in the environmental assessment of the project.

### **3.3.9 Provincial and International Boundaries**

The project is located entirely within the province of Quebec.

The Labrador boundary (Province of Newfoundland and Labrador) is about 30 km northwest of the mining property.

## **3.4 Official Description of the Land**

In the Fire Lake sector, Champion Iron Mines Ltd owns 12 mining properties including 1,448 claims totalling an area of about 925 km<sup>2</sup>.

The Fire Lake North property includes 340 contiguous claims covering an area of 173.1 km<sup>2</sup>. Map 3.2 shows the location of the mining rights with 100% Champion interest.

Surface property rights belong to the Government of Quebec. Champion Iron Mines Ltd will submit an application for a mining lease in due course.

## **3.5 Land and Water Use**

### **3.5.1 Zoning**

The Fire Lake North project is located north of the 49<sup>th</sup> parallel, and is therefore within the geographical limits of the Plan Nord initiative to develop mineral resources. The properties are also included in an area that is slated to be zoned as “natural resources” land (revised Development Plan) by the Caniapiscaw RCM, which authorizes mine zoning.

### **3.5.2 Land Titles**

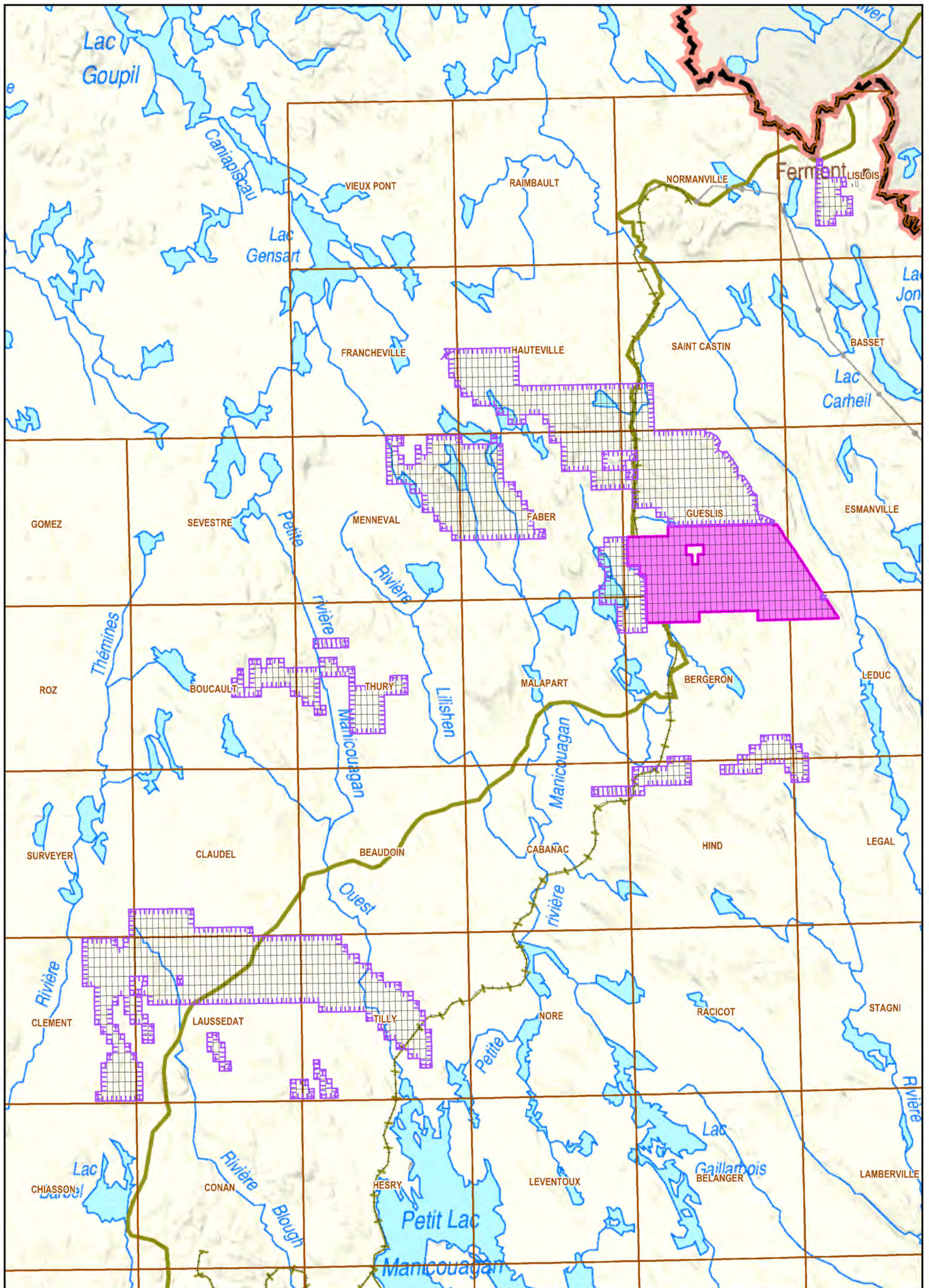
See section 3.4 above.

### **3.5.3 Land Use Plans**

In addition to the RCM development plans, the mining site is subject to the Public Land Use Plan produced by the ministère de l'Énergie et des Ressources naturelles (MERN). The mining site falls within the 09-006-00 land use area. This area is zoned “multiple use”, which means “using the land and developing the resources”.

The mine site will in addition require access to lands used for traditional activities by the Innu of Uashat mak Mani-Utenam. The project is however not expected to adversely impact the use of these lands.





Propriété minière / Mining Property (GESTIM, 141129)

- Fire Lake North
- Autre propriété minière de Champion Iron Mines Ltd / Other Mining Properties Owned Champion Iron Mines Ltd

Limite de canton / Canton Limits

**CHAMPION** IRON MINES LIMITED

Projet de mise en valeur de la propriété Fire Lake North / Development of the Fire Lake North Property

Description de projet / Project Description

**Localisation des titres miniers détenus par Champion Iron Mines Limited**

0 10 20 km

Échelle 1 : 350 000



**ROCHE** Fichier / File : 63133\_ACEE\_C3-2\_Claims\_141212.WOR  
 Décembre 2014 / December 2014

**Carte / Map 3.2**





## 4 Federal Government Participation

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### 4.1 Financial Support

No federal authority will be providing any financial support for the project and this option has not been considered to date.

### 4.2 Federal Land

The mine site is not located on land constituting a federal Crown land.

### 4.3 Legislative or Regulatory Requirements

Under the new Canadian Environmental Assessment Act (2012) (CEAA), only those projects specifically designated by the Regulation modifying the Regulations Designating Physical Activities now require an environmental assessment by the Canadian Environmental Assessment Agency (CEAA). In addition, the Minister of the Environment may designate a project not identified in regulations if there is the potential for adverse environmental effects or sufficient public concerns about such environmental effects. The following provisions from the Regulations apply to the Fire Lake North mining project:

- 16. The construction, operation, decommissioning and abandonment of
  - a) metal mine, other than a rare earths or gold mine, with an ore production capacity of 3,000 t/d or more;
  - b) a metal mill with an ore input capacity of 4,000 t/d or more;

Section 35 of the Fisheries Act specifies that:

*(1) No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.*

*(2) A person may carry on a work, undertaking or activity without contravening subsection (1) if*

*[...]*

*(b) the carrying on of the work, undertaking or activity is authorized by the Minister and the work, undertaking or activity is carried on in accordance with the conditions established by the Minister;*

*(c) the carrying on of the work, undertaking or activity is authorized by a prescribed person or entity and the work, undertaking or activity is carried on in accordance with the prescribed conditions;*

*[...]*

*(e) the work, undertaking or activity is carried on in accordance with the regulations.*

In the case of the Fire Lake North project, the Minister of Fisheries and Oceans (DFO) will need to issue an authorization for altering fish habitat under section 35 of the Fisheries Act.

It should also be noted that the Project will require the implementation of an environmental effects monitoring program (EEM) in line with Metal Mining Effluent Regulations (MMER).



## 5 Environmental Effects

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### 5.1 Description of Physical and Biological Environment

The information in this section was drawn from the Champion Iron Mines Ltd data base that was essentially compiled from field surveys in 2011 and 2012 by Roche Ltd, Consulting Group. Complementary surveys may be required to collect more data on the physical and biological environment and to better define the potential impacts of the proposed project.

#### 5.1.1 Climate and Air Quality

The Fermont area has a sub-arctic, continental climate with very severe winters typical of north central Quebec. The prevailing winds are from the west.

No air quality measurement has been taken in the field. However, given the location of the development, it can be assumed that air quality is good in the region of the mine.

#### 5.1.2 Geomorphology

The Fire Lake North sector consists of a peneplain from 500 m to 900 m above sea level. The area drains southward to the St. Lawrence Estuary through the Nipissis and Manicouagan River systems. Glaciation left a veneer of moraine boulder till and eskers that cover much of the local bedrock. These glacial deposits dominate the local topography and control most of the surface drainage.

#### 5.1.3 Soils

A soil characterization for the mining property was carried out in 2011. Additional samples were also collected in 2012.

#### 5.1.4 Water System and Surface Water Quality

The mining property is located on the Pékans River and Petite Rivière Manicouagan watersheds. The source of the Petite Rivière Manicouagan is northwest of the study area flowing toward the Manicouagan reservoir. The Pékans River, which originates west of the city of Fermont, drains into the Moisie River.

The project area includes more than 20 lakes of varying sizes including the Don, Lamêlée, Hippocampe, Demi-Mille and Éva lakes. The only named watercourse that crosses the area is the Petite Rivière Manicouagan, toward which the entire western section of the property drains. More than 30 small permanent streams, however, traverse the property. Most of the streams flow through valley bottoms, wooded or open wetlands.

### **5.1.5 Hydrogeology and Groundwater Quality**

Groundwater samples collected as part of the 2011 characterization study at the mining site showed that concentrations that were below the guidelines set out in Quebec's *Soil Protection and Land Rehabilitation Policy*. A hydrogeological study is under way and more sampling was done in 2012.

### **5.1.6 Plant Communities**

The area where the mine is to be developed is located in the boreal zone, more specifically at the transition between the spruce-moss forest domain in the east and the lichen woodland domain to the north. The uniform forest cover is clearly dominated by black spruce. The stands are mostly monospecific but black spruce is associated on occasion with balsam fir and tamarack. The odd hardwood specimen, such as white birch, trembling aspen or balsam poplar, can also be seen in the landscape.

The sides of hills are occupied by denser spruce moss stands and the bottom of valleys by dense softwood stands and shrubs, or wetland areas. The summits are generally occupied by very open spruce lichen woodlands similar to the lichen woodland domain.

The more poorly drained areas, such as valleys and the bottom of slopes, are occupied by moss spruce stands with a significant amount of sphagnum moss. A number of small wetland areas are present on the property, specifically ponds, riparian marshes, and peatbogs. Monospecific and relatively dense alder swamps have also been observed on the banks of some streams. The peatbogs are small in size, but relatively numerous, especially on stream banks.

No threatened or vulnerable species, or species likely to be so designated, were surveyed in the 2011 and 2012 characterization studies.

### **5.1.7 Wildlife and Wildlife Habitats**

#### **5.1.7.1 Large Animals**

Large animals on the proposed mining site are represented by the woodland caribou ecotype, moose and black bear. The woodland caribou is an ecotype that is considered to be threatened in Canada under the *Species at Risk Act*, and vulnerable in Quebec under the *Act respecting threatened or vulnerable species*.

In recent surveys, two herds of 30 and 15-20 woodland caribou were observed near Price Lake and the Petite Rivière Manicouagan. These two herds were about 25 km apart when they were sited and about 15 km from the exploration camp. On 19 recently observed sets of moose tracks, 25 moose were sited during the survey.

According to the literature and the results of large animal surveys, there is good moose and woodland caribou potential on the mining property sector. However, in the 2011 and 2012 surveys, no caribou were observed in the vicinity of the Champion Iron Mines Ltd exploration camp.

The density of moose in south hunting area No. 19 is generally one of the lowest in Quebec. Little information is available on the abundance of black bear in the study area.

#### **5.1.7.2 Small Animals**

Based on a literature review and the results of a small animal survey, the most abundant species in the sector are the grey wolf, Canadian lynx, snowshoe hare, and grouse species. Species present in smaller numbers are the red fox, ermine, American beaver and the porcupine. No mink, muskrat or fishers were sited during the inventories. No small animal species with a special status was detected in the study area.

#### **5.1.7.3 Birds**

In the vicinity of the mine site, the goose and duck family and the grouse and ptarmigan family (which is of interest to hunters) are potentially represented by fifteen and three species respectively. There are respectively nine and four species of diurnal and nocturnal raptors potentially present in the study area.

About 65 bird species have been sited within a 70 km radius of the mining property during breeding season. More than half of these species nest in the sector with a high level of certainty: 14 were found to be confirmed breeders (including herring gull, American black duck, Canada goose, osprey, bald eagle, Savannah sparrow, Lincoln's sparrow and Canada jay) and 20 were considered probable breeders (including Arctic tern, red-breasted merganser, common merganser, surf scoter, greater yellowlegs, dark-eyed junco, Boreal chickadee and ruby-crowned kinglet).

Populations of waterfowl and aquatic birds however are relatively unknown in the Fire Lake North project area. In the spring 2012, a wildfowl count involving a direct visual count of breeding couples as part of a helicopter survey of aquatic environments in the study area was conducted using the method developed by the Canadian Wildlife Service (CWS). Another objective of the survey was to validate the presence of harlequin duck, an at-risk species. These data are currently being compiled and analyzed. The inventory methods and detailed wildfowl results will be presented in the environmental assessment report along with the results of the forest bird inventory also carried out in 2012.

#### **5.1.7.4 Fish**

In the 2011 and 2012 mining site characterization studies, of the various specimens caught in the streams, the highly prized game fish brook trout was the most abundant species, followed by lake chub, burbot and white sucker. In the lakes surveyed, brook trout was the most abundant fish, followed by northern pike, northern sucker, white sucker, lake trout and lake chub.

Fish habitat and the feeding, fry rearing and reproduction functions of the water bodies affected by the mine were also characterized in the summer 2012. This information is currently being compiled and analyzed and will be considered in the environmental impact assessment of the project.

### **5.1.8 Special Status Species and Sites of Importance for Nature Conservation**

The abundance of small boggy areas both locally and regionally diminishes their value given that they are not unique and not relatively rare, and especially since the species richness associated with these sites is hardly significant.

Only one species that is likely to be designated as threatened or vulnerable is present close to the property (rosy pussy-toes, *Antennaria rosea* ssp. *confinis*). No species on Quebec's list of threatened or vulnerable species was identified in the 2011 and 2012 characterization studies.

For large animals, the woodland caribou, which is present in the study area, is considered threatened in Canada under the *Species at Risk Act*, and vulnerable in Quebec under the Act respecting threatened or vulnerable species. No small animal species with special status has been inventoried in the study area.

Seven bird species with special status either federally or provincially are potentially present in the region based on their distribution ranges. Preferred nesting habitats seem to be present for three species (common nighthawk, Boreal pewee and rusty blackbird). Nesting habitats may also be present for three other species (golden eagle, bald eagle and short-eared owl).

## **5.2 Description of Changes**

### **5.2.1 Fish and Fish Habitats**

Mine effluent could potentially alter fish habitats if the water management plan was not to be applied as projected and it is also likely that the planned development of the two pits could lead to existing lakes being totally or partially (installation of a dyke) emptied. Final selection of storage sites in the feasibility study will take the presence of these bodies of water and wetlands into consideration.

Fish habitat, along with the feeding, fraying and reproduction functions in the bodies of water affected by the mine were characterized in summer 2012. Fish inventories have also been performed. The results will be used to assess habitat loss and potential compensation options under the *Fisheries Act*.

### **5.2.2 Aquatic Species**

At this stage, no impact on aquatic species is anticipated as defined under the *Species at Risk Act*.

### **5.2.3 Migratory Birds**

Based on other mine project studies, potential impacts on migratory birds appear to be relatively negligible since it would be limited to noise disturbances in the vicinity of infrastructure along with limited aquatic habitat loss at any lake or stream affected by the mine or terrestrial habitat loss where wood-cutting activities will take place. It should also be noted that such activities could impact nesting and habitat availability for wildfowl and other aquatic bird species where infrastructures are expected to be located. The final assessment of those impacts on migratory birds will be performed as part of the

Environmental and Social Impact Assessment. That study will also include mitigation measures in order to minimize impacts on migratory birds.

Populations of wildfowl and aquatic birds are relatively unknown in the Fire Lake North project area. In the spring 2012 a wildfowl count consisting of a direct visual count of nesting couples as part of a helicopter survey of aquatic environments in the study area was conducted based on the method developed by the Canadian Wildlife Service (CWS). This inventory was also aimed at validating the presence of harlequin duck, an at-risk species. These data are currently being compiled and analyzed. The methods and detailed results of the wildfowl inventories will be presented in the project environmental assessment report.

#### **5.2.4 Aboriginal Peoples**

According to information gathered in the field and from studies pertaining to the territory, the mine project is not expected to have a significant negative direct effect on current traditional land and resource use or on a building found on the traplines involved namely traplines 255 and 256. Based on available data, the mine would not be located where existing Innu camps are and would not interfere with any valued territory. This information will however need to be validated with Innu trapline users since available data are too general to adequately assess such issues.

To date, there are no known archaeological sites within the boundaries of the mining property. An analysis however identified 99 potential archaeological areas in the surrounding areas. These potential areas are essentially on the shoreline of lakes in the region, specifically Lamêlée, Don, Hippocampe and Éva lakes on the property.

The anticipated socio-economic effects of the project are expected to be positive overall and essentially involve employment and business opportunities. Every effort will be made to promote Innu employment along with business opportunities for Innu enterprises.

Moreover, the project is not expected to have any direct effect on the physical health of Aboriginal people, given that health and safety measures will be put in place as part of the project and that applicable environmental standards will be met. The literature and past experience on other projects however indicate that increased revenues in Aboriginal communities and workers being away from their families can lead to mental health issues. An increase in alcoholism and family conflict has in some cases been observed. In cooperation with community social and health service providers, every effort will be made to minimize these risks.

The full range of environmental and social issues associated with the Fire Lake North mining project for the Innu Uashat mak Mani-Utenam community cannot be adequately evaluated and managed without consulting the main stakeholders. As already mentioned, preliminary contacts have been made with the community, but have not yet resulted in a collaborative agreement.

A work plan for the analysis of Innu land use has been prepared. This exercise will be undertaken as part of the project environmental assessment process, as soon as an agreement is reached with Innu authorities. Issues with respect to land claims and proposed development projects on community territory will be broached more specifically by those in charge of negotiations with the Innu Takuaikan Uashat mak Mani-Utenam.

The information gathered from this process will be used to create a portrait of land use practices and their significance to the users along with the importance of natural resources and other relevant elements with a view to assessing project impacts.

### **5.3 Federal Lands**

The mine site is not located on land constituting a federal Crown land.

## 6 Proponent's Consultations with Aboriginal Groups

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### 6.1 Aboriginal Group

The Fire Lake North mine project is located within the limits of the Province of Quebec. With regards to traditional hunting, fishing and trapping, the study area is located in the Saguenay Beaver Reserve, division Sept-Îles, and within the Fur-Bearing Animal Management Unit (UGAF) #60. Consequently, consultations have so far focused and will continue focusing on the concerned Innu community, namely the Uashat mak Mani-Utenam (ITUM) First Nation. Consultation will cover land use as well as traditional knowledge and concerns raised by its members. All relevant information pertaining to the Ashuanipi Corporation will also be gathered. That Corporation was born in 2006 as part of a global territorial negotiation with the Government of Quebec and regroups both ITUM and Matimekush-Lac John Innu First Nation. If the Project was to be modified and include lands located in Newfoundland-and-Labrador, the Innu Nation of Labrador would also be consulted. Contacts for ITUM are:

Innu Uashat mak Mani-Utenam (ITUM) First Nation  
P.O. Box 8000  
265 Montagnais Blvd Uashat QC G4R 4L9

Phone: 418-962-0327  
Fax: 418-968-0937  
Email: info@itum.qc.ca

Chief: Mike (Pelash) Mckenzie  
General Manager: Ricky Fontaine

### 6.2 Consultation Activities

No formal consultations have to date been held with the Innu Uashat mak Mani-Utenam First Nation. Champion Iron Mines Ltd is continuing efforts in this regard. The intention of Champion Iron Mines Ltd is that ITUM's interests and long-term vision be integrated into the project planning process in compliance with both parties' desire to create a sustainable development project that will promote the economic development of the region in keeping with established objectives as regards social and environmental responsibility.

### 6.3 Comments and Concerns

The Fire Lake North mining project will take into consideration all the concerns expressed by stakeholders. To establish sustainable relationships, Champion Iron Mines Ltd will continue to pursue its consultation and communication efforts with the various parties, including the Uashat mak Mani-Utenam community. Information and exchange sessions will also be held to inform those concerned and obtain feedback on their concerns.

## **6.4 Information on Current Use**

The Fire Lake North property is part of the traditional territory used by the Uashat mak Mani-Utenam Innu (ITUM).

In 1954, the Quebec government created Saguenay Beaver Reserve and established a regional network of traplines to rationalize the harvesting of fur-bearing animals. This form of land use is superimposed over the traditional division of land by Innu families on the territory. It features close management of land use, which is assumed by the holder of the individual traplines.

The typical pattern of use for hunting, fishing and trapping are seasonal by nature. The period of greatest activity runs from late August to mid-December. This is an intensive period of trapping. Winter hunting begins when winter sets in, as of mid-December, and continues to mid-February with a focus on caribou hunting. Late winter, before the rivers thaw, is marked by the return of trapping activities. Spring hunting starts in late April with the return of the Canada geese and continues through to mid June. The annual cycle ends in summer, when communities gather to celebrate and reconnect.

Traplines involved by the proposed Fire Lake North mining project are traplines 255 and 256. As noted in Section 5.2.4 herein, with the ITUM's consent, exhaustive consultations with trapline users will be carried out to complete the information on land and resource use and to hear about their concerns and gather their comments vis-à-vis the project.

## **6.5 Consultation and Information Gathering Plan**

The information gathering exercise to be undertaken with Aboriginal users was outlined in Section 5.2.4 of the full document.

Champion Iron Mines Ltd will complete its consultations with Aboriginal people interested in the project in collaboration with representatives of the Innu Uashat mak Mani-Utenam First Nation.



## 7 Consultations with the General Public and Other Parties

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### 7.1 Interested Groups

Other parties who may be interested in and possibly affected by the project are:

- Côte-Nord Health and Social Services Agency
- Côte-Nord Regional Environmental Board
- Québec Snowmobiling Federation
- Fermont Citizens' Movement
- Caniapiscau RCM (and City of Fermont)
- Sept-Rivières RCM
- Duplessis Watershed Organization
- Uashat mak Mani-Utenam First Nation
- Produits forestiers Arbec
- Côte-Nord/Duplessis Tourism Board

Other authorities consulted to date are:

- City of Fermont and Caniapiscau RCM
- MNRF (now MERN)
- MTQ
- MDDEP (now MDDELCC)
- Canadian Environmental Assessment Agency;
- Major Projects Management Office (federal)

The Fire Lake North mining project will take into consideration all the concerns of the stakeholders. With a view to building sustainable relationships, Champion Iron Mines Ltd will continue pursuing its consultation and communications efforts with project stakeholders. Information and consultation sessions will also be held to inform those interested in the project and to learn about their concerns.

### 7.2 Consultation Plan

Champion Iron Mines Ltd will complete its consultation of those interested in the project in collaboration with local representatives.

### 7.3 Consultations with other Regulatory Authorities

In March 2012, Champion Iron Mines Ltd submitted its project notice to the Minister of Sustainable Development, Environment and Parks (MDDEP, now MDDELCC). The MDDELCC is responsible for applying Quebec's *Regulation respecting environmental impact assessment and review*. Following receipt of the notice, the MDDELCC prepared a directive indicating the nature and scope of the environmental impact assessment (EIA) that Champion Iron Mines Ltd is required to prepare. The EIA will be prepared in compliance with the various provisions of *Directive 019 for the Mining Industry*.



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