

VOYAGER METALS INC.
PROJECT NO.: 211-05276-03

MONT SORCIER MINING PROJECT PROJECT NOTICE

SEPTEMBER 2023





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VOYAGER METALS INC.

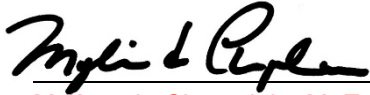
PROJECT NO. 211-05276-03
DATE: SEPTEMBER 2023

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September 13, 2023

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September 13, 2023

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September 13, 2023

Date

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The conclusions presented in this report are based on the work performed by technical, trained, and professional personnel, in accordance with their reasonable interpretation of current and accepted engineering and technical practices at the time the work was performed.

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This limitations statement is considered an integral part of this report.

CLIENT

VOYAGER METALS INC.

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Project Director	Robert Girardin
Consultant	Suzann Méthot

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WSP CANADA INC. (WSP)

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Reference to cite:

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ABBREVIATIONS/ACRONYMS

AQI	Air Quality Index
CBHSSJB	Cree Board of Health and Social Services of James Bay
CN	Canadian National Railway
COMEV	Environmental and Social Impact Assessment Committee
COMEX	Environmental and Social Impact Review Committee
D019	Directive 019
EIA	Environmental Impact Assessment
EQL	Environment Quality Act
Fe	Iron
Fe₃O₄	Iron oxide (II, III)
FIFO	Fly-in fly-out
GHG	Greenhouse Gas Emissions
ISAQ	Inventory of Archaeological Sites in Quebec
JBNQA	James Bay and Northern Quebec Agreement
JBRHSSC	James Bay Regional Health and Social Services Centre
kV	Kilovolt
MCC	Ministry of Culture and Communications of Quebec
MDMER	Metal and Diamond Mining Effluent Regulations
MELCCWP	Ministry of the Environment, Climate Change, Wildlife and Parks (MELCCWP)
MFWP	Ministry of Forests, Wildlife and Parks ¹
MNRF	Ministry of Natural Resources and Forests ¹
Mt	Million tonnes
RCM	Regional County Municipality
SPA	Saguenay Port Authority
t	Tonne
t/ d	Tonnes per day
UGAF	Fur animal management unit
WSP	WSP Canada Inc.

1. Following the appointment of the new Conseil des ministres in October 2022, the Forest sector is now under the responsibility of the Ministry of Natural Resources and Forests (MNRF) while the wildlife and parks sector is under the responsibility of the MELCCWP.



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1 APPLICANT IDENTIFICATION AND CONTACT DETAILS

1.1 IDENTIFICATION OF PROJECT INITIATOR

PROPONENT	Voyager Metals Inc.
CIVIC ADDRESS	200 Bay Street Suite 3205, Toronto, Ontario M5J 2J2
PRINCIPAL REPRESENTATIVE FOR THE PURPOSES OF THE PROJECT NOTICE	Robert Girardin, Project Director 418-965-1764 rgirardin@voyagermetals.com
WEBSITE	https://voyagermetals.com/

The certified resolution and power of attorney authorizing the signatory (**Robert Girardin**) to sign and file this Notice of Project on behalf of Voyager Metals Inc. are set out in Schedule A.

It should be noted that Voyager Metals Inc. was known as Vanadium One Iron Corp. prior to October 18, 2021. Any mention or reference to Voyager Metals Inc. in this document includes Voyager Metals Inc. (hereinafter-referred to as “Voyager”) and Vanadium One Iron Corp.

1.2 BUSINESS NUMBER

QUEBEC BUSINESS NUMBER (NEQ)	1173511826
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1.3 RESOLUTION OF THE MUNICIPAL COUNCIL

Not applicable.

1.4 IDENTIFICATION OF THE CONSULTANT APPOINTED BY THE PROJECT INITIATOR

CONSULTANT	WSP Canada Inc.
CIVIC ADDRESS	3535, boulevard L.-P.-Normand, 2nd Floor Trois-Rivières, Quebec G9B 0G8
PERSON IN CHARGE OF THE PROJECT	François Lafrenière, Project Director 514 716-8595 francois.lafreniere@wsp.com

2 PROJECT OVERVIEW

2.1 PROJECT TITLE

Mont Sorcier Mining Project

2.2 ARTICLE OF LIABILITY

The Mont Sorcier Mining Project (the Project) is located in the territory covered by the James Bay and Northern Quebec Agreement (JBNQA). The provisions applicable to the James Bay and Northern Quebec region for projects located south of the 55th parallel (Environment Quality Act [EQA], Title II, Chapter II) thus apply to the Project.

As part of the implementation of the assessment and review procedure applicable to projects located within the JBNQA, the James Bay Environmental Advisory Committee (also known as the Cree “Gaweshouwaitego Asgee Weshouwehun”) has the functions of monitoring, through the free exchange of views and information, the application of Chapter 22 of the JBNQA and the administrative supervision of the Evaluation Committee referred to in Section 148 of the EQA.

Since mining projects such as Mont Sorcier are listed in paragraph (a) of Schedule A of the EQA, the latter is necessarily subject to the assessment and review procedure provided for in Title II, Chapter II of the EQA. The evaluation and review of the Project must be carried out by two committees provided for in the EQA (Title II, Chapter II, Section II of the EQA):

- The Evaluation Committee (COMEV): A tripartite Quebec-Canada-Cree body responsible for the preliminary evaluation and development of Project guidelines;
- The Review Committee (COMEX): A bipartite Quebec-Cree body responsible for Project review.

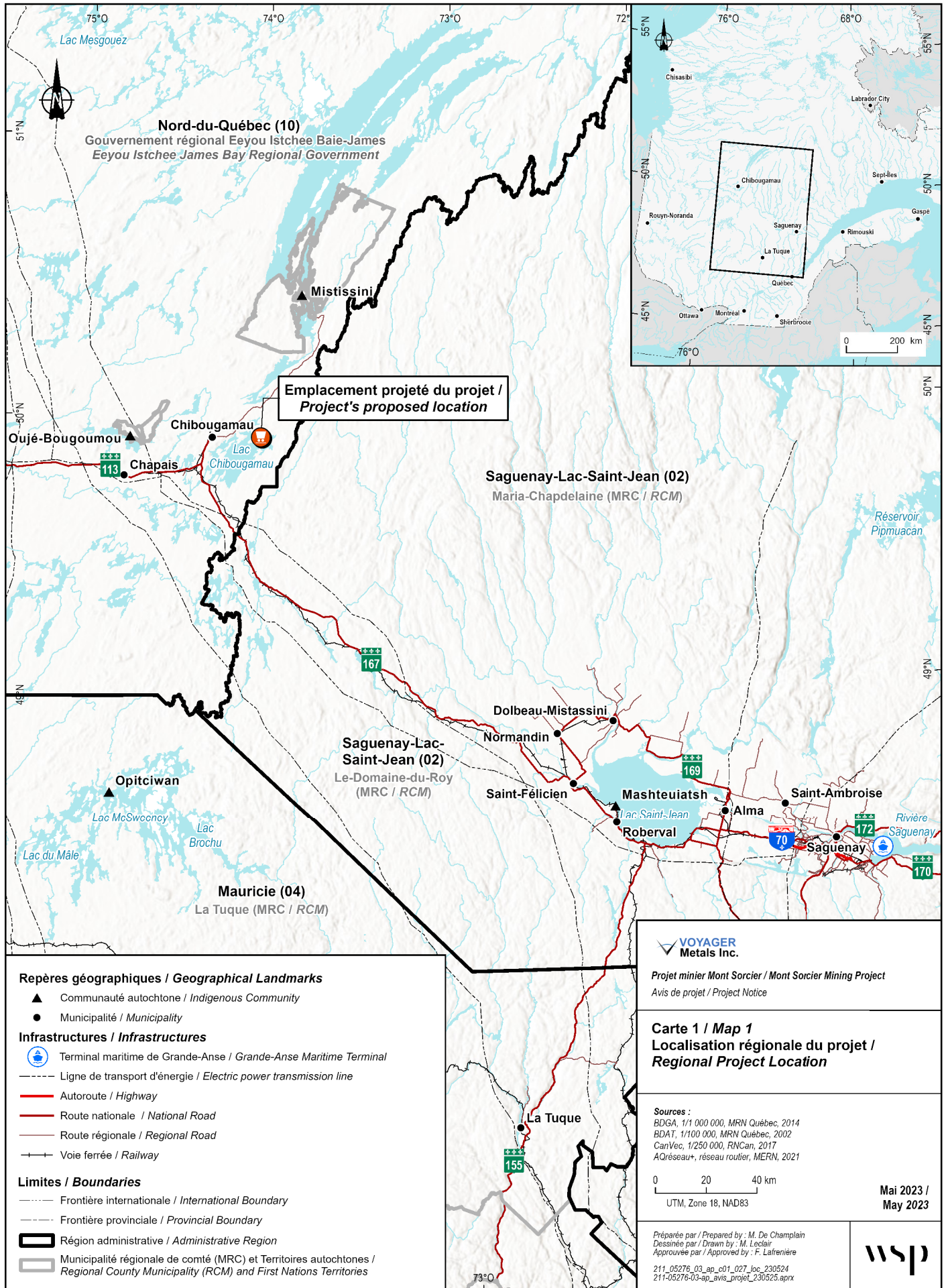
Completion of the Project will therefore require a Certificate of Authorization (CA) issued by the Government of Quebec, insofar as the decision is favourable to the Project once the planned evaluation and review procedure has been completed. Since the Project is provincial in nature and located on Category III lands of the JBNQA, this decision will be made by the Ministry of the Environment, the fight against Climate Change, Wildlife and Parks (MELCCWP) and will be based, in particular, on the recommendations and opinions of COMEV and COMEX.

2.3 BRIEF DESCRIPTION OF THE PROJECT AND ALTERNATIVES

2.3.1 SUMMARY PROJECT DESCRIPTION

Voyager, a Canadian-based mining company, plans to mine an iron and vanadium deposit located in the Mont Sorcier area, approximately 17 km east of downtown Chibougamau.

Map 1 shows the location of the Project at the regional level. The various activities planned for the Project are described in the following sections.



2.3.1.1 SITE PREPARATION

The first stage of the Project will be to prepare the site to receive the equipment and allow the construction of infrastructure, structures, and works. The main activities associated with site preparation will be carried out mainly with the help of subcontractors and their machinery, consisting of the following:

- land clearing;
- construction of access roads;
- installation of site trailers and temporary sanitary facilities;
- development of temporary water management infrastructure;
- construction of machinery storage areas;
- transport, circulation, and refuelling of machinery;
- development of areas hosting future infrastructure, structures, and works.

2.3.1.2 CONSTRUCTION

The main infrastructure, structures, and works to be constructed for the mining operations of the Project are presented in Table 1. An overview of future mining facilities, as proposed at the Notice of Project stage, is presented in Map 2.

Table 1 Main infrastructure, structures, and works

ACTIVITIES RELATED TO MINING OPERATIONS	INFRASTRUCTURE, STRUCTURES, AND WORKS
Mining pit operations	Open pit
	Access ramps to the pit
Management and storage of waste rock and overburden	Waste rock and overburden stockpile areas
Ore processing	Primary and secondary crushers
	Ore conveyor network
	Process plant
	Concentrate storage area and associated building
Iron concentrate transport by train	Tower for loading iron concentrate into railcars
	Section of railway connected to the region's existing rail network
Storage and loading of iron concentrate at the port	Use/lease of existing port infrastructure
Tailings management and storage	Mine tailings storage area (tailings storage facility)
Water management	Basins and water pumping stations associated with tailings management
	Network of ditches, basins, and pumping stations to collect surface runoff in contact with mining infrastructure
	Mine water pumping system
	Natural fresh water withdrawal system
	Tailings storage facility process water recirculation system
	Mining wastewater management and treatment system
	Water treatment and distribution system for human consumption
	Domestic wastewater management and treatment system
Wash bay water treatment and management system	

Table 1 (cont.) Main infrastructure, structures, and works

ACTIVITIES RELATED TO MINING OPERATIONS	INFRASTRUCTURE, STRUCTURES, AND WORKS
Support for mining operations	Power lines and substations
	Administrative offices and changing rooms/dryers
	Parts and consumables warehouses
	Railway equipment and infrastructure maintenance workshop
	Security guardhouse
	Telecommunication system
	Fuel farm
	Mechanical workshop and oil/water separator
	Wash bay
	Powder magazine, detonator warehouse, and explosives preparation area
	Housing building
	Liaison office

2.3.1.3 MINING OPERATIONS

Mining pit operations

The future Mont Sorcier mine will be an open pit operation with benches and stopes. The operations will be carried out in the following stages:

- drilling and blasting;
- extraction and transport of waste rock;
- extraction and transport of raw ore.

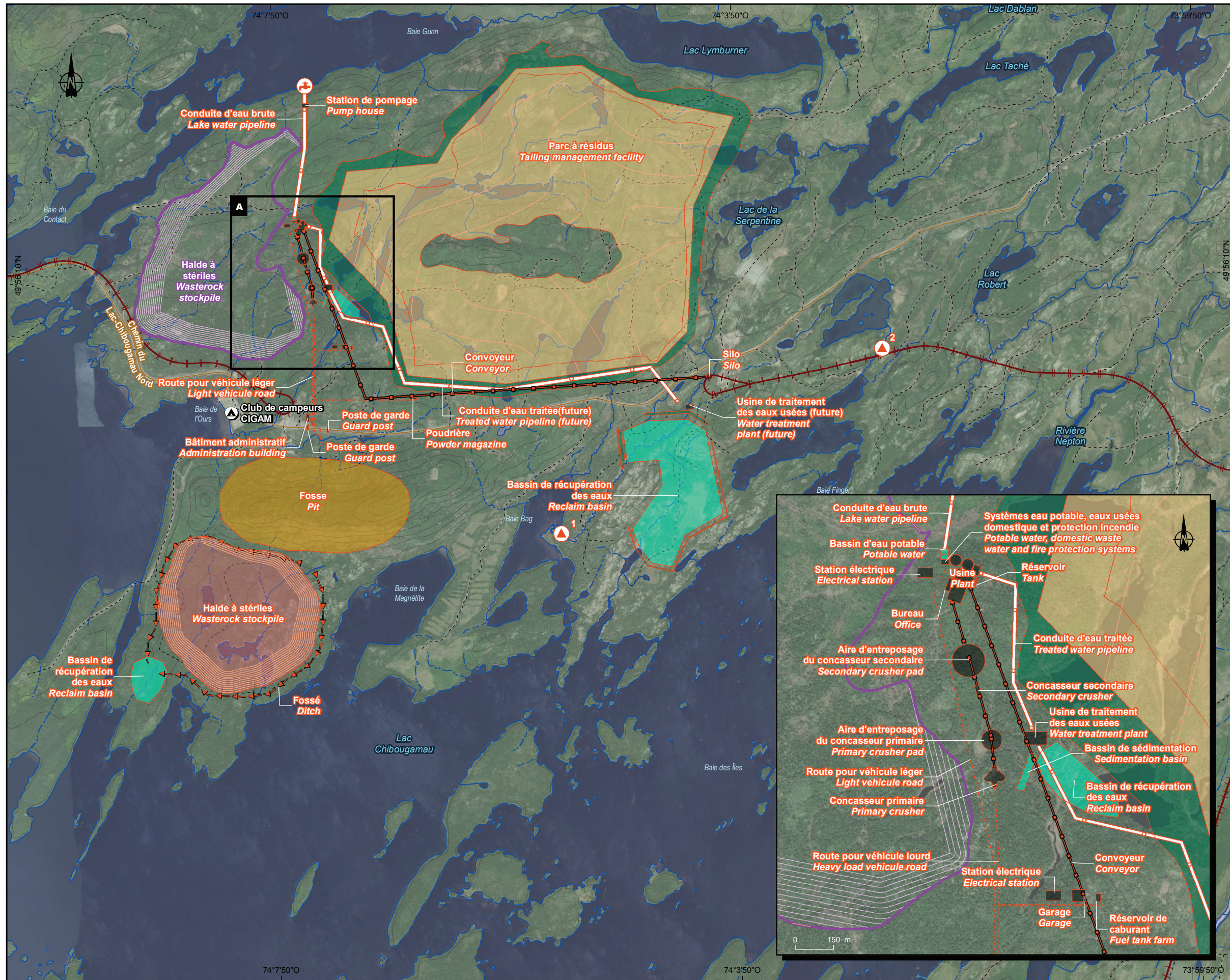
The infrastructure used to operate the mining pit consists mainly of access ramps and haulage roads to transport mined ore to the primary crusher and waste rock to the stockpiles.

Under the current mining plan, the pit will reach a maximum depth of approximately 400 m below ground level and will be just over 2 km long.

The waste rock will be stored in two stockpiles, one to the south and to the north of the pit, using two placement methods (Map 2). The first method involves dumping the material near the crest using mining trucks, then pushing it down the slope with a bulldozer (push-dumping method). The second method (“free-dumping”) involves dumping the material in individual stockpiles, using mining haulage trucks, and then levelling everything with a bulldozer.

At the time this document was being written, geochemical characterization and leaching tests were being carried out on the waste rock. The results will be used to assess the acid-generating and leaching potential of the waste rock, and to determine what water protection measures need to be put in place, if any.

The overburden will be stored next to the pit, to be used for progressive remediation as needed.



- Composantes projetées / Projected Components**
- ▲ Emplacement potentiel du point de rejet de l'effluent minier / Mining effluent discharge potential location
 - Prise d'eau potable / Drinking water intake
 - Conduite / Pipeline
 - Convoyeur / Conveyor
 - Fossé / Ditch
 - Route / Road
 - Élévation / Elevation
- Infrastructures de surface / Surface Infrastructures**
- Contours des composantes / Component contours
 - Bassin de récupération des eaux / Reclaim basin
 - Digue / Dyke
 - Fosse / Pit
 - Halde à stériles / Wasterock stockpile
 - Parc à résidus / Tailing management
 - Autre / Other
- Version conceptuelle préliminaire / Preliminary Conceptual Version**
- Halde à stériles / Wasterock stockpile
- Composante connexe projetée / Related Projected Component**
- Option de voie ferrée / Railroad option
- Loisirs et tourisme / Recreation and Tourism**
- ▲ Camping / Campground
- Hydrographie / Hydrography**
- Écoulement / Waterflow**
- Intermittent / Intermittent
 - Permanent / Permanent
 - Permanent partiellement souterrain / Partially underground permanent
- Réseau routier / Road Network**
- Chemin forestier / Forest road
 - Route d'accès aux ressources / Resource access road

VOYAGER Metals Inc.

Projet minier Mont Sorcier / Mont Sorcier Mining Project

Avis de projet / Project Notice

Carte 2 / Map 2
Aperçu des installations minières / Overview of the Mining Installations

Sources :
 BD1Q, 1/20 000, MRNF Québec, 2007
 CanVec+, 1/50 000, RNCAN, 2014
 BDTA, 1/250 000, MRN Québec, 2002
 BDGA, 1/5 000 000, MRNF Québec, 2010
 AQRéseau+, réseau routier, MERN, 2016
 SDA, 1/20 000, MRNF Québec, avril 2015

0 400 800 m
 UTM, fuseau 18, NAD83

Mai 2023 / May 2023

Préparation / Prepared by : M. De Champlain
 Dessin / Draw by : M. Leclair
 Approbation / Approved by : F. Lefrenière
 211-05276-03_ap_c02_028_comp_prj_230524.mxd



Ore processing

The processing plant will be built to the north of the pit (Map 2). Daily production will be variable, especially during the start-up period of mining operations, as is often the case in the industry. Once the start-up and stabilization phase of production operations is completed, the maximum annual production is expected to be 5 million tonnes (Mt) of iron concentrate, an average production rate of 13,698.6 tonnes per day (t/d) with a maximum daily rate of 25,000 t/d. (subject to adjustments with the completion of the feasibility study).

The Project's processing plant consists of four main circuits: crushing, grinding, magnetic separation, and flotation. The concentrate produced is then thickened, filtered, and dried before being shipped, while the tailings from the ore processing process are thickened before being sent to the tailings storage facility for safe storage. Water and compressed air support services are provided for the various process circuits. A simplified preliminary process diagram of the ore processing plant is shown in Figure 1.

The milling process at the processing plant also includes the use of reagents to feed two processes. First, the flotation process involves the use of foaming and reagents to adjust the pH and recover the sulphur and silica contained in the ore. The process of dehydrating concentrate and thickening mine tailings is supported by the use of a flocculant.

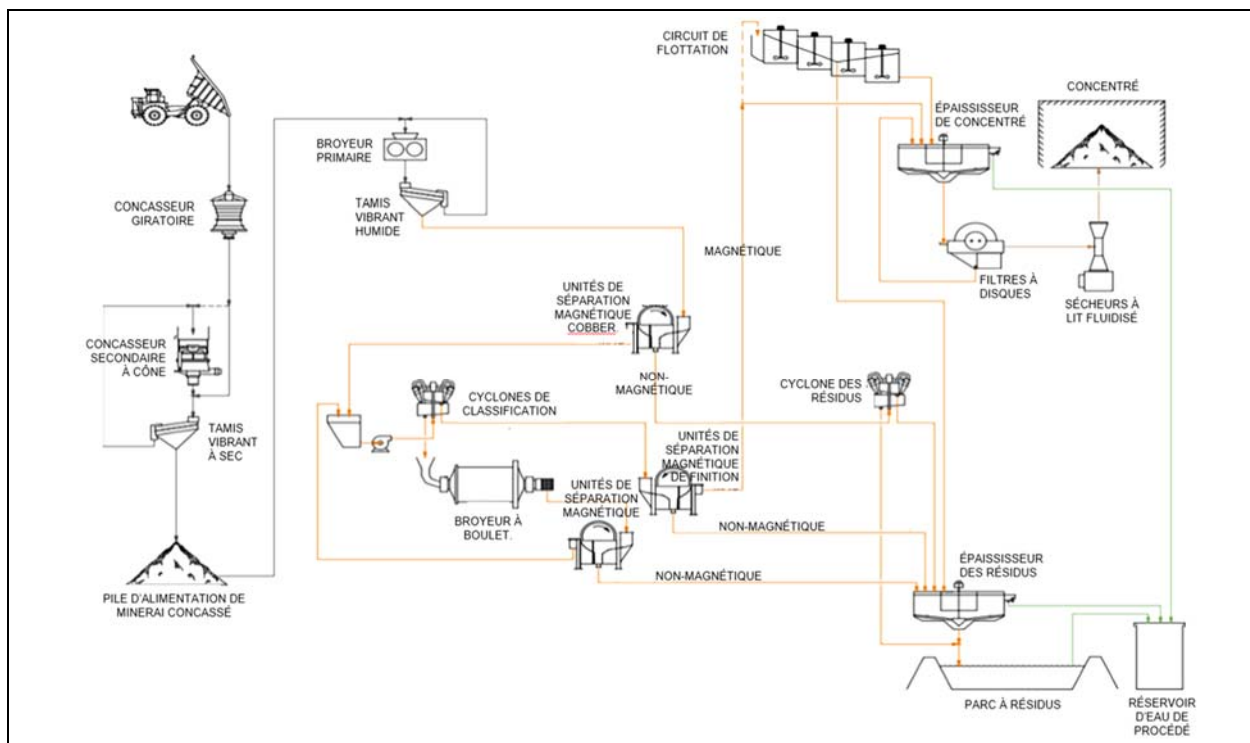


Figure 1 Preliminary simplified process diagram

2.3.1.4 TRANSPORT OF IRON CONCENTRATE BY TRAIN

The concentrate produced will be transferred to railcars via a conveyor structure and a loading tower for transport by train to Grande-Anse, Saguenay (Map 1). The concentrate will then be transferred to boats for delivery to customers.

Rail transportation will involve the construction of a new 46 km-long rail spur to connect to the existing rail infrastructure owned by Canadian National Railway (CN),¹ from where it will be routed approximately 300 km to the Port of Saguenay. The rail transport system consists of six trains each, with 120 gondola cars operating year-round.

The rail spur proposed at this stage of the Project will start at the site (from a loop), head east and then south, ending by connecting to CN's existing rail infrastructure. The rail is a single line capable of handling a 120-car gondola train.

Approximately 30 km of the new rail line will closely follow the route already proposed by the BlackRock iron mine, located southeast of Mont Sorcier. The remaining 16 km between the Project and the BlackRock mining project area will be added to the line to reach the future Mont Sorcier mine, completing the 46 km rail route.

The right-of-way will have a width of approximately 18 m to 20 m, for a maximum area of approximately 100 ha. Around 32 km of the route will be in woodland, 11 km in wetlands, and the remaining 3 km in unproductive land (dry barrens, gravel pits, power transmission lines, disturbed areas, and roads, etc.).

The proposed rail line will cross 57 logging roads, but no snowmobile or ATV trails marked and maintained by local clubs. Crossings will be provided to enable the various users to cross the track safely.

The route of the proposed rail line also involves the crossing of 29 watercourses (12 intermittent and 17 permanent) over a total crossing length of approximately 17 m. It should be noted that bridges and culverts are planned to be installed according to the configuration of each crossing. The choice of bridge and culvert layout has not yet been determined at this design stage and will be the subject of a detailed analysis for each separate crossing as part of the Environmental Impact Assessment (EIA), which report is expected to be submitted at a later date.

2.3.1.5 STORAGE AND LOADING OF IRON CONCENTRATE AT THE PORT

Voyager plans to transport its iron concentrate to the federally owned Grande-Anse Marine Terminal, which is managed by the Saguenay Port Authority (SPA). The Grande-Anse dock was built on the right bank of the Saguenay River. This dock is constructed of sheet piling and topped by a concrete cap wall. It is equipped with mooring bollards on either side of its structure, enabling it to accommodate ore carriers. The water depth available at low tide is 13.8 m.

Various types of infrastructure are already present on the terminal's service area, including an administrative building with a parking area, a loading shed, and a storage area. This infrastructure has been developed to meet a variety of freight transportation needs for regional industries.

To avoid building additional rail infrastructure and to reduce the impact of the project, it will be necessary to use the existing rail link between the Grande-Anse Marine Terminal and the CN rail network in the Saguenay area to enable the management, storage, and loading of iron concentrate at the port facilities. This service is currently owned by Rio Tinto, and an agreement will have to be reached between Voyager and this company to enable the use of the service.

¹ Also called Canadian National.

A memorandum of understanding was already signed between Voyager and SPA in 2021, under which the two entities will work together to jointly develop a plan for handling, storing, and loading the iron concentrate to be produced at the future Mont Sorcier mine in ore carriers.

This plan should include multi-user infrastructure, the construction, operation, and management of which will be part of upcoming discussions between Voyager and SPA, with a view to concluding a mutually beneficial agreement.

2.3.1.6 TAILINGS MANAGEMENT AND STORAGE

The processing plant thickener will receive tailings from the milling process before sending them as pulp to the tailings storage facility. Mine tailings will be hydraulically deposited and confined by retaining structures, i.e., dams that will have to be built and raised as the tailings storage facility fills up.

The tailings dams were being designed at the time of filing this Project Notice. The technical details of the works will be presented in the feasibility study report to be produced at a later date and will be incorporated into the Project EIA.

It should be noted that geochemical characterization and leaching tests will be carried out on the tailings. The results will be used to assess their acid-generating and leaching potential, and to determine what water protection measures, if any, need to be implemented in the tailings storage facility.

2.3.1.7 WATER MANAGEMENT AT THE MINE SITE

The water to be managed as part of the Project will mainly be that associated with the management of water contained in tailings, surface runoff in contact with infrastructure, and mine water (natural recharge from the water table). Natural water will also be extracted to supply some systems and treatment units will be used to treat wastewater before it is discharged to the environment.

Water management equipment, infrastructure, and structures were in the design phase at the time of filing this Project Notice. The associated technical details will be presented in the feasibility study report to be produced at a later date and will be incorporated into the Project EIA.

Tailings water

The water contained in the tailings stored in the tailings storage facility will drain to a pond. A pumping station will be in place to recirculate the water back to the mill for reuse in the ore processing process. Surplus water will be sent to a water treatment unit to ensure compliance with the quality criteria set out in the Metal and Diamond Mining Effluent Regulations (MDMER) and MELCCWP Mining Directive 019 (D019) before being discharged into one of the watercourses shown on Map 2.

The design criteria for the water retention pond at the tailings storage facility will comply with D019. The tailing storage facility's water retention structures will thus be able to contain a project flood, which will be established on the basis of the cumulative volume of water from a critical rainfall event (based on a 1,000- or 2,000-year 24-hour rainfall event) and the average snowmelt over a 30-day period (the amount of snow is that which corresponds to the maximum foreseeable for a 100-year recurrence). The base recurrence selected for the critical rainfall event for the design of water-retaining structures will depend on the type of tailings:

- 1:2,000 years for an acid-generating, cyanide-rich, radioactive, or high-risk tailings accumulation area, as defined in Schedule II of D019;
- 1:1,000 years for an accumulation area for any other type of tailings.

Furthermore, to take into account the impacts of climate change and to reduce the severity of the consequences on the water management works of the site, the capacity of the retaining structures to manage extreme rainfall and snowmelt events will be increased by considering, in particular, the results of a study published by the Ouranos consortium in 2022 on the regional climate portrait for reference and future climates, in support of the analysis of impacts and adaptation to climate change in Eeyou-Istchee James Bay, northern Abitibi-Témiscamingue, and Nunavik (Paquin et al., 2022).

Surface runoff water in contact with infrastructure

Overall, stormwater and snowmelt in contact with the mining infrastructure will be collected and managed by a network of ditches, ponds, and pumping stations: pit, ramp and access road, waste rock and overburden stockpiles, tailings storage facility, industrial area linked to the processing plant, and supporting infrastructure.

Collected water will be conveyed to a collection pond for reuse in the ore treatment process at the mill, or for treatment and discharge to effluent when there is excess water at the tailings storage facility.

A collection basin will also be built in the industrial area associated with the processing plant, to the east of the north waste rock stockpile. A second basin will be built in the south waste rock stockpile area. Water collected in these basins will also be routed to the tailings storage facility's water management system.

Infrastructure and contact water management structures will be designed to minimally comply with D019 for accumulation areas without water retention, i.e., a 1:100-year flood.

The design criteria for water-retaining structures will also comply with D019 and will thus be able to contain a project flood, which will be established based on the cumulative water volume of a critical rainfall event (based on a 1,000- or 2,000-year 24-hour rainfall event) and the average snowmelt over a 30-day period. As mentioned in the previous section, the capacity of retaining structures to handle extreme rainfall and snowmelt events will be increased to account for climate change.

It should be noted that the stormwater management approach will give priority to diverting natural runoff through diversion ditches before it comes into contact with the mining infrastructure, so as to minimize the amount of water coming into contact with the mine site infrastructure.

Mine water

As the pit is developed, mine water will be pumped to the collection basin for use in the processing plant process. The mine water pumping equipment was being designed at the time of filing this Notice of Project. The technical details of the equipment will be presented in the feasibility study report to be produced at a later date and will be incorporated into the Project EIA.

Natural water withdrawal

A natural water pumping station will be installed north of the facilities to pump water for the Project. The preliminary location of the natural water intake considered at this stage of the Project is shown on Map 2.

Water treatment and effluents

A mine wastewater treatment system will be used at the mine site. It will mainly be used to treat excess water accumulated in the tailings storage facility. The treatment system will meet MDMER and D019 criteria. The site will have a single final mine effluent, which will discharge into one of the locations considered at this stage of the Project (Map 2).

The Project also includes a drinking water treatment system for distribution and sanitary use at the site. It will include water filtration and disinfection components to meet the criteria of Quebec's Regulation respecting the quality of drinking water (chapter Q-2, r. 40).

A domestic wastewater treatment and management system will also be installed on site. This system will consist of a wastewater treatment plant. The effluent from this treatment system will discharge into a tributary of Lake Chibougamau. Sludge from the treatment system will be collected and disposed off-site by an independent specialized company.

2.3.1.8 OPERATIONS SUPPORT

In addition to water management infrastructure, the Project includes the use of the following infrastructure:

- electrical substations;
- administrative offices and changing rooms/dryers;
- parts and consumables warehouses;
- maintenance workshop for railway equipment and infrastructure;
- security guardhouse;
- telecommunications system;
- fuel farm;
- mechanical workshop and oil/water separator;
- wash bay;
- powder magazine, detonator warehouse, and explosives preparation area;
- housing building;
- liaison office.

2.3.1.9 SITE REDEVELOPMENT AND REMEDIATION

Site remediation work will be carried out in compliance with applicable regulatory provisions, the *Guide for the Preparation of the Redevelopment and Restoration Plan for Mining Sites in Quebec* (MERN, 2022a), the D019 on the Mining Industry (MDDEP, 2012), and any other applicable provisions, such as the Policy for soil Protection and Rehabilitation of Contaminated Land, and the Regulation respecting the protection and rehabilitation of land (c. Q-2, r. 37). The tallyman and Cree communities will be consulted in the development of the remediation plan.

Other elements that will receive special attention as part of site remediation include the following:

- the management of contaminated water at the mine site and the impact of planned remediation measures on the levels of the various contaminants in the effluent and in the natural environment;
- how the forest cover affected by the Project will be restored;
- the Project's impact on First Nation communities as a result of post-mining site remediation.

The work will be complemented by the implementation of a post-remediation care and maintenance program meeting the requirements of section 4.14 of the *Guide to the Preparation of the Redevelopment and Restoration Plan for Mining Sites in Quebec* (MERN, 2022a). This program will verify the integrity of structures and the effectiveness of corrective measures applied in the field and will also contain environmental and agronomic monitoring.

2.3.2 BRIEF DESCRIPTION OF CONSTRUCTION ALTERNATIVES

The evaluation of Project alternatives mainly considers components such as locations, development, or implementation methods, routes, designs, technologies, mitigation measures, etc. The evaluation therefore optimizes the Project to reduce negative impacts and considers other means of improving the Project’s positive impacts.

The Project components described above (activities, infrastructure, structures, and works, whether permanent or temporary) are the alternatives that were deemed preferable at the time this document was prepared. The Project development process will include a more detailed analysis and adjustment or optimization of these preferred alternatives. Table 2 presents the Project components for which alternatives have been considered, as well as the alternatives retained at this stage of Project development and design.

Table 2 Project components for which alternatives were considered

PROJECT COMPONENTS	ALTERNATIVES RETAINED
Type of mining	Open pit
Method of storage of waste rock and tailings	Surface storage with minimal impact on water and wetlands
Tailings management	Hydraulic deposition
Discharge location of mine effluent	<ul style="list-style-type: none"> — Solution 1: Bab Bay area — Solution 2: Finger Bay area
Railway tracks	— Southeast alignment, approximately 46 km, connecting to the existing railway in the southeast area of Lac Chibougamau
Port	— Grande-Anse Marine Terminal
Housing for workers	— The choice of location, duration (temporary or permanent building), and housing arrangements for workers have not yet been determined, and the alternative remains to be developed in collaboration with local stakeholders.

2.4 PROJECT OBJECTIVES AND RATIONALE

The Project is part of a global context in which demand for high-grade iron ore has increased in recent years. When used in blast furnaces to produce steel, high-grade iron concentrate contributes to lower greenhouse gas (GHG) emissions by reducing the amount of energy required for steelmaking processes, which currently generate nearly 7% of global GHG emissions according to estimates by the International Energy Agency (IEA), or by enabling the use of electric furnaces.

In addition, the Mont Sorcier deposit contains not only high-quality iron, but also an iron deposit that is mainly in the form of magnetite. Compared to hematite, iron in the form of magnetite generally reduces coal consumption by steelmakers. In short, the Mont Sorcier deposit would produce a high-grade magnetite-type iron concentrate for steelmakers, while helping to combat climate change.

According to the preliminary economic assessment study completed by DRA Global in 2022, the Mont Sorcier deposit would comprise 559.3 Mt of indicated mineral resources at an average grade of 28.2% Fe₃O₄, generating 163.4 Mt of iron (65%) and vanadium (0.52%) concentrate production. In addition, a total of 470.5 Mt of inferred mineral resources generating 128.9 Mt of the same concentrate would also be present on the property.

The results of the DRA Global study (2022) indicate that the Project has potentially viable economic results under the following scenario:

- Annual production of approximately 5 Mt of high-quality, low-impurity iron concentrate containing 65% iron and 0.52% vanadium.
- A base selling price of US\$100/tonne (t) of 62% iron concentrate, plus a US\$20/t premium for 65% iron content and a vanadium credit of US\$15/t.
- A 21-year mine life.
- Open-pit mining with a stripping ratio over the mine life of less than 0.9:1.
- Average annual earnings before interest, taxes, depreciation, and amortization of US\$348 million and average annual free cash flow of US\$235 million over the 21-year mine life.
- Total operating costs of US\$66/t of concentrate over the life of the mine (possible freight to Asia, but Voyager will focus on the Quebec market).
- Initial capital expenditures estimated at US\$574 million, including a contingency of US\$118 million.
- A repayment period of less than two years.

Based on the assumptions used by DRA Global (2022) in carrying out the preliminary economic assessment study, it is reasonable to believe that the Project's open-pit operation lends itself to the expectation of "reasonable prospects for potential economic extraction," according to the guidelines of the Canadian Institute of Mining.

Moreover, in addition to the favourable results of DRA Global's preliminary economic evaluation study (2022), several other factors work in the Project's favour:

- **Strategic location:** The Mont Sorcier mining site is located in the municipality of Chibougamau, in the traditional Cree territory of Eeyou Istchee, more precisely within the boundaries of the Cree communities of Oujé-Bougoumou and Mistissini, an area already very active in the mining industry. Chibougamau and Chapais, located about 45 km west of Chibougamau, are former mining centres for copper and gold. The Cree support and promote mining development as part of their approach to natural resource management and as a tool for social and economic development. A skilled workforce, including qualified mining personnel, is present in the region, which is also well served by service and equipment maintenance providers. There are even several non-First Nation and First Nation businesses specializing in mining services.
- **Favourable transportation infrastructure:** Chibougamau straddles Highway 167 and is served by an airport. A helicopter base and a seaplane base are available in the area. Chibougamau is also the railhead for CN's Northern Quebec Short Line.
- **Favourable port infrastructure:** A seaport is located in Grande-Anse in the Saguenay-Lac-Saint-Jean region, about 300 km southeast of the Mont Sorcier mining site, along a railway. The latter could advantageously be used for the maritime transport of the iron concentrate produced by Voyager.

- **Favourable renewable energy infrastructure:** Hydroelectric power, a renewable energy source, is available in the Chibougamau area. A 735 kV line linking power generation facilities in the James Bay region (north of Chibougamau) to Montréal and Quebec City passes through Chibougamau, where an electrical substation is located.

Several other potential advantages help to justify the Project, including a political context favourable to mining development in the Nord-du-Québec region, and the active participation of First Nation communities in regional economic development, including the mining sector, generating short- and long-term economic benefits for First Nation communities, the Chibougamau sector, the Abitibi-Témiscamingue and Saguenay-Lac-Saint-Jean regions, and the province of Quebec. The key economic benefits associated with the Project include:

- vocational and technical training opportunities for the local and regional population, including First Nation people;
- capital investment to enhance the value of the mining property and set up equipment and infrastructure for the future mine;
- the creation of many jobs during the construction phase, in addition to many other permanent jobs to conduct the day-to-day operations of the mine;
- the awarding of various contracts to qualified local contractors in the construction phase;
- the awarding of various local and regional service and supply contracts during the operations phase;
- the generation of significant tax or property revenues for the community, the region, the province of Quebec, and the federal government;
- contributing to the dynamism and vitality of the Chibougamau and Saguenay areas by enabling the creation and maintenance of businesses in various sectors, and supporting residential development of the town of Chibougamau, thereby helping to maintain and attract labour to the region;
- the creation of business opportunities of all kinds for local communities, including First Nation communities, thereby fostering local and regional socio-economic resilience and helping local communities to position themselves advantageously for other large-scale projects for the benefit of current and future generations.
- an opportunity for the Innu community of Masteuiatsh to relaunch its rail service Project to meet the Project's maintenance needs.

2.5 RELATED ACTIVITIES

The related activities are as follows:

- construction of a new power line by Hydro-Québec to supply the site;
- improvements to the existing access road (Chemin du Lac-Chibougamau Nord);
- the creation of borrow pits for roads and other infrastructure.

3 LOCATION AND DESCRIPTION OF THE AREA

3.1 IDENTIFICATION AND LOCATION OF THE PROJECT AND ITS ACTIVITIES

The Project is located within the boundaries of the Municipality of Chibougamau, in the Cree traditional territory of Eeyou Istchee James Bay in the administrative region of Nord-du-Québec (region 10), approximately 17 km east of downtown Chibougamau (Map 1). This territory comprises the traditional territory of Eeyou Istchee, represented by the Cree Nation Government and Grand Council of the Crees, as well as Jamésie, a non-First Nation territory equivalent to a regional county municipality (RCM).

To date, Voyager holds 64 mining claims in the Mont Sorcier sector, covering an area of approximately 3,195.6 ha. Map 3 shows the location of the mining claims held by Voyager.

All Project infrastructure is located on lands in the public domain of Quebec (owned by His Majesty in right of the Province of Quebec).

The geographic coordinates (latitude/longitude, Nad 83) of the main Project components are as follows:

- ditch: -74° 07' 30.441; 49° 54' 51.711;
- tailings storage facility: -74° 05' 35.176; 49° 55' 49.908;
- south waste rock stockpile: -74° 08' 11.086; 49° 54' 15.142;
- north waste rock stockpile: -74° 08' 11.941; 49° 56' 12.425;
- industrial sector:² -74° 07' 35.605; 49° 56' 25.039;
- final effluent — option 1: -74° 5' 21.391; 49° 54' 40.958;
- final effluent — option 2: -74° 2' 33.182; 49° 55' 41.989;
- water intake: -74° 7' 32.618; 49° 57' 12.737;
- west access: -74° 7' 33,159" ; 49° 55' 17,49;
- east access: -74° 7' 22,640" ; 49° 55' 16,950.

3.2 DESCRIPTION OF THE PROJECT SITE

At the time this document was being written, the first phase of wildlife inventories and characterization of the physical and biological environments had been carried out. A second phase of work is scheduled to be completed for use in the Project's EIA.

² Industrial refers to the location of industrial buildings, including the processing plant and the iron concentrate storage area.

The EIA report to be produced at a later date will contain a detailed description of the biological and physical environment in the Project area.

In the meantime, the following sections present a summary description of the physical and biological environments generated from inventory work to date and available literature. The main environmental components are illustrated on Map 4.

3.2.1 PHYSICAL ENVIRONMENT

3.2.1.1 ATMOSPHERIC ENVIRONMENT

According to the Köppen-Geiger climate classification system, the regional climate of the Project area is cold and humid continental (MELCC, 2022a). It is considered cold as average temperatures remain below freezing from November to March, and humid due to regular rainfall throughout the year. It differs from the northern climate of the province in that its summer is temperate, with average temperatures above 10 °C from June to September.

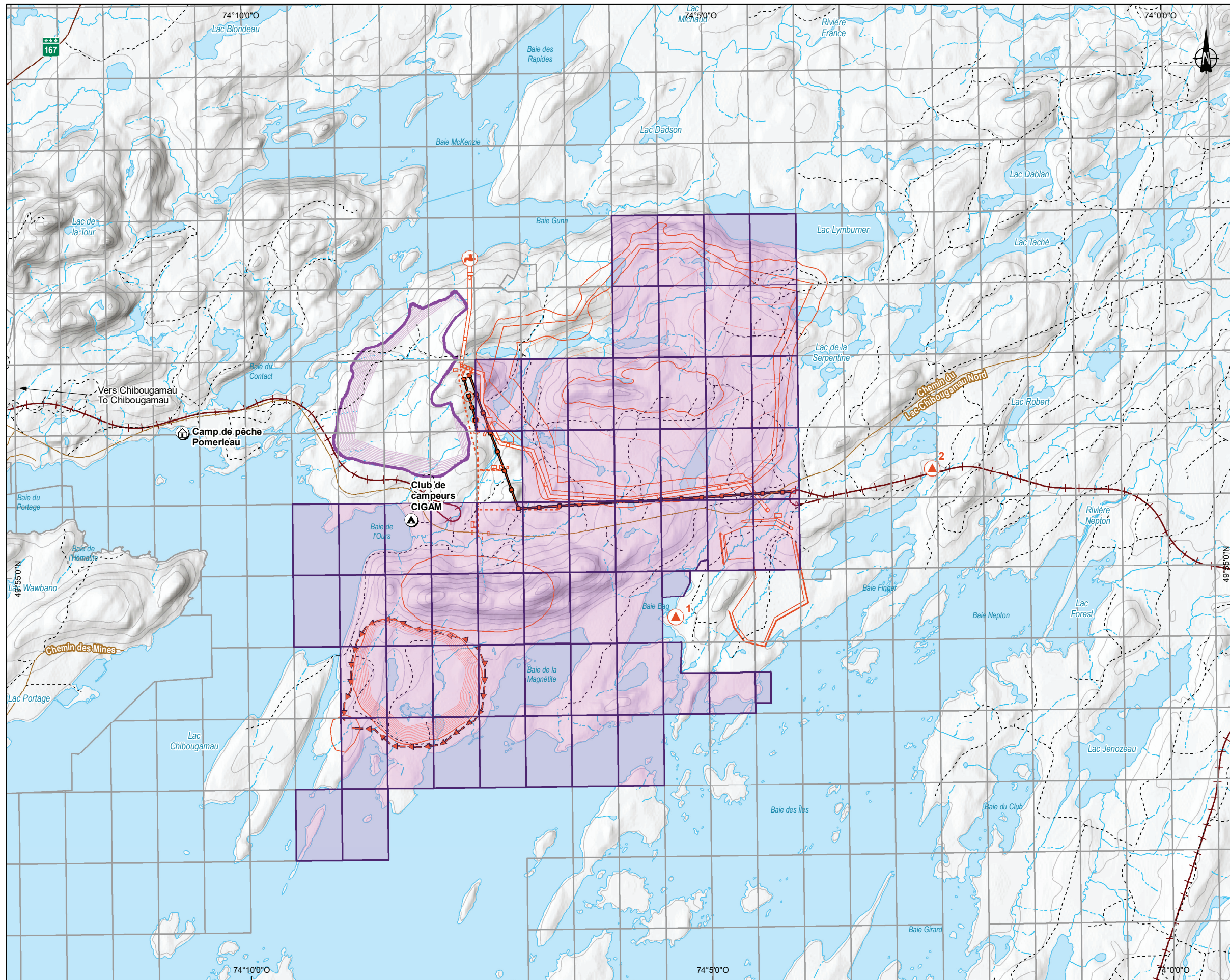
The *Quebec Air Quality Monitoring Network* (MELCC, 2022b) provides ambient air quality data from some 60 stations across the province. Every hour, an air quality index (AQI) is calculated from the following five contaminants: ozone, fine particulate matter, sulphur dioxide, nitrogen dioxide, and carbon monoxide. To date, no stations are located near the Project. The nearest station is in the Ashuapmushuan-Pemona Wildlife Reserve (station 02610; coordinates 48°48'35.00"N, 72°44'20.01"W) in the Lac-Saint-Jean meteorological region, about 160 km southeast of the Project. Available AQI statistics for this region indicate that in 2020, air quality was good 79.7% of the time (MELCC 2022c).

3.2.1.2 PHYSIOGRAPHY, GEOLOGY, AND GEOCHEMISTRY

Natural provinces are large territories whose recognition is based on physiographic contrasts expressed by the nature and configuration of the bedrock, topography, hydrography, and surface deposits. According to Quebec's ecological reference framework, the Project area is in the Mistassini Highlands natural province, corresponding to a large plateau dotted with hills. Its average altitude is between 300 m and 450 m, with some peaks above 500 m (MELCC, 2022d). Terrain elevation at the location of the Voyager mining property varies in the same order of magnitude, with one peak culminating at 530 m altitude (Mont Sorcier).

Glacial deposits are abundant in the Mistassini Highlands natural province. They are often thick, very stony, sandy in texture, and interspersed with large deposits of fluvio-glacial sand and gravel (MELCC 2022d).

The Project area is in the Superior geological province, which consists of diverse and very ancient rocks of Archean age (> 2,500 billion years). This province is subdivided, from north to south, into seven sub-provinces. The Project site is located at the northeastern end of the Abitibi sub-province (MERN 2012). It comprises east-west trending volcanic and sedimentary greenstone belts, hosting a significant number of mineral deposits.



Composantes projetées / Projected Components

- Emplacement potentiel du point de rejet de l'effluent minier / Mining effluent discharge potential location
- Prise d'eau potable / Drinking water intake
- Conduite / Pipeline
- Convoyeur / Conveyor
- Fossé / Ditch
- Route / Road
- Élévation / Elevation

Infrastructures de surface / Surface Infrastructures

- Contours des composantes / Component contours

Version conceptuelle préliminaire / Preliminary Conceptual Version

- Halde à stériles / Wasterock stockpile

Composante connexe projetée / Related Projected Component

- Option de voie ferrée / Railroad option

Limites / Limits

- Claim du promoteur / Promoter's claims
- Autre claim / Other claim

Loisirs et tourisme / Recreation and Tourism

- Camp de pêche / Fishing camp
- Camping / Campground

Hydrographie / Hydrography

Écoulement / Waterflow

- Intermittent / Intermittent
- Permanent / Permanent
- Permanent partiellement souterrain / Permanent partially underground

Réseau routier / Road Network

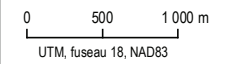
- Route régionale / Regional road
- Route d'accès aux ressources / Resource access road
- Chemin forestier / Forest road



Projet minier Mont Sorcier / Mont Sorcier Mining Project
Avis de projet / Project Notice

Carte 3 / Map 3
Claims miniers détenus par Voyager / Mining Claims Owned by Voyager

Sources :
BDTQ, 1/20 000, MRNF Québec, 2007
CanVec+, 1/50 000, RNCAN, 2014
BDTA, 1/250 000, MRN Québec, 2002
BDGA, 1/5 000 000, MRNF Québec, 2010
AOréseau+, réseau routier, MERN, 2016
Gestion des titres miniers (GESTIM), MERN Québec, 8 mars 2022
SDA, 1/20 000, MRNF Québec, avril 2015

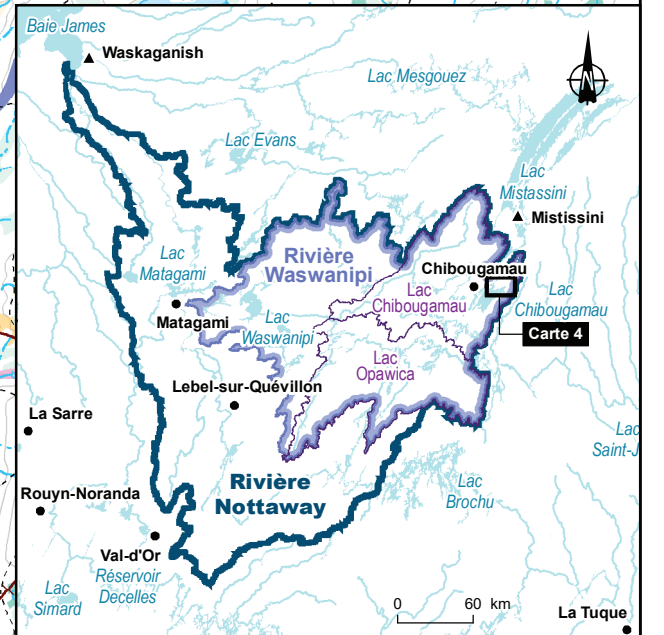
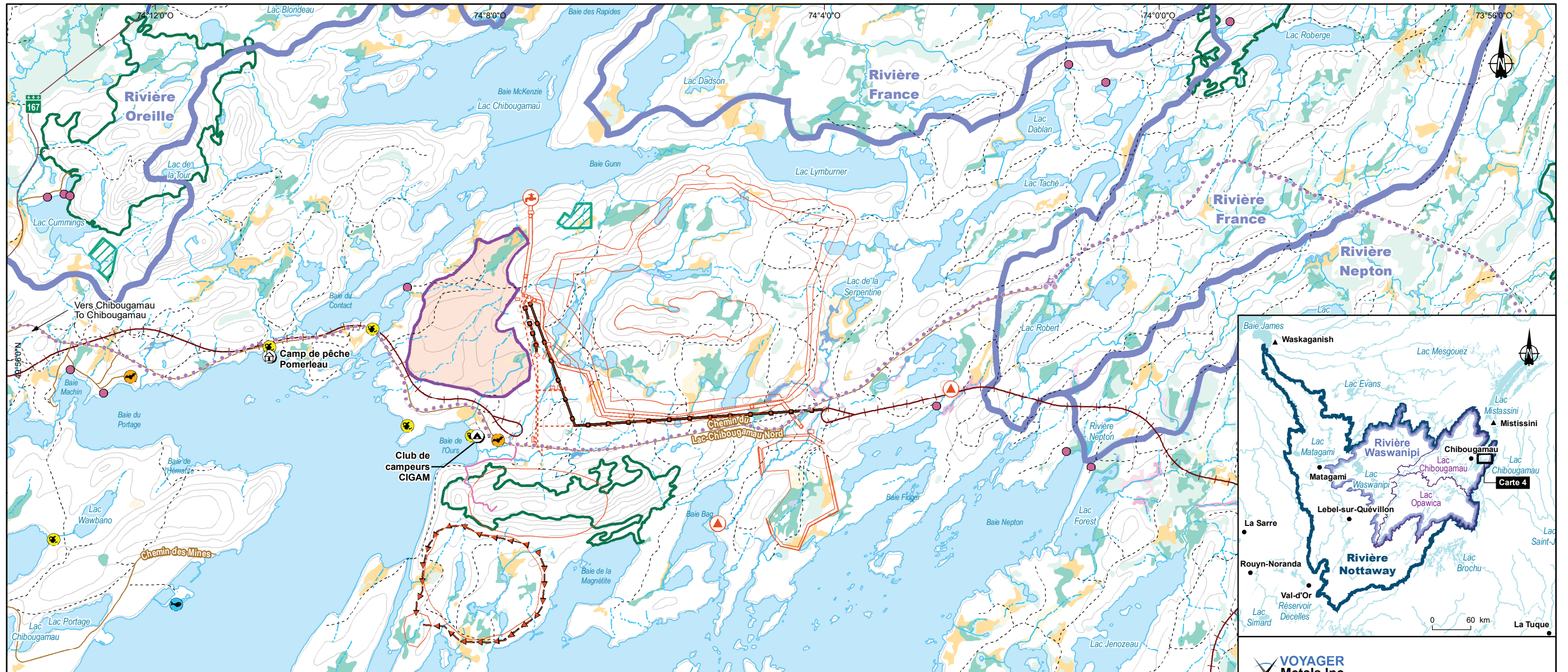


UTM, fuseau 18, NAD83

Mai 2023 / May 2023

Préparation / Prepared by : M. De Champlain
Dessin / Draw by : M. Leclair
Approbation / Approved by : F. Lefrenière
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Composantes projetées / Projected Components

- Emplacement potentiel du point de rejet de l'effluent minier / Mining effluent discharge potential location
 - Prise d'eau potable / Drinking water intake
 - Conduite / Pipeline
 - Convoyeur / Conveyor
 - Fossé / Ditch
 - Route / Road
 - Contours des composantes / Component contours
 - Halde à stériles / Wasterock stockpile
 - Option de voie ferrée / Railroad option
- Version conceptuelle préliminaire / Preliminary Conceptual Version

Réseau routier / Road Network

- Route régionale / Regional road
- Chemin forestier / Forest road
- Route d'accès aux ressources / Resource access road

Loisirs et tourisme / Recreation and Tourism

- Bail de villégiature / Vacation lease
- Camp de pêche / Fishing camp
- Camping / Campground
- Sentier de motoquad / Quad bike trail
- Sentier pédestre / Pedestrian trail

Aires protégées / Protected Areas

- Écosystème forestier exceptionnel / Exceptional forest ecosystem
- Projet de refuge biologique exclu de la production forestière / Biological refuge project excluded from forest production

Habitats fauniques / Wildlife Habitats

- Site de maternité de chauve-souris / Bat maternity site
- Frayère / Spawning site

Archéologie / Archeology

- Site à potentiel archéologique / Site with archaeological potential

Milieus humides / Wetlands

- Eau peu profonde / Shallow water
- Marais / Marsh
- Marécage arbustif / Shrubby swamp
- Marécage arborescent / Forested swamp
- Tourbière ombrotrophe ouverte / Open bog
- Tourbière ombrotrophe boisée / Forested bog
- Tourbière minérotrophe ouverte / Open fen
- Tourbière minérotrophe boisée / Forested fen

Hydrographie / Hydrography

- Sens de l'écoulement / Water flow

Écoulement / Waterflow

- Intermittent / Intermittent
- Permanent / Permanent
- Permanent partiellement souterrain / Permanent partially underground

Bassins versants / Watersheds

- Niveau 1 / Level 1
- Niveau 2 / Level 2
- Niveau 3 / Level 3
- Niveau 4 / Level 4



Projet minier Mont Sorcier / Mont Sorcier Mining Project

Avis de projet / Project Notice

Carte 4 / Map 4
Principales composantes du milieu /
Main Environmental Components

Sources :
 BDTO, 1/20 000, MRNF Québec, 2007
 CanVec+, 1/50 000, RNCAN, 2014
 BDTA, 1/250 000, MRN Québec, 2002
 BDGA, 1/5 000 000, MRNF Québec, 2010
 AQRéseau+, réseau routier, MERN, 2016
 Baux de villégiature, MRNF Québec, janvier 2018
 SDA, 1/20 000, MRNF Québec, avril 2015

0 550 1 100 m
 UTM, fuseau 18, NAD83

Mai 2023 / May 2023

Préparation / Prepared by : M. De Champlain
 Dessin / Draw by : M. Leclair
 Approbation / Approved by : F. Lefrenière
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In the Chibougamau region, a stratiform synvolcanic intrusion of mafic to ultramafic composition is present in the volcanic rocks of the Obatogamau and Waonichi formations. This is the Lac Doré intrusive suite (MERN 2022b). The stratigraphy of this suite comprises the following four zones (CSA Global Consultants Canada Ltd., 2019):

- the lowest anorthositic zone composed of anorthosite and gabbro, in variable proportions;
- the stratified zone consisting of bands of ferro-pyroxenite, magnetized gabbro, magnetites (containing titanium and vanadium), and anorthosite;
- the granophyre zone (at the top) composed of soda-rich leucotonalite;
- the boundary zone in contact with the surrounding volcanic rocks.

3.2.1.3 HYDROGRAPHY

The Project area is in the Nottaway River watershed, specifically in the Lac Chibougamau sub-basin. Lac Chibougamau, with a surface area of 210 km², is a major body of water located near the Project site. Bear, Magnetite, and Bag bays of Lac Chibougamau are located on Voyager mining claims (Map 3). A few small lakes and streams are also present on the claims.

The waters of Lake Chibougamau flow into Lac aux Dorés and then join the Chibougamau River in the southern part of Lac aux Dorés. The Chibougamau River, over 200 km long, crosses numerous lakes (Ledden, David, Scott, Gwillim, Chevrillon, Barlow, Opémisca, and Michwacho) before ending its course at the same point where the Opawica River converges with the Waswanipi River. The Waswanipi River flows into Lake Matagami, then the Nottaway River, before joining James Bay.

3.2.1.4 SURFACE WATER AND SEDIMENT QUALITY

In the past and today, Lac Chibougamau and its shores have been impacted by mining activities (gold, copper, vanadium, etc.), and lake sediments still contain high concentrations of metals in some places. In lake sediments, certain metal concentrations have been measured at higher levels near the tailings storage facilities of the Copper Rand (arsenic, vanadium, etc.) and Principale (arsenic, cadmium, copper, nickel, and zinc) mines, and these concentrations could potentially affect the most sensitive aquatic organisms. Water sampling in Lac Chibougamau in 2008 revealed that all metal concentrations were below water quality criteria for the protection of aquatic life (Norda Stelo, 2019).

3.2.2 BIOLOGICAL ENVIRONMENT

3.2.2.1 VEGETATION AND WETLANDS

The Project area is in the boreal vegetation zone, more particularly in the open boreal forest subzone colonized by dense stands of boreal softwoods and light hardwoods. The area is also located in the Western Spruce-Moss bioclimatic domain (MFFP, 2021).

The landscape is fairly uniform in the spruce-moss bioclimatic domain, since the forest cover is clearly dominated by black spruce (*Picea mariana*), which forms many monospecific stands here, but is also associated with various companion species, including balsam fir (*Abies balsamea*). Some hardwoods, such as paper birch (*Betula papyrifera*), trembling aspen (*Populus tremuloides*) and, to a lesser extent, balsam poplar (*Populus balsamifera*), also grow in this area. The undergrowth is covered with hypnaceous mosses and ericaceous shrubs. Herbaceous species are generally few and far between.

According to information from the ecoforestry map (4th program, 2012), the vegetation on Voyager's mining claims is predominantly coniferous, with a few mixed and deciduous stands (Map 4.6 in Schedule C, produced by Norda Stelo in 2019).

According to the mapping of potential wetlands in Quebec produced in 2019, the wetlands potentially present on the mining property are mainly composed of swamps and, to a lesser extent, wooded and open peatlands (Map 4). They are mainly located in the area south and north of Mont Sorcier.

3.2.2.2 AQUATIC WILDLIFE AND FISH HABITAT

Lac Chibougamau, one of the largest lakes in the region, supports a diverse fish community, including species prized by sport fishermen and Cree communities alike. According to information obtained from the Ministry of Forests, Wildlife and Parks³ (MFFP 2022a), 21 species have been recorded in this lake. Of these, only the lake sturgeon has special status in Quebec and Canada (Table 3).

A baseline study conducted in 1998 and 1999 revealed that the fish population of this lake was dominated by walleye and burbot, while the state of the lake trout population was precarious. There is currently a total ban imposed by the MFFP on lake trout fishing due to the low recruitment and poor health of the Chibougamau lake populations (Norda Stelo, 2019).

Four wildlife sites of interest are present in Lac Chibougamau and correspond to walleye spawning grounds. In addition, 14 potential spawning grounds and deep-water summer habitats for lake trout have been identified and mapped in the northern part of Lac Chibougamau (Map 4.7 in Schedule C Produced by Norda Stelo in 2019).

3.2.2.3 AVIAN AND TERRESTRIAL FAUNA

According to the James Bay Wildlife Portrait (CRRNTBJ, 2010), several mammal species are likely to frequent the Project area. Although not abundant, the presence of white-tailed deer has also been confirmed in the Chibougamau and Chapais area. The presence of the rock vole and southern bog lemming has also been confirmed by the MFFP (2022a) in the Project area. These species have a special status in Quebec, as do the least weasel and the woodland caribou (forest ecotype) (Table 3). The woodland caribou (forest ecotype) also has a special status in Canada.

According to the information obtained from the MFFP (2022a), seven of the eight bat species found in Quebec are present in the Project area. Of these, five have a special status in Quebec or Canada (Table 3). A hibernaculum for the northern long-eared myotis and the little brown bat is located near the Project site. Several active and potential maternity colonies have also been identified. These are generally roosts set up on private land and are monitored annually by the MFFP (Map 4).

According to data from the *Québec Breeding Bird Atlas*, there are 94 bird species listed in or near the Project area: 23 waterbirds, 10 birds of prey, and 63 forest birds (AONQ 2022). Of these, five have special status in Quebec or Canada (Table 3). These are the common nighthawk, bank swallow, Canada warbler, bald eagle, and rusty blackbird. Four other species of special status have also been observed near the town of Chibougamau, according to eBird Québec (2022) data: Barrow's goldeneye, peregrine falcon, barn swallow, and red-necked phalarope. Information obtained from the MFFP (2022a) also mentions the presence of the short-eared owl and the olive-sided flycatcher.

³ Following the appointment of the new Council of Ministers in October 2022, the Forestry sector now comes under the Ministry of Natural Resources and Forests (MRNF), while the Wildlife and Parks sectors come under the Ministry of the Environment, Climate Change, Wildlife and Parks (MELCCWP).

Lastly, according to information provided by the MFFP (2022a), nine species of amphibians and three species of reptiles are present in the Project area (50 km radius around Mont Sorcier). These are the blue-spotted salamander (*Ambystoma laterale*), the spotted salamander (*Ambystoma maculatum*), the two-lined salamander (*Eurycea bislineata*), the American toad (*Anaxyrus americanus*), the spring peeper (*Pseudacris crucifer*), the wood frog (*Lithobates sylvaticus*), the leopard frog (*Lithobates pipiens*), the northern green frog (*Lithobates clamitans melanota*), the mink frog (*Lithobates septentrionalis*), the common garter snake (*Thamnophis sirtalis*), the painted turtle, and the snapping turtle. Of these species, only the painted and snapping turtles have special status in Canada (Table 3).

3.2.2.4 SPECIES OF SPECIAL STATUS

Several species of special status have been identified in the Project area or are likely to frequent it. These species are presented in Table 3 along with their status in Canada, as defined under the Species at Risk Act (S.C. 2002, c. 19) and in Quebec, as defined in the Act respecting threatened or vulnerable species (chapter E 12.01).

Of the wildlife species with special status in Quebec, 14 are present in the Project area, and four are likely to be (Table 3). The presence of bald eagles, rock voles, and southern bog lemmings was confirmed based on data obtained from the Centre de données sur le patrimoine naturel du Québec (CDPNQ, 2022b). Information obtained from the MFFP (2022a), within a 50 km radius of Mont Sorcier, also confirmed the presence of lake sturgeon, pointed lake limpet, yellow-banded bumble bee, short-eared owl, olive-sided flycatcher, and silver-haired, hoary, and red bats in the Project area. Lastly, the presence of Canada warbler, common nighthawk, and rusty blackbird was confirmed based on data from the Atlas of Breeding Birds of Quebec (AONQ, 2022).

Data obtained from the CDPNQ (CDPNQ, 2022a and 2022b) also mention the presence of two plant species and three other wildlife species of special status in Quebec in or near the Project area (within a 50 km radius of Mont Sorcier). These are the modest aster, the field forklet moss, the bank swallow, the little brown bat, and the northern long-eared myotis. The presence of other species of special status in Quebec (painted and snapping turtles) has also been confirmed in this area based on data obtained from the MFFP (2022a).

3.2.2.5 PROTECTED AREAS AND WILDLIFE HABITATS

Two wildlife habitats protected under the Act respecting the conservation and development of wildlife (chapter C-61.1) are located near the Project site (Map 4). These include an island or peninsula, inhabited by a bird colony as well as fish habitat, which contains all bodies of water, marshes, swamps, and watercourses frequented by fish (including eggs and sexual products of fish, molluscs, and aquatic crustaceans) at some stage in their life cycle.

An exceptional forest ecosystem protected under the Sustainable Forest Development Act (chapter A-18.1), the rare Baie-Gunn forest, is located approximately 3 km north of the Project area (Map 4).

A biological refuge project excluded from forest production (02664R022), covering an area of 188.5 ha, is located on Voyager's mining claims (Map 4). This refuge project is awaiting legal recognition under the Sustainable Forest Development Act (chapter A-18.1). Even though this land is not legally protected, the MFFP applies the principle of prudent management to this area to maintain the conditions for eventual legal designation (e.g., territory excluded from all forest planning). This administrative protection does not, however, cover tree-cutting carried out to exercise non-forestry rights, such as clearing corridors for exploration or mining. These activities could be authorized due to the presence of an active mining title or a recognized high potential for mining development according to the Guidelines for the Management of Biological Refuges (Poulin, 2014).

Table 3 Species of special status present or potentially present in the Mont Sorcier Mining Project area

COMMON NAME	SCIENTIFIC NAME	STATUS IN QUEBEC ^A	STATUS IN CANADA ^B	PRESENCE IN PROJECT AREA (within 50 km radius)
Fish				
Lake sturgeon	<i>Acipenser fulvescens</i>	S	Of concern	Confirmed
Gastropoda				
Pointed lake limpet	<i>Acroloxus coloradensis</i>	S	–	Confirmed
Insects				
Yellow-banded bumble bee	<i>Bombus terricola</i>	S	Of concern	Confirmed
Birds				
Common nighthawk	<i>Chordeiles minor</i>	S	Of concern	Confirmed
Barrow's goldeneye	<i>Bucephala islandica</i>	Vulnerable	Of concern	–
Peregrine falcon	<i>Falco peregrinus</i>	Vulnerable	Of concern	–
Short-eared owl	<i>Asio flammeus</i>	S	Of concern	Confirmed
Bank swallow	<i>Riparia riparia</i>	–	Threatened	Confirmed
Barn swallow	<i>Hirundo rustica</i>	–	Of concern	–
Olive-sided flycatcher	<i>Contopus cooperi</i>	S	Threatened	Confirmed
Canada warbler	<i>Cardellina canadensis</i>	S	Of concern	Confirmed
Red-necked phalarope	<i>Phalaropus lobatus</i>	–	Of concern	–
Bald eagle	<i>Haliaeetus leucocephalus</i>	Vulnerable	–	Confirmed
Rusty blackbird	<i>Euphagus carolinus</i>	S	Of concern	Confirmed
Mammals				
Least weasel	<i>Mustela nivalis</i>	S	–	–
Rock vole	<i>Microtus chrotorrhinus</i>	S	–	Confirmed
Southern bog lemming	<i>Synaptomys cooperi</i>	S	–	Confirmed
Woodland caribou, forest ecotype	<i>Rangifer tarandus caribou</i>	Vulnerable	Threatened	–
Silver-haired bat	<i>Lasionycteris noctivagans</i>	S	–	Confirmed
Hoary bat	<i>Lasiurus cinereus</i>	S	–	Confirmed
Northern long-eared myotis	<i>Myotis septentrionalis</i>	–	Endangered	Confirmed
Red bat	<i>Lasiurus borealis</i>	S	–	Confirmed
Little brown bat	<i>Myotis lucifugus</i>	–	Endangered	Confirmed
Amphibians and reptiles				
Painted turtle	<i>Chrysemys picta</i>	–	Of concern	Confirmed
Snapping turtle	<i>Chelydra serpentina</i>	–	Of concern	Confirmed
Plants				
Modest aster	<i>Canadanthus modestus</i>	S	–	In the vicinity
Calypso	<i>Calypso bulbosa</i>	S	–	–
Field forklet moss	<i>Dicranella staphylina</i>	S	–	In the vicinity
Ostrich fern	<i>Matteuccia struthiopteris</i>	Vulnerable to picking	–	–
Littletree willow	<i>Salix arbusculoides</i>	S	–	–
McCall willow	<i>Salix maccalliana</i>	S	–	–
False mountain willow	<i>Salix pseudomonticola</i>	S	–	–

a Status in Quebec as defined by the Act respecting threatened or vulnerable species: S: likely to be designated threatened or vulnerable.

b Status in Canada as defined in Schedule 1 of the Species at Risk Act:

Sources: AONQ, 2022; Desrosiers et al., 2002; eBird, 2022; Government of Canada, 2022a; MFFP, 2022a; MFFP, 2022b; Prescott and Richard, 2013.

3.2.3 SOCIAL ENVIRONMENT

The following sections provide a brief description of the social environment.

3.2.3.1 POPULATION

As previously mentioned, the Project is located mainly within the boundaries of the Municipality of Chibougamau, in the territory of the Eeyou Istchee Bay James regional government in the administrative region of Nord-du-Québec. This territory has a total area of approximately 274,623 km² (MAMH, 2010) and is located between the 49th and 55th parallels. It comprises the traditional territory of Eeyou Istchee, represented by the Cree Nation Government and Grand Council of the Crees, as well as Jamésie (non-native territory). Spread over 16 communities, Jamesians and Crees live side by side.

The Jamesian populations are concentrated in the towns of Chapais, Chibougamau, Matagami, and Lebel-sur-Quévillon, as well as in Valcanton, Villebois, and Radisson. The Cree, for their part, live in nine communities along the James Bay coast, at the mouths of major tributaries or inland. These are the Cree communities of Chisasibi, Eastmain, Mistissini, Nemaska, Oujé-Bougoumou, Waskaganish, Waswanipi, Wemindji, and Whapmagoostui. Each municipality and locality is administered by a municipal council and each Cree community is administered by a band council. The following sections describe the Cree communities of Mistissini and Oujé-Bougoumou as well as the towns of Chibougamau and Chapais, which are the closest to the Project.

Jamesian cities

Covering an area of 694.87 km², Chibougamau is the most populous town in the Nord-du-Québec region.

It had a population of 7,233 in 2021, compared to 7,504 in 2016 (Statistics Canada, 2022). This represents a population decline of 3.6%. The population density per km² was 10.4 in 2021 and 10.7 in 2016 (Statistics Canada, 2022; Statistics Canada, 2017). In 2021, the average age of the population was 40.5 years (40.3 years for men and 40.7 years for women), while the median age was 40.8 years (40.4 years for men and 40.8 years for women) (Statistics Canada, 2022). In 2016 in Chibougamau, 130 people were from visible minorities and 125 people had immigrant status (Statistics Canada, 2017). At the time this document was being written, this figure may have nearly doubled, according to the latest information on Chantier Chibougamau's recruitment of foreign workers (Le Devoir, 2022). The average size of private households was 2.2 persons in 2021. There were a total of 1,800 couple families and 320 single-parent families. French was the first official language spoken by both men and women. French was also the language most frequently spoken at home (Statistics Canada, 2022). The town of Chibougamau is located about 20 km west of the Project.

The town of Chapais, 45 km from Chibougamau, had a population of 1,468 in 2021 compared to 1,499 in 2016 (Statistics Canada, 2022). This represents a population decline of 2.1%. Population density per km² was 23.6 in 2021 and 23.5 in 2016 (Statistics Canada, 2022; Statistics Canada, 2017). In 2021, the average age of the population was 40.2 years (40.4 years for men and 40.0 years for women), while the median age was 40.4 years (40.8 years for men and 40.4 years for women) (Statistics Canada, 2022). The average size of private households was 2.2 persons in 2021. There were 375 couple families and 45 single-parent families. French was the first official language spoken by both men and women. French was also the language most frequently spoken at home (Statistics Canada, 2022).

First Nation peoples

Mistissini, an inland Cree community, is located approximately 60 km northeast of the Project, on the shore of Lake Mistissini. In 2021, Mistissini's population was 3,190, down from 3,523 in 2016 (Statistics Canada, 2022). This represents a population decline of 9.5%. Population density per km² was 3.05 in 2021 and 2.59 in 2016. In 2021, the average age of the population was 32.0 years (31.5 years for men and 32.4 years for women), while the median age was 29 years (26.8 years for men and 30.2 years for women) (Statistics Canada, 2022). In the 2016 census, 25 people were from a visible minority (Statistics Canada, 2017). However, current data do not show any immigrants in the Cree territory of Mistissini. The average size of private households was 3.8 persons in 2021. There were 575 couple families and 210 single-parent families. The first official language spoken was English for both men and women, while the language most frequently spoken at home was Cree (Statistics Canada, 2022).

The second closest Cree community to the Project site (50 km to the west) is Oujé-Bougoumou. Its population was 797 in 2021 (Statistics Canada 2022), a small increase from 2016 (747). Population density per km² in 2021 was 8.3 for a land area of only 96.22 km². The average age of the population was 27.7 years (40.4 years for men and 28.7 years for women), while the median age was 40.4 years (22.8 years for men and 40.4 years for women) (Statistics Canada, 2022). In 2021, the average size of private households was 3.7 people. The first official language spoken was English, for both men and women, while 29.7% of the population was proficient in both English and French, and the language most frequently spoken at home was Cree (Statistics Canada, 2022).

Map 5 illustrates the Project's location in relation to First Nation communities.

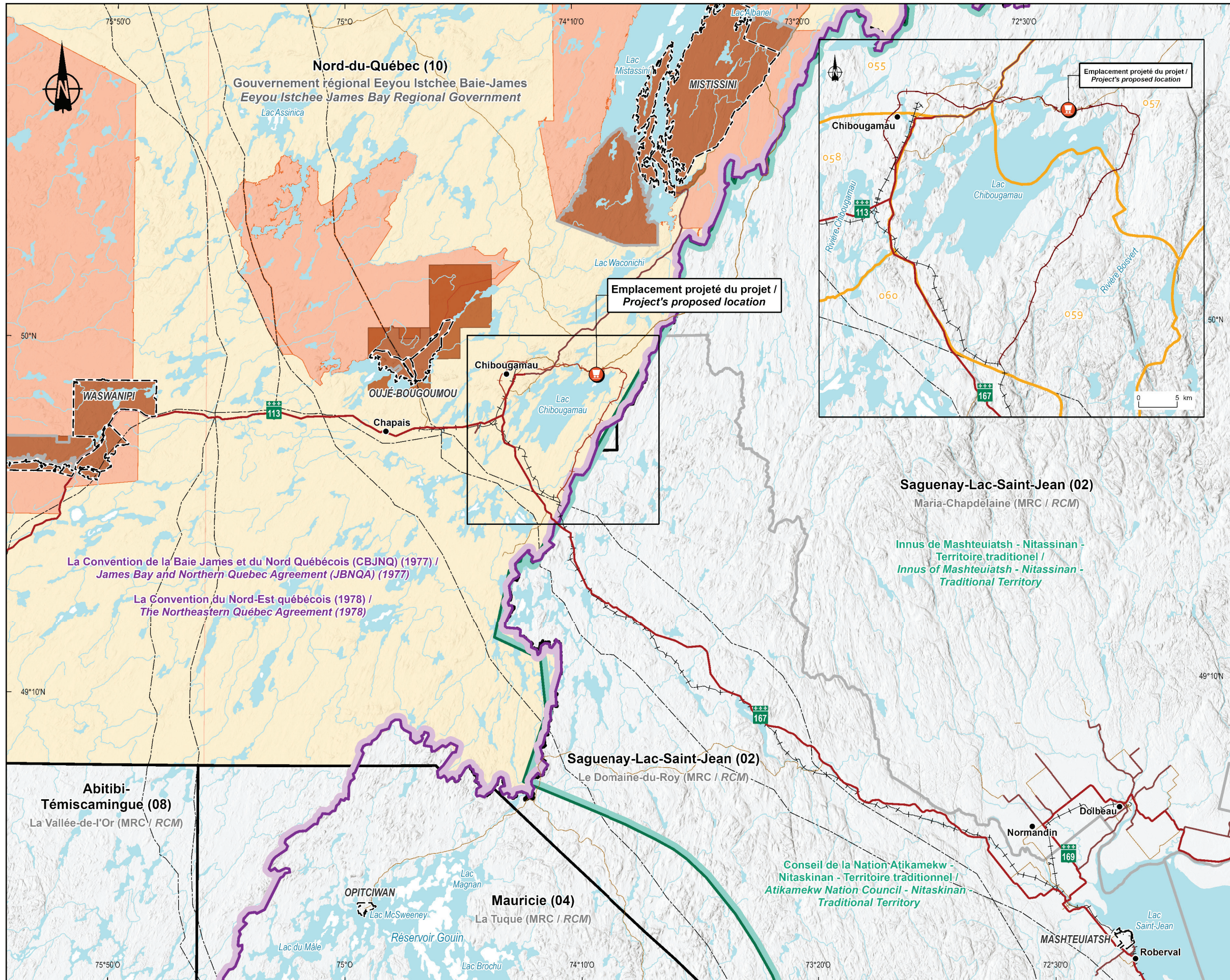
3.2.3.2 PORTRAIT OF GLOBAL HEALTH

The results of the Canadian Community Health Survey indicate that in the Iiyiyiu Aschii region, the Terres-Cries-de-la-Baie-James health and social services region, one in six residents rate their health as "fair or poor" (CBHSSJB and INSPQ, 2008). In addition, 57% of Iiyiyiu Aschii residents reported having had at least one long-term health problem. Between 1991 and 2003, an increase in the prevalence of some of the main reported chronic health problems (asthma, bronchitis, or emphysema [4% versus 11%], hypertension [11% versus 24%] and diabetes [9% versus 17%]) was reported. Hypertension, non-food allergies, diabetes, back pain, and migraines were the main problems reported in 2003. The survey also found that one in five respondents said they "sometimes or often" limited their daily activities due to a long-term condition or health problem.

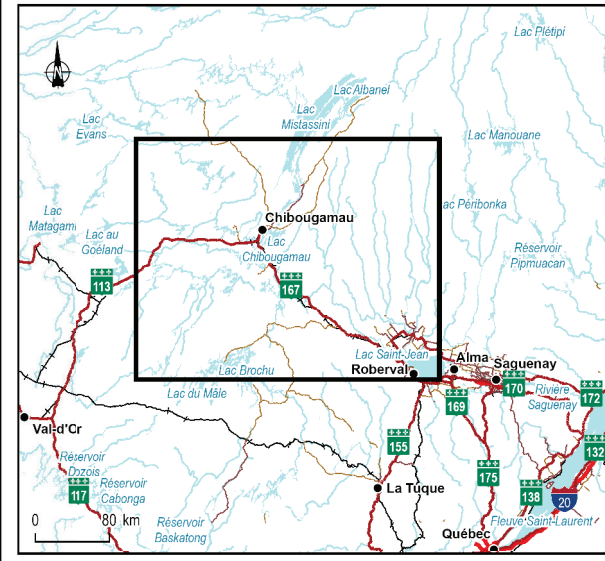
Between 2013 and 2015, the death of 22 Eeyouch (James Bay Cree) was attributable to diabetes as an initial or secondary cause. The average age at death was significantly lower than in Quebec (68.0 years compared to 78.7 years) (CBHSSJB, 2020). Diabetes is a risk factor for circulatory diseases and diseases associated with heart disease. Even in the absence of diabetes, these remain significant health problems in the region. Between 2013 and 2015, 77 Eeyouch died as a result of circulatory disease, while the average age at death was significantly lower than elsewhere in Quebec (69.9 vs. 80.1) (CBHSSJB, 2020).

An assessment of the health and well-being of Jamesians was carried out in 2009 for the Nord-du-Québec health and social services region (CBHSSJB, 2009). The main findings were as follows:

- Drinking water quality and exposure to tobacco smoke in the environment were the two documented indicators that showed the greatest potential for adverse health impacts. In addition, workplace risks were significantly higher than those observed in other resource regions.
- The proportions of smokers and alcohol users were declining, even though the age at which the first fully smoked cigarette was smoked appeared to be younger than in Quebec.



- Composantes du projet / Project Components**
- Emplacement projeté du projet / Project's proposed location
 - Composante connexe projetée / Related Projected Components
 - Option de voie ferrée / Railroad option
- Traité et territoire revendiqué / Treaty and Claimed Territory**
- Traité moderne / Modern treaty
 - Territoire revendiqué / Claimed territory
- Terres de catégorie (CBJNQ) / Category Lands (JBNQA)**
- Terres de catégorie I / Category I lands
 - Terres de catégorie II / Category II lands
 - Terres de catégorie III / Category III lands
- Limites / Boundaries**
- Région administrative / Administrative Region
 - Municipalité régionale de comté (MRC) et Territoires autochtones / Regional County Municipality (RCM) and First Nations Territories
 - Terrain de trappe / Traps Area
- Réseau routier / Road Network**
- Autoroute / Highway
 - Route nationale / National Road
 - Route régionale / Regional Road
 - Route d'accès aux ressources / Resource access road
 - Voie ferrée / Railway



VOYAGER Metals Inc.
 Projet minier Mont Sorcier / Mont Sorcier Mining Project
 Avis de projet / Project Notice

Carte 5 / Map 5
Communautés autochtones régionales / Regional Indigenous Communities

Sources
 Terres autochtones, RNCan, 2 juin 2022
 Contraintes et restrictions (GESTIM), MERN Québec, 10 Septembre 2021
 Traités modernes autochtones, RNCan, 6 mai 2022
 BDGA, 1/1 000 000, MRN Québec, 2002
 BDAT, 1/100 000, MRN Québec, 2002
 CanVec, 1/250 000, RNCan, 2017
 AQuéseau+, réseau routier, MERN, 2021

0 10 20 km
 UTM, Zone 18, NAD83

Préparé par / Prepared by : M. De Champlain
 Dessinée par / Drawn by : M. Leclair
 Approuvée par / Approved by : F. Lafrenière
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Mai 2023 / May 2023



- Compared to Quebec as a whole, the region hospitalized more people with diagnoses related to conditions requiring ambulatory care. It stood out particularly for hospitalizations for chronic obstructive pulmonary disease and pneumonia, diabetes, and hypertension.
- Jamesians' perceived state of physical health was similar to that of the Quebec population.
- In terms of mental health, the Jamesians showed comparable or even better results than Quebecers, except for suicidal ideation, which showed no difference.
- In terms of morbidity, an increase in the incidence of cancer was observed. Lung cancer was of particular concern, given that the rate of regular and occasional smokers had long been higher than in Quebec.
- A higher rate of prematurity among newborns was observed in the region.
- The life expectancy of Jamesians did not differ significantly from that of Quebecers.
- The observed drop in trauma deaths was eclipsed by a meteoric rise in tumour mortality, which was the leading cause of death, accounting for four out of 10 deaths.

In general, Jamesians perceived themselves to be in good health and were physically active, reported less stress in their daily lives and at work, had a stronger sense of belonging to their community, reported fewer long-term health problems, had a low infant mortality, and had less recourse to health professionals (CBHSSJB, 2009). However, life expectancy at birth was lower, and mortality from respiratory diseases, trauma (motor vehicle accidents and suicides) and malignant tumours was higher than in Quebec. A high prevalence of overweight and cancer incidence were also noted for the region.

3.2.3.3 ACCESS TO HEALTH SERVICES

Jamésian cities

The towns of Chibougamau and Chapais are served primarily by the James Bay Regional Health and Social Services Centre (CRSSS), which provides health and social services to the population of the Nord-du-Québec health and social services region. The CRSSS encompasses the James Bay Territory, which covers an area of 350,000 km². The Jamesians are mainly concentrated in the municipalities of Chapais, Chibougamau, Lebel-sur-Quévillon, Matagami, and Baie James.

The James Bay CRSSS has five health centres, managed in two sectors—the eastern and western sectors—to reach the population and users throughout the territory and ensure that services are available close to home. The towns of Chibougamau and Chapais form the eastern sector, and the following health centres are located there:

- Chapais: Centre de santé René-Ricard (family medicine, emergency services, walk-in clinic, radiology, dermatology, rehabilitation, pharmacy, etc.).
- Chibougamau: Centre de santé de Chibougamau (family medicine, emergency services, screening and prevention of minor illnesses, online appointment service, etc.).

In Chapais, the Centre de santé René-Ricard mainly serves the population for health needs, but in the more populous town of Chibougamau, several private health care, physiotherapy, dental, and other clinics are also present on its territory.

Cree community of Mistissini

The Cree Nation of Mistissini is served by the Miyupimaatisiun Community Centre of Mistissini, which offers medical services (cancer screening, emergency services, occupational therapy, speech therapy, physiotherapy, etc.) and other more specific services for children, youth, and adults. The Centre also offers medical imaging (in partnership with the Chisasibi hospital), pharmacy, mental health, adapted transportation, and dental care services, which are offered in French, English and Cree.

A multi-service day centre also serves the territory, providing a space for gathering, healing, and learning for people in isolation, seniors, adults with special needs, and people with mental health issues. It also offers youth services, home and community care services, and paramedical care.

A new Eeyou Istchee Youth Rehabilitation Centre was also opened in Mistissini in 2020. It provides a home for young people who need intensive out-of-home interventions for substance abuse, trauma, and other serious problems.

Cree community of Oujé-Bougoumou

For its part, the Cree Nation of Oujé-Bougoumou is served by the Oujé-Bougoumou Healing Centre, which offers physical and psychological emergency medical services, specialized services for children, youth, and adults (minor surgery, family medicine, cancer screening, occupational therapy, speech therapy, physiotherapy, etc.). The Centre also offers pharmacy, mental health, home care, youth protection, and dental care services, which are offered in French, English, and Cree.

The community also boasts a multi-service day centre that offers adapted and paramedical transit services, such as audiology, psychoeducation, speech therapy, and respiratory therapy.

3.2.3.4 SOCIO-ECONOMIC CONDITIONS

Jamésian cities

Employment and economic activities

Although Chibougamau's economic activities are rooted in its mining and forestry heritage, they also include the service, energy, and recreation and tourism sectors. Among the total working population aged 15 and over in 2021, the largest occupational category was sales and service, followed by trades, transport, equipment operators and related occupations, followed by business, finance, and administration (Statistics Canada, 2022). The wood processing company, Chantier Chibougamau, alone employs nearly 600 Chibougamau residents (Fond de solidarité FTQ, 2023). The construction industry employed 185 people, including 165 men and 20 women (Statistics Canada, 2022). The mining industry employed 245 people, including 195 men and 45 women. However, the impacts of the COVID-19 pandemic were felt strongly in Chibougamau, and many people left the town due to business closures, labour shortages, and difficulty accessing services. According to the latest Statistics Canada census, the town's population fell from 7,504 to 7,233 between 2016 and 2021 (Statistics Canada, 2022).

As for the town of Chapais, its inhabitants depend on the forestry industry, particularly Barrette-Chapais (a leading lumber producer in Quebec), Chapais Énergie, as well as the mines of northern Quebec. The town's vital health and education services and the ongoing development of the public sector are also key factors. Among the active population aged 15 and over, and the total population aged 15 and over in 2021, the largest occupational category was sales and service, followed by trades, transport, equipment operators, and related occupations (Statistics Canada, 2022). There were 60 people (100% men) in the mining industry and only 30 workers (15 men and 15 women) in the construction industry in Chapais in 2021.

The activity rate was 63.7% (64.5% for men and 62.7% for women), the employment rate 60.6% (61.3% for men and 59.8% for women), and the unemployment rate 5.6% (5.0% for men and 6.3% for women). Most workers were employees (680 individuals) while only 35 were self-employed (Statistics Canada, 2022). As in Chibougamau, the population of Chapais also declined from 1 499 to 1 468 between 2016 and 2021 (Statistics Canada, 2022).

Income

In 2020, the average total income in Chibougamau was \$54,900 (\$61,450 for men and \$47,880 for women), and in Chapais it was \$47,800 (\$57,200 for men and \$36,600 for women) (Statistics Canada, 2022).

Schooling

In 2021, 23% of the population aged 15 and over in private households in Chibougamau did not have a certificate, diploma, or degree, with a slightly higher proportion among men (59%). Eighteen percent of the population had a high school diploma, with a slight majority of women (58%), and 59% had a post-secondary certificate or degree, with a higher proportion of men (52%). The proportion of Chibougamau's population with no certificate, diploma, or degree was slightly higher than those of the province (18%) and the country (16%) (Statistics Canada, 2022).

For the town of Chapais, in 2021, 36% of the population aged 15 and over in private households did not have a certificate, diploma or degree, with a slightly higher proportion among men (56%). Eighteen percent of the population had a high school diploma, with a majority of women (51%), and 47% a post-secondary certificate or degree, with a higher proportion of men (55%). The proportion of the Chapais population without a diploma was twice that of the province and the country (Statistics Canada, 2022).

First Nation peoples

Employment and economic activities

In the Cree community of Mistissini, 55 people (35 men and 25 women) in the mining, quarrying, and oil and gas extraction industries were counted in 2021. The construction industry, meanwhile, accounted for 90 people (70 men and 15 women) out of a total working-age population of 1,610. Among the total workforce aged 15 and over in 2021, the largest occupational category was education, law, social, and community and government services, followed by sales and service. The activity rate was 60.4% (61.5% for men and 59.2% for women), the employment rate 56.4% (57.6% for men and 55.6% for women), and the unemployment rate 6.2% (6.3% for men and 5.5% for women). Most workers were employees (1,525 individuals) while only 65 were self-employed (Statistics Canada, 2022).

In 2021, the Cree community of Oujé-Bougoumou had an active population aged 15 and over of 295, compared with 15 registered unemployed. A total of 15 people (100% male) worked in the mining, quarrying, and oil and gas extraction industry and 10 people in the construction industry in 2021 (100% male). Among the total workforce aged 15 and over in 2021, the largest occupational category was education, law, social, and community and government services, followed by business, finance, and administration. The activity rate was 56.2% (56.6% for men and 55.8% for women), the employment rate 55.2% (54.7% for men and 53.8% for women), and the unemployment rate 5.1% (6.7% for men and 6.9% for women). Most workers were employees (295 people), while there were no self-employed workers (Statistics Canada, 2022).

Income

In 2020, the average total income in Mistissini was \$51,200 (\$49,900 for men and \$52,400 for women), and in Oujé-Bougoumou it was \$50,200 (\$47,200 for men and \$53,200 for women) (Statistics Canada, 2022). It is interesting to note that women's incomes in these two communities were higher than men's.

Schooling

With regard to education, in 2021, for the population aged 15 and over in private households, 51% did not have a certificate, diploma, or degree in Mistissini, with a majority of women (51%), a proportion almost three times higher than in Quebec (18%) and Canada (16%). Only 15% of the population had a high school diploma, with a majority of men (54%), and 34% a post-secondary certificate or degree, with a majority of women (56%). The proportions of people with diplomas are considerably lower than those of the province and the country, demonstrating a certain vulnerability in terms of education (Statistics Canada, 2022).

For the Cree community of Oujé-Bougoumou, the proportions for the same year (2021) were 41% of the population aged 15 and over in private households who did not have a certificate, diploma, or degree, with a higher proportion among men (58%), which is more than twice as high as in Quebec and Canada. Only 19% of the population had a high school diploma, with a majority of women (60%), and 40% had a post-secondary certificate or degree, with a slight majority of women (52%). The proportions of graduates, like those of Mistissini, are lower than those of the province and the country (Statistics Canada, 2022).

3.2.3.5 HUNTING, FISHING, AND TRAPPING

Hunting, fishing, and trapping are highly valued activities in the region, providing numerous jobs and significant economic benefits. The Project site is in hunting zone number 17 and fur management unit (FMU) number 87 (Gouvernement du Québec, 2022a and 2022b). More specifically, walleye fishing and moose and black bear hunting are activities of great interest in the region. A non-exclusive outfitting operation (Camp de pêche Pomerleau), comprising 13 cottages used on a seasonal basis, is located about 2 km west of the Project, on the shore of Lac Chibougamau (Map 4).

The Project area is located on Category III lands. These lands are accessible to all communities, but the Cree First Nation population retains exclusive rights to hunt, fish, and trap certain aquatic and fur-bearing species. The exploitation of fur-bearing animals is an important part of the traditional activities of native trappers. The trapline of tallyman James B. Wapachee (O57) encompasses the Project site (Map 5). Trapline 059 is located near the Project site, in an area being studied for the construction of a rail line (southeast alignment) to link the future mine site to the existing rail network (Map 5).

According to a study complementary to the environmental impact assessment of the Black Rock mining project, located approximately 10 km southeast of the Project site, the predominant traditional activities of the Oujé-Bougoumou (and sometimes Mistissini) Cree in this area are as follows:

- hunting moose and migratory birds;
- fishing on Lac Chibougamau and other smaller bodies of water;
- trapping fur-bearing species such as beaver, weasel, and lynx;
- fruit and plant gathering.

In addition, the MFFP has been sampling fish flesh from Lac Chibougamau since 1998 to measure contaminant levels and compare values with Health Canada advisory limits. The MELCCWP's Guide de consommation du poisson de pêche sportive en eau douce (MELCC, 2022e) recommends a consumption of fish from the northern sector of Lac Chibougamau of between 2 and 8 meals per month, depending on fish species, size, and mercury content (Schedule D).

3.2.3.6 HERITAGE AND ARCHAEOLOGY

Based on information obtained from the Inventaire des sites archéologiques du Québec (ISAQ) of the Ministère de la Culture et des Communications du Québec (MCC), four areas of high archaeological potential have been identified west of the Project site: the Bear Bay area, the Lac Chibougamau areas, and the Détroit Valiquette area (Map 4; MCC, 2022).

4 TIMETABLE FOR COMPLETION

The main stages in the Project’s implementation are summarized in Table 4.

Table 4 Mont Sorcier Mining Project milestones

PERIOD	PRODUCTION STAGE
2020	Preliminary Economic Study (by CSA)
2021-2024	Field inventories
2023-2024	Update of preliminary economic study (by DRA Global)
	Analysis of alternatives for storing mining waste
2023	Submission of the Project Notice to the provincial authorities
2023-2024	Development of compensation plan for fish habitat and wetlands
2024	Submission of the feasibility study
2024	Filing of the impact study (including the alternative analysis report and the compensation plan)
2025	Beginning of the process of listing water bodies and watercourses in Schedule 2 of the MDMER
	Decision by federal regulatory authorities on the Order Amending Schedule 2 of the MDMER
2027	Start of site preparation and construction work
2028-2049	Mining operations
2049-2050	Period of closure, site restoration, and site remediation

5 PUBLIC AND FIRST NATION COMMUNITY INFORMATION AND CONSULTATION ACTIVITIES

This section presents details on the information and consultation activities carried out with the public and the First Nation communities concerned and potentially concerned by the Project. It also presents the main concerns expressed during the meetings initiated to date, as well as the information and consultation activities envisaged while completing the Project's EIA.

5.1 INFORMATION AND CONSULTATION ACTIVITIES CARRIED OUT

As part of the project design and EIA, Voyager organized initial information sessions, which began in 2022. Recognizing the importance of involving First Nation groups, local communities and authorities, interest groups, and land users in the design, planning, and development of the Project, the main objective of these sessions was to contextualize the Project in its insertion environment and gather preliminary concerns, recommendations, and interests from stakeholders.

5.1.1 PUBLIC

Among the public, the stakeholders targeted as part of this preliminary information process were:

- the James Bay Regional authority.
- the Town of Chibougamau.
- Développement Chibougamau;
- the Saguenay Port Authority (SPA);
- the Société du Plan Nord (marketing office);
- the owner of the rail service at the Port of Saguenay (Rio Tinto);
- Hydro-Quebec;
- The Roberval Saguenay Railway Company;
- the private owner of Marguerite Island;
- the Club de camping CIGAM.

Various means of communication have been used to establish and maintain dialogue with the various stakeholders since 2022. These include:

- written communications (emails, letters);
- verbal communications (telephone interviews, videoconferencing);

- face-to-face meetings; and,
- memorandum of understanding.

Although the Jamesian population is familiar with activities related to the mining industry, none of the mining projects developed in the immediate Chibougamau area since the 1950s have been open pit as planned for the Project.

This raises even more concerns because the Project site is located in an area popular with the Chibougamau population for outdoor activities, namely the Mont Sorcier area.

The main concerns expressed by the local community during the consultations held to date are presented in Table 5.

Table 5 Main concerns raised by the local Jamesian community

THEME	CONCERNS
Quality of life	<ul style="list-style-type: none"> – Fears of expropriation caused by the Project. – Desire that the Project will “not be in my backyard.” – Impact of the arrival of fly-in fly-out (FIFO) workers on local health services.
Landscape	<ul style="list-style-type: none"> – Concerns associated with the disappearance of Mont Sorcier from the locally known and recognized landscape.
Land use	<ul style="list-style-type: none"> – Mont Sorcier occupies an important place in the community and is considered a local asset in the use of the territory for various activities. There is concern that access to these activities, particularly the Mont Sorcier hiking trail network, could disappear.
Housing	<ul style="list-style-type: none"> – In the context of the housing shortage in the area where the Project will be located, concerns have been raised about the potential negative impact the Project could have on the retention of the local workforce, with the arrival of FIFO workers who would possibly occupy housing units.
Labour	<ul style="list-style-type: none"> – The stakeholders would like to see: <ul style="list-style-type: none"> • that the local and regional labour pool is favoured by the proponent; • that the proponent considers, in view of the labour shortage, a labour strategy that includes recourse to immigration; • training and development of regional capabilities planned by the proponent.
Social cohesion	<ul style="list-style-type: none"> – The concerns raised include the need to ensure coordination and alignment of actions and strategies between Voyager and local stakeholders affected by the Project.

5.1.2 FIRST NATION COMMUNITIES

The Project site is located near the Cree community of Oujé-Bougoumou, more specifically on shared trapline O57/M57 (Map 5). A segment of the rail line planned at this stage of the Project’s development will be built from the eastern part of the Project site, crossing trapline O59 to connect with CN’s existing rail line.

Part of the rail route (existing and operating link) to the port of Grande-Anse in the Saguenay also crosses the Nitassinan (traditional land) of the Pekuakamiulnuash Takuhikan Innu Nation.

It should be noted that an alternative rail route was also considered in the western sector of the site, on traplines O55 and O58 (Map 5). This alternative has been presented to the two tallymen concerned, but the track alternative in the *eastern* sector of the mine site remains the preferred one at this stage in the Project’s planning and design.

It should also be noted that the Project involves maritime transport of iron concentrate by boat from the port of Grande-Anse to the St. Lawrence Seaway, in the vicinity of Nionwentsïo, the traditional land of the Huron-Wendat Nation and the Innu Nation of Pessamit.

Table 6 lists the First Nations likely to be affected by the Project.

Table 6 First Nations potentially affected by the Mont Sorcier Mining Project

FIRST NATIONS	LAND STATUS	NAME OF THE RESERVE/ VILLAGE	AFFILIATED TRIBAL COUNCIL	APPROXIMATE DISTANCE FROM THE PROJECT
Cree Nation of Oujé-Bougoumou	Land of the James Bay and Northern Quebec Agreement	Oujé-Bougoumou	Grand Council of the Crees	Village: 50 km west
Cree Nation of Mistissini	Land of the James Bay and Northern Quebec Agreement	Mistissini	Grand Council of the Crees	Village: 60 km northwest
Innu Nation of Pekuakamiulnuash Takuhikan	Reserve	Mashteuiatsh	Mamuitun Tribal Council	Land: 13 km east Village: 200 km southeast
Atikamekw of Opitciwan	Reserve	Obejiwan 28	Atikamekw Sipi – Atikamekw Nation Council	Land: 100 km southwest Village: 150 km southwest
Innu Nation of Essipit	Reserve	Essipit	Mamuitun Tribal Council	Land: 200 km east Village: 500 km southeast
Huron-Wendat Nation	Reserve	Wendake	Council of the Huron-Wendat Nation	Land: 300 km southeast Village: 400 km southeast

Source: Environment Canada and Geolocation, 2011; Government of Canada, 2021 and 2022b.

In 2022, Voyager initiated a series of information meetings with First Nation groups and organizations. The target groups for this first phase were:

- Eeyou Istchee James Bay Regional Government;
- Cree Nation Government;
- Cree Nation of Oujé-Bougoumou;
- Cree Nation of Mistissini;
- Innu Nation of Pekuakamiulnuash Takuhikan;
- The Cree tallymen of trapping grounds O57, O59, O55, and O58 of Oujé-Bougoumou and M57 of Mistissini;
- Innu Nation of Essipit.

The meetings held to date have identified preliminary concerns shared by First Nation groups. These are set out in Table 7.

Table 7 Main concerns raised by First Nation groups

THEME	CONCERNS
Fish habitat	<ul style="list-style-type: none"> – Impact of mine effluent on the environment. – Management of surface water/runoff from the mine. – How water will be treated by the proponent. – Disturbance caused by vibrations generated by blasting. – Dust emissions and their impacts. – Impact of the Project on the nearby walleye sanctuary in Lac Chibougamau. – Impact of the Project on walleye spawning grounds. – Cumulative impacts on fish habitat.
Current use of land resources and resources for traditional purposes	<ul style="list-style-type: none"> – Disruption of traditional activities (hunting, fishing, trapping, berry picking, etc.) throughout the mine life cycle (construction, operations, and closure). – Camp and cabin owners are concerned about the Project's impact on their living space.
Protected area	<ul style="list-style-type: none"> – The Wapachee family pointed out that a proposed biological refuge is located in the project area.
Cumulative impacts	<ul style="list-style-type: none"> – To date, the cumulative impacts of disturbances on the traplines have depleted resources to the point where Cree families on traplines O57 and O59 can no longer meet their subsistence needs. The growing number of land users, the development of the town of Chibougamau, and the intensification of mining activities from the 1940s to the 1970s would top the list of contributors to cumulative impacts. Land users mentioned that due to heavy metals and other mining contaminants, fish consumption has declined considerably, and the fish population has dropped dramatically over the years.
Local and regional economy	<ul style="list-style-type: none"> – First Nation communities don't just want to suffer the negative impacts of the Project, they also want to benefit from the opportunities it offers. – Land users would be interested in partnering with the proponent in the various activities and works to be carried out on the territory as the Project's EIA progresses. – Comments were made on the importance of addressing future training and employment/contract opportunities among affected families and the community. It was also made clear that the current spirit of collaboration in these early stages of the Project does not translate into acceptance or approval of the Project. – Members of First Nation groups have expressed their vision of development, policies, or strategies concerning the Project. There may be divergent intergenerational perceptions among the Cree. It is hoped that Voyager will document and consider these different points of view and perceptions in the development of the Project. – It is hoped that collaboration agreements with First Nation groups will be initiated at the appropriate time prior to Project development.
Participation in consultations	<ul style="list-style-type: none"> – All the Eeyouch (James Bay Cree) that we met felt it was important to inform them in advance of any work to be carried out on their territory, and to consult them first if required. – It seems there will be too many consultation events, which would affect the presence and attendance of the members of the First Nation groups who are invited. This leads to fears that concerns will not be adequately conveyed. – For the Cree, and particularly for the main users of the territory, the cost of travelling for multiple consultations and participation in various committees is significant and affects their participation, which may also affect the consultation process.

Table 7 Main concerns raised by First Nation groups

THEME	CONCERNS
Fish habitat	<ul style="list-style-type: none"> – Impact of mine effluent on the environment. – Management of surface water/runoff from the mine. – How water will be treated by the proponent. – Disturbance caused by vibrations generated by blasting. – Dust emissions and their impacts. – Impact of the Project on the nearby walleye sanctuary in Lac Chibougamau. – Impact of the Project on walleye spawning grounds. – Cumulative impacts on fish habitat.
Current use of land resources and resources for traditional purposes	<ul style="list-style-type: none"> – Disruption of traditional activities (hunting, fishing, trapping, berry picking, etc.) throughout the mine life cycle (construction, operations, and closure). – Camp and cabin owners are concerned about the Project's impact on their living space.
Protected area	<ul style="list-style-type: none"> – The Wapachee family pointed out that a proposed biological refuge is located in the project area.
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Local and regional economy	<ul style="list-style-type: none"> – First Nation communities don't just want to suffer the negative impacts of the Project, they also want to benefit from the opportunities it offers. – Land users would be interested in partnering with the proponent in the various activities and works to be carried out on the territory as the Project's EIA progresses. – Comments were made on the importance of addressing future training and employment/contract opportunities among affected families and the community. It was also made clear that the current spirit of collaboration in these early stages of the Project does not translate into acceptance or approval of the Project. – Members of First Nation groups have expressed their vision of development, policies, or strategies concerning the Project. There may be divergent intergenerational perceptions among the Cree. It is hoped that Voyager will document and consider these different points of view and perceptions in the development of the Project. – It is hoped that collaboration agreements with First Nation groups will be initiated at the appropriate time prior to Project development.
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5.2 INFORMATION AND CONSULTATION ACTIVITIES PLANNED DURING THE COMPLETION OF THE ENVIRONMENTAL IMPACT ASSESSMENT

5.2.1 PUBLIC

Following the filing of the Project Notice, more detailed formal consultations will be undertaken, spaced out over time as the Project progresses. For this second phase of the consultation process, new stakeholders will be added who have not yet been met. Each of the targeted stakeholder groups will be consulted to gather and respond to their comments, questions, and concerns about the Project. Information sessions for the general public are also planned, and advisory committees dealing with environmental, social, and economic issues will also be set up. At this stage, Voyager will focus on gathering stakeholder comments, questions, and concerns about the Project, the aim of this phase being to optimize the performance of the Project as a whole and ensure that its integration into the host environment is well harmonized.

In the short term, a few additional public activities will be implemented in the regions as the Project develops:

- At least three public information sessions with Voyager will be held in Chibougamau, Oujé-Bougoumou, and Mistissini. These information sessions will be open to the general public, local users, and regional businesses. They will provide an opportunity to present the Project in its entirety, and to gather initial comments and questions from the public. WSP will be on hand to support Voyager in answering any technical questions that may arise. Other public information sessions may be added at the request of the community.
- A second meeting with the Town of Chibougamau, Développement Chibougamau, and the Eeyou Istchee James Bay regional government.
- A meeting with adjacent recreation and tourism users.

There are also plans to formalize an approach aimed at local stakeholders in the Saguenay region affected by the rail and sea transport that will serve the Project. To date, an agreement in principle has already been signed between Voyager and SPA.

Finally, even though the iron ore produced by the Project will be exported by a third party from the port of Grande-Anse via the Saguenay Fjord (which flows into the St. Lawrence River), Voyager has initiated dialogue with stakeholders, including the Innu First Nation of Essipit and the Huron-Wendat First Nation, potentially affected by the impacts of marine transport on marine mammals.

Voyager also intends to set up working groups with local communities and stakeholders concerned by the Project. Once formed, the working groups will play a central role in the Project's EIA, in a spirit of collaboration and solution-seeking between the parties involved. Meetings on topics of interest to stakeholders may be organized to address their concern or interests in greater depth.

5.2.2 FIRST NATION COMMUNITIES

With a view to maintaining a strong, ongoing relationship with the First Nation groups affected by the Project, Voyager is already committed to implementing adapted, concerted information and consultation processes with First Nation groups, and to establishing mutual collaboration and partnership agreements with them.

To this end, a formal consultation, communication, and mobilization plan will be drawn up by Voyager in consultation with the community, incorporating an ongoing project update. This plan will aim to gather the concerns and interests of First Nation groups, particularly those relating to environmental issues, land use, employment, training opportunities, service provision, potential collaborations, and so on. The outcome of discussions with First Nation groups will enable the Project to be designed to address their concerns and interests, and to optimize its social acceptability.

In addition to some additional activities that will be implemented as mentioned in the previous section, other First Nation groups will be met at a later date, including the Cree Board of Health and Social Services of James Bay (CBHSSJB). Meetings with community socio-economic and education/training stakeholders will also be held in 2023.

6 DESCRIPTION OF THE MAIN ISSUES AND IMPACTS OF THE PROJECT ON THE RECEIVING ENVIRONMENT

6.1 DESCRIPTION OF THE MAIN ISSUES

At this stage of the project, and considering the results of the preliminary consultations and inventories carried out by the Project initiator, the main anticipated issues identified include, but are not limited to:

- maintaining the relationship with the land by the main Cree users;
- protecting water environments;
- maintaining biodiversity;
- reconciling land uses;
- maintaining the quality of the landscape;
- maintaining quality of life;
- workforce recruitment;
- combating climate change.

The main sources of potential impacts of the Project are presented in Table 8, according to the different phases of the project (construction, operations, and closure).

Table 8 Sources of potential impacts of the Mont Sorcier Mining Project

PROJECT PHASES	SOURCES OF POTENTIAL IMPACTS
Construction	<ul style="list-style-type: none"> – Work site installation and presence – Site preparation (clearing, stripping, excavation, earthworks, blasting) – Installation of temporary and permanent infrastructure (foundation, construction of buildings and access roads) – Management of hazardous and residual materials (hazardous, domestic, and construction) – Transportation and traffic – Use and maintenance of equipment and heavy machinery – Purchase of goods, services, and materials – Presence of workforce
Operations	<ul style="list-style-type: none"> – Mining pit operations – Management of ore, tailings, and waste rock – Water management and treatment – Hazardous materials and residual materials management (hazardous and domestic)

Table 8 (cont.) Sources of potential impacts of the Mont Sorcier Mining Project

PROJECT PHASES	SOURCES OF POTENTIAL IMPACTS
Operations (cont.)	<ul style="list-style-type: none"> – Mining infrastructure – Transportation and traffic – Use and maintenance of equipment and heavy machinery – Purchase of goods, services, and materials – Presence of workforce
Closure	<ul style="list-style-type: none"> – Work site installation and presence – Dismantling of equipment and infrastructure – Pit flooding – Site rehabilitation and restoration – Management of hazardous and residual materials (hazardous, domestic, and construction) – Transportation and traffic – Presence of workforce

6.2 DESCRIPTION OF THE MAIN ANTICIPATED IMPACTS OF THE PROJECT ON THE RECEIVING ENVIRONMENT

The following section presents the anticipated impacts of the Project on the valued components of the environment according to the different phases of the project. It should be noted that the anticipated impacts presented in this section are proposed even before the Project is fully designed. They remain to be confirmed and clarified once Project planning and design is completed.

It should also be noted that precautionary measures for anticipated impacts and mitigation measures for confirmed impacts, as well as a follow-up program, will be proposed as part of the EIA report to be produced at a later date. These measures will aim to minimize the identified impacts of the Project.

6.2.1 CONSTRUCTION PHASE

The main impacts of the Project in the construction phase are presented in Table 9.

6.2.2 OPERATIONS PHASE

Table 10 presents the main impacts of the Project during the operations phase.

6.2.3 CLOSURE PHASE

The main impacts of the Project during the closure phase are presented in Table 11.

Table 9 MAIN ANTICIPATED IMPACTS RELATED TO THE CONSTRUCTION PHASE OF THE MONT SORCIER MINING PROJECT

RECEIVING ENVIRONMENT COMPONENT	ANTICIPATED IMPACT
Ambient air	<ul style="list-style-type: none"> – Changes in ambient air quality through the emission of gaseous contaminants, particulate matter, and metals into the air
Surface and ground water	<ul style="list-style-type: none"> – Alteration of surface and ground water quality – Alteration of the water regime – Changes in water use by water users in affected watersheds—recreational water bodies, drinking water, etc.
Aquatic fauna and their habitat	<ul style="list-style-type: none"> – Disturbance, degradation, and loss of fish and benthic fauna habitat – Alteration of surface water quality (suspended solids emissions, accidental spills) – Alteration of fish passage – Alteration of the natural surface water flow (change in hydrological regime) – Increased fishing pressures – Depending on the type of discharges, acute or chronic effects on ichthyological fauna
Wetlands and forests	<ul style="list-style-type: none"> – Loss of vegetated areas and disruption of plant communities in natural terrestrial and wetland environments – Spillage or contamination of natural terrestrial and wetland environments – Loss of wildlife habitat – Loss of wetlands and associated ecological functions – Loss of biodiversity – Loss of carbon sinks
Terrestrial and avian wildlife	<ul style="list-style-type: none"> – Habitat loss, disturbance, and fragmentation – Disturbance in the behaviour of populations – Sensory disturbance to wildlife (noise, vibration, light) – Risk of collisions, nest destruction, or mortality – Alteration of wildlife habitat quality in the event of a spill – Increased hunting pressures – Depending on the nature of the discharge, acute or chronic effects on wildlife
Sanitary conditions, human health, and well-being	<ul style="list-style-type: none"> – Alteration of valued components related to community health (to be validated in the EIA) – Disruption of the safety of First Nation girls and women – Disruption of access to health and social services – Change in sound and light environment – Change in demographic profile
Socio-economic conditions	<ul style="list-style-type: none"> – Increase in direct and indirect employment opportunities – Increased local economic activity – Economic benefits for local and regional suppliers – Increased business opportunities for companies
Current use of lands and resources for traditional First Nation purposes	<ul style="list-style-type: none"> – Loss of traditional sites and activities – Temporary disruption of traditional activities – Displacement of wildlife – Changes in access to land and resources – Nuisances caused by light and noise pollution – Constraints on transmission of knowledge
Natural, cultural, and spiritual heritage of First Nation peoples	<ul style="list-style-type: none"> – Constraints on access to territory – Unearthing of archaeological remains – Potential disturbance of sites and places of cultural interest and heritage that is sensitive and sacred to First nation peoples – Disruption of peoples' ability to practise their culture – Alteration of hydrographic and wooded landscape components and associated lines of sight – Constraints to knowledge transmission

Table 9 (cont.) Main anticipated impacts related to the construction phase of the Mont Sorcier Mining Project

RECEIVING ENVIRONMENT COMPONENT	ANTICIPATED IMPACT
Sanitary conditions, human health, and well-being of First Nation peoples	<ul style="list-style-type: none"> – Alteration of valued components related to community health (to be validated in the EIA) – Disruption of the safety of First Nation girls and women – Disruption of access to health and social services – Changes in sound environment – Reduced sense of safety for road users and increased risk of accidents – Changes in the quality of food and traditional resources such as fish caught in the surrounding waters and rivers
Socio-economic conditions of First Nation peoples	<ul style="list-style-type: none"> – Increased direct and indirect employment opportunities for members of local First Nation communities – Increased business opportunities for First Nation companies – Economic benefits for First Nation suppliers – Difficulty integrating First Nation workers

Table 10 MAIN ANTICIPATED IMPACTS RELATED TO THE OPERATIONS PHASE OF THE MONT SORCIER MINING PROJECT

RECEIVING ENVIRONMENT COMPONENT	ANTICIPATED IMPACT
Ambient air	<ul style="list-style-type: none"> – Changes in ambient air quality through the emission of gaseous contaminants, particulate matter, and metals into the air – Increase in atmospheric greenhouse gases
Surface and ground water	<ul style="list-style-type: none"> – Alteration of surface and ground water quality – Alteration of the hydrological and hydrogeological regime – Changes in water use by water users in affected watersheds—recreational water bodies, drinking water, etc.
Aquatic fauna and their habitat	<ul style="list-style-type: none"> – Alteration of surface water quality (suspended solids emissions, accidental spills) – Increase in fishing pressure due to increasing population and workers – Depending on the type of discharges, acute or chronic effects on ichthyological fauna
Wetlands and forests	<ul style="list-style-type: none"> – Spillage or contamination of natural terrestrial and wetland environments – Alteration of hydrological regimes essential to the maintenance of wetlands
Terrestrial and avian wildlife	<ul style="list-style-type: none"> – Disturbance to the behaviour of populations – Sensory disturbance (noise, vibration, light) – Risk of collisions or mortality – Alteration of habitat quality – Increased hunting pressures – Depending on the nature of the discharge, acute or chronic effects on wildlife
Sanitary conditions, human health, and well-being	<ul style="list-style-type: none"> – Changes in drinking water quality (to be validated in the EIA) – Alteration of valued components related to community health (to be validated in the EIA) – Disruption of girls' and women's safety – A changing community landscape – Disruption of access to health and social services – Changes in demographic profile – Changes in sound and light environment – Changes in the quality of food and resources such as fish caught in nearby lakes and rivers

Table 10 (cont.) Main anticipated impacts related to the operations phase of the Mont Sorcier Mining Project

RECEIVING ENVIRONMENT COMPONENT	ANTICIPATED IMPACT
Socio-economic conditions	<ul style="list-style-type: none"> – Increase in direct and indirect employment opportunities – Attraction and retention of local residents – Increased local economic vitality – Creation of more favourable conditions for the establishment of services for the local population – Enhanced social well-being and economic prosperity of communities, notably through increased employability (training) and creating business opportunities for companies – Economic benefits for local and regional suppliers – Stimulation of local and regional economies
Current use of lands and resources for traditional First Nation purposes	<ul style="list-style-type: none"> – Permanent impact on community use of land and water resources (change in land use) and on intergenerational transmission of knowledge
Natural, cultural, and spiritual heritage of First Nation peoples	<ul style="list-style-type: none"> – Alteration of natural heritage resulting from the use of water bodies and watercourses – Alteration of land and water use at the watershed scale by First Nation peoples for recreational, navigational, or ceremonial purposes – Alteration of access to sites of spiritual and cultural importance – Constraints to knowledge transmission
Sanitary conditions, human health, and well-being of First Nation peoples	<ul style="list-style-type: none"> – Changes in drinking water quality (to be validated in the EIA) – Alteration of valued components related to community health (to be validated in the EIA) – Disruption of the safety of First Nation girls and women – A changing community landscape – Disruption of access to health and social services – Changes in sound environment – Changes in the quality of food and traditional resources such as fish caught in the surrounding waters and rivers – Reduced sense of safety for road users and increased risk of accidents
Socio-economic conditions of First Nation peoples	<ul style="list-style-type: none"> – Increased direct and indirect employment opportunities for members of local First Nation communities – Difficulty integrating First Nation workers – Retention of local and First Nation community members – Increased economic strength of First Nation communities – Enhanced economic prosperity and resilience of First Nation communities by increasing the employability of First Nation people (training) and creating business opportunities for First Nation companies – Economic benefits for First Nation suppliers

Table 11 Main anticipated impacts during the closure phase of the Mont Sorcier Mining Project

RECEIVING ENVIRONMENT COMPONENT	ANTICIPATED IMPACT
Ambient air	<ul style="list-style-type: none"> – Changes in ambient air quality through the emission of gaseous contaminants, particulate matter, and metals into the air
Surface and ground water	<ul style="list-style-type: none"> – Alteration of the hydrological and hydrogeological regime – Restoration of surface water and water quality
Aquatic fauna and their habitat	<ul style="list-style-type: none"> – Alteration of the water regime – Restoration of surface water quality – Alteration of surface water quality by accidental spills
Wetlands and forests	<ul style="list-style-type: none"> – Restoration of vegetated areas and wetlands
Terrestrial and avian wildlife	<ul style="list-style-type: none"> – Gradual reduction of disturbance in the behaviour of populations – Gradual reduction in sensory disturbance (noise, light, vibration) – Gradual reduction in risk of collision – Gradual restoration of forest cover on disused sites following revegetation work – Improvement in habitat quality through site remediation
Sanitary conditions, human health, and well-being	<ul style="list-style-type: none"> – Alteration of ground and surface water quality – Landscape alteration
Socio-economic conditions	<ul style="list-style-type: none"> – Promote resilience of local socio-economic conditions by optimizing mine site redevelopment – Possibility of recovering some infrastructure (e.g., administrative buildings) for local communities
Current use of lands and resources for traditional First Nation purposes	<ul style="list-style-type: none"> – Temporary disruption of traditional activities
Natural, cultural, and spiritual heritage of First Nation peoples	<ul style="list-style-type: none"> – Reuse and reappropriation of land for traditional or spiritual activities
Sanitary conditions, human health, and well-being of First Nation peoples	<ul style="list-style-type: none"> – Concerns about risks to human health (dust, groundwater quality, noise, stress) – Reuse and reappropriation of the mine site
Socio-economic conditions of First Nation peoples	<ul style="list-style-type: none"> – Gradual reduction in the mine's workforce requirements – During mine site remediation, the possibility of recovering some existing infrastructure (e.g., administrative buildings) for the benefit of First Nation peoples

7 GREENHOUSE GAS EMISSIONS

Voyager recognizes that the transition to a greener, more prosperous economy must be an immediate priority and requires sustained effort over the coming years and decades by all sectors of society, at home and abroad. This is why the company intends to put in place several measures to minimize its GHG emissions for all phases of the Project. Voyager's first priority will be to use hydroelectricity to power as many of its activities as possible throughout the life of the Project. The technical and economic feasibility of this approach depends, however, on the possibility of connecting the mine site to the Hydro-Québec grid, which has a 735 kV electrical substation in the Chibougamau area. For the time being, Voyager considers the connection to Hydro-Québec's power grid to be feasible as part of its design and planning work for the Project.

7.1 FIXED SOURCES

Stationary fuel combustion sources are devices that burn fuel for the purpose of producing heat or useful work. This includes boilers, power generation units, cogeneration units, combustion turbines, engines, incinerators, and heaters.

Following the example of several mining projects in Quebec, Voyager plans to use hydroelectricity to power stationary iron concentrate production equipment, including building heating. This approach will minimize direct GHG emissions from the Project.

7.2 MOBILE SOURCES

Mobile combustion refers to devices that burn fuel and are not stationary (e.g., transportation activities— road, off-road, air, rail, and waterways). The fleet of service equipment (vans and small service trucks) planned for use by Voyager will run mainly on electricity. The technology currently available allows us to plan for a minimum of 75% of the fleet to be powered by electricity, supplemented by specialized, fuel-powered service trucks (estimated at up to 25% of the fleet). It should be noted that this estimate remains preliminary and is subject to change depending on the context and circumstances of the Project.

Electric mining equipment currently available on the market will be favoured in the design and planning of the Project, provided its size and capacity are able to meet operational requirements. Indeed, one of the particularities of iron ore mining is that the quantities of ore and waste rock to be managed are generally among the highest in the mining industry. For example, haulage trucks with capacities of 240 t or 300 t are generally required for mining operations in the iron industry, as is the case at ArcelorMittal's Mont-Wright iron mines in Fermont and Minerai de fer Québec's Lac Bloom. However, electric haulage trucks with such capacity do not currently exist.

While Voyager will favour electric mining equipment wherever possible, fuel-powered equipment will be considered to complement this fleet, if required. Low-carbon fuels (natural gas, propane, electric fuels, etc.) will be preferred for the Project, where appropriate.

7.3 SOURCES ATTRIBUTABLE TO SOIL DISTURBANCES

The Project involves deforestation and disturbance of wetlands located on the mine site and along the proposed rail line. These disturbances will generate GHG emissions caused by the release of carbon stocks contained in these ecosystems. Voyager intends to estimate the CO₂ equivalent value generated by soil disturbance and will attempt to avoid or minimize such disturbance when planning its work.

8 DECLARATION AND SIGNATURE

I declare that:

1° the documents and information provided in this Project Notice are accurate to the best of my knowledge.

Any false representation may result in penalties under the EQA. All information provided will form an integral part of the application and will be published in the Environmental Assessment Registry.

First name and last name

Signature

Date

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APPENDIX

A

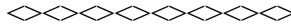
**CERTIFIED RESOLUTION
AND POWER OF ATTORNEY
AUTHORIZING THE
SIGNATORY TO SIGN AND
FILE THIS PROJECT NOTICE
ON BEHALF OF VOYAGER
METALS INC.**

**CERTIFIED COPY OF
RESOLUTIONS OF THE BOARD OF DIRECTORS OF
VOYAGER METALS INC. (THE “CORPORATION”)**

AUTHORIZATION FOR FILING

WHEREAS provincial and federal governments in Canada require a board resolution evidencing individuals designated to file documents with governmental agencies;

IT WAS RESOLVED THAT Cliff Hale-Sanders, Mark Brennan, Robert Girardin and Carl Calandra, are hereby authorized to file documents on behalf of Voyager Metals Inc. with any provincial or federal government agency, including but not limited to MELCC, MFFP, DFO ECC, CIRA and to do all acts and things and to execute and deliver, whether under the seal of the Corporation or otherwise, all such documents, instruments and writings as, in their discretion, are necessary or desirable to give effect to this resolution.



The undersigned, Corporate Secretary of the Corporation, hereby certifies that the foregoing is a true and complete copy of the Resolution passed by the Directors of the Corporation on the 20th day of July, 2022, pursuant to the *Business Corporations Act (Ontario)*; and further that said Resolutions are still in full force and effect, unamended.

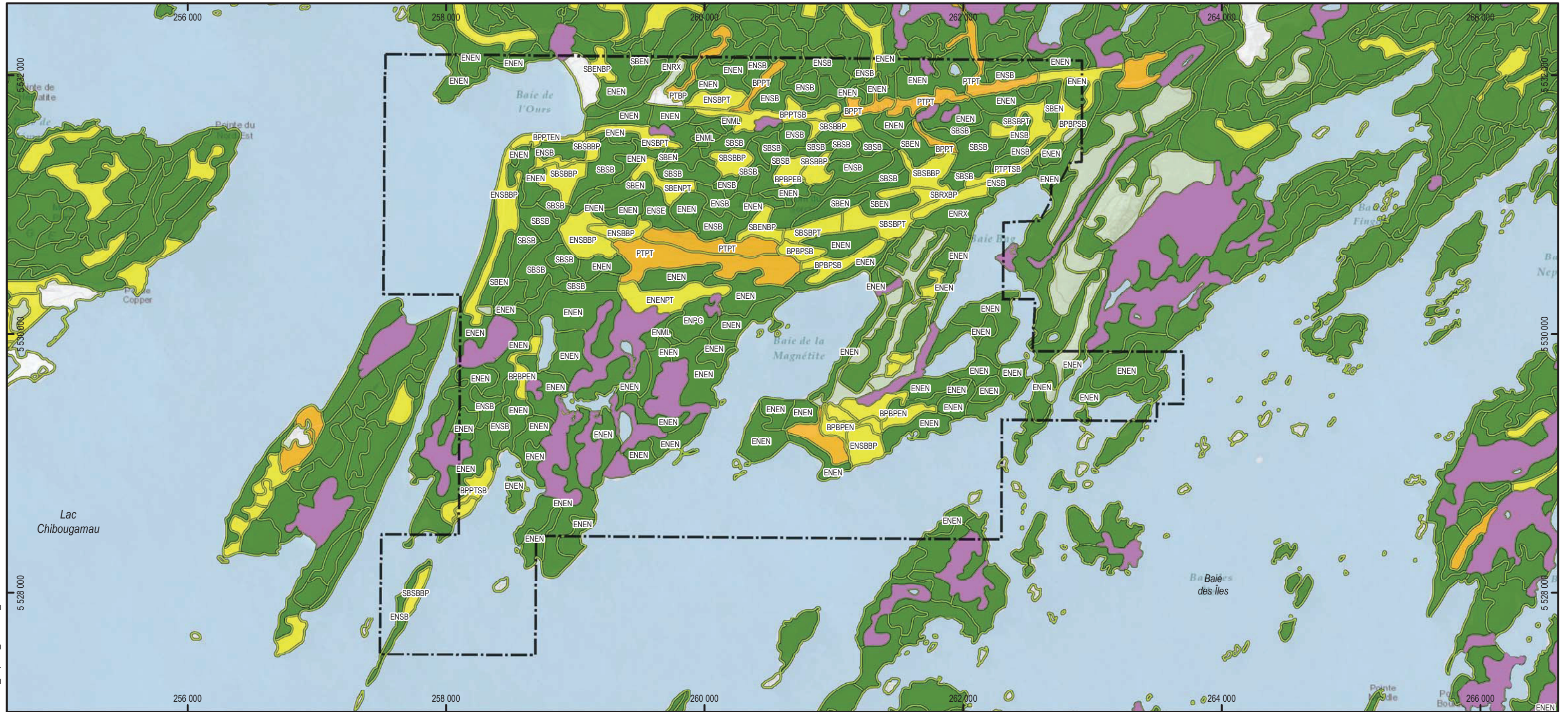
DATED at Toronto, Ontario, as of the 20th day of July, 2022.

Carl Calandra
Vice President & General Counsel

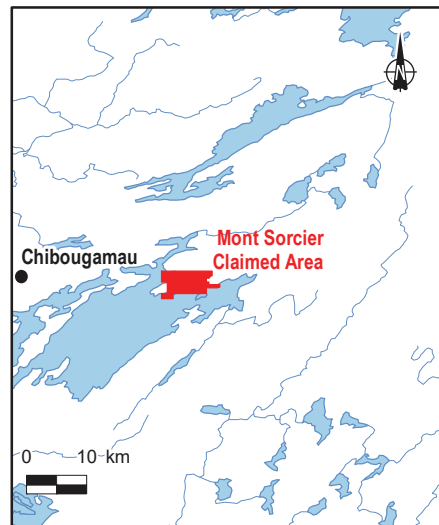
APPENDIX

B

**MAPS PRODUCED BY NORDA
STELO IN 2019**



Emplacement: P:\117310_002\200-CONTENU\26-Geomatique\Domains\MXD\117310_Map_4-6_Ecoforest_190123.mxd

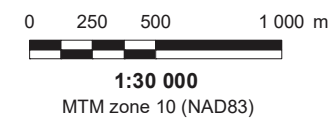


Legend

- Mont Sorcier Property Limits
- Potential Wetlands (2018)
- Forest Stands
- Types of cover**
- hardwood
- mixed
- resinous

Sources :
 Potential Wetlands : MDDELCC, 2017b
 Forest Stands : Ecoforestry Map, 4th inventory, MFFP, 2015a

FOREST STANDS		FOREST STANDS	
BPBPPEB	Bouleau à papier, bouleau à papier et épinette blanche	ENSBPT	Pessière à épinettes noires et sapins baumiers avec peupliers faux-trembles
BPBPEN	Bouleau à papier, bouleau à papier et épinette noire	ENSE	Pessière à épinettes noires avec sapins baumiers et/ou épinettes blanches
BPBPSEB	Bouleau à papier, bouleau à papier et sapin baumier	PTBP	Peupleraie à peupliers faux-trembles avec bouleaux à papier
BPPT	Bouleau à papier et peuplier faux-tremble	PTPT	Peupleraie à peupliers faux-trembles
BPPTEN	Bouleau à papier, peuplier faux-tremble et épinette noire	PTPTSEB	Peupleraie à peupliers faux-trembles avec sapins baumiers
BPPTSEB	Bouleau à papier, peuplier faux-tremble et sapin baumier	SBEN	Sapinière à sapins baumiers avec épinettes noires
ENEN	Épinette noire et épinette noire	SBENBP	Sapinière à sapins baumiers et épinettes noires avec bouleaux à papier
ENENPT	Pessière à épinettes noires avec peupliers faux-trembles	SBENPT	Sapinière à sapins baumiers et épinettes noires avec peupliers faux-trembles
ENML	Épinette noire et mélèze laricin	SBRXBP	Sapinière à sapins baumiers et résineux indéterminés avec bouleaux à papier
ENPG	Épinette noire et pin gris	SBSB	Sapinière à sapins baumiers
ENRX	Épinette noire et résineux indéterminés	SBSBBP	Sapinière à sapins baumiers avec bouleaux à papier
ENSB	Épinette noire et sapin baumier	SBSBPT	Sapinière à sapins baumiers avec peupliers faux-trembles
ENSBBP	Pessière à épinettes noires et sapins baumiers avec bouleaux à papier		



ENVIRONMENTAL AND SOCIAL SCOPING STUDY

Mont Sorcier Project

Forest Stands and Wetlands

JANUARY 2019

117310_Map 4-6_Ecoforest_190123.mxd

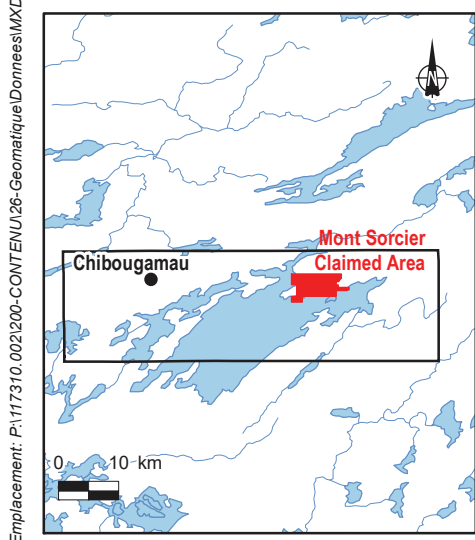
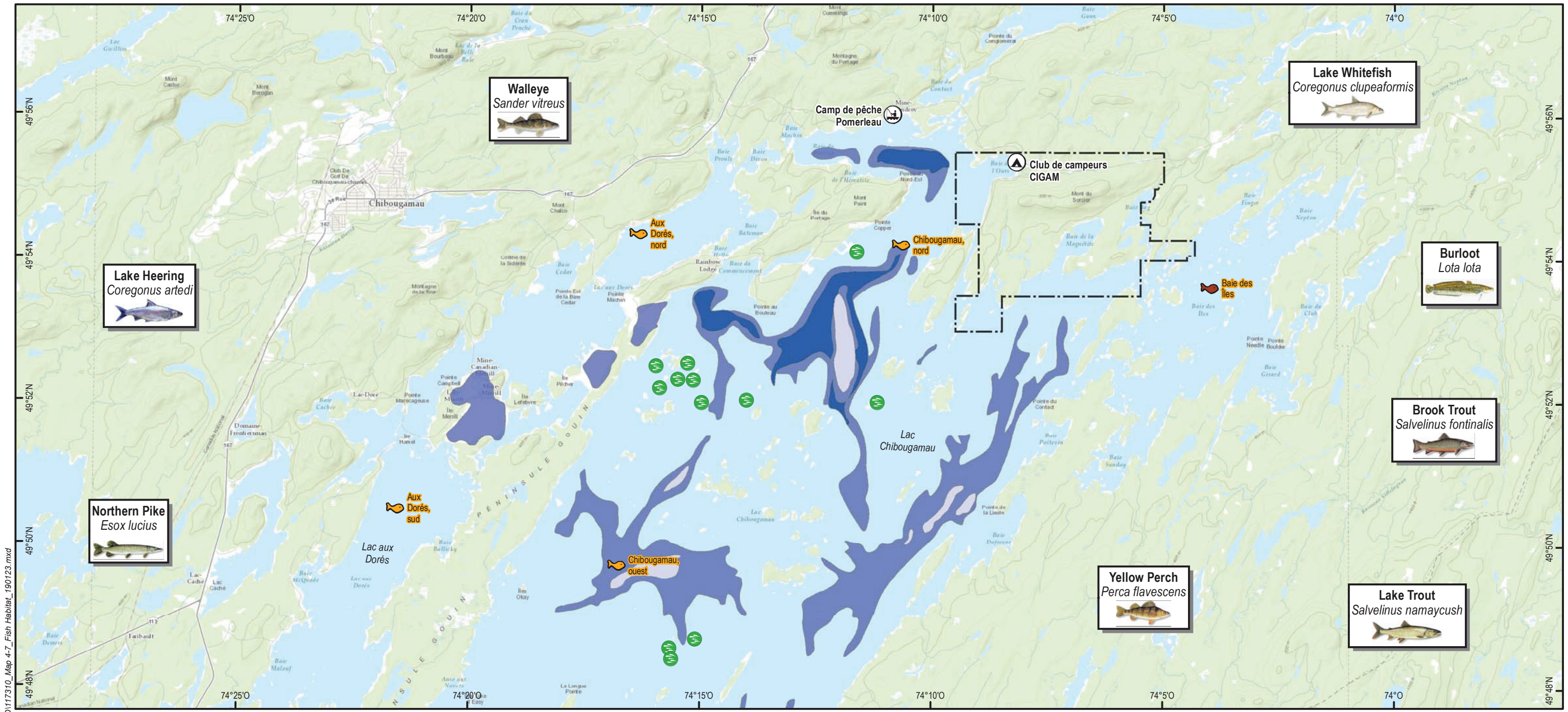
Base Map : ESRI, DigitalGlobe, 2010

Map 4.6

Prepared by : CV

Drawn by : YR

Verified by : VB



- Mont Sorcier claimed area
- Lake Trout spawning grounds
Source : Beaudet et Ouellet (2008)

English name **Some sport fish presentation**
Latin name **Lake Chibougamau**
 Source : MFFP (2018)

Fishing site for mercury content analysis in the flesh of fish

- Laliberté (2013)
- MELCC (2018)*

Lake trout deep water summer habitat**

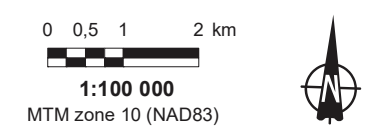
- 20 m
- 20-30 m
- +30 m

Sources :
 * Internet site consulted on January 3, 2019
 ** Beaudet et Ouellet (2008)

ENVIRONMENTAL AND SOCIAL SCOPING STUDY

Mont Sorcier Project

Fish Habitat



JANUARY 2019
 117310_Map 4-7_Fish Habitat_190123.mxd
 Base Map : ESRI, DigitalGlobe, 2010

Préparé : CV Dessiné : YR Vérifié : VB

Map 4.7

Emplacement: P:\117310.002\200-CONTENU\26-Geomatique\Donnees\MXD\117310_Map 4-7_Fish Habitat_190123.mxd

SCHEDULE

C

**RECOMMENDED
MONTHLY CONSUMPTION
OF FISH CAUGHT IN
LAC CHIBOUGAMAU**

Guide de consommation du poisson de pêche sportive en eau douce

La taille des poissons (petit, moyen, gros) varie d'une espèce à l'autre. Pour connaître la taille de l'espèce, cliquez sur le nom y correspondant.

Bassin primaire : Nottaway, Rivière						
Bassin secondaire : Waswanipi, Rivière						
Plan d'eau : Chibougamau, Lac						
Site : Secteur nord						
Espèce	Petit		Moyen		Grand	
	Teneur en mercure mg/kg	Repas/mois	Teneur en mercure mg/kg	Repas/mois	Teneur en mercure mg/kg	Repas/mois
Cisco de lac	0,14	8	0,16	8	0,26	8
Doré jaune	0,25	8	0,38	8	0,57	4
Grand brochet	0,16	8	0,30	8	0,62	4
Grand corégone	0,10	8	0,07	8	0,19	8
Lotte	0,25	8	0,37	8	0,53	4
Meunier noir	0,03	8	0,04	8	0,09	8
Meunier rouge	0,16	8	0,19	8	0,32	8
Omble de fontaine			0,21	8	0,25	8
Perchaude	0,13	8				
Touladi	0,31	8	0,74	4	1,56	2

Évaluation de la page

[En savoir plus](#)

À quel point était-il facile d'obtenir l'information que vous recherchez aujourd'hui ?

1 2 3 4 5 6 7

Facile

Difficile

Guide de consommation du poisson de pêche sportive en eau douce

La taille des poissons (petit, moyen, gros) varie d'une espèce à l'autre. Pour connaître la taille de l'espèce, cliquez sur le nom y correspondant.

Bassin primaire : Nottaway, Rivière						
Bassin secondaire : Waswanipi, Rivière						
Plan d'eau : Chibougamau, Lac						
Site : Baie des Îles						
Espèce	Petit		Moyen		Grand	
	Teneur en mercure mg/kg	Repas/mois	Teneur en mercure mg/kg	Repas/mois	Teneur en mercure mg/kg	Repas/mois
Doré jaune	0,32	8	0,39	8	1,21	2
Grand brochet	0,23	8	0,30	8	0,95	4

Évaluation de la page

[En savoir plus](#)

À quel point était-il facile d'obtenir l'information que vous recherchez
aujourd'hui ?

1 2 3 4 5 6 7

Facile

Difficile