



**TRANSLATION OF THE SUMMARY OF THE  
ENVIRONMENTAL IMPACT ASSESSMENT**



# NOTICE TO READERS

This document presents a summary of the environmental impact assessment (EIA) and the Answers to questions and comments from the Government of Québec (Answers to questions) for the Falco Resources Ltd.'s Horne 5 mining project (Falco or Falco Resources) in Rouyn-Noranda, in the Abitibi-Témiscamingue region. This summary provides an overview of the project and presents its main potential environmental impacts.

The EIA and the Answers to questions were submitted to the *Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs* (MELCCFP) in 2018, 2022, and 2023, respectively.

The MELCCFP confirmed the admissibility of the EIA for the Horne 5 Project and the project is moving towards the public information and consultation period entrusted to the *Bureau des audiences publiques sur l'environnement* (BAPE). At the same time, engineering and optimization work on the project's components continues, with the aim of limiting environmental impacts and making the Horne 5 Project one that is well integrated into its community.

The development of the Horne 5 Project includes a deposit development phase. This phase is a prerequisite to mining and is subject to a separate environmental authorization process. Development of the Horne 5 Project includes dewatering the former Horne, Quemont and Donalds mines and rehabilitating the shaft of the former Quemont mine for underground drilling and bulk ore sampling.

For the latest project details, we invite you to visit the Horne 5 Project virtual portal website at [falcores.com](http://falcores.com) and on the MELCCFP's environmental assessment registry at [Registre des évaluations environnementales – Recherche simple – MELCCFP \(gouv.qc.ca\)](http://Registre des évaluations environnementales – Recherche simple – MELCCFP (gouv.qc.ca)).

*Please note that this is a translation of a document written in French, and the original version prevails. Any questions regarding potential discrepancies or lack of clarity should be addressed to Falco.*



# CAUTION

Pursuant to an acquisition agreement dated September 12, 2012, and a deed of sale of the same date, QMX Gold Corporation transferred to Druk Capital Partners (now Falco Resources Ltd., "Falco" or the "Company") all its rights to the minerals contained at a depth of more than 200 m below the surface of mining concession 156-PTB, where the Horne 5 deposit is located. Falco also owns certain surface rights surrounding the Quemont No. 2 shaft located on mining concession 243. Ownership of Concession 156-PTB and Concession 243 is held by Glencore Canada Corporation ("Glencore Canada"). On January 23, 2024, Falco entered into an Operating License and Indemnity Agreement ("OLIA") with Glencore Canada, under which Glencore Canada has granted Falco, subject to the conditions contained in the OLIA, a license to use a portion of its mining concessions, which Falco will use to develop, construct and operate Falco's 100%-owned Horne 5 Project. Due to the proximity between the Horne 5 Project and Glencore Canada's Horne smelter, the OLIA anticipates that the Horne smelter operations will retain priority over the Horne 5 Project operations. Falco's ability to begin certain activities conditioned by the OLIA, including the enhancement and mining activities of the Horne 5 Project, is also subject to Falco's compliance with the conditions precedents included in the OLIA, including the provision to Glencore Canada, at the relevant time, of financial guarantees in the form of letters of credit, performance guarantees or similar guarantees, and the other conditions precedents summarized in Falco's material change report dated February 1, 2024 available on the Company's profile at [www.sedarplus.ca](http://www.sedarplus.ca).

In addition, Falco will also need to acquire certain rights-of-way, or other surface rights, in order to construct and install the pipelines that will transport the tailings to the Tailings Management Facilities ("TMF") located approximately 11 km from the town of Rouyn Noranda. Falco is also required to obtain the final rights to the TMF site, some of which are currently held by a third party and some of which must be granted by the government. Although Falco believes that it will be able to satisfy the conditions precedents set forth in the OLIA within a reasonable time and that it will be able to obtain definitive rights to the TMF site, there can

be no assurance that such conditions precedents will be satisfied and that such rights to the TMF site will be obtained and, if obtained, granted on terms acceptable to Falco.

Falco notes that the timetable of activities described herein for the commencement and completion of such activities is subject at all times to factors which are not within Falco's sole control. These factors include the ability to obtain, on terms acceptable to Falco, financing, government and third-party approvals, clearances, rights-of-way and surface rights

Except for statements of historical fact contained herein, certain information constitutes forward-looking statements regarding the business, operations, projects, and management of the environmental aspects of the Horne 5 Project. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual plans, results, performance, or achievements of the Company to be materially different from any future plans, results, performance, or achievements expressed or implied by the forward-looking statements. These risks and uncertainties include the risk that the conditions precedents to Falco's ability to conduct deposit development and mining activities under the OLIA will not be satisfied; the risks that Falco will not obtain the financial guarantees or insurance policies to be provided to Glencore Canada, or the financing necessary to develop or operate the Horne 5 Project; the risks that the required permits and authorizations from governmental authorities to develop and operate the Horne 5 project will not be obtained on the terms contemplated or at all; the risk that the OLIA may be terminated in accordance with its terms following an event of default or otherwise, as well as other risks and uncertainties set out in Falco's continuous disclosure documents filed on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca). There can be no assurance that forward-looking statements will prove to be accurate, as current plans, results and future events could differ materially from those anticipated in such statements. Accordingly, the reader should not place undue reliance on forward-looking statements. The Company undertakes no obligation to update or revise any forward-looking statements, except as required by applicable laws.

---

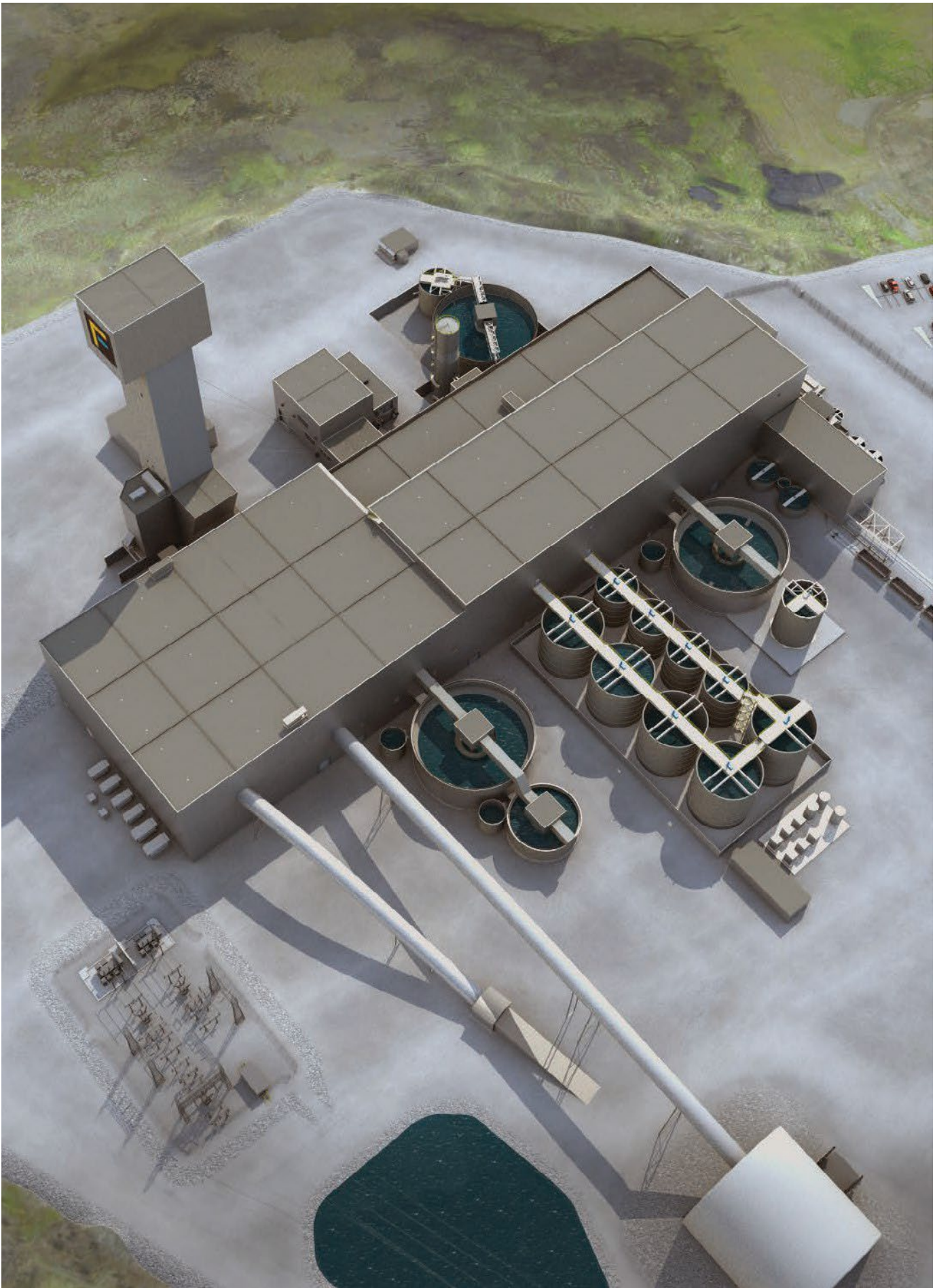
*This report was prepared by WSP Canada Inc. on behalf of FALCO RESOURCES LTD in accordance with the Professional Services Agreement. Disclosure of any information contained in this report is the sole responsibility of the intended recipient. Its contents reflect the best judgment of WSP Canada Inc. in light of information available at the time the report was prepared. Any use that may be made of it by a third party, or any reference to or decisions arising therefrom, are the sole responsibility of such third party. WSP Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of the use of this report. This limitation statement forms part of this report.*

*The original of the technological document that we transmit to you has been authenticated and will be kept by WSP for a minimum period of ten years. Since the transmitted file is no longer under WSP's control and its integrity is not guaranteed, no guarantee is given as to any subsequent modifications that may be made to it.*

*This document is a translation of the French version. In case of any discrepancy between this version and the original French version, the French version prevails.*

# TABLE OF CONTENTS

<b>ABBREVIATIONS AND ACRONYMS</b> .....	<b>7</b>
<b>1 THE PROJECT AT A GLANCE</b> .....	<b>8</b>
<b>2 PROJECT LOCATION</b> .....	<b>10</b>
<b>3 PRESENTATION OF THE INITIATOR</b> .....	<b>12</b>
<b>4 BACKGROUND</b> .....	<b>14</b>
<b>5 PROJECT BACKGROUND AND PURPOSE</b> .....	<b>16</b>
Critical and strategic minerals.....	18
<b>6 PROJECT DESCRIPTION</b> .....	<b>19</b>
Project stages.....	19
Project components .....	20
Infrastructure and mining activities .....	20
Tailings Management .....	28
Water management .....	31
<b>Restoration and closure</b> .....	<b>34</b>
Emissions, waste, and discharges .....	37
Project workforce, schedule, and costs .....	38
<b>7 STAKEHOLDER CONSULTATIONS</b> .....	<b>40</b>
Community involvement .....	40
Local communities.....	40
<b>First Nations communities</b> .....	<b>40</b>
Mobilization of local and regional player.....	42
Ongoing engagement with stakeholders.....	43
A Successful consultation .....	43
<b>8 IMPACT ASSESSMENT AND MITIGATION MEASURES</b> .....	<b>45</b>
<b>9 DESCRIPTION OF THE RECEIVING ENVIRONMENT</b> .....	<b>46</b>
<b>10 POTENTIAL IMPACTS, MEASURES AND COMMITMENTS</b> .....	<b>47</b>
Air Quality.....	47
Water protection.....	50
Biodiversity .....	53
Sound climate.....	59
Vibratory climate.....	61
Territory and cohabitation.....	65
Economic and community benefits.....	70



# ABBREVIATIONS AND ACRONYMS

Abbreviations And Acronyms	Meaning
BAPE	Bureau d'audiences publiques sur l'environnement
NOB	Nord-Osisko Basin
H5MC	Horne 5 Mining Complex
EIA	Environmental Impact Assessment
GHG	Greenhouse gases
TMF	Tailings management facilities
CSM	Critical and strategic minerals
MELCCFP	Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs
MRNF	Ministère des Ressources naturelles et des Forêts
CAR	Clean Air Regulation
PCT	Pyrite concentrate tailings
PFT	Pyrite flotation tailings

# 1 THE PROJECT AT A GLANCE

Horne 5 is a world class underground polymetallic gold deposit located in the heart of the city of Rouyn-Noranda, in the Abitibi-Témiscamingue region.

## THE MINE

The Horne 5 deposit lies directly beneath the former Horne mine, operated by Noranda Inc. from 1926 to 1976. The underground mine will be developed at depths ranging from 650 m to over 2,000 m and will be accessible from the shaft of the former Quemont mine that will be rehabilitated.

## THE MINING COMPLEX

The Horne 5 Mining Complex (H5MC) will be strategically located in the Noranda-Nord industrial park, on a site already impacted by former mining activities. Some 15,000 tonnes of ore will be processed daily into gold and silver bullions, as well as zinc and copper concentrates.

## TAILINGS MANAGEMENT FACILITIES

Tailings will be valorized in paste backfill, and more than a half will be returned underground. Excess tailings will be deposited in tailings management facilities (TMF). The TMF will be located on a site already impacted by historical mining activities, namely the former Norbec mine site.

## THE PIPELINE NETWORK

A network of pipelines will transport tailings from the H5MC to the TMF, and reclaim water in the opposite direction. This network will be made up of instrumented double-walled pipes for additional protection. The route prioritizes the use of existing infrastructure rights-of-way, thus reducing the impact on natural environment.

## AN INNOVATIVE APPROACH

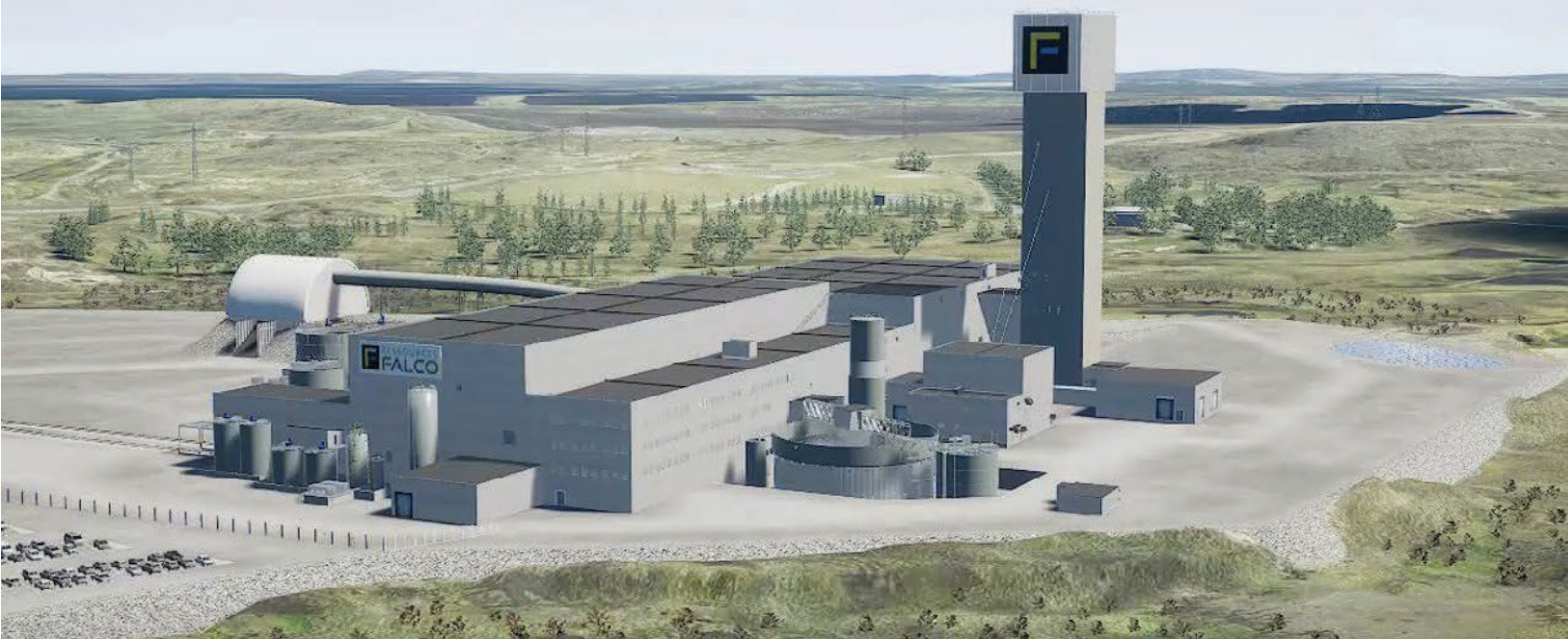
Falco aims to innovate by improving current practices and improving on current practices in science and technology. Its approach is to make the Horne 5 Project a self-sufficient mine, using mining equipment remotely operated from the surface.

## LISTENING TO THE PUBLIC

Falco is developing its project considering the expectations and concerns expressed by stakeholders from the earliest stages of project development. Among the tools used to understand concerns and expectations, and to raise awareness of the Horne 5 Project. The Horne 5 Virtual Portal allows visitors to immerse themselves in the future project, with virtual open houses, a 3D model, and an interactive map. The information and consultation portal invites visitors to share their impressions using a questionnaire and offers them the opportunity to leave comments. Visit it at [www.falcores.com](http://www.falcores.com).

“Falco’s intention is not just to build a mine, but to build the mine with the community, at the service of the community.”

Luc Lessard, Eng.  
President, Chief Executive Officer and Director



## IN SUMMARY



Average annual gold production (in ounces):  
**220K**



Mine life:  
**15 years**

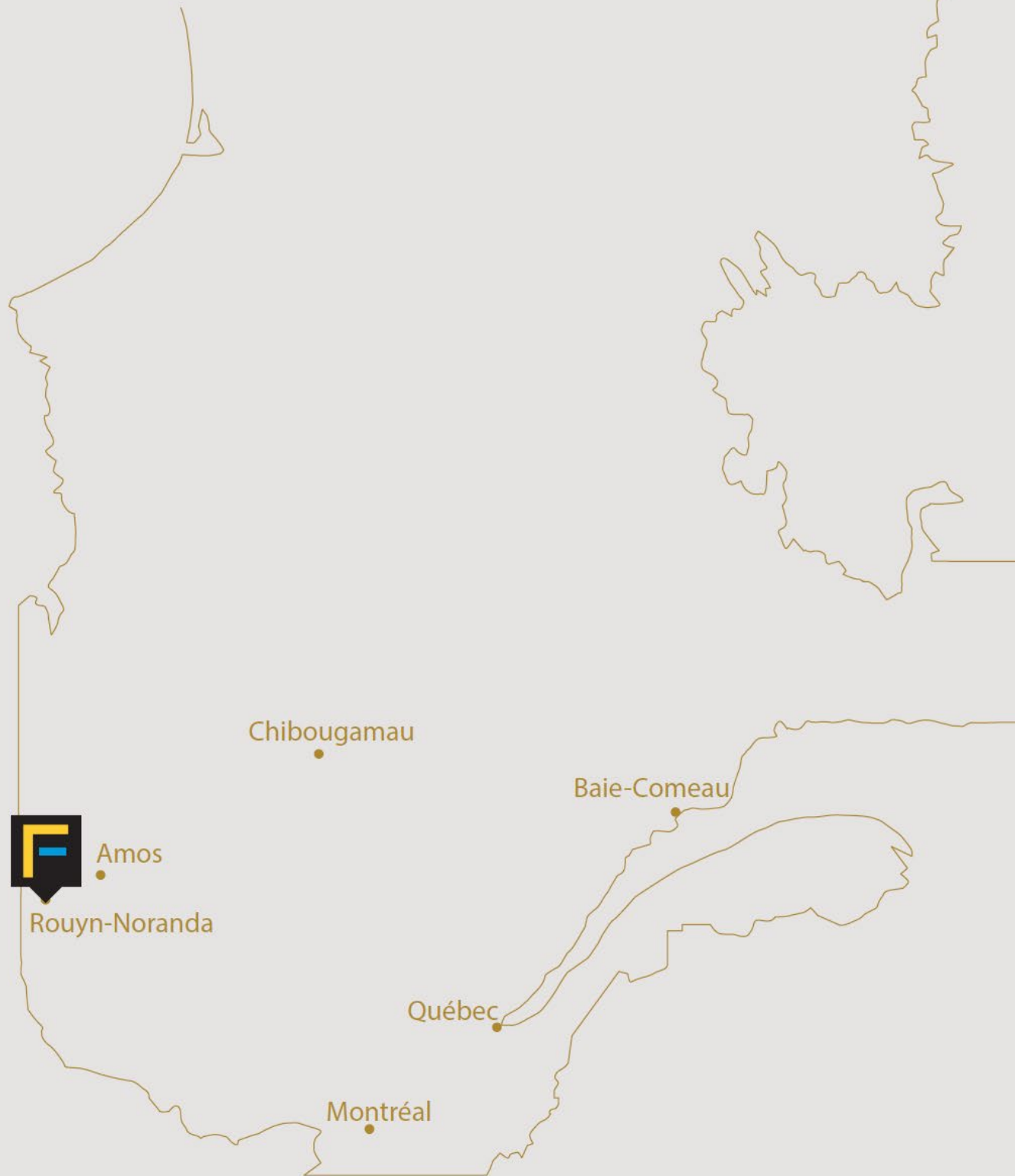


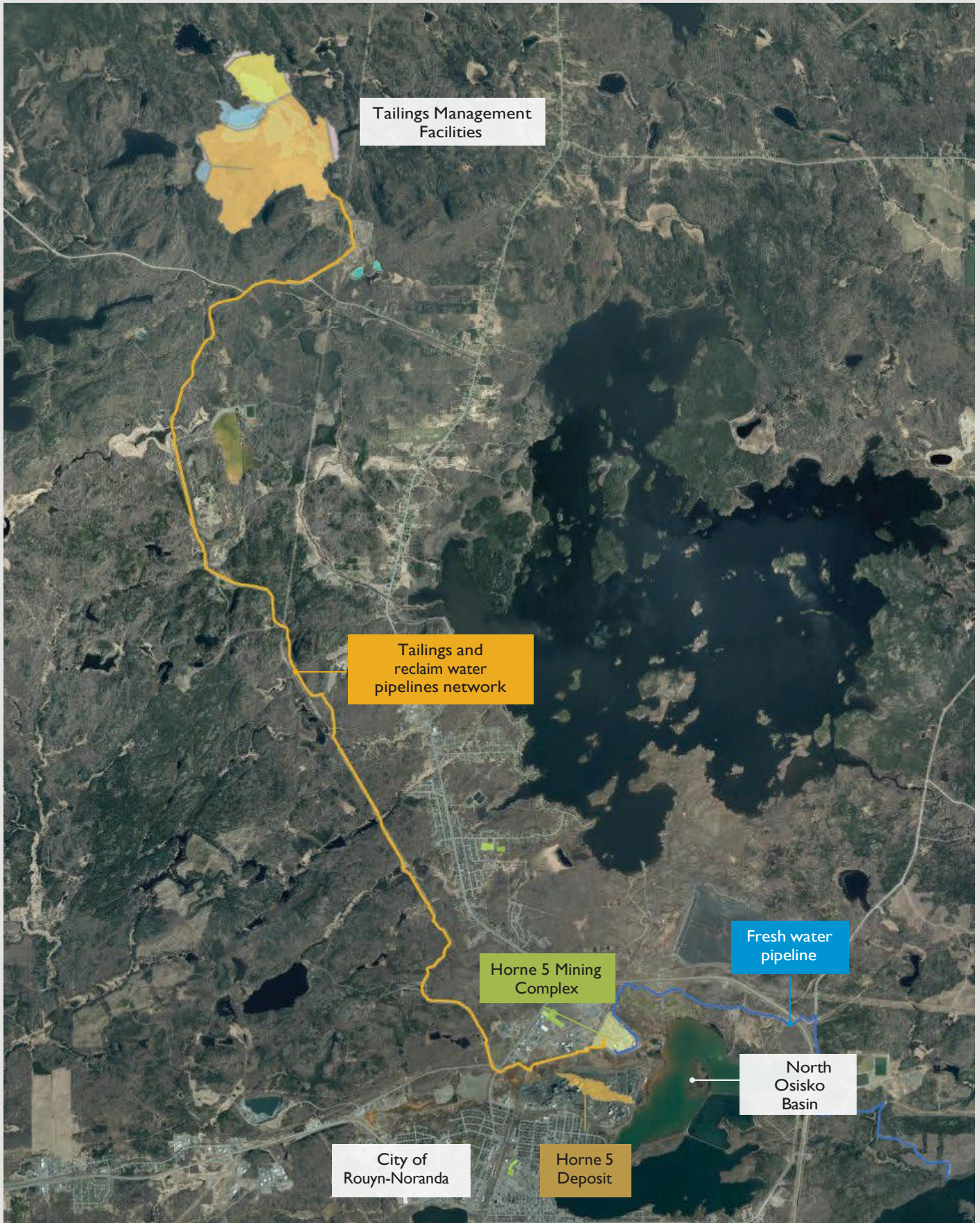
Investment:  
**+ \$1B**



Jobs: **900** during construction and **500** during operation

## 2 PROJECT LOCATION





# 3 PRESENTATION OF THE INITIATOR

## FALCO RESOURCES LTD

Falco is one of the largest mineral claims holders in Québec, with a vast portfolio of properties in Abitibi-Témiscamingue.

Falco holds rights to approximately 67,000 hectares in the Noranda Mining Camp, representing 67% of the camp.

Falco's main project is the Horne 5 Project, located beneath the site of the former Horne mine, which operated from 1927 to 1976 and produced 11.6 million ounces of gold and 2.5 billion pounds of copper. Osisko Development Corp. is Falco's largest shareholder, with a 17.3% interest in the Company.

Comprised of professionals with solid experience in the Québec mining sector, the Falco Resources team is proud of its Québec roots and its contribution to the development of the Abitibi-Témiscamingue region. In particular, the management team has been involved in the construction and operation of several mines in the province.

Falco is convinced that the Horne 5 Project represents a unique opportunity to create value for all its stakeholders.

Falco has adopted an Environmental Policy and a Corporate Social Responsibility Policy. Through these actions, Falco demonstrates the importance it places on developing eco-efficient mining projects that optimize resource use and prevent pollution. This commitment testifies to Falco's willingness to act consistently in all its activities health and safety, the environment, community relations and social development.

By asking itself what kind of legacy it wants to leave the community, Falco has prioritized environmental, social and governance (ESG) factors in defining its mission and has adopted an inspiring vision firmly rooted in its values.

## MISSION

Our way of being a mine :  
Building a lasting legacy every day, through every action we take.

## VISION

Falco's innovative, scalable and transparent approach, rooted in current and future issues, is a model and a source of pride for its employees, its community and its peers.

## VALUES

Falco advocates values such as transparency, integrity, determination and audacity.

“What really makes me proud is working on a project to develop a different kind of mine. With our team, we’re a driving force for change in the mining industry.”

**Hélène Cartier**, Eng. LL.B. ASC.  
Vice President, Environment and Sustainable Development



### **WSP CANADA (WSP)**

The Horne 5 Project is subject to the Québec government’s environmental impact assessment. Environmental assessment provides a rigorous framework that considers specialist knowledge as well as the concerns and knowledge of stakeholders. As part of this process, Falco called on WSP’s team of experts to support it in developing its project and carrying out the EIA.

With a team of dedicated industry professionals, WSP Canada is supporting Falco in a project to promote the sustainable and responsible extraction of minerals essential to a greener future.

WSP’s expertise is based on many years of experience in the field and in the mining sector. Thanks to a multidisciplinary team of scientists, biologists, sociologists, anthropologists, historians, engineers, geographers, economists and communications experts, WSP analyzes the environment in which the project will be located, drafts the impact study and conducts various specialized complementary studies.

# 4 BACKGROUND

## THE REDISCOVERY OF A MINE

For over 50 years, the former Horne mine was one of the most prolific in Québec, contributing to the development of Rouyn-Noranda and the mining industry throughout the Abitibi-Témiscamingue region, as well as in Québec.



The Horne mine's historical production has been over 2.5 billion pounds of copper and over 11 million ounces of gold.

In 2012, Falco acquired the remains of one of Canada's most renowned mining districts: the Noranda Mining Camp.





## EXPLORATION WORK

In 2015 and 2016, Falco completed 75 confirmation and exploration holes on Horne 5, totalling 36,355 metres of drilling. Historical geological information combined with drilling results confirmed the value of the Horne 5 deposit.

## COMMITTED TO THE COMMUNITY

Falco began consulting with the community as early as the project’s preliminary development phase.

**More than 95 meetings  
have been held since 2014.**

An advisory committee made up of stakeholders recognized in their respective communities and with diverse backgrounds has been in place since 2019.

Public consultation activities have highlighted existing social issues in the Rouyn-Noranda community, including housing, the workforce, and community services. In keeping with its values, the company is actively involved in the debate surrounding these issues. Consultations are continuing to raise awareness of the Horne 5 Project and identify stakeholders’ expectations and concerns, with a view to integrating them into the project’s design and development.



# 5 PROJECT BACKGROUND AND PURPOSE

In keeping with its mission, ESG objectives and the Québec Plan for the Development of Critical and Strategic Minerals (2020-2025), Falco aims to develop a mine in harmony with its environment and community, and to contribute to Québec's energy and technological transition.

Using local expertise and the latest technologies, Falco aims to create a mine of the future that will help transform the mining industry.

The goal of the Horne 5 Project is to develop existing mineral resources in a context where metal prices allow economically viable mining.

Analysts' long-term forecasts for the world metals market call for demand for copper and zinc to outstrip supply, which suggests that economic conditions will be favourable for the copper and zinc concentrates that will be produced at the future Horne 5 mine. As for gold, its price on international markets reached record highs in 2023.

Several favourable aspects contribute to justifying the realization of the project, in particular:

## DEMAND FOR COPPER AND ZINC

- growing global demand for copper and zinc to support the energy transition;
- copper and zinc are critical and strategic minerals (CSM) essential to support Québec's energy and technological transition;
- copper and zinc are critical minerals essential to strategic industries in the Canadian economy;
- the presence of sites in Québec for processing copper and zinc concentrates means that copper concentrate can be transported to Glencore's Horne smelter, located less than a kilometer from its production site.

## Horne 5 will be the #1 copper producer in Québec

Over the 15 years of its operation, the Horne 5 project will generate:

**Au**

3.3 M oz

**Ag**

27.3 M oz

**Cu**

247 M LB

**Zn**

1.2 Billion LB



### **POSITIVE BENEFITS FOR ROUYN-NORANDA AND ABITIBI-TÉMISCAMINGUE**

- local and regional business opportunities, jobs, and investment;
- a boost to the local and regional economy;
- the consolidation of Rouyn-Noranda as a centre of mining excellence;
- a showcase for the development and application of innovations that will be highlighted in the mining innovation zone and research collaborations.

### **THE POSSIBILITY OF USING EXISTING INFRASTRUCTURE AND SITES THAT HAVE ALREADY BEEN IMPACTED**

- infrastructure at the former Horne and Quemont mines, for the construction of the mine and H5MC;
- infrastructure at the former Norbec mine site for the development of the TMF;
- a road network providing access to the project sites;
- major arterial roads (routes 117 and 101), an airport, and a rail network nearby;
- the presence of reliable electrical and natural gas distribution networks and nearby municipal services.

# Critical and strategic minerals

Achieving the Paris Agreement objective of limiting global warming to less than 2°C, preferably 1.5°C, relative to pre-industrial levels depends on energy transition and will require the use of several CSM.

The increased use of CSM is part of a range of solutions to be implemented. The objectives of reducing global greenhouse gas (GHG) emissions will require a multitude of measures, initiatives, and reforms. That's why extracting the minerals needed for the energy transition must be done with a minimum impact and with respect for communities, and must be guided by the principles of sustainable development.

The Horne 5 Project is in line with the objectives of the Québec government's Plan for the Development of Critical and Strategic Minerals concerning the decarbonization of the economy, particularly the transportation electrification projects.

In addition to gold, the project will produce CSM required for the development of a green economy. Copper and zinc are included in the Québec government's strategy for three main reasons:

- their importance to key sectors of the economy;
- high supply risk;
- they have no commercial substitutes.



Copper is an essential element for the electrification of transportation, a strategically important component for the transition to a low-carbon economy.

Technologies	Importance of Metals (High ++ and Average +)
Solar – photovoltaic	COPPER ++ and silver +
Solar – by energy concentration	COPPER + and zinc +
Wind turbine	COPPER ++ and zinc ++
Hydroelectricity	COPPER + and zinc +
Bioenergy	COPPER++ and zinc +
Power system components	COPPER++
Electric vehicles and batteries	COPPER ++

According to the scenarios studied, the share of copper demand for technologies needed for the energy transition will be 30% to 45% by 2040. It currently stands at 24%.

Source: (International Energy Agency, 2022)

# 6 PROJECT DESCRIPTION

The following paragraphs summarize the description of the proposed project. In accordance with the environmental assessment process, various project alternatives were compared. These can be consulted in Chapter 4 of the EIA.

## Project stages

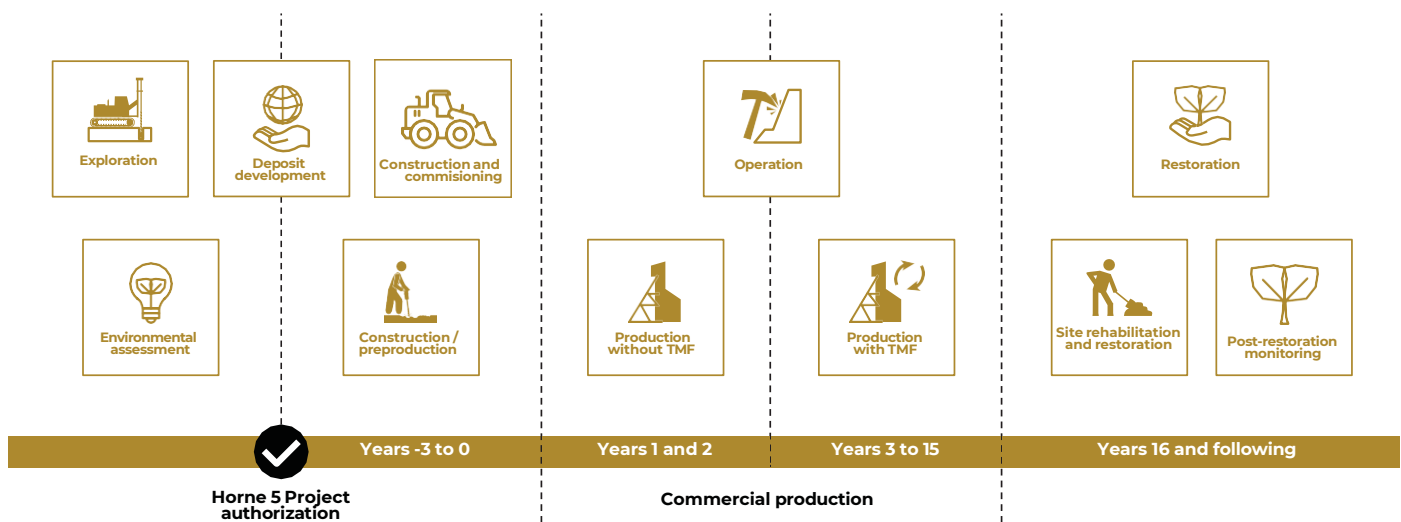
The Horne 5 Project follows the mine development process of exploration, development, operation, and closure.

Because of its location and history, it benefits from a vast amount of data and archives that have supported the exploration phase and initiated the development phase (see the box below).

The construction and commissioning, operation and restoration phases covered by this EIA are scheduled to be carried out over four periods, which can be defined as follows:

- the preproduction period: the period during which the infrastructure required for mining is being built and commissioned;
- the production period without TMF: operating period during which tailings will be returned exclusively underground;
- the production period with TMF: the period during which the TMF will be in operation to deposit tailings that will not be used in paste backfill;
- the reclamation and restoration (or closure) period: a period that begins when operations are completed and during which sites are reclaimed and restored.

### HORNE 5 PROJECT STAGE



The development phase is a prerequisite to mining and is subject to an environmental authorization process that is separate from the environmental impact assessment procedure.

Development of the Horne 5 deposit involves an underground exploration program to better define the deposit and project parameters.

## Project components

The proposed project includes the following components:

- the underground mine, located beneath the former Horne mine;
- the H5MC, located on the site of the former Quemont mine in the Noranda-Nord industrial park, where most of the mining infrastructure will be built;
- the TMF, located at the site of the former Norbec mine, 11 km north-northwest of H5MC in the D'Alembert district;
- a network of tailings and reclaim water pipelines linking the H5MC to the TMF;
- the fresh water pipeline from Lake Rouyn to H5MC.

**Falco has prioritized already-impacted sites for the location of its infrastructure.**



## Infrastructure and mining activities

The following paragraphs summarize the main infrastructure that will be built during construction for each component, as well as the main mining activities that will take place there during operation. Activities involving more than one component are described in subsequent sections.

### THE UNDERGROUND MINE

The underground mine will be developed from depth of 650 m to over 2,000 m. Access will be from the old Quemont mine shaft (Quemont No. 2), which will be rehabilitated during the development phase and deepened during operation.

The mine will comprise 42 levels and will be developed in 2 phases.

The hoisting system will comprise two 43 t skips, a double-deck service cage with a capacity of 15,000 kg, i.e., 50 people per deck, and a double-deck auxiliary cage with a capacity of five people per floor.

### Ore extraction

Ore will be mined at depths ranging from 710 m to 2,060 m, beneath the former Horne mine. The average production rate is estimated at 15,500 t per day, with a maximum of 18,450 t per day of operation.

Production blasts will be limited to one per day, Monday to Friday.

i

To reduce vibrations, Falco has committed to designing blasts in a way that respects a vibration limit of 5 mm/s, i.e., less than 50% of the permitted limit (12.7 mm/s).

## VIBRATORY LEVELS OF CERTAIN FAMILIAR ACTIVITIES

Activity	Vibratory Level (mm/s)
Walking	0.8
Jumping	7.1
Close a door	12.7
Nail	22.4
<b>Blasting</b>	<b>&lt; 12.7</b>

Ore will be routed to the underground crushing station via a network of ore passes. The levels will be divided into two zones, east and west, linked at a central point. Each zone will be served by its own ore pass. This will reduce the average distance between the ore discharge point and the operating stope to 221 m.

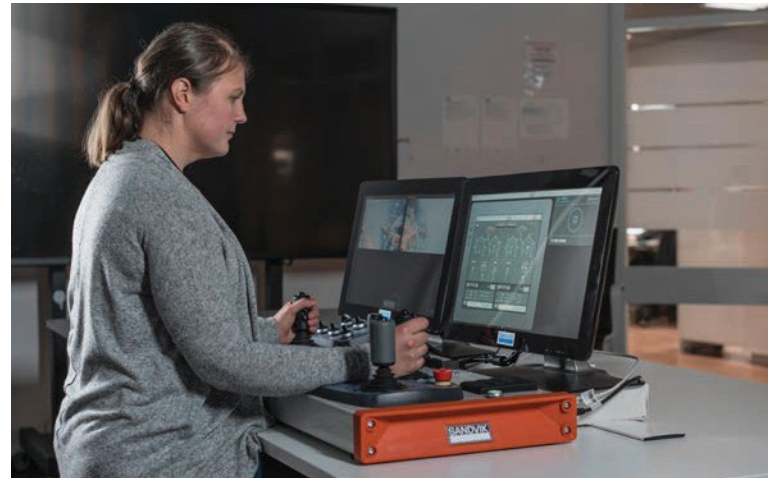
Mining operations will require a large quantity of mine backfill. The mining method (transverse long hole) and the mining sequence (primary and secondary) call for all mine workings to be mined and then backfilled with paste backfill (see section of the same name).

Underground mine development will generate mine waste rock, which will primarily be used as backfill material underground. During operation, all waste rock will be stored underground. During the preproduction period, a portion of the waste rock (approximately 1.5 Mt) will have to be hoisted to the surface and trucked to the TMF site (see Waste Rock Management).

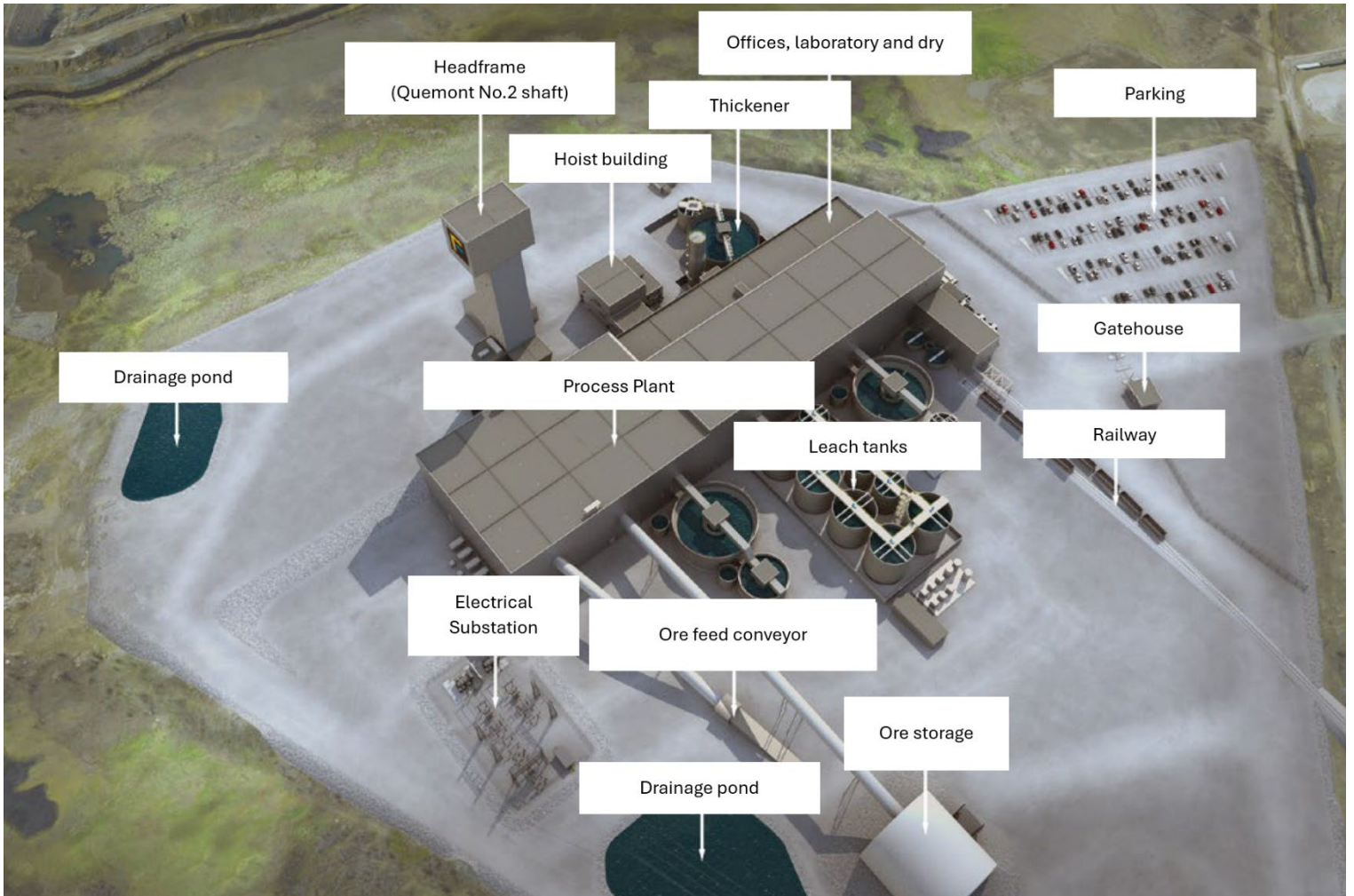
Groundwater collected in the mine will be revalorized and used as reclaim water to feed the process plant (see Water management).

## Underground mining equipment

Highly automated and using innovative electrical equipment, some of which will be remotely controlled, the mine will use 25-ton loaders to transport ore to the ore passes. Several underground ore handling and transport operations will be controlled from a control room on the surface.



To reduce noise, the fans supplying fresh air to the mine will be located underground.



## THE MINING COMPLEX

As H5CM is located in an urban environment, the primary objective in determining the location of its infrastructure was to minimize sprawl and maximize the use of sites already impacted.

To access the mine, the use of the old Quemont mine shaft was the option that best met this objective.

For the same reasons, Falco preferred to build the process plant on land adjacent to the old Quemont mine shaft. Once the ore has been hoisted to the surface, it can be transported by conveyor over a short distance. The conveyor will avoid the negative impacts associated with transporting ore by truck.

The H5CM will house most of the infrastructure, including a 100 m-high headframe and the process plant with an average capacity of 15,500 tonnes per day.

### In summary, infrastructure at H5MC will include:

- roads and rail infrastructure;
- a 120 kV transmission line linking the H5MC to a Hydro-Québec substation (approx. 2 km);
- an electrical substation;
- power distribution and communications networks;
- headframe and hoist building;
- surface ore storage facilities;
- process plant, including a paste backfill plant, and concentrate storage and handling area, offices, laboratories and dry, as well as associated tanks, and thickeners;
- water management facilities;
- a gatehouse and parking area;
- fuel storage tanks;
- drainage ponds.

## Ore storage

During the preproduction period, ore hoisted to the surface will be stored for a few months on a temporary ore stockpile with a capacity of around 200k tonnes in a purpose-built area. The ore stored on the stockpile will be the first ore to be milled once the process plant is operational.

During production, ore hoisted to the surface will be transported and stored in a partially underground facility built on bedrock and covered by a fixed-roof dome. Ore will be transported from the headframe to the storage facility via a covered conveyor installed in a trench cut through the backfill to the ground surface.

## Ore processing

The process plant will be designed to handle an average of 15,500 tonnes per day. It will include a section for metal recovery and another for paste backfill production.

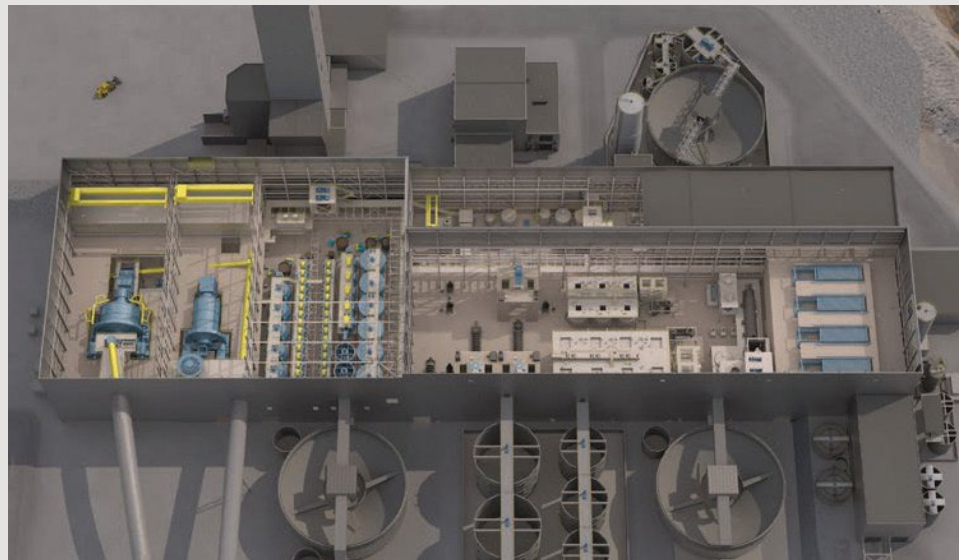
The recovery process has been designed based on laboratory test results, with the aim of minimizing chemical consumption and maximizing metal recovery.

The process plant will produce doré bars (semi-pure alloy of gold and silver), as well as copper and zinc concentrates.

Its fresh water requirements will be minimized through the recirculation of surface contact water and mine water at the H5MC and the TMF, enabling a reuse rate of over 95% (see Water Management).

## ORE PROCESSING

- **Primary and secondary grinding circuit**
- **Cyclone and flotation circuit**
  - Copper concentrate at 16% Cu ( $\pm$  130 tpd)
    - 40% Au / 32% Ag recovery
  - Zinc concentrate at 52% Zn ( $\pm$  200 tpd)
  - Pyrite concentrate
    - 50% Au / 43% Ag recovery as doré bars
- **Pyrite concentrate regrind circuit ( $\pm$  10 microns)**
- **Leach Tanks**
- **Carbon-in-pulp circuit**
- **Elution and refining (gold and silver doré)**
- **Cyanide destruction circuit**



## Tailings

Approximately 80 Mt of tailings will be generated by ore processing, with about 60% pyrite flotation tailings (PFT) and 40% pyrite concentrate tailings (PCT). Several factors were taken into consideration in developing the strategy and management methods (see Tailings management).



Approximately 45% of tailings will be recycled into paste backfill over the life of the mine.

## Paste backfill

A section of the process plant will be set up to prepare paste backfill. PFT and PCT will be mixed in a tank and dewatered by filter presses. The filtered tailings will be transported by conveyor to a high-efficiency mixer, to which the binding agents and water will be added. Subsequently, the pulp produced will be distributed by gravity through a piping network to the mine workings once mining has been completed. There will be two parallel pulp production lines, each with its own distribution network.

## TAILINGS MANAGEMENT FACILITIES

For the disposal of tailings that could not be returned underground, Falco prioritized the use of an already impacted site. Following an analysis of several sites, based on Environment Canada's Guidelines for the Assessment of Alternatives for Mine Waste Disposal, the former Norbec mine, where an inactive tailings impoundment was already in place and water treatment was still required, was selected as the site for the TMF.

The design of the accumulation areas for waste rock to be hoisted to the surface during the preproduction period, and for tailings that cannot be used in paste backfill or deposited as hydraulic backfill underground, will take advantage of the site's existing topography and infrastructure (see Tailings Management).

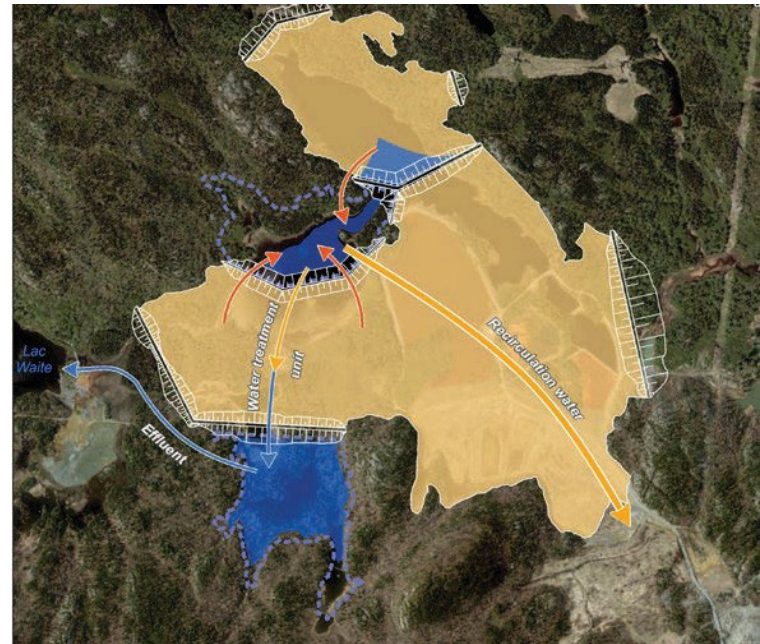
*Tailings Management Facility of the historical Norbec Mine*



Collected water that cannot be routed to the H5MC for use as reclaim water at the process plant will be treated and returned to the environment (see Water Management).

The TMF development will result in the loss of existing mine water ponds, beaver ponds and surrounding wetlands. These losses will be compensated for, notably by the creation of new habitat of equivalent value.

The TMF site, like the H5MC site, will be completely restored once mine operations are completed (see Restoration and Closure).



*Tailings Management Facilities (TMF)*

**ANALYSIS CRITERIA FOR TMF SITE SELECTION**

Environmental indicators	Socio-economic indicators	Technical indicators	Economic indicators
Total footprint	Number of neighborhoods affected by the site	Length of containment dikes	Dike construction volume
Watershed	Distance from an urban area	Length of ditch network	Tailings line length
Length of watercourses affected	Distance from a house	Constructability	Surface area of tailings facility
Number of watercourse crossings	Number of owners	Minimum number of collection ponds or pumping stations	Restoration in proportion to surface area
Fish habitat	Areas disturbed by past mining or industrial activities	Total length of pumping pipes	Site accessibility
Vegetation	Interference with infrastructure	Distance from site	Proximity to existing electrical infrastructure
Wetlands	Drinking water intake	Presence of reusable mining infrastructure	Transport system operating costs
Presence of special-status plant or wildlife species	Number of known drinking water wells	Expansion potential	Foundation preparation
Air emissions	Recreational or vacation use	Operational flexibility of the tailings facility	
Opportunity to restore a disturbed site	Landscape	Surface area of disturbed areas that can be restored	

## THE TAILINGS AND RECLAIM WATER PIPELINE NETWORK

The tailings and reclaim water pipelines will link the H5MC process plant to the TMF.

They will carry tailings to the TMF that could not be returned underground, and reclaim water back to the H5MC.

This pipeline network will comprise five double-walled pipes, four for tailings transport (2 for PCT and 2 for PFT) and one for reclaim water. They will be instrumented, and holding tanks will be installed in case of breakage all along the 17 km route.

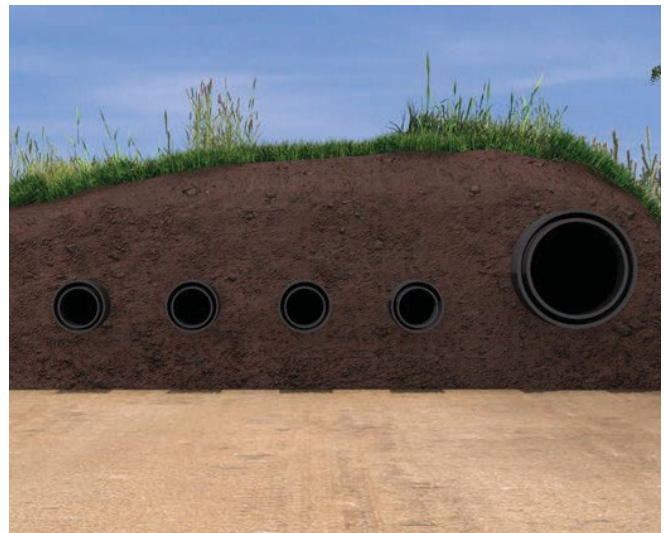
The route prioritizes the use of existing infrastructure rights-of-way (roads, paths and power lines).

Pipe-break simulations were carried out, regardless of the probability of occurrence, and despite the numerous measures planned to avoid such an event. The results show that the shortest time to reach Lake Dufault's drinking water intake would be 5 days, and that contaminant concentrations would be below the drinking water standard for all scenarios used. An impact on aquatic life could happen, but only for a few months. A change in colour would be visible at the point of discharge, but not at the municipal drinking water intake.

i

These rights-of-way offer the advantage of being impacted areas, already deforested, thus minimizing further fragmentation of forest habitat.

Tailings and reclaim water pipelines will be covered with vegetated granular material to protect them from vandalism and to avoid impeding the movement of wildlife.



## FRESH WATER PIPELINE

A pipeline will be laid between Lake Rouyn and the H5MC to supply fresh water to the process plant on an as-needed basis. The 7 km pipeline will be partly reused from the dewatering pipeline used during the deposit development phase (see Project milestones).

Fresh water requirements for the process plant will be minimized thanks to the collection and recirculation of surface contact water and mine water at the H5MC and the TMF, and a reclaim water reuse rate of over 95% (see Water Management).



# Tailings Management

The nature of the Horne 5 Project brings its share of constraints, notably due to its location in an urban environment, but also opportunities, such as the need to use mine backfill to operate the mine and the opportunity to use tailings in its fabrication, as well as the presence of former underground mines nearby and the possibility of depositing tailings there.

## STRATEGY

The tailings management strategy is based on the following elements:

- revalorized tailings for use in paste backfill throughout the life of the mine;
- deposition of tailings as hydraulic backfill in the underground openings of nearby former mines as long as space is available;
- storage of excess PCT and PFT that could not be stored underground, on surface in a single location, preferably on an already impacted site;

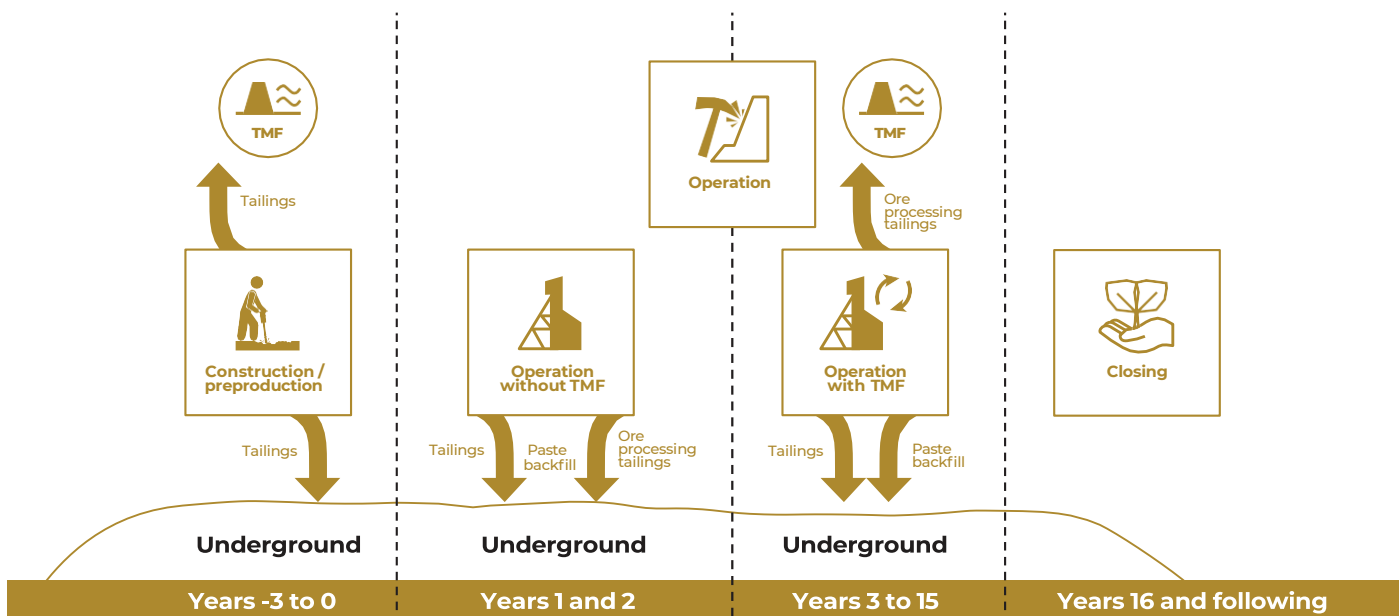
Priority will be given to returning tailings underground to limit their accumulation on surface.

Of these, the majority will be used in paste backfill to provide the stability required for the mining plan. Surplus tailings will be sent to the TMF.

Mine waste rock generated by underground mine development that cannot be kept underground and must be hoisted to the surface will also be sent to the TMF (see Waste Rock Management).

The proposed tailings management strategy and reclamation measures assume that both tailing streams (PCT and PFT) are acid-generating, leachable and cyanide-rich. Falco has adopted this conservative position, even though geochemical analyses show that PFT is less reactive and may not be acid-generating.

## TAILINGS MANAGEMENT STRATEGY



## UNDERGROUND DISPOSAL

During the first years of operation (operation period without TMF), tailings will be deposited as hydraulic backfill in the old Horne mine. It is estimated that the former Horne mine workings will provide just over 4 Mm<sup>3</sup> of storage space.

PCT and PFT will be pumped from the process plant to above the former Horne mine by pipeline, then directed underground via a network of boreholes, pumps and pipes.

No outward migration of contact water is anticipated during operation, given the hydraulic containment generated by pumping to keep the mine dry. Little interaction with groundwater is expected thereafter, due to the low permeability of bedrock at depth.

## SURFACE DEPOSITION

Once the underground openings of the former Horne mine have been backfilled, tailings that cannot be used for paste backfill will be deposited on the surface at the TMF.

The nature of the tailings, the distance to be covered and the urban context guided the selection of the most appropriate management and transportation methods for surface deposition, i.e., the use of thickened tailings, transported hydraulically by pipelines.

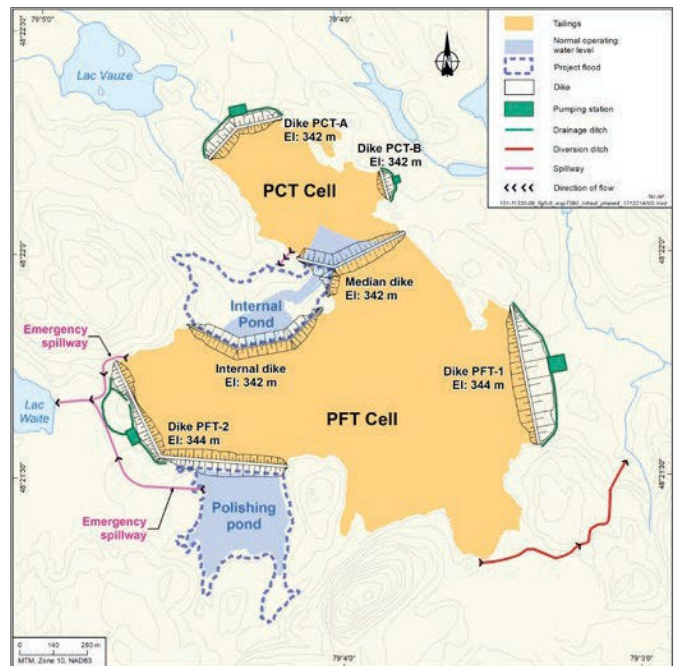
Tailings will be deposited at the TMF in two separate accumulation areas: the PCT cell and the PFT cell. The design of the accumulation areas takes advantage of the existing topography and drains contact water from the PFT cell to the internal pond via a permeable dike.

Water collected in the PCT cell and in peripheral collection systems will also be pumped to the internal pond, from which the pipeline sending the TMF reclaim water to the H5MC will be routed (see Water management).

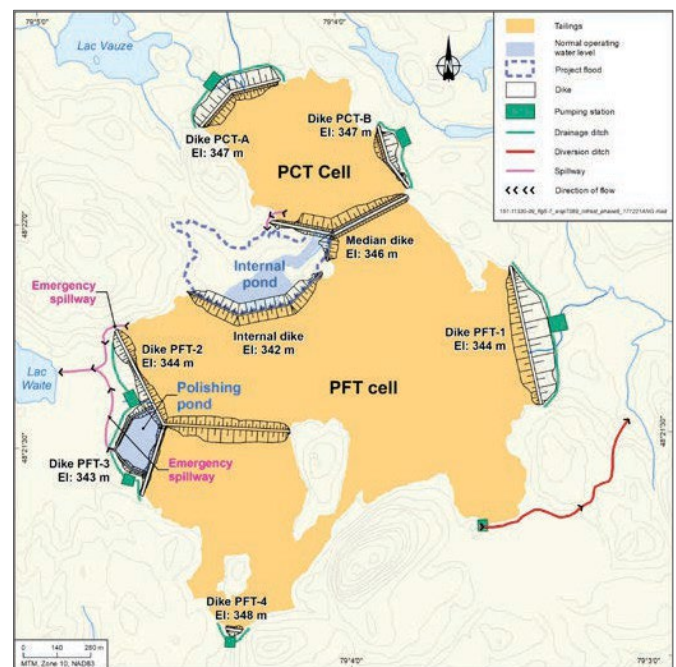
PCT, which is the most reactive, will be confined to a cell using an impermeable geomembrane. Hydrogeological modelling has shown that the PFT cell will not require a geomembrane to protect groundwater.

Tailings storage areas will be developed in 5 stages, each corresponding to the raising of the dikes. Stage 5 will require the construction of a new polishing pond since the initial polishing pond will serve as an extension to the PFT cell for the last 2 years of operation.

PLAN VIEW OF THE TMF  
End of stage 4



End of stage 5



i

The design of the TMF makes the probability of dike failure is very low, notably due to the absence of water accumulation against peripheral dikes.



The hypothetical dike failure scenarios modelled show that the supernatant contact water accumulated in the tailings cells would not be mobilized in the event of failure. Only tailings would escape, and tailings spillage would not reach downstream infrastructure or lakes. A study of the potential consequences of a tailings spill coming into contact with surface water following a dike failure occurring at the same time as a project flood demonstrated that drinking water quality standards would probably not be exceeded, except for the area immediately around the point of water entry into Lake Dufault. Thus, a dike failure, highly unlikely, at the same time as with an exceptional event could possibly have an impact, but it would be limited to the immediate inflow area of affected watercourses, such as Vauze Creek or Duprat Stream (Ruisseau Duprat). Concentrations of certain parameters (cyanide, total phosphorus, silver, zinc, copper, bromide, and nitrite) could exceed water quality criteria for aquatic life beyond the contact water inflow area, but with no impact on water quality at the drinking water intake.

## WASTE ROCK MANAGEMENT

Waste rock to be hoisted to the surface during the preproduction period will be transported to the TMF. Transportation will be carried out by truck, at a rate of 2 to 10 trucks per day, 5 days a week (between 7 AM and 7 PM). Given the potential impact on the quality of life of Boulevard Saguenay and Rang Jason residents, a route avoiding these arteries has been proposed. There will be no residences along this route.

As the mining plan does not allow for the segregation of different lithologies, the waste rock management strategy makes the conservative assumption that all waste rock is acid-generating and leachable. However, geochemical analyses show that if these reactions were to take place, they would only occur after several years of exposure to air.

To ensure safe storage, an accumulation area will be built within the existing infrastructure of the unrestored tailings facility of the former Norbec mine. This accumulation area is considered temporary, as it will be completely covered by tailings once the TMF is in place.

# Water management

The design of the Horne 5 Project aims to maintain a water balance and to manage water quality and quantity proactively, responsibly, and sustainably.

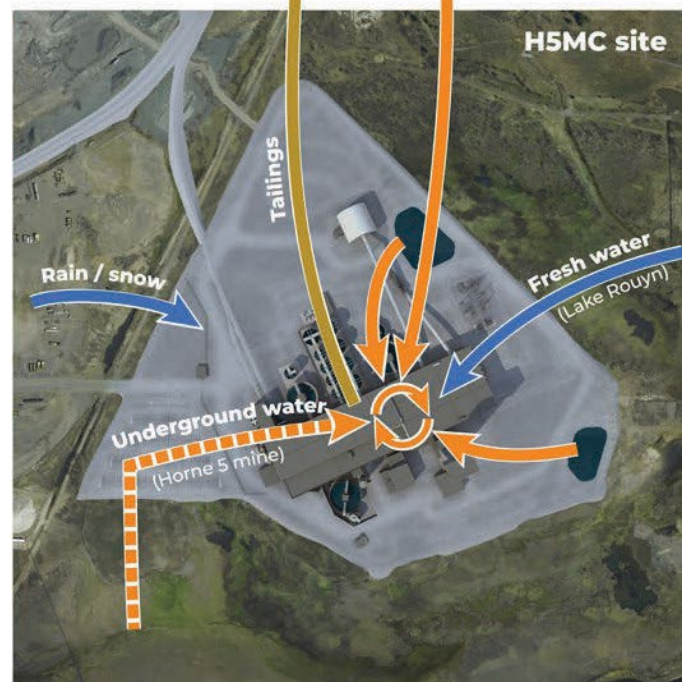
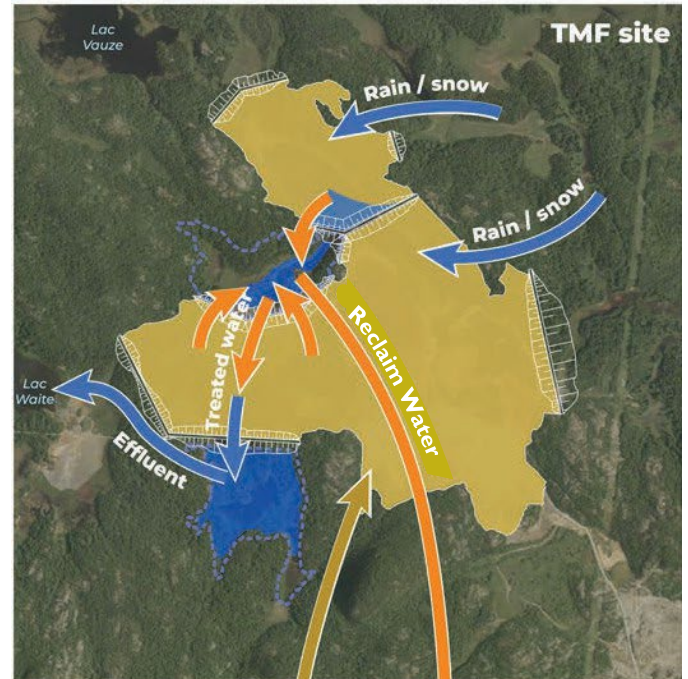
## STRATEGY

The Horne 5 Project’s water management strategy aims to protect water from the receiving environment and to maximize water recirculation and reuse to minimize fresh water use. It is based on the following elements:

- protect surface water originating from the natural environment and limit the quantities of contact water by diverting water currently flowing towards the planned infrastructure;
- collect contact water to prevent it from being discharged into the environment, and reuse it whenever possible;
- prioritize water recirculation to limit the need for fresh water and water treatment.

The project is expected to use up to approximately 2,400 m<sup>3</sup>/h of water. This includes a maximum fresh water withdrawal of 72 m<sup>3</sup>/h:

- the process plant and mining activities will be supplied mainly by reclaim water;
- some needs will absolutely require fresh water;
- water that cannot be reused as reclaim water will be treated and discharged into the final effluent.



### Contact water

Water that has been in contact with mining activities, including ore, waste rock, tailings, and the facilities and infrastructure used to manage them.



## RECLAIM WATER

Water requirements will be met mainly by reclaim water, which will come from a variety of sources:

- underground mine water, from a reserve of dewatering water accumulated during dewatering of adjacent old mines during deposit development, and from the dewatering system that will collect water from the Horne 5 mine, keeping it dry during construction and operation;
- contact water from the collection of runoff (rain and snow) in drainage ponds at the H5MC and in collection ditches and ponds at the TMF, as well as from the bleed water from the surface tailings at the TMF.

Contact water from the TMF will be routed back to the H5MC via the reclaim water pipeline. It will follow the same route as the tailings pipelines.

i

The design targets a water recirculation rate of **over 95%**.

## FRESH WATER

Mining activities also require fresh water. The plan is to draw water from Lake Rouyn, which has a maximum capacity of 72 m<sup>3</sup>/h. It will be supplied to the H5MC via the fresh water pipeline.

To minimize the need to draw water from external sources, certain requirements such as reagent mixing will use a combination of fresh water and reclaim water from the H5MC drainage ponds.

## FINAL EFFLUENT

Water that cannot be reused as reclaim water will be treated at the water treatment plant ("WTP") located at the TMF, routed to the polishing pond, and discharged to the environment as final effluent.

- no effluent discharge will be required during the operation period without TMF, unless an exceptional event occurs;
- during the operation period with TMF, final effluent will be discharged to Lake Waite, west of the TMF.

Lake Waite is in the Lake Duprat sub-watershed, which in turn lies in the Lake Dufault watershed, some 17.5 km downstream.

The average annual flow of the final effluent will vary between 65 and 85 m<sup>3</sup>/h, with a peak of 150 m<sup>3</sup>/h during spring flooding, when snowmelt produces a volume of water far more than the project's needs.

Water discharged in the final effluent will first have been treated at the WTP, which will be built on the TMF site. The treatment of water in excess of the project requirements will allow it to comply with provincial and federal discharge criteria, and work towards achieving the provincial Environmental Discharge Objectives (EDOs) set for the project.

The development of the TMF will result in significant decreases in summer low-flow and flood flows in Vauze Creek, just downstream of the existing tailings facility at the former Norbec mine, due to the termination of the final effluent discharge that currently occurs there. These will gradually fade downstream, becoming barely perceptible at Dufault Lake. This reduction in characteristic flows will result in water level decreases of between 5 cm and 1 m in Vauze Creek, depending on the section, as well as the area of habitat usable by aquatic fauna in certain sectors.

An increase in characteristic flows is expected in Waite Creek when water will be released into the environment at the TMF. This effect gradually diminishes as it approaches Duprat Lake and will be of lesser magnitude at its mouth. The increase in flow will result in a rise in the water level in this creek, increasing the area of habitat usable by aquatic fauna. Because of the nature of the stream banks and the vegetation found there, it is unlikely to be subject to erosion.





## Restoration and closure

For several years now, major efforts have been made to plan the closure and reclamation of mine sites, right from the design stage. Mine closure entails socio-economic impacts, for which Falco has already initiated discussions with stakeholders.

### QUÉBEC GOVERNMENT REQUIREMENTS

For a mining project to go ahead, a rehabilitation and restoration plan must be approved by the MRNF. It must be based on the *Guide de préparation du plan de réaménagement et de restauration des sites miniers du Québec*.

“According to this guide, restoration aims to return the site to a satisfactory state:

- eliminates unacceptable risks to human health and safety;
- limits the production and propagation of contaminants likely to harm the receiving environment and, in the long term, aims to eliminate all forms of maintenance and monitoring;
- restores the site to a visually acceptable condition;
- restores the infrastructure site (excluding tailings and mine waste rock accumulation areas) to a condition compatible with future use” (MERN, 2017).

**Since 2013, the Québec government has required the deposit of a financial guarantee to cover the full cost of rehabilitation and restoration work.**

The restoration plan must be revised every 5 years to reflect the evolution of the project. For more information, see the *Guide de préparation du plan de réaménagement et de restauration des sites miniers au Québec*.

### REHABILITATION AND RESTORATION PLAN FOR THE HORNE 5 PROJECT

The rehabilitation and restoration plan for the Horne 5 Project is presented in two documents, one for the H5MC, which includes the fresh water pipeline, and one for the TMF, which includes the tailings and reclaim water pipelines network.

These documents are available on the MELCCFP environmental assessment registry, as well as on the Horne 5 virtual project portal.

## PROTECTION, REHABILITATION AND RESTORATION MEASURES

The overall restoration objective is to ensure the safety and environmental quality of the site, and to return the affected land to a condition compatible with future uses.

The restoration plan includes several measures, of which the following are the main ones:



### Securing work areas, daylight openings and crown pillars

- Falco will secure work areas in accordance with regulations;
- Once the equipment and heavy machinery have been brought up from underground, Falco plans to block off the Quemont No.2 shaft and ventilation shafts with a reinforced concrete slab to secure the site.



### Dismantling buildings and infrastructure

- Falco plans to dismantle and demolish all buildings, support infrastructure, equipment, and transportation infrastructure.
- Where possible, equipment and materials will be sold, recycled, or relocated to another site.
- The quality of the underlying soils will be assessed and managed according to appropriate criteria.
- Affected surfaces will be restored to their original state or to a state close to it. They will be cleared of debris, reprofiled to encourage natural recovery and, where necessary, revegetated.



### Disposal of equipment and heavy machinery

- When operations cease, all mining equipment and heavy machinery will be removed from the site.



### Tailings storage areas

Tailings storage areas will be rehabilitated to prevent contamination from acid-generating, leachable and cyanide-rich tailings stored there.

Restoration

measures are designed to create barriers to oxygen and water infiltration, with covers adapted to the characteristics of the tailings and the conditions in which they are stored including climatic conditions in the area.

- At the H5MC, there will be no surface tailings accumulation areas.
- At the TMF, all accumulation areas will be restored. Measures will be put in place to control drainage and allow vegetation to re-establish itself as quickly and efficiently as possible. Falco will conduct a comparative analysis of various capping scenarios to evaluate the performance of the materials and define the best restoration solution.



### **Water management infrastructure**

Water management at the TMF will take place in two phases:

- during active closure, surface water will be collected, and the water treatment plant (WTP) will remain in place until the collected water meets applicable criteria;
- in passive closure, once the collected water meets applicable criteria and no longer requires treatment, the collection and pumping systems and the WTP will be dismantled and the occupied areas revegetated.



### **Climate change**

- The sizing of water management infrastructure and storage areas takes climate change into account.



### **Site remediation**

- At closure, a characterization study of the occupied land will be completed, and if the study reveals the presence of contaminants whose concentration exceeds the quality criteria, Falco will propose measures to make the land compatible with its future use.



### **Petroleum and chemical products, and hazardous and non-hazardous residual materials**

- All petroleum and chemical products will be used up at the end of operations, or sold if any remain.
- Tanks and piping will be removed in accordance with the law.
- Non-contaminated materials will be reused, recycled or recovered according to their condition.
- Contaminated materials will be disposed of in an authorized facility.



### **Post-restoration monitoring and maintenance program**

A program to monitor the environmental performance of the restoration work will be implemented to ensure the longevity of the structures, as well as the safety and environmental quality of the restored sites.



### **Anticipated costs**

The cost of all the work involved in the Horne 5 rehabilitation and site restoration plan is \$133M. The amount will be paid according to the following schedule:

- the first payment of 50% upon approval of the plan;
- 25% in Year 1;
- 25% in Year 2.

# Emissions, waste, and discharges

This section summarizes the noise, air emissions, greenhouse gas (GHG) emissions, residual materials, and residual hazardous materials anticipated for the Horne 5 Project during the construction, operation, and closure phases. Water discharges are described in the Water Management section.

## NOISE EMISSIONS

Construction, operation, and closure activities will generate noise. Noise standards are set out in the MELCCFP's *Note d'instructions 98-01*. All necessary measures will be taken to limit noise at source (see Sound climate).

## AIR EMISSIONS

Construction, operation, and closure activities will generate atmospheric emissions of particulate matter and combustion gases. The requirements of the *Clean Air Regulation* will be met (see Air quality).

## GREENHOUSE GAS EMISSIONS

An estimate has been made of the quantity of GHGs that will be generated by construction and operation activities and emitted to the atmosphere.

Direct GHG emissions associated with all construction activities are estimated at 35 kt of CO<sub>2</sub>eq at the TMF and 36 kt of CO<sub>2</sub>eq at H5MC.

Those associated with operating activities are estimated at 27.2 kt/year of CO<sub>2</sub>eq at H5MC and around 29 kt/year of CO<sub>2</sub>eq for the project as a whole.

Closure activities will depend on the possibility of reusing some of the buildings used for the project after its completion. Very conservatively, the work has been considered to be equivalent to one year's use of fuel equivalent to that in operation. GHG emissions from such use are estimated at 10.96 kt CO<sub>2</sub>eq/year.

Falco has undertaken to refine the estimate of GHG emissions resulting from the project and to submit a more detailed GHG reduction plan following detailed engineering.

## HAZARDOUS AND NON-HAZARDOUS RESIDUAL MATERIALS

The dismantling of existing facilities will generate hazardous and non-hazardous residual materials. These will be characterized and disposed of in accordance with current standards.

In compliance with the *Regulation respecting hazardous materials*, residual hazardous materials will be stored in containers and transported to an accredited company. Non-hazardous residual materials will be sent to a recycling company, where applicable, or to the Rouyn-Noranda landfill site.

Administrative offices and personnel will also be sources of non-hazardous residual materials. Measures for the rational use and conservation of resources (reduction at source, improved efficiency of use and application of recovery technologies: reuse, recycling, composting, etc.) will be implemented at operating sites (recycling and composting bins in offices, at the plant, at the mine, etc. for paper, cardboard, plastics, metals and other recyclables, as well as compostable waste).



## Project workforce, schedule, and costs

### SCHEDULE AND WORKFORCE

A total of around 900 workers are expected to be needed during construction, while around 500 jobs will be created during operation.

Depending on the type of job, schedules will be as follows :

5 days on/4 days off /4 days on / 5 days off:

- on 10-hour shifts, alternating night and day;
- on 10-hour day shifts only;
- on 12-hour shifts alternating night and day.

5 days on/2 days off on 8 hour day shifts only.

The mine will operate 24/7.

### MILESTONE

According to the project feasibility study, the construction/preproduction period is estimated to last just under 3 years, while the mine life is estimated to 15 years, with an operation period without TMF lasting around 2 years and an operation period with TMF starting in year 3 and ending in year 15.

#### HORNE 5 PROJECT MILESTONES

STAGES	DURATION
Deposit Development	24 to 36 months
Construction/Preproduction	24 months
Production/Operation	15 years
Closure	3 years
Post-closure monitoring	More than 10 years

## PROJECT COSTS

### CAPITAL EXPENDITURES

FEASIBILITY STUDY 2021	CAN \$M
Mining development	280
Process plant	401
Electrical and communication	19
Project infrastructure	98
Tailings and water management	64
Indirect costs	78
Owner's costs	50
<b>Subtotal</b>	<b>990</b>
Contingencies	91
<b>TOTAL</b>	<b>1,081</b>

### OPERATING COSTS

FEASIBILITY STUDY 2021	CAN \$/oz
Mining	301
Processing	538
Tailings, water treatment and environment	146
General and administrative expenses	72
Smelting and refining	204
Royalties	56
By-product credits	(795)
Sustaining	204
Site restoration	27
<b>Total cost of all-inclusive maintenance (AISC)</b>	<b>751</b>
Preproduction costs	326
<b>ALL-INCLUSIVE COST</b>	<b>1,078</b>

Horne 5 is one of the world's top quartile of low-cost operations (AISC).

### RESTORATION COSTS

Restoration and closure costs for the H5MC and the TMF have been estimated at \$133M.

# 7 STAKEHOLDER CONSULTATIONS

## Community involvement

Community acceptance is an essential condition for the project to go ahead. In order to take into account the social and economic environment of the community, Falco undertook an information and consultation process with the community from the very first stages of the project's development. The objectives of this approach for the project were as follows:

- establish an ongoing dialogue between citizens, interest groups, local stakeholders, and Falco representatives;
- gather concerns and expectations to be considered in planning the various phases of the project;
- plan a varied program of activities to reach all stakeholders.

A stakeholder consultation and engagement plan was implemented. This plan included information, consultation, and collaboration with the community.

The information component was designed to ensure that the population and interest groups had access to fair, objective, and relevant information to facilitate their understanding of the project, the approval process, and the conditions for construction, operation, and restoration of the mine.

The objective of the consultation component was to establish an ongoing dialogue between citizens, interest groups, local stakeholders, and Falco representatives.

Finally, Falco wanted to establish a credible and legitimate mechanism for collaboration, serving as a privileged interlocutor with the community.

To meet its information and consultation objectives, Falco intends to pursue its relations with stakeholders throughout all phases of the project's development.

### LOCAL COMMUNITIES

Whether through its involvement with the Chamber of Commerce or various local organizations, Falco is deeply rooted in the various communities of Abitibi-Témiscamingue.

### FIRST NATIONS COMMUNITIES

Falco met with the Timiskaming and Abitibiwinni First Nations Councils to present the project and to discuss the issues they perceive and the relevance of information and consultation activities on the project for their populations.

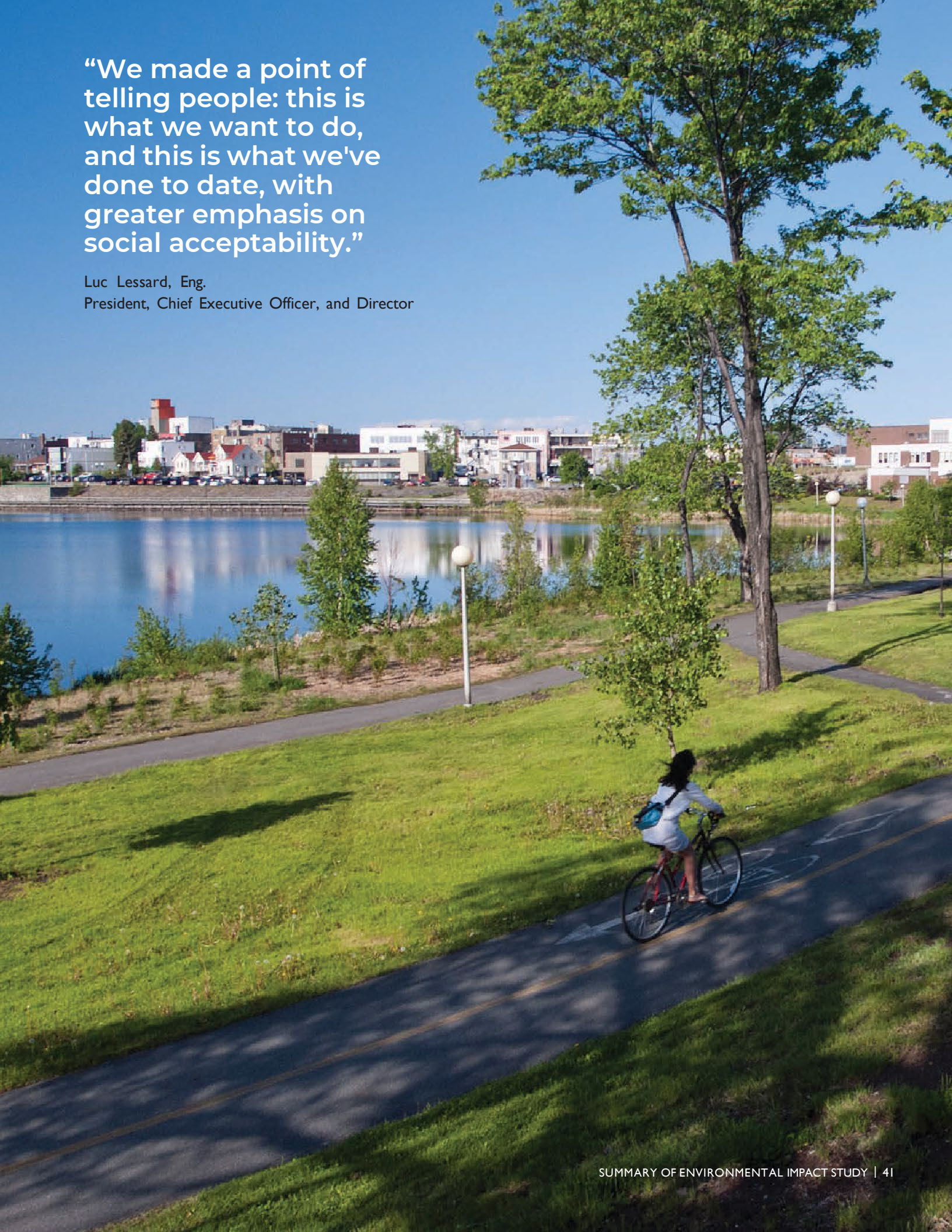
To date, it appears that the territory targeted by the project is not used for traditional purposes (hunting, fishing, trapping, gathering).

Falco is committed to continuing meaningful discussions and consultations with the communities affected by its activities.

In doing so, Falco wishes to respond to the Truth and Reconciliation Commission's Call to [Action No. 92](#) addressed to Canada's business community.

“We made a point of telling people: this is what we want to do, and this is what we've done to date, with greater emphasis on social acceptability.”

Luc Lessard, Eng.  
President, Chief Executive Officer, and Director



## Mobilization of local and regional players

Anxious to make a project that fits into its community, Falco formed an Advisory Committee in 2019.

The committee is made up of representatives recognized in their respective communities and with diverse backgrounds. They come from a variety of backgrounds, including municipal, environmental, socio-economic, and educational.

The Advisory Committee's mandate was created to help improve the project and strengthen its mitigation measures from a sustainable development perspective.

Through the Committee, Falco hopes to benefit from the experience of its members to learn about community concerns and work together to improve the project.

### COMPOSITION OF THE ADVISORY COMMITTEE

COMPOSITION OF THE ADVISORY COMMITTEE (AS OF JANUARY 2024)	ORGANIZATION
Environment	<ul style="list-style-type: none"> <li>— Organisme de bassin versant du Témiscamingue (OBVT)</li> <li>— Conseil régional de l'environnement de l'Abitibi-Témiscamingue (CREAT)</li> </ul>
Education and research	<ul style="list-style-type: none"> <li>— Cégep de l'Abitibi-Témiscamingue</li> <li>— Centre de service scolaire de Rouyn-Noranda</li> </ul>
Healthcare	<ul style="list-style-type: none"> <li>— Direction de santé publique, Module santé environnementale</li> </ul>
Citizens	<ul style="list-style-type: none"> <li>— Comité du Vieux-Noranda</li> </ul>
Socio-economic organization	<ul style="list-style-type: none"> <li>— Villes et villages en santé / Rouyn-Noranda</li> <li>— Chambre de commerce et d'industrie de Rouyn-Noranda</li> <li>— Représentant de la communauté d'affaires</li> </ul>
Municipal representatives	<ul style="list-style-type: none"> <li>— Ville de Rouyn-Noranda, Aménagement du territoire et de l'urbanisme</li> <li>— Membres du conseil municipal (x3)</li> </ul>

# Ongoing engagement with stakeholders

Information and consultation activities with stakeholders will continue throughout all phases of project development, as well as during construction and operation of the mine.

Future consultation activities include:

- further public information sessions to present the project;
- maintaining contact with certain organizations;
- meetings with residents of neighbourhoods most likely to be affected by the project to document their concerns;
- meetings with residents of rang Jason and D'Alembert;
- meetings with other specific groups expressing fears following the arrival of a mining project to pursue or initiate constructive exchanges;
- information meetings with First Nations communities;
- meetings with companies in the Noranda-Nord industrial park;
- other networking days between Falco and companies that can offer their services;
- information sessions specifically dedicated to educational institutions;
- regular information sessions with the Rouyn-Noranda city council;
- information sessions with scientific organizations to exchange views on various technical topics related to the project, and to provide ongoing opportunities for improvement and optimization

## A Successful consultation











The consultation process carried out at this stage of the Project has made it possible to raise awareness of the Horne 5 Project among stakeholders and identify their expectations and concerns.

The consultations identified SOCIAL issues already present in the Rouyn-Noranda community, as well as ENVIRONMENTAL issues.

Several measures are proposed to address the concerns expressed during the consultations. The table on the following page presents the main concerns and expectations, as well as the initiatives taken by Falco to address them.

**Over 95 meetings held since 2014.**

EXAMPLES OF HOW CONCERNS AND EXPECTATIONS HAVE BEEN TAKEN INTO ACCOUNT  
IN THE PROJECT DEVELOPMENT

	Concerns or Expectations	Initiatives
SOCIAL ISSUES	 Access to local community services (e.g., lack of childcare spaces)	Meetings with the City of Rouyn-Noranda to provide predictability by keeping its representatives informed of the project's progress and schedule.
	 Housing availability in Rouyn-Noranda	Work with regional organizations to identify accommodation needs in advance to optimize existing services (inventory of available rooms and commercial accommodation possibilities).
	 Enhancing the value of training for access to jobs	Falco's representation to educational institutions and authorities so that the company can offer accelerated training programs specialized to the company's needs.
	 Labour scarcity	Use of innovative technologies that reduce the number of workers required and enable a more diversified workforce.
ENVIRONMENTAL ISSUES	 Air quality (particularly arsenic and other contaminants)	Installation of a filtration system with 98% efficiency for particulate emissions from the mine.
	 Water quality in lakes, rivers, groundwater, and soil	Use of double-walled pipes. Installation of state-of-the-art leak detection tanks.
	 Tailings management	More than 50% of the project's tailings will be returned underground. Of this portion, 90% will be used in paste backfill.
	 Greenhouse gas emissions	Electrification of vehicle fleet and mining equipment. Copper concentrate to be sold locally. Favouring rail transport over truck transport.
	 Restoration of sites following cessation activities	Falco commits to rehabilitate operating sites and revegetate by seeding or by natural revegetation of rehabilitated areas, where applicable.
	 Local inconveniences associated with activities (noise, vibration, transport, etc.)	Blasting design below permissible environmental standards for vibration (5 mm/s vs standard 12.7 mm/s).
		Production blasting schedule designed to limit disturbance to the local population (between 3:30 PM and 4 PM, weekdays only).
Work schedules starting and finishing outside peak hours to avoid congestion of local traffic.		

# 8 IMPACT ASSESSMENT AND MITIGATION MEASURES

## IMPACT ASSESSMENT METHODOLOGY

The impact assessment methodology is based on a description of the receiving environment, defining the state of reference in which the project will be located, and on the identification of the sources of impact of the project that could interact with the sensitive components of the environment. Sources of impact are determined as all interventions during construction, operation, and closure phases that could directly or indirectly modify any component of the physical, biological or human environment.

An impact can be positive if it leads to an improvement in the environmental component affected by the project, or negative if it contributes to its deterioration.

To measure the significance of an impact, three criteria are considered: the duration of the disturbance (long, medium or short); the extent of the anticipated impact (regional, medium or one-off); and the intensity of the impact (strong, medium or weak).

## MITIGATION, ENHANCEMENT, AND COMPENSATION MEASURES

A series of mitigation measures have been implemented to reduce the project's negative effects on the environment. Improvement measures are also applied to increase the positive effects. Compensation measures are implemented to offset the permanent loss or permanent disruption of certain environmental components.

## RESIDUAL IMPACT

The residual impact is that remaining after the application of mitigation, enhancement, and compensation measures. Its significance is determined by a combined interpretation of the impact's duration, its extent, and the intensity of the disturbance it causes to the environment. All these variables are put into perspective by specialists in the field, and this assessment thus constitutes the residual impact. Four classes of importance are used to qualify the residual impact: very low, low, medium or high.

For this project, the WSP team carried out in-depth inventories of the various components of the natural and human environments to design a project that was as acceptable as possible from an environmental, social and technical standpoint. Adjustments were also made to the project following submission of the EIA, in response to requests from the community and government departments involved in the project analysis.

The main issues identified for the project and the measures and commitments made by Falco to address them are described in the following sections.

Cumulative impacts, residual impact assessment, accident risk management, and environmental monitoring and follow-up programs are not covered in this summary but can be found in chapters 11 to 14 of the main EIA report.

# 9 DESCRIPTION OF THE RECEIVING ENVIRONMENT

The receiving environment in which the Horne 5 Project will be built is characterized by a long history of mining and industrial activity. A large proportion of the sites selected for the project's infrastructure are already impacted by the presence of existing infrastructure or former mining or industrial activities: 100% of the projected surface area at H5MC and over 50% of the projected surface area at the TMF.

The pipeline network will also be laid out on a route that prioritizes the use of existing rights-of-way and infrastructure, thus avoiding further disturbance of natural environments.

Chapter 12 of the EIA summarizes certain components of the receiving environment and the baseline conditions related to the potential impacts of the main social and environmental issues identified. For a complete description of the receiving environment for each of the applicable study areas and all value components, we invite you to consult chapters 8, 9, and 10 of the EIA and the Answers to Questions.



# 10 POTENTIAL IMPACTS, MEASURES AND COMMITMENTS

The analysis of the potential impacts of the Horne 5 Project on the physical, biological, and human environments is detailed in chapters 8, 9, and 10 of the EIA and in the Answers to Questions. The following sections summarize the main social and environmental issues identified and highlight some of the measures incorporated into the design and commitments made by Falco to mitigate environmental and social impacts.

## Air Quality

Air quality in Rouyn-Noranda has come under increased public and government concern due to exceedances of applicable standards and criteria for certain contaminants in ambient air. Falco recognizes the importance of air quality to the health of the Rouyn-Noranda community.

### REGULATORY FRAMEWORK

The air quality and air emissions assessments for the Horne 5 Project were carried out in accordance with the requirements of the Clean Air Regulation ("CAR"). This regulation is the reference document for judging the results of the atmospheric dispersion modelling studies carried out as part of the authorization applications and the environmental impact assessment.

This modelling must be carried out in accordance with the requirements of the MELCCFP's *Guide de la modélisation de la dispersion atmosphérique*. The pre-existing concentration of a contaminant in the ambient air (initial concentration) must be added to the concentrations obtained by the emissions modelling (modelled concentration) to verify compliance with modelled total concentration standards and criteria.



### BASELINE CONDITIONS

To establish initial concentrations, air quality monitoring was carried out in 2016 and 2017. Data from air quality monitoring carried out by the MELCCFP and generic concentrations defined by CAR were also used.

In the H5MC sector, initial concentrations of arsenic, barium, copper, nickel, and lead were exceeded.

$$\text{Initial Concentration} + \text{Modelled Concentration} = \text{Total Modelled Concentration}$$

## MODELLING

The impact of the Horne 5 Project on air quality was assessed by atmospheric dispersion modelling, incorporating emission sources anticipated during the construction and operation phases for the H5MC and the TMF sectors.

To ensure that the results are conservative, the scenarios modelled represent "worst-case" conditions (number of simultaneously active sources, duration of activities, emission rates, etc.). They deliberately overestimate expected average conditions.

The modelled concentrations for each scenario were added to the initial concentrations for the H5MC and the TMF sectors, and the total modelled concentrations were compared with current standards and criteria.

The total modelled concentrations of the main compounds meet the standards for both sectors. Only those metals whose initial concentration was already above the limit value were exceeded. Total modelled concentrations of crystalline silica show occasional exceedances of certain applicable criteria. However, these are small and occur in limited areas north of the H5MC or near the TMF. Infrequent particulate matter exceedances are also modelled, but only during construction. Specific management measures could be developed and implemented to meet the requirements of the CAR.

## MEASURES AND COMMITMENTS

The conditions required by the MELCCFP as part of the renewal of the Horne smelter's ministerial authorization, issued in March 2023 make it possible to anticipate a significant reduction in the smelter's emissions, and therefore in the initial concentrations of metals currently exceeded, prior to the completion of the Horne 5 Project.

Nevertheless, Falco has incorporated various measures into the project design, such as the addition of a dust filtration system to the mine ventilation system, which will reduce metal emissions from the mine by over 98%.

*With the dust filtration system, the project captures more than nine times its own emissions.*

As a result, the mass balance of project emissions will be negative.

For example, for arsenic, according to the modelling assumptions:

- the filtration system would capture 450 g/year of arsenic;
- the sum of arsenic emissions from the Horne 5 Project is estimated at 50 g/year;
- Horne 5 would therefore reduce arsenic in ambient air by 400 g/year.

The same analysis can be made for other metals currently exceeding standards in ambient air.

Although analysis of the modelling results has shown that the increase in atmospheric concentrations is scientifically insignificant for metals already in exceedance in ambient air, and that management measures will enable standards to be met even for substances already showing exceedances, Falco has commissioned a firm of experts to carry out two toxicological studies to assess the potential effects of its emissions on human health.

A study estimating the contribution of air emissions from the Horne 5 Project to total exposure to metals in exceedance or likely to be exceeded concluded that:

- the atmospheric concentrations that could be generated by air emissions from the Horne 5 Project in the Rouyn-Noranda urban core are very low, and their contribution to population exposure is negligible;
- the risk to human health posed specifically by Falco's atmospheric emissions is negligible, in both the short and long term.

***The level of cumulative risk over the life of the project is 250 times lower than the level of exposure deemed safe and of negligible risk by the INSPQ.***

A study on exposure to respirable crystalline silica emissions concludes that:

- the health risks to the population posed by crystalline silica emissions that could be generated by Horne 5 activities are negligible.

Other measures will also help reduce the impact of the Horne 5 Project on air quality, including those that will be applied to reduce dust by watering surfaces and keeping soils moist. Other examples include transporting tailings by pipeline and using an alternative route for the transportation of waste rock.

A rigorous air quality monitoring program is planned to measure the impact of mining activities on air quality, and to determine compliance and acceptability in comparison with applicable standards and criteria.

This program will include:

- Meteorological data monitoring.
- Ambient air quality sampling.

To complement the air quality monitoring program, equipment representing fixed emission sources will be sampled.

A GHG reduction plan will also be finalized and reviewed on a regular basis to keep up to date with technological developments that could help combat climate change and offer opportunities to contribute further to improving air quality.





## Water protection

Protecting water, in all its forms and uses, remains a constant concern in the development of the Horne 5 Project.

### HYDROGRAPHY

The Horne 5 Project is located in the Kinojevis River's watershed. With a surface area of 4,125 km<sup>2</sup>, it drains the waters of several lakes and streams including Dufault, Osisko, Noranda, Rouyn, Duprat, Waite, Vauze and Marion Lakes, as well as the Duprat River and Vauze, Fourcet, Landry, Marion, Osisko and Dallaire watercourses, to name but a few.

### DRINKING WATER

The water intake for the City of Rouyn-Noranda's water supply system is in Dufault Lake. Lake Duprat has been identified as an alternative drinking water supply source. Businesses and residences are also supplied by private wells in the TMF sector. Significant restrictions are in force in certain areas of the territory to protect drinking water sources.

H5MC is served by the water supply network. According to the hydrogeological information system ("SIH") of the MELCCFP, only one historical well is located within a 700 m radius of H5MC. This well is now backfilled and no longer in use.

In the TMF sector, there are some twenty groundwater wells distributed on either side of Rang Jason. Other wells are located approximately 3 km along Route 101 in the D'Alembert district.

According to hydrogeological studies, no aquifers have been identified in the vicinity of the H5MC, and there are no groundwater supply wells for human consumption in the area.

At the TMF, the bedrock aquifer is considered a source of acceptable water quality and sufficient quantity, given the presence of groundwater users in the vicinity. The other hydrostratigraphic units (clay, silt, and till), however, are aquitards that cannot constitute a source of water supply (unsatisfactory quality or insufficient quantity).

### SURFACE WATER

Inventory work was carried out to establish a complete baseline of surface water quality in the various project sectors.

Analytical results were compared with the most severe provincial surface water quality criteria for the protection of aquatic life in the event of long-term exposure.

In the H5MC sector, the water quality of the watercourses sampled is typical of environments impacted by historical industrial activity. Upstream and downstream of the sector, exceedances of criteria for the protection of aquatic life are frequent to very frequent for certain parameters (pH, copper, iron, cadmium), and occasional for others (fluoride and zinc).

In the TMF sector, waterbodies and watercourses are of variable quality. At the head of the watershed, the water in Lake Vauze is of relatively good quality, with occasional exceedances of aquatic life protection criteria for pH, aluminum, and phosphorus. Near the proposed facilities, water quality is poorer. At Lake Waite and in the OX2 Basin (a former mining water pond), exceedances of criteria for the protection of aquatic life are very frequent for certain metals (cadmium, copper, and zinc) and frequent or occasional for others (lead and petroleum hydrocarbons).

In Vauze Creek, exceedances of criteria for the protection of aquatic life are frequent for copper and occasional for other parameters (cadmium, lead, zinc, petroleum hydrocarbons, and phosphorus).

In the watercourses along the proposed tailings and reclaim water pipelines route, the water sampled is of poor quality, reflecting the region's mining history. In most watercourses, exceedances of criteria for the protection of aquatic life are frequent to very frequent for certain metals (copper, lead, cadmium, zinc), and occasionally for other parameters (petroleum hydrocarbons, iron, manganese, silver, phosphorus, and pH).

## GROUNDWATER

As part of groundwater characterization work, observation wells were installed (7 at the H5MC and 8 at the TMF) or were installed and sampled (6 at the H5MC and 9 at the TMF).

Analytical results were compared to provincial resurgence criteria in surface water, established by the Government based on criteria for the prevention of contamination and the protection of aquatic life in surface water. The standards of By-law 2013-779 governing the quantity and quality of wastewater discharged into the sewer systems and watercourses of the City of Rouyn-Noranda were also used for comparison in the H5MC sector.

In the H5MC sector, the groundwater level was at a depth of approximately 0.7 to 5 m. The data obtained suggest eastward flow towards the Nord-Osisko Basin.

In the TMF area, groundwater levels were generally near the surface, with depths ranging from about 0.5 to 5 m. The data obtained suggest topographically controlled flow, generally towards the east, in the direction of Vauze Creek.

## WETLANDS AND BODIES OF WATER

Photointerpretation work and field inventories were carried out in the TMF sector, as well as in a 50 m wide corridor along the tailings and reclaim water pipelines and the freshwater pipeline, to list wetlands and bodies of water.

In the TMF area, approximately 59 ha of wetlands and waterbodies were inventoried (nearly 23% of the surface area).

In the corridor along the tailings and reclaim water pipelines network, approximately 9.6 ha of wetlands and waterbodies were identified (nearly 12% of the area).

In the corridor along the freshwater pipeline, approximately 4.3 ha of wetlands and waterbodies were identified (nearly 12% of the surface area).

## MEASURES AND COMMITMENTS

Falco has committed to and is planning several mitigation measures to protect water in the areas of activity of the Horne 5 Project. These measures began at the design stage and continue to be integrated into every phase of the project's development. They include:

### **Site selection criteria aimed at avoiding impacts on drinking water sources and limiting those on watercourses and wetlands:**

- potential sites sought for the TMF development had to be outside esker footprints and allow for final effluent development at least 2 km from Dufault Lake;
- sites that could have a direct impact on Dufault Lake were rejected;
- pipelines routing had to prioritize the use of existing rights-of-way and linear infrastructure to limit disturbance of natural environments.

### **Water and tailings management strategies integrating surface water and groundwater protection:**

- diversion of surface water flowing towards the TMF, to avoid contact with the planned facilities;
- capture of rainwater on the H5MC and TMF sites, to enable reuse and prevent runoff into the environment;
- water recirculation, to limit the need for freshwater.

### **Infrastructure design criteria to protect drinking water, surface water, groundwater, and wetlands, including:**

- the design of structures that take advantage of topography and facilitate water drainage to reduce the need for dikes and the accumulation of water in storage areas;
- carrying out dike and pipe failure studies to assess potential consequences and plan emergency measures in the event of failure;
- the use of double-walled pipes to prevent spillage in the event of a break;

- the installation of instrumented leak retention tanks to detect and collect leaks;
- the design of a modern, efficient water treatment plant, enabling high water quality standards to be met;
- the integration of climate change considerations into the design of the infrastructure.

### **Construction methods and work procedures that respect best practices and minimize impacts, including:**

- work likely to affect the hydraulic capacity of watercourses during low water periods;
- levelling of surfaces to capture runoff and installation of treatments to reduce suspended solids before discharge;
- cleaning and maintenance of equipment in dedicated facilities;
- using abrasives instead of fluxes and water instead of chemical solutions as dust suppressants.

### **Restoration measures and compensation projects designed to restore or improve natural environments:**

- restoration of the TMF site without the need for pumping or water treatment;
- compensation for wetland and water loss.

### **Measures to monitor water quality throughout the life of the project, including post-restoration:**

- implementation of a surface and groundwater monitoring program, including the installation of a network of observation wells and a periodic sampling program to monitor them;
- monitoring water quality in residential wells closest to planned mining activities.

Other measures will also help reduce the project's impact on the receiving environment, including those that will be applied to minimize the impact on soil, sediment, and ambient air quality, which will also contribute to water protection.



## Biodiversity

Studies have been carried out to assess the potential impact of the Horne 5 Project on plant and wildlife biodiversity.

### **Wildlife biodiversity**

Studies have been carried out on terrestrial fauna, herpetofauna (amphibians and reptiles), avifauna (birds), Chiroptera (bats) and aquatic fauna.

### **BASELINE CONDITION**

The wildlife studies were carried out in two stages:

- an assessment of habitat potential for various target species, including special-status species potentially present in the region;
- field inventories according to the protocols recommended by the MELCCFP to establish a portrait of the local fauna and to confirm or refute the presence of special-status wildlife species, or habitats essential to their survival.

Particular attention was paid to the presence of species of precarious status on the territory, which was first the subject of a request to the *Centre de données sur le patrimoine naturel du Québec* ("CDPNQ").

### **Terrestrial wildlife**

The Abitibi-Témiscamingue region is home to 4 species of large wildlife: moose, white-tailed deer, black bear and woodland caribou. Of these, only the woodland caribou has a precarious status, being designated vulnerable in Quebec and threatened in Canada.

Among small mammals, 23 species are potentially present in the study area, 3 of which have a precarious status: least weasel and cougar (likely to be designated threatened or vulnerable in Quebec), and wolverine (threatened in Quebec).



Eighteen species of micromammals are potentially present in the study area, 2 of which have a special status, namely the southern bog lemming and the rock vole. Both species are likely to be designated as threatened or vulnerable in Quebec. An assessment of potential key habitats for these special-status species was carried out by analyzing map information and aerial images of the area. The most interesting habitats are found in the northern part of the study area, along rang Inmet and especially north of the TMF site. However, no specific inventory of these species was carried out.

### Herpetofauna

A total of 9 species of amphibians and reptiles were recorded, including 6 anurans (frogs and tree frogs) and 3 garter snakes. All are common species in the region, except for the green snake, which is likely to be designated as threatened or vulnerable in Québec. A few other sightings of this species have been reported by the CDPNQ.

Among special status herpetofauna, only the Blanding's turtle and wood turtle are likely to be present in the region, but field research has failed to detect them, despite the presence of potentially suitable habitats. No turtles were observed, although snapping turtles, painted turtles, wood turtles and Blanding's turtles have been reported in the Abitibi-Témiscamingue region. The same is true for species likely to be designated as threatened or vulnerable, including the boreal chorus frog and the four-toed salamander, for which special inventory efforts have been made without detecting them.

### Avifauna

During the various surveys carried out, around 125 bird species were observed or heard, including some 40 species of waterfowl and aquatic birds.

The presence of 7 species of precarious status was confirmed in the proposed siting areas during the various inventories: Canada warbler, common nighthawk, eastern whip-poor-will and olive-sided flycatcher, short-eared owl, rusty blackbird (all likely to be designated threatened or vulnerable in Quebec), and bald eagle (vulnerable in Quebec).

### Chiropterans

Acoustic inventories (recording of calls) carried out as part of the project confirmed the presence of 4 bat species (big brown, silver-haired, eastern red, and hoary bats), as well as bats of the genus *Myotis* (little brown bat and northern bat).

Among the species listed, silver-haired, eastern red and hoary bats are likely to be designated threatened or vulnerable in Quebec. The little brown bat and the northern bat are considered endangered in Canada. Most species are arboreal or use mature trees with cavities at some stage in their lives. Mature forest stands are therefore particularly suitable for the special-status species recorded in the study area. The association of rivers, lakes, and other wetlands with mature forest stands is a key habitat for chiropterans. The probable presence of a hibernacula for bats of the genus *Myotis* in one of the galleries at the Waite-Amulet site has been noted.

### Aquatic Fauna

Field inventories were carried out in the H5MC, the TMF (anthropogenic water bodies and beaver ponds), as well as the tailings and reclaim water pipeline network (13 watercourses) and freshwater pipeline sectors. These surveys confirmed the presence of some fifteen fish species common to the region in all these habitats but did not identify any species of precarious status.

## ANTICIPATED IMPACTS

The Horne 5 Project aims to minimize impacts on wildlife habitats from the design stage:

- no natural environment will be impacted by the H5MC due to the industrial nature of the site chosen for its implementation;
- to protect habitats, the tailings, reclaim water, and fresh water pipelines have been routed to avoid wetlands and bodies of water as far as possible and to minimize encroachment into the natural environment. This will ensure that the habitats crossed by these infrastructure are not further fragmented;
- a portion of the area required for the TMF is currently occupied by a tailings facility and used as a water treatment pond, limiting the project's encroachment into the natural environment;

- the main anticipated impacts on wildlife are disturbance and encroachment of infrastructure into the natural environment (habitat for these species) during construction, operation, and closure. It should be noted that the habitats affected by the project are not unique. They are common in the region. They have already been disturbed by human activities, including mining, due to the proximity of the urban and peri-urban environment, which limits further habitat and encroachment on undisturbed natural environments.

Herpetofauna, avifauna, and chiropterans are likely to be impacted during all stages of the project, whether construction, operation, or closure. Deforestation, construction, transportation, and dismantling are all activities that are likely to influence these species. These effects will be minimal at the H5MC since it is in an industrial environment.

Although the design and selection of the sites were aimed at minimizing their footprint in natural environments, the planned infrastructure will result in encroachments on fish habitat, mainly at the TMF. Direct losses are estimated at 54.6 ha, 99% of which will be at the TMF. These are fragmented habitats, some of them anthropogenic (such as the OX2 Basin, resulting from the damming of Vauze Creek when the Norbec tailings facility was created) and of low ecological value. Other losses will result from stream crossings required for the tailings and reclaim water pipelines, which will require widening existing culverts, which will further encroach on watercourses.

## MEASURES AND COMMITMENTS

Falco is committed to implementing mitigation measures from the start of construction through to site closure to limit negative impacts on habitat and preserve precarious wildlife species. The specific measures applicable to wildlife include the following, but are not limited to:

### Terrestrial wildlife

- Plan awareness-raising activities for workers about the presence of precarious species to limit disturbance caused by the work and minimize the risk of collisions;
- Carry out clearing and/or work outside the critical period for moose calves;
- Cover pipelines on certain sections to allow the crossing of wildlife.

### Herpetofauna

- Avoid destruction and disturbance of hibernacula (garter snakes, turtles, and anurans) by refraining from disturbing the soil in early spring or late autumn, and from any intervention in watercourses from October to April;
- Dispose of unrecovered tree trunks that could provide shelter for garter snakes and forest salamanders at the edge of the pipelines rights-of-way;
- At the end of construction work and dismantling of facilities, clean up and reshape disturbed areas to encourage natural regrowth of vegetation and stabilize soils. If necessary, work areas will be seeded as quickly as possible with an appropriate seed mix to accelerate the revegetation process and prevent the establishment of exotic invasive plant species

### Avifauna

- Carry out clearing outside the bird nesting season;
- Make workers aware of the potential presence of bald eagle, common nighthawk and eastern whip-poor-will nests. If a nest is discovered near the work site, the work must be interrupted until nesting has ceased;
- Avoid disturbance of migratory bird nests and eggs.

### Chiropterans

- Carry out clearing work outside bat breeding and birthing seasons;
- Before dismantling a building or other installation, carry out an inspection to check whether it is being used as a maternity or resting place by chiropterans. If this is the case, protective measures will be taken to ensure the survival of the bats;
- Within a 1 km radius of the hibernacula identified in one of the galleries at the Waite-Amulet site, carry out any work likely to cause noise and/or vibrations outside the wintering period.

### Aquatic fauna

Losses of fish habitat resulting from the project must be compensated under Canada's Fisheries Act and Quebec's Regulation respecting wildlife habitats.

Falco is currently evaluating various fish habitat compensation projects and is also on the lookout for potential compensation projects.

## PLANT BIODIVERSITY

Studies have been carried out on terrestrial vegetation, as well as wetlands and bodies of water.

## BASELINE CONDITIONS

Photointerpretation work and inventories of the natural terrestrial, wetland and water environments were carried out in a study area of around 335 ha, encompassing all the project's planned infrastructure. The aim of this work was to establish a detailed portrait of the natural habitats, as well as their floristic characteristics (stands, types of environments, plant species present, and presence or absence of protected plant species).

The project is in the boreal vegetation zone and in the mixed forest sub-zone. This zone occupies the southern part of the boreal zone and is dominated by stands of fir and white spruce, mixed with white birch.

The study area for the Horne 5 Project is mainly composed of natural terrestrial environments, anthropogenic environments, and wetland and water environments. Mixed forests, poplar groves, and dry barrens are the main forest stands. There are also mixed hardwoods, birch stands, spruce stands and a few jack pines and fir stands.

Most wetlands in the study area are marshes, swamps, bogs and ponds. Shrub swamps, ponds and beaver ponds are also common in the study area. There are also forested swamps, wooded ombrotrophic bogs, alder stands and, to a lesser extent, open ombrotrophic bogs and open fens.

The hydric environments in the study area are lakes as well as permanent and intermittent streams, including their banks and shorelines.



## ANTICIPATED IMPACTS

The Horne 5 Project aims to minimize impacts on terrestrial, wetland, and water environments from the design phase:

- To protect these environments and comply with the avoid-minimize-compensate mitigation sequence, the tailings and reclaim water pipeline network and the freshwater pipeline were selected with the aim of avoiding wetlands and waterbodies as much as possible. Projected corridors will follow existing rights-of-way (roads and power lines) for most of their length, to minimize encroachment into the natural environment. This will have the effect of not further fragmenting habitats crossed by these infrastructures.
- No natural environment will be impacted by the H5MC due to the anthropogenic nature of the site chosen for its implementation.
- A portion of the area required for the TMF is currently occupied by a tailings facility and used for surface water treatment, limiting the project's impact on the natural environment.

### Terrestrial environments

During construction, actions likely to affect terrestrial vegetation include clearing rights-of-way, preparing construction sites, and building access to these sites.

The footprint of the planned TMF will be gradually cleared over an area of some 121 ha to allow for the installation of infrastructure and the construction of dikes at the outer limits of the site.

The right-of-way for the tailings and reclaim water pipelines (12 or 18 m wide, reduced to 6 or 10 m at water crossings), as well as the right-of-way for the fresh water pipeline (5 m), will be cleared over areas of approximately 13 ha and 2.6 ha respectively to allow for infrastructure construction.

During operation, vegetation control will be the only impact on terrestrial vegetation.

At closure, no source of impact will adversely affect terrestrial vegetation. A positive impact is expected due to site restoration.

### **Wetlands and bodies of water**

The map shows all the wetlands and bodies of water that will be affected by the project.

The construction of the fresh water pipeline will result in the loss of 0.07 ha of shoreline and 0.005 ha of wetlands. These losses will be confined to the eastern side of the bypass road.

Wetland and water losses related to the construction of the tailings and reclaim water pipelines are estimated at 0.4 ha for shoreline, 0.5 ha for riverbanks and 1.1 ha for wetlands.

Construction activities at the TMF site will be phased over the life of the project. Ultimately, the loss of wetlands (outside of the littoral zone and lakeshore or riverbanks) are estimated at 5.4 ha. Anticipated losses of water environments total 13.6 ha of lakeshore or riverbanks and 54.2 ha of littoral area.

### **Floristic species of precarious status**

Only one plant species of precarious status has been recorded within a 15 km radius of the project. It is the striped coralroots (likely to be designated threatened or vulnerable in Québec), observed southeast of the town of Rouyn-Noranda, about 3 km from the H5MC. Exhaustive inventories conducted in 2017, 2018, and 2019 to determine the presence of this species in the project right-of-way did not identify this or any other plant species of precarious status.

## **MEASURES AND COMMITMENTS**

Several mitigation measures will be implemented to limit the impact of project activities on terrestrial and wetland vegetation.

Mitigation measures specific to terrestrial environments aim to prevent the degradation of natural environments beyond the construction right-of-way, to encourage the recovery and reclamation of trees and woody residues, to prevent the establishment or dispersal of invasive exotic species, and implement revegetation strategies following construction work, based on natural recovery of vegetation or seeding with native species.

Mitigation measures applicable to wetlands include the use of work methods that minimize the encroachment and destruction of these environments by machinery, the maintenance of water links and surface runoff necessary for the sustainability of these environments, and the restoration of the site following construction work.

### **Compensation**

Falco is committed to compensating for residual losses of wetlands and bodies of water. A compensation plan will be developed jointly with the MELCCFP to identify projects of interest that would restore and create wetlands and hydric environments on a local scale. This plan will be developed in parallel with the fish habitat compensation plan.

### **Restoration**

Anticipated wetland and water loss at the TMF site is considered permanent. However, vegetation recovery may be observed with a return to conditions conducive to the re-establishment of hydromorphic soils along the routes of the various following the withdrawal of the pipes during closure.

# Sound climate

Particular attention has been paid to the sound climate, so that the planned activities fit harmoniously into the host environment.

## REGULATORY FRAMEWORK

The assessment of the sound environment at the Horne 5 mining project was carried out in accordance with the requirements and noise levels criteria set out in MELCCFP Instruction Note 98-01 ("NI 98-01"). The latter indicates average hourly daytime and nighttime noise levels that must not be exceeded at sensitive receptors, depending on the uses permitted by the municipal zoning by-law.

## BASELINE CONDITIONS

To document the pre-project sound climate, continuous sound measurements were taken at seven measuring stations in the H5MC area over three two-week periods. Measurement station locations were chosen to characterize the reference sound environment at sensitive receptors, i.e., the residential sectors around H5MC and the *Centre intégré de santé et services sociaux de l'Abitibi-Témiscamingue* ("CISSSAT").

Similarly, continuous sound measurements were taken over two-week periods at two measuring stations in the TMF sector. The locations of the measurement stations were chosen to characterize the baseline sound environment at sensitive receptors, i.e., the residential areas near the TMF.

## MODELLING

Once the baseline condition had been completed, acoustic modelling was carried out using specialized software to assess the projected noise levels following project implementation. This modelling exercise enables us to predict the dispersion of sound waves towards receptors based on the sound sources identified for the project, while considering the various obstacles to their dispersion present in the environment (existing or planned buildings, vegetation zones, etc.). This exercise is used to conservatively

predict noise emissions from the project at identified sensitive receptors, and then to assess compliance with the noise criteria of NI 98-01. This approach was carried out in accordance with the methodology proposed by the MELCCFP in NI 98-01.

A conservative operating scenario was prepared for each sector (TMF and H5MC). These scenarios consider:

- maximum and continuous noise generation by all projected fixed equipment;
- the noise contribution of equipment located inside buildings, by assessing the noise radiated outward by building openings;
- the contribution of mobile equipment (delivery trucks, wagons, etc.), taking into account the movement of this equipment along roads and the time it takes to reach the site;
- for the TMF, site equipment was positioned as close as possible to sensitive receptors, and maximum continuous noise emission was considered to increase the conservatism of the results. Mobile equipment, such as on-road and off-road trucks, were considered, considering their routes and the time taken to move around the site.

## H5MC

For simulated operating conditions, projected noise levels without the integration of mitigation measures were calculated at 8 sensitive receptors corresponding roughly to the measurement points of pre-project noise levels (residential areas near planned infrastructure, the Noranda Golf Club and the *Centre intégré de santé et des services sociaux de l'Abitibi-Témiscamingue*).



Projected noise levels modelled without mitigation measures exceeded noise criteria for 7 of the 8 sensitive receptors. These results highlight the need to select equipment and incorporate noise mitigation measures that will meet NI 98-01 criteria.

### **TMF**

For simulated operating conditions, projected noise levels without integration of mitigation measures were calculated at 6 sensitive receptors corresponding to the 2 measurement points of the pre-project noise environment and the residential areas in the vicinity of the planned infrastructure. The projected noise levels modelled are all below the noise criteria set out in NI 98-01.

## **MEASURES AND COMMITMENTS**

Modelling results have demonstrated the need to implement mitigation measures to meet NI 98-01 criteria at H5MC.

Mitigation measures identified to minimize noise generated by project activities at H5MC include:

- selecting equipment that minimizes noise emissions and promotes compliance with regulations;
- designing infrastructure to attenuate noise emissions at source, and using silencers where possible;
- installing the mine's main fans underground, to reduce surface noise;
- set up a noise emissions monitoring network at sensitive receptors during operation.

Falco is committed to selecting equipment that respects the sound power levels recommended by the sound climate study. If certain equipment cannot achieve the recommended sound emission level, additional mitigation measures will be implemented.

# Vibratory climate

Mining activities, such as blasting, generate vibrations. The creation of underground openings in the bedrock can generate induced seismicity, which also generates vibrations. Vibration control and management of induced seismicity are essential responsibilities for any mining operation. Falco has made commitments well below the standards to limit the impact on the community

## Vibrations caused by blasting

Blasting for mine development and production, as well as surface blasting for rock excavation during construction, generates vibrations. The vibrations caused by blasting are a function of the blasting load, and their vibration level depends on the distance and conditions of the rock and soil between the position of the blast and the point where they are felt.

## Vibrations caused by induced seismicity

The creation of underground openings can cause induced seismicity, which in turn generates vibrations. Seismicity induced by excavation in rock is influenced by the natural stress regime and geomechanical properties of the rock, the size of the excavations created, and the presence of surrounding geological structures.

Vibrations caused by induced seismicity are a function of the magnitude of the seismic activity and their vibratory level depends on the depth and distance of origin, as well as on the rock and soil conditions between that location and the one where they are felt.



## Vibrations

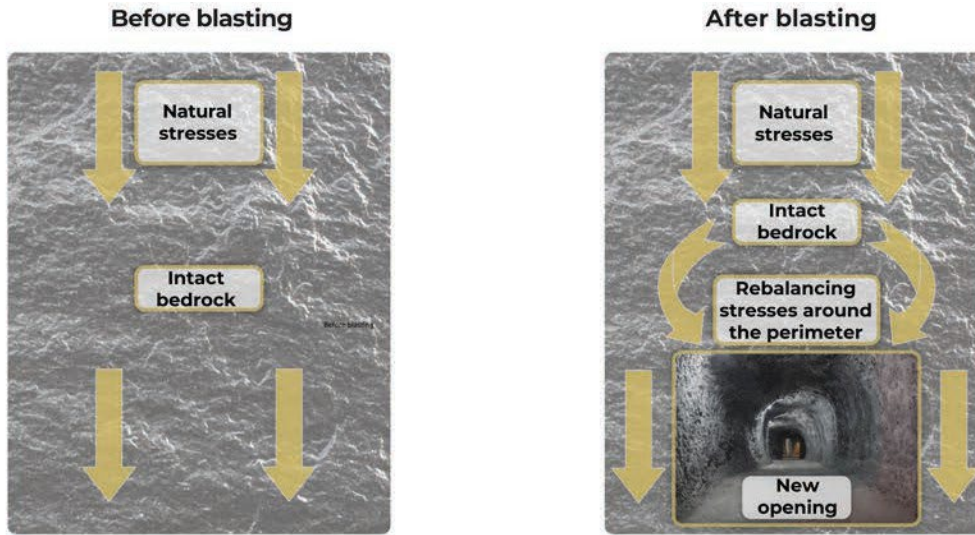
Vibration is a wave propagating through the ground or rock. This wave is characterized by:

- the speed at which the wave oscillates, in mm per second (mm/s);
- the frequency or number of complete oscillations of the wave measured in one second, expressed in hertz (Hz).

Vibrations, measured in mm/s, are often expressed as "vibration level".

## Induced seismicity

Induced seismicity is any seismic activity related to or created by human activity. What we perceive as induced seismicity is the vibrations it generates. Various causes can generate induced seismicity. For example, the water reservoirs of hydroelectric dams exert pressure on the bedrock and generate low-magnitude seismic activity as they fill up. Seismic activity is often measured on the Richter magnitude scale. As seismicity generated by mining activities is generally of low magnitude, it is often referred to as "microseismic activity" (below 0 on the Richter magnitude scale).



## Vibration perception

Vibration perception varies from one individual to another, and according to the conditions in which it is experienced. It can be difficult to assess what measured vibration levels correspond to. Vibration levels typical of certain familiar activities are shown in the table on page 21, in comparison with the limit of the standards applicable in Quebec for underground mine blasting.

Vibration levels depend on vibration speed and frequency. The limit of perceptibility by humans is set at a vibration level of 0.3 mm/s.

The vast majority of vibrations generated by blasting and induced seismicity are not perceptible, and their effects are generally inconsequential.

## REGULATORY FRAMEWORK

To prevent damage and limit the impact of vibrations, MELCCFP's *Directive 019 sur l'industrie minière* stipulates that the operator of an underground mine located less than 1 km from a sensitive receptor must install a vibration monitoring network.

In addition, for operating depths more than 100 m:

- The maximum permissible ground vibration velocity generated by blasting operations and recorded at the sensitive receiver may not exceed 12.7 mm/s;
- Blasting between 7 PM and 7 AM must be carried out at a fixed time, and the operator must notify the affected population within 1 km, as well as any change in the blasting schedule.

## BASELINE CONDITIONS

To assess the local vibration environment under baseline conditions, vibration levels surveys were carried out in 2016, 2017, and 2019.

### H5MC sector

Eleven measuring stations were set up in the H5MC sector in 2016. Their location was chosen to characterize the reference vibration environment in populated areas and at certain identified sensitive receptors (*Centre intégré de santé et des services sociaux de l'Abitibi-Témiscamingue*, Nord-Osisko Basin dike, Quemont-2 tailings dike, etc.).

Vibration levels were measured continuously over 3 two-week periods.

In general, vibration levels were considered low:

- average vibration levels measured remained below 0.2 mm/s, i.e., values generally not perceptible to humans;
- maximum vibration levels measured remained generally low, reaching between 1.5 and 3 mm/s for most stations, and just over 6 mm/s at the station most strongly influenced by the presence of a railroad.

In 2019, two measuring stations were installed in the residential area of the Notre-Dame district, where vibrations caused by blasting are more likely to be felt because they are closer to the deposit. Vibrations were measured continuously for 12 months to:

- build a baseline dataset prior to the start of mining operations;
- differentiate between baseline vibration levels and the future contribution of the Horne 5 Project;
- for the period June 2019 to June 2020, vibration levels measured in the Notre-Dame district were low;
- average values were of the order of 0.17 mm/s and 0.12 mm/s at each measurement point;
- in both cases, average vibrations were higher on weekdays than on weekends, and stronger during the day than in the evening or at night.

### **TMF sector**

In the TMF sector, a measuring station was set up in 2017. The location was chosen to characterize the reference vibration in the inhabited area near the TMF. Vibration levels were measured continuously over 2 two-week periods.

In general, vibration levels were considered low:

- average vibration levels remained below 0.1 mm/s, i.e., values that were perceptible to humans;
- the maximum vibration level measured was 0.89 mm/s.

## **ANTICIPATED IMPACTS**

### **Surface blasting**

At H5MC, surface blasting will be required during construction to set up the mining facilities. Falco plans to carry out 4 low-intensity blasts per day, over a 28-day period, and is committed to respecting the maximum speeds permitted by regulations.

At the TMF, surface blasting could be carried out to remove granular material (rock blasting). Given their isolated location, far from inhabited areas, such blasting poses no risk of damage to buildings or infrastructure.

### **Underground blasting**

At H5MC, underground blasting will be required for development work and mining. Falco is committed to planning these blasts in such a way as to respect a vibration limit of 5 mm/s at ground level at sensitive receptors, i.e., less than 50% of the limit permitted by Directive 019, which is of 12.7 mm/s.

Only one production blast per day is planned, during daylight hours only, at a time of high urban activity. The vibratory impact of the planned production blasts was assessed using a theoretical model to predict the vibrations that could be generated by blasting at different operating depths. The results show that the 5 mm/s limit is respected under all the conditions evaluated. Vibrations could be felt by some members of the public, since the perception threshold is around 0.3 mm/s.

One development blasting is planned at night during the operating phase, but of much lesser magnitude and should not be perceptible.

Development blasting is also planned during construction. Estimates of anticipated vibration levels indicate that the maximum level at all housing locations will be less than 1 mm/s, more than 80% below Falco's vibration limit of 5 mm/s.

The results of the studies carried out to estimate anticipated vibration levels were considered adequate and conservative for the hospital cancer treatment center and the high sensitivity of their equipment.

## MEASURES AND COMMITMENTS

Falco is committed to implementing mitigation measures to control vibrations, limit their perception by the public, and ensure that the integrity of the buildings is maintained. These measures include:

### Substandard vibration limits

- The blasting design calls for a maximum velocity of 5 mm/s, whereas the standard is 12.7 mm/s.

### Blasting schedule

- Production blasting will take place on weekdays, during daylight hours only, in the late afternoon during periods when there is the most activity to limit perception.

### Communication

- The blasting operations will take place at set times and will be communicated to the public.

### Follow-up and monitoring

- A soil inspection program will be set up in the Notre-Dame sector (for residences located near the Horne 5 deposit);
- vibration monitoring will be carried out at all production blasts, using a network of seismographs positioned to measure vibrations accurately;
- induced seismic activity will be monitored in real time using geotechnical measuring instruments. Monitoring will also enable us to adjust the mining sequence or the size of work sites to minimize the potential for seismic activity.



# Territory and cohabitation

The Horne 5 Project lies at the heart of the ancestral territory of the Anishnabe Nation. Three communities have claims to the portion of the territory where the planned infrastructure is located: Long Point First Nation ("LPFN"), Timiskaming First Nation ("TFN") and Abitibiwinni First Nation ("AFN").

The Horne 5 Project is in the Abitibi-Témiscamingue region, in the City of Rouyn-Noranda, which has also been a regional county municipality (RCM) since 2002.

The planned components of the project benefit from an advantageous location in terms of permitted activities and land use, thus promoting cohabitation:

- the mine and H5MC are located in an industrial zone;
- the TMF is located at the site of the former Norbec mine, where there is an unrestored tailings facility;
- the tailings and reclaim water pipelines linking the H5MC to the TMF, and the fresh water pipeline from Lake Rouyn to H5MC, run along existing linear rights-of-way.

The project is located partly on private and partly on public land. The project will require the acquisition of private property for the H5MC and TMF. Rights of occupancy on public land will be required to construct the TMF and pipelines. Rights-of-way will also have to be obtained for sections crossing private properties.

Responsibility for the development and management of the territory affected by the project footprint is shared between two principal agents, the MRNF and the City of Rouyn-Noranda ("CRN").

- The MRNF is responsible for land use, management and development of public land, and mineral and energy resources (public land use plan).

The CRN determines the major development orientations for its territory, and oversees and regulates its development, both on privately and publicly owned land.

## CLAIMS OF FIRST NATIONS

The communities of Long Point First Nation, Timiskaming First Nation, and Abitibiwinni First Nation have different levels of claim to the territory where the Horne 5 Project is located. The Horne 5 Project does not intersect any First Nations reserve, nor does it overlap with any traplines.

The traditional territory claimed by the Abitibiwinni First Nation is defined by the Abitibiwinni-Québec Agreement signed in 2017. This agreement on consultation and accommodation has several objectives, including:

- specifying the consultation processes applicable to mining activities;
- encouraging and promoting harmonious and positive relations between companies and the Abitibiwinni First Nation;
- preventing disputes between the parties and facilitate their resolution.

Falco has initiated discussions and consultations with all three communities.

## PUBLIC LAND-USE PLAN

The TMF and a large portion of the tailings and reclaim water pipelines are located in the allocation zone 08-065 Dufault and Duprat Lakes watersheds of the Abitibi-Témiscamingue region's public land-use Plan. Lake Dufault is the source of drinking water for the city of Rouyn-Noranda. Lake Duprat has been identified as an alternative source of drinking water. The government's intention for this zone is to use the territory primarily as a source of drinking water, while ensuring water quality.

The area around H5MC and the fresh water pipeline mainly overlaps three public land-use Plan allocation zones whose vocations allow for:

- multiple modulated: multi-purpose use of land and resources, with no one activity taking precedence over another;
- priority: precedence of one main land or resource use, planned or actual, over other uses. In this case the City of Rouyn-Noranda's drinking water supply at Lake Dufault, which the government intends to prioritize;
- protection: applies to the main lakes in the H5MC sector, notably Lake Osisko and Lake Rouyn, for which the government's intention is to safeguard wildlife habitats.

Falco intends to respect these public land allocations by protecting the water quality of Lake Dufault, respecting the capacity of Lake Rouyn for the withdrawal of fresh water, and ensuring that these operations minimize impacts on wildlife.

## LAND USE PLANNING AND DEVELOPMENT (CRN)

In terms of land use planning, the H5MC site overlaps with the urban affectation zone (urbanization perimeter) of the City of Rouyn-Noranda's revised land use and development Plan, which allows industrial use as well as resource use, including mining, in certain sectors identified in the urban plan.

The fresh water pipeline crosses the urban area within the urbanization perimeter, as well as a resource use area near Lake Rouyn.

The TMF and the northern part of the tailings and reclaim water pipelines are included in the resource allocation. Further south, the pipelines are in an urban area.

In all cases, the project's planned infrastructure and activities comply with land-use planning guidelines. The Horne 5 mining project complies with the City of Rouyn-Noranda's urban planning by-laws. Under the zoning by-law, the H5MC site is located in an industrial zone (zone 6021), and the TMF site is included in a resource development zone (zone 9017). The use of natural soil and subsoil resources is authorized in both zones. This use is also authorized in all areas crossed by the tailings and fresh water pipelines. There is therefore no zoning changes required for the Horne 5 mining project.

## LAND USE

### H5MC and fresh water pipeline area

This area is not currently suitable for traditional First Nations use. The site is hemmed in by industrial uses and, like its surroundings, has been reshaped by several years of mining and industrial development. It is therefore highly unlikely that this area has any potential for traditional use.

The H5MC site is in the heart of the Noranda-Nord industrial park, in the urban allocation on avenue Marcel-Baril. This industrial park is home to heavy industrial and warehousing activities. These include Glencore Canada's Horne Smelter site, adjacent to the H5MC site to the south. Several former mining sites can be found in this part of the city. The H5MC site is therefore part of an industrial environment with a long history of mining and is adjacent to inactive tailings facilities (Quemont-I to the northeast, and Noranda-I to the southwest).

Near the Noranda-Nord industrial park, the major residential and commercial areas are located south of the Horne Smelter in the city's historic core (Vieux-Noranda) and northwest of H5MC (the rue des Lilas area north of the bypass road). The fresh water pipeline right-of-way does not intersect any commercial or residential buildings. It crosses the Noranda Golf Club, the immediate neighbour to the north of the H5MC site.

Rouyn-Noranda's downtown core and historic Old Noranda offer a diverse range of commercial, touristic, artistic, cultural, and recreational activities. From late May to early November, these parts of town host several festivals. Numerous recreational trails can be found in the H5MC area. A section of the Route Verte (bicycle trail) runs along route 117 from west to east, then north along route 101. Some regional and local snowmobile and quad trails are located near H5MC. The proposed fresh water pipeline route runs alongside and crosses existing and proposed snowmobile and quad trails including the Trans-Québec No.83 snowmobile trail. Hiking trails are present in the vicinity of the fresh water intake in Lake Rouyn.

In the H5MC sector, hunting activities are limited and concentrated on waterfowl at Rouyn Lake. Sport fishing is practised in most of the lakes in the sector, notably Dufault, Osisko and Rouyn lakes.

### **TMF, tailings and reclaim water pipelines sector**

The current potential for First Nations use of this area for traditional purposes is considered very low, given its proximity to the Rouyn-Noranda urban area and historical mining operations. The TMF site is located close to the village of the D'Alembert district, where the built environment is predominantly residential and organized along the route 101. More recent residential constructions are located along rang Jason and route 101. The lack of commercial development in this area is due to its proximity to Rouyn-Noranda's urban core. The former Norbec mine tailings site, where the TMF will be developed, is the main industrial site in this sector. The right-of-way for the tailings and reclaim water pipelines runs alongside

several former mines, including the partially restored Waite-Amulet mine site. The D'Alembert district is characterized by its forested landscape and rugged topography. The D'Alembert hills, east of the proposed TMF, are home to several hiking trails, appreciated among other things for their interesting views of the surrounding landscape and their proximity to the Rouyn-Noranda urban area. Numerous recreational trails are found around the TMF and along the right-of-way of the tailings and reclaim water pipelines. The Trans-Québec No.93 snowmobile trail, the Trans-Québec No.1 ATV trail, as well as regional and local trails crisscross the area. The Trans-Québec No.1 ATV trail and the Trans-Québec No.93 snowmobile trail follow and sometimes cross the proposed tailings and reclaim water pipelines. The southern section of the tailings and reclaim water pipelines is located near the Mont-Powell mountain biking trails. Lake Dufault, downstream of the various watercourses flowing into the TMF sector and the tailings and reclaim water pipelines, is used as a source of drinking water for the City of Rouyn-Noranda. The municipal water intake is in the southern part of the lake, near the urban core. The lake is also used for recreational purposes, such as fishing (ice and summer), boating and swimming. Lake Duprat, downstream of the projected final effluent from the TMF and draining into Lake Dufault, is used as an annual vacation site (a few lakeside cottages). The lake is also used for recreational purposes such as fishing (ice and summer), boating via a public boat launch, and swimming. Hunting (small game and moose) and trapping are also common in this area. Duprat lake is identified as an alternative source of drinking water for the City of Rouyn-Noranda. However, it is not used as a source of drinking water by residents, although some may use it for other purposes. Finally, the wooded areas along the right-of-way of the tailings and reclaim water pipelines between chemin Millenback and rang Inmet are identified as popular areas for outdoor activities, hunting, motocross, and rifle shooting.

## ANTICIPATED IMPACTS

The potential for the use of the Horne 5 Project footprint and its immediate surroundings for the practice of traditional activities by First Nations is considered very low but cannot be ruled out. Falco recognizes the importance of the contribution of First Nations culture and ancestral knowledge, which is why it is important to maintain a dialogue and involve the three First Nations communities concerned in all phases of the project.

The development of the Horne 5 Project raises concerns about how its construction and operation activities will alter land use, particularly around the TMF and the tailings and reclaim water pipelines, which will become more integrated into an environment used for a variety of purposes.

A few rudimentary shelters are present in the TMF sector.

The presence of numerous snowmobile and ATV trails in the project area means that trail users will experience some inconvenience and may temporarily modify their routes during the project construction phase. In fact, the right-of-way for tailings and reclaim water pipelines, as well as the fresh water pipeline right-of-way runs alongside or crosses various provincial, regional, and local trails that will have to be redeveloped or relocated. The risk of accidents could also increase during the construction phase. It should be noted, however, that the location of these trails was taken into account when determining the infrastructure right-of-way, and that the project incorporates a number of improvements that will ultimately benefit these users.

The water quality of the main lakes and watercourses in the project area has been identified as an issue, since it is dependent on numerous land uses such as vacation, sports, and recreational activities, in addition to providing drinking water for residents of the City of Rouyn-Noranda via Dufault Lake. The main concerns for these activities stem from a fear of an accidental event, such as a pipeline leak or dike failure. It should be noted, however, that the design of the planned infrastructure incorporates numerous measures to protect against such risks.

Certain wildlife harvesting activities (sport fishing, moose and small game hunting, and trapping) could also be disrupted during project construction and operation, particularly around the TMF and the tailings and reclaim water pipelines. During construction, the disturbance caused by machinery and the presence of workers could cause terrestrial wildlife to move to quieter areas. During the hunting season, hunters and land users may have to modify their practices and relocate, especially during the construction period.

## MEASURES AND COMMITMENTS

Falco has made commitments and is planning several mitigation measures aimed at improving cohabitation with the First Nations concerned and land users in the areas of activity of the Horne 5 Project. These include:

### First Nations

- Falco recognizes the importance of First Nations, particularly Long Point First Nation (LPFN), Timiskaming First Nation (TFN) and Abitibiwinni First Nation (AFN);
- Falco is committed to continuing meaningful discussions and consultations with the communities affected by its activities, and to ensuring that First Nations peoples have equitable access to jobs, all with a view to reconciliation;
- Falco wishes to respond to the Truth and Reconciliation Commission's 92 call to action addressed to Canada's business community;
- continue dialogue with the LPFN, TFN and AFN communities to facilitate participation in the consultations and establish their desired level of involvement in the next stages of the project;
- Falco wishes to collaborate and participate in the socio-economic development of First Nations to distribute wealth more equitably within the territory;
- Falco hopes to benefit from the ancestral ecological knowledge of the First Nations in the development of the Horne 5 Project;
- Falco plans to develop an information program for First Nations on operations, environmental management, mitigation measures, and environmental impact monitoring programs;
- Falco plans to develop and implement a local and responsible purchasing policy to contribute to the vitality of the local, regional, and First Nations economy as well as to publicize this policy and also call on the responsibility of selected suppliers.

### Land users

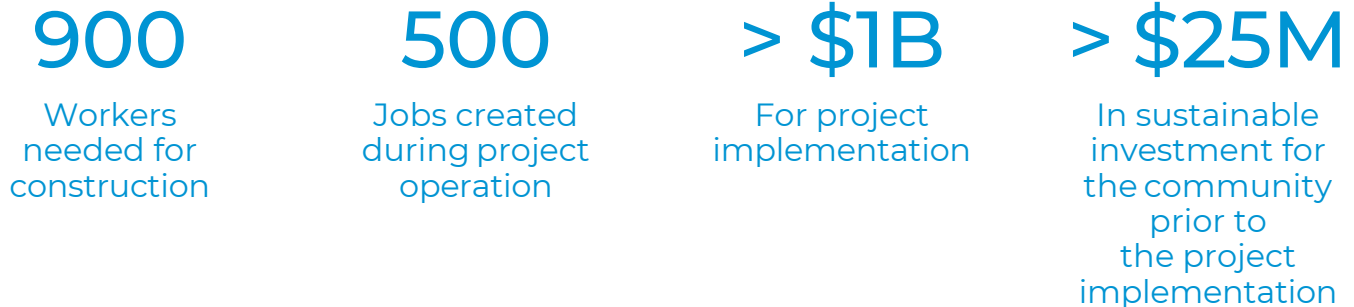
- Implement special safety measures, in collaboration with snowmobile and ATV clubs, near the tailings and reclaim water pipelines, as well as the fresh water pipeline, to ensure the safety of recreational trail users;
- establish a communication plan to inform the Rouyn-Noranda population, users, and municipal authorities of the start and progress of the work, as well as of the measures to be taken to protect the environment and limit inconvenience;
- sensitize workers to the practices and activities (hunting, fishing, hiking, gathering, etc.) of land users;
- negotiate agreements with leaseholders on public land who are affected by the project because of their proximity;
- provide for the replacement of numerous damaged culverts along the right-of-way of the tailings and reclaim water pipes, which will subsequently be used by users of the Trans-Québec No.93 snowmobile and Trans-Québec No.1 ATV trails;
- cover certain sections of the pipelines to mitigate impacts on land users;
- design the right-of-way of the tailings and reclaim water pipelines along existing linear infrastructure (recreational trails, transmission line rights-of-way, and roads), thereby avoiding further fragmentation of the territory and limiting impacts on wildlife and wildlife harvesting activities.

Several other measures to promote cohabitation are planned as part of the Horne 5 Project, including those for air quality, noise, vibration, and water protection.

# Economic and community benefits

## SOCIO-ECONOMIC BENEFITS

The project's local socio-economic benefits relate primarily to jobs, local suppliers and other investments in the community, both at the time of construction, operation and closure of the mine. Concrete actions have already been taken, and others will be in the future, to ensure that these benefits reach the community as much as possible.



In 2017, an assessment of the economic impacts associated with planned spending on this project was carried out. Most of the planned expenditures will be made with local suppliers, and the Abitibi-Témiscamingue region will be the main beneficiary of the economic benefits.

Over its entire lifecycle, the Horne 5 Project's investments will generate significant benefits for Québec, including:

Wealth creation of:

- **\$3,781.6M over 18 years** (construction and operation phases), or an average of \$210.1M per year

Tax and royalty revenues of:

- **\$941.4M** for the **Québec** government, or an average of \$52.3M per year
- **\$486.0M** for the **Canadian** government, or an average of \$27M per year

Regional added value in the order of:

- **\$2.2B**, or an annual contribution of \$121.4M to the **regional GDP**

<sup>1</sup> The *Institut de la Statistique du Québec* (ISQ) intersectoral model was used to assess the economic impact of the total of these expenditures for Québec. This assessment is based on the 2017 Horne 5 Project feasibility study. Although the costs and investments presented in the updated feasibility study in 2021 are slightly higher, the 2017 assessment gives a realistic order of magnitude of the anticipated economic impact.

## TANGIBLE BENEFITS

As part of the program to relocate the buildings and infrastructure currently located on the H5MC site, Falco has already invested \$25M in:



The construction of two multi-sport fields, including one of the finest synthetic fields in Québec



Expansion of the La Source-Polymétier complex in Rouyn-Noranda and the relocation of Manutex activities

### Quality of life and social cohesion

The quality of life of individuals and the social cohesion of a community involve a set of individual parameters (e.g., personal and family situation of individuals, lifestyle habits, access to services) and collective parameters (quality of the environment, quality of the living environment, etc.). The study to define a baseline of social components, carried out by WSP in 2021, can be consulted on the Horne 5 Project portal.

The results of a survey of 659 Rouyn-Noranda residents conducted as part of this study indicate that:

- 90% say Rouyn-Noranda is a city close to nature
- 94% are satisfied or very satisfied with their quality of life
- 95% perceive Rouyn-Noranda as an ideal place to raise a family
- 92% have a positive perception of their physical health
- 95% have a positive perception of their mental health

## LOCAL SERVICES

Various community services are currently under pressure in the Abitibi-Témiscamingue region, notably the shortage of daycare places and the lack of space in schools.

On the one hand, we see the development of the mining sector as adding to the effervescence and clientele that is conducive to maintaining and adding services to the population. On the other hand, this sector also contributes to their current precariousness due to the demand it generates.

Other concerns are associated with certain impacts of mining projects on social cohesion, notably by accentuating the income gap between different groups of individuals. In addition, other social problems may be experienced by individuals (violence, drug addiction, etc.). Some of these concerns are more often raised in the context of fly-in / fly-out, a practice that Falco did not adopt for the Horne 5 Project.

## CLOSURE

The cessation of mining operations will be accompanied by an inevitable slowdown in the project's positive socio-economic benefits for workers, suppliers, and others in the community benefiting directly or indirectly from the project.

Several of the stakeholders consulted raised the same issues as those encountered by other mining projects. Falco is planning measures to mitigate the effects of closure and ensure the sustainability of the community benefits generated by the mine.

## ISSUES ALREADY PRESENT IN THE COMMUNITY

The Rouyn-Noranda community is currently facing challenges in terms of access to housing, community services, and workforce. Since these issues and solutions involve all major employers and community players, the project represents an opportunity to participate in local initiatives or to encourage new synergies to better address them.

## Labour shortage

The city of Rouyn-Noranda and the Abitibi-Témiscamingue region are no exception to the shortage of skilled and unskilled labour and to the difficulties of recruiting, replacing, and integrating workers which is also present in many regions of Québec.

Many of the community stakeholders we met emphasized that Abitibi-Témiscamingue is a prosperous region, due in part to the presence of the mining industry and its direct and indirect benefits. According to OAT (Observatoire de l'Abitibi-Témiscamingue) data for 2016, Rouyn-Noranda is home to more than 2,400 workers in the mining, energy, and quarrying sector. More than 10% of the active population aged 15 and over work in this sector. The mining industry, its workers and their families ensure the vitality of the region's businesses. More generally, 85% of survey respondents agree that Rouyn-Noranda is a dynamic place to do business.

*The stakeholders and companies we interviewed pointed out that, when it comes to labour, the mining sector has an advantage over others, such as service businesses, community services and certain industries, because of the wages paid and the general conditions offered.*

## Valuing education

According to the social reference survey, Rouyn-Noranda's population aged 25 to 64 without a high school diploma is 16.1%, slightly below the Québec average of 13.2%.

According to education stakeholders, two phenomena are particularly marked in the area: a higher number of students not completing high school, and a marked decline in the number of college and professional training.

*The availability of jobs in the region may encourage the hiring of individuals with incomplete schooling or encourage them to drop out of school.*

## Housing shortage

Since 2005, Rouyn-Noranda has been facing a housing crisis, with the vacancy rate below the critical 3% threshold. This is having an upward impact on property prices and rents. The dynamism of the mining sector is contributing to the housing shortage in the area by putting pressure on the rental and real estate markets.

*This shortage affects individuals with low-income, reduced mobility, or loss of autonomy even more, since there is a shortage of social housing and affordable housing in the area.*

Lack of housing is also an obstacle to the attraction and integration of new workers in the region, especially those with families.

## MEASURES AND COMMITMENTS

To ensure that the Horne 5 Project integrates with the host community, Falco has set out several measures and commitments. These reflect the expectations and concerns raised in consultations held over the past few years. They include:

### Maximizing local economic benefits from the project

- Develop and implement a local and responsible purchasing policy to contribute to the vitality of the local, regional, and First Nations economy. Publicize this policy and the responsibility of selected suppliers.
- Prioritize local hiring and offer advantageous employment conditions to employees to give them and their families better prospects for the future.
- Develop and implement a donation and sponsorship policy to actively contribute to community life and regional development.

### Maintain quality of life and social cohesion

- Implement and monitor all Horne 5 Project mitigation measures to improve cohabitation (e.g., noise, vibration, air emissions, traffic, etc.).
- Implement a program to raise awareness among employees, contractors, and workers of the importance of complying with mitigation measures promoting better cohabitation.

- Enhance the quality of community infrastructure as part of the H5MC building relocation program through new and improved construction (expansion of La Source-Polymétier complex and St-Luc multisport fields).
- Carry out construction work, giving priority to weekdays (Monday to Friday) and daytime (between 7 AM and 7 PM).
- Subject Falco workers to an anti-discrimination, anti-racism, and anti-bullying human resources policy, as well as a policy of good community behaviour.

### Maintain communications on the project and interactions with stakeholders

- Establishment in 2019 of an advisory committee made up of stakeholders recognized in their respective communities and with diverse backgrounds.
- Maintain a liaison office in Rouyn-Noranda as an information point for the population, to welcome citizens directly and gather any concerns, comments, or suggestions they may have.
- Plan and implement transparent information and consultation activities and resources throughout the project to reach the entire population.
- Set up a monitoring committee to keep a watchful eye on the project's impacts and drawbacks.



### **Carry out the project in a context of labour shortage**

- Establish and apply a hiring policy that promotes school retention, local and First Nations hiring, diversity, inclusion, people with reduced mobility, and gender parity. Publicize this policy in the community.
- Prepare and disclose a detailed employability plan for the project, specifying the number of jobs by specialty, as well as the qualifications and training required.
- Specify the type of labour required by local, regional, and First Nations contractors.
- Involve local workforce stakeholders as early as possible.
- Focus as much as possible on developing new technologies and empowering mining operations with local partners to alleviate pressures on the local workforce.

### **Enhance the value of training for access to jobs**

- Prepare and disclose a detailed employability plan for the project, specifying the number of jobs by specialty and the qualifications and training required.
- Involve local training stakeholders as early as possible.
- Recognize the value of staying in school by establishing hiring criteria (e.g., minimum age, level of training), offering internship programs, organizing training courses, or scholarships (one or more).
- Offer opportunities associated with the potential and interests of its employees and future employees.

### **Implement the project while taking the housing shortage into account**

- Collaborate with local housing stakeholders to monitor the situation, communicate anticipated needs, and explore avenues of intervention.
- Prioritize local hiring to minimize the project's impact on housing (no massive influx of employees and new families from outside the region, no fly-in/fly-out).
- Make contractors and suppliers aware of the housing situation before awarding contracts (e.g., commit to not converting affordable housing into luxury studios for workers, to avoid evicting modest-income families and amplifying the scarcity of affordable housing).

### **Consider issues already present in the community**

- Participate in existing community initiatives (city and other stakeholders) on cross-cutting issues in the community (e.g., housing accessibility, access to daycare spaces).
- Intervene with other major employers and other community groups involved in the search for solutions to cross-disciplinary issues when a strategy is not already in place to address them.

### **Ensure a successful social transition following the cessation of mining operations**

- From the outset of the project, in partnership with the community, draw up a social transition plan to prevent and minimize the effects of the end of operations. A first version of the plan will be drawn up before the start of commercial operations, and it will be revised regularly during the life of the mine.





**HEAD OFFICE**

1100, avenue des Canadiens de Montréal  
Suite 300, Montréal, QC H3B 2S2  
514.905.3162

**REGIONAL OFFICE**

230, avenue Marcel-Baril  
Rouyn-Noranda, QC J9X 7C1  
819.917.3875

[info@falcores.com](mailto:info@falcores.com)  
[falcores.com](http://falcores.com)