50 CAREERS

COMITÉ SECTORIEL DE L'INDUSTRIE DES MAIN-D'ŒUVRE MINES

GUIDE TO CAREERS IN THE MINING INDUSTRY

cfp Baie-James
CENTRE DE FORMATION PROFESSIONNELLE DE LA BAIE-JAMES

CFP CENTRE DE FORMATION PROFESSIONNELLE DE L'ESTUAIRE

Centre de formation professionnelle Val-d'Or

MINE

CANADIAN MALARTIC

L'une des plus **GRANDES MINES D'OR À CIEL OUVERT** au Canada

La mine Canadian Malartic est gérée et exploitée par le Partenariat Canadian Malartic détenu à parts égales par Yamana Gold Inc. et Mines Agnico Eagle Limitée. Avec les fosses Canadian Malartic et Barnat, nous sommes l'une des plus grandes mines d'or à ciel ouvert au Canada.

Nos activités se poursuivront jusqu'en 2029.

ON RECRUTE

NOUS SOMMES À LA RECHERCHE DE TALENTS!

Informez vous ou postulez au :
CANADIANMALARTIC.COM/FR/EMPLOIS

PARTENARIAT CANADIAN MALARTIC

SUIVEZ-NOUS!

eldorado

RECRUTE

10 RAISONS DE TRAVAILLER CHEZ NOUS!

1. Minière en constante évolution
2. Proximité de la ville de Val-d'Or
3. Environnement sécuritaire
4. Avantages sociaux compétitifs
5. Horaires variables
6. Emplois stimulants
7. Implications dans la communauté
8. Opportunités de développement
9. Développement durable au cœur de nos actions
10. Et surtout... Plaisir au travail!

POUR VOIR NOS POSTES DISPONIBLES
eldoradogoldquebec.com/(section carrières)

eldorado gold
Québec

ArcelorMittal

Bâtissez votre avenir avec nous!

- Collaborez avec des équipes passionnées dans un environnement à couper le souffle
- Faites partie d'une organisation engagée dans sa communauté
- Profitez d'une rémunération concurrentielle pour réaliser vos rêves

Venez faire carrière dans un territoire à la grandeur de vos aspirations!

Pour en savoir plus: emploidegeant.com

Accroître les **compétences**, assurer la **relève**, **performer.**

Institut national des mines
Québec

FONDERIE HORNE

UNE COMPAGNIE GLENCORE

TOI AUSSI, DEVIENS UN *allié*

La Fonderie Horne offre des **salaires compétitifs** et d'**excellents avantages**, et ce, à deux pas de chez toi!

JOINS NOTRE ÉQUIPE!

- Personnel d'opération
- Personnel d'entretien
- Personnel technique
- Gestionnaires
- Ingénieurs

Envoie-nous ta candidature maintenant!

fonderiehorne.ca
section carrière

CFP DE L'ESTUAIRE

UNE RÉFÉRENCE EN MINES ET FORÊTS AU QUÉBEC

La formation professionnelle, un choix gagnant et payant!

- Une formation adaptée au marché du travail
- Des équipements à la fine pointe de la technologie
- Des métiers menant à des salaires très concurrentiels
- Possibilité de rémunération par le Centre local d'emploi pendant la formation
- Aide à la pension pour les élèves de l'extérieur

Chez nous, plusieurs métiers en demande dans le secteur minier sont à ta portée grâce aux programmes :

- Conduite de machinerie lourde
- Comptabilité
- Cuisine
- Électricité
- Électromécanique de systèmes automatisés
- Entretien général d'immeubles
- Forage au diamant
- Mécanique industrielle de construction et d'entretien
- Secrétariat
- Techniques d'usinage

Certains programmes offrent des entrées plusieurs fois par année.
Contacte-nous pour connaître les prochaines cohortes.

INFORMATIONS ET INSCRIPTION

au 418 587-4735, poste 6306
visitez notre site Web : cfpestuaire.ca

Centre de services scolaire de l'Estuaire
Québec

UN EMPLOI DANS LES MINES T'INTÉRESSE?

FORAGE AU DIAMANT

- 600 h sur 4 mois
- Modules miniers 1, 2, 3, 4, 5, 6 et 7 donnés pendant la formation
- Formation pratique en surface et sous-terre

FORAGE ET DYNAMITAGE

- 900 h sur 6 mois
- Formation pratique donnée à la mine Canadian Malartic, l'une des plus grandes mines d'or au Canada

EXTRACTION DE MINERAI

- 930 h sur 6 mois
- Modules miniers 1 à 10 donnés pendant la formation

TRAITEMENT DU MINERAI

- 900 h sur 10 mois
- Formation dans l'usine-école du CFP Val-d'Or, unique au Canada

NOUS REJOINDRE

cfpvaldor.qc.ca
819 825-6366
cfpvd@csob.qc.ca

Centre de formation PROFESSIONNELLE VAL-D'OR

Centre de services scolaire de l'Or-et-des-Bois
Québec

TABLE OF CONTENTS

INTRODUCTION

The mining industry: A wealth of opportunities 14
Active mines and mining projects under development 18

ARTICLES BY PARTNERS

Technology for training at CFP de l'Estuaire
By Centre de formation professionnelle de l'Estuaire 22

Unique training connected to mining operations: An ideal formula for integrating students into the job market
By Centre de formation professionnelle de la Baie-James 25

Mining training: Practical and innovative
By Centre de formation professionnelle Val-d'Or 27

50 CAREERS IN THE MINING INDUSTRY

Vocational level 38

College level 78

University level 106

Other training requirements 142

Photo credit: Mathieu Dupuis, Eldorado Gold Québec

ARTICLES BY CONTRIBUTORS

Modular training for mining workers: OHS training for workers in the sector
By Québec Mining Association 154

Mining safety – A matter of legislation, training and innovation
By l'Association paritaire pour la santé et la sécurité du travail du secteur minier 157

Making a choice for your future
By the Québec Mineral Exploration Association 160

Québec mining contractors: Essential partners for local companies
By l'Association des entrepreneurs miniers du Québec 163

An increasingly educated workforce and the skills needed for a competitive, greener mining sector!
By Institut national des mines du Québec 166

Useful mining industry vocabulary 172

Acronyms 174

Index of the 50 careers presented in the guide 176

Directory of educational institutions by administrative region 178

Directory of the main organizations and resources in the mining sector 188

Partners and advertisers 190

Production team and acknowledgements 191

Participating companies and featured employees 192

CFP CENTRE DE FORMATION PROFESSIONNELLE DE L'ESTUAIRE

Centre de formation

cfp Baie-James CENTRE DE FORMATION PROFESSIONNELLE DE LA BAIE-JAMES

DÉTERMINÉ.E.S À DÉCARBONER

SOIS AU CŒUR DE LA DÉCARBONATION DE L'INDUSTRIE DE L'ACIER.

Le concentré de fer produit au site minier du Lac Bloom se classe parmi les plus purs au monde.

Nous sommes fiers de réduire significativement les émissions de GES dans l'industrie de l'acier grâce à l'expertise que nous avons développée sur la Côte-Nord.

NOUS EMBAUCHONS DU TALENT LOCAL!

Envie de joindre les rangs d'une équipe visionnaire?

Postule maintenant au **MFQ400.CA**

MINERAI DE FER QUÉBEC

UNE FILIALE DE
CHAMPION IRON

The mining industry: A wealth of opportunities

By Audrey Dumont, Communications Advisor and Project Manager, Comité sectoriel de main-d'œuvre de l'industrie des mines

Today, the Québec mining industry represents more than 100,000 jobs and some 100 careers, providing opportunities for professional advancement while contributing to the ongoing development of one of the province's greatest economic assets. This sector of endless opportunities holds great potential for the future and for future generations. In addition to being a major producer of gold, iron and nickel, Québec is the only producer of niobium and titanium dioxide in Canada. The soil also contains many other metallic and non-metallic minerals, such as lithium, graphite, copper, zinc, diamond, cobalt, salt and silver.

When we talk about mineral development in Québec, we're referring to the different phases in the life of a mine. Of course, no mining facility is built without first carrying out conclusive **prospecting** on site. This begins with the exploration phase, where we prospect the soil for high-content resources. Then, if the feasibility level is satisfactory, we move on to the construction phase to equip the mine with the facilities required for the next phase, mine operation. Lastly, mineral development ends with the closure and restoration phase, which is the reclamation of the mined area. At each phase in the life of a mine, a number of professional bodies, employed by the mine or by mining contractors, work in the field and in the offices to ensure that the various operations run smoothly.

There are two types of mines: open-pit and underground. The choice of mining method depends on the depth and layout of the deposit, among other things. In an open-pit mine, a spiral pit is dug and benches two to fifteen metres high are formed. They are blasted to extract the ore, which is then loaded by backhoes and transported to the **concentrator** in huge trucks that can hold up to 400 tonnes of ore. An underground mine, on the other hand, looks like an anthill. It's a huge network of vertical and horizontal tunnels leading to the ore deposit. Once extracted, the ore is brought to the surface via the shaft and transported to the concentrator.

Photo credit: Canadian Malartic Partnership - Mathieu Dupuis

What are these minerals used for?

Did you know that most of the objects around us are made with minerals from the mining industry? Whether it's the gold in smartphones, the nickel in wind turbines or used in medical equipment, the salt used to de-ice roads or the lithium and graphite used in battery design, metals and minerals play a crucial role in our daily lives.

A top employer

Ask anyone in the mining industry what's most important, and they will undoubtedly tell you it's the health and safety of workers. Companies make every effort to ensure a healthy and safe work environment. They also offer numerous health and safety training courses tailored to the job, on hiring and on a regular basis thereafter. What's more, the vast majority of mining companies have a department dedicated solely to occupational health and safety. Mining companies are also sensitive to the inclusion of Indigenous people in the workforce. Agreements guaranteeing royalties to communities are signed for mining projects located in regions where Indigenous peoples live.

Mining companies are also committed to the environment. A number of initiatives and programs have been set up to make their activities transparent and reduce their environmental impact. Canadian and Québec mining companies are recognized worldwide for their sound environmental and social practices.

At the heart of a technological transition

The mining industry is in the midst of a technological transition, and the resulting innovations are revolutionizing the sector. For example, drones are being used in mining operations to visualize mining facilities located in environments where access is difficult or potentially risky. This is a significant achievement in terms of health and safety. The underground LTE network makes it possible to transmit data in real time from underground passages to the surface, despite the physical constraints of the environment. Thanks to automation, some mining equipment can also be operated from several kilometres away.

Photo credit: Québec Iron Ore

These few examples of innovations are just the beginning of the technological advances that are helping to improve safety and optimize mine operations.

Photo credit: Procon

The work environment

Companies set up different work schedules to make their employees' lives easier. These schedules are expressed by the number of days worked followed by the number of days off. The most common are 5-2 or 4-3, but there are also 7-7, 14-14 and 21-21 schedules. The type of schedule depends on a number of factors, including the location of the mine.

Mining in Québec takes place mainly in three administrative regions: Abitibi-Témiscamingue, Côte-Nord and Nord-du-Québec. Some mining companies located far from major centres offer **commuting** services by plane or car, also known as *fly-in/fly-out* and *drive-in/drive-out*. This type of travel is associated with long-term, rotating schedules where employees remain in the workplace for a specified period of time. Companies provide them with essential services and recreational facilities, such as fitness centres. They also organize activities at mining sites, such as family days or theme dinners.

Over 100 thriving professions

There are over 100 careers in mining. Long gone are the days of working underground with pickaxes. Yet some people may still not have a clear idea of the world of mining. The purpose of this guide is to demystify 50 careers in demand in the mining industry.

First, these careers are classified into four broad categories according to the academic level required: careers requiring vocational training (page 38), college training (page 78), university training (page 106) and other training (page 142). In addition, each career description is accompanied by a list of the training programs usually required and the complete list of educational institutions that offer these programs. For example, there are two vocational training programs for heavy equipment operators: the Diploma of Vocational Studies in heavy equipment operation for forestry road systems and the Diploma of Vocational Studies in heavy equipment operation, which are offered at eight schools in Québec. To learn more, simply refer to the careers page for a list of numbers associated with the program and locate them in the directory of schools listed by region on page 178.

IMPORTANT: The lists of schools offering various training programs were up to date in July 2022. Some institutions may have withdrawn programs or added new ones. In addition, some programs may have different names depending on the school offering them.

This edition of the *Guide to Careers in the Mining Industry* includes a new "Interview" section for each of the 50 careers, where real employees from the sector talk about their jobs, their work environment and their ambitions. The testimonials of these 50 people, each more passionate than the last, give you a more concrete idea of the industry's professions.

The *Guide to Careers in the Mining Industry* also provides a wealth of interesting and useful information about the sector, such as a map of the main mines in Québec and numerous articles by a variety of industry players that paint a current picture of a growing industry that's always on the lookout for best practices.

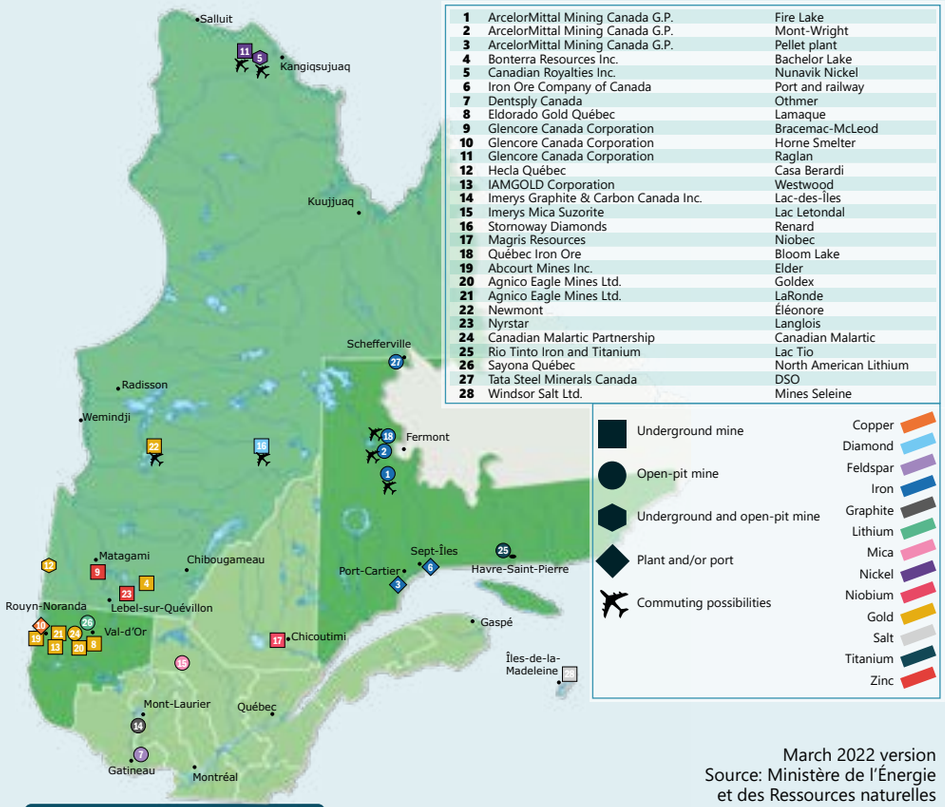
Whether you're looking for manual or intellectual work, underground, in a factory or on the surface, you'll find the ideal job for you.

Happy reading!

Photo credit: Mathieu Dupuis, Eldorado Gold Québec

Active mines and mining projects under development

Map of active mines in Québec



1	ArcelorMittal Mining Canada G.P.	Fire Lake
2	ArcelorMittal Mining Canada G.P.	Mont-Wright
3	ArcelorMittal Mining Canada G.P.	Pellet plant
4	Bonterra Resources Inc.	Bachelor Lake
5	Canadian Royalties Inc.	Nunavik Nickel
6	Iron Ore Company of Canada	Port and railway
7	Dentsply Canada	Othmer
8	Eldorado Gold Québec	Lamaque
9	Glencore Canada Corporation	Bracemac-McLeod
10	Glencore Canada Corporation	Horne Smelter
11	Glencore Canada Corporation	Raglan
12	Hecla Québec	Casa Berardi
13	IAMGOLD Corporation	Westwood
14	Imerys Graphite & Carbon Canada Inc.	Lac-des-Îles
15	Imerys Mica Suzorite	Lac Letondal
16	Stornoway Diamonds	Renard
17	Magris Resources	Niobec
18	Québec Iron Ore	Bloom Lake
19	Abcourt Mines Inc.	Elder
20	Agnico Eagle Mines Ltd.	Goldex
21	Agnico Eagle Mines Ltd.	LaRonde
22	Newmont	Éléonore
23	Nyrstar	Langlois
24	Canadian Malartic Partnership	Canadian Malartic
25	Rio Tinto Iron and Titanium	Lac Tio
26	Sayona Québec	North American Lithium
27	Tata Steel Minerals Canada	DSO
28	Windsor Salt Ltd.	Mines Seleine

March 2022 version
Source: Ministère de l'Énergie et des Ressources naturelles

List of mining projects

Abitibi-Témiscamingue	**Lithium**	Sayona Québec	Authier
Abitibi-Témiscamingue	**Nickel**	Magneto Investments Limited Partnership	Dumont Nickel
Abitibi-Témiscamingue	**Gold**	Bonterra Resources	Barry
Abitibi-Témiscamingue	**Gold**	Monarch Mining Corporation	Beaufor
Abitibi-Témiscamingue	**Gold**	Monarch Mining Corporation	Croinor Gold
Abitibi-Témiscamingue	**Gold**	Abcourt Mines	Sleeping Giant
Abitibi-Témiscamingue	**Gold**	Granada Gold Mine	Granada
Abitibi-Témiscamingue	**Gold**	Falco Resources	Horne 5
Abitibi-Témiscamingue	**Gold**	Wesdome Gold Mines	Kiena
Abitibi-Témiscamingue	**Gold**	O3 Mining	Marban
Abitibi-Témiscamingue	**Gold**	Radisson Mining Resources	O'Brien
Abitibi-Témiscamingue	**Gold**	Probe Metals	Val-d'Or Est
Abitibi-Témiscamingue	**Gold**	Yamana Gold Québec	Wasamac
Abitibi-Témiscamingue	**Zinc**	Abcourt Mines	Abcourt-Barvue
Côte-Nord	**Iron**	Labrador Iron Mines Holdings	Houston (Malcolm Pit)
Côte-Nord	**Rare earths**	SOQUEM	Kwyjibo
Lanaudière	**Graphite**	Nouveau Monde Graphite	Matawinie
Nord-du-Québec	**Iron**	BlackRock Metals	BlackRock
Nord-du-Québec	**Iron**	Oceanic Iron Ore Corp.	Hopes Advance
Nord-du-Québec	**Iron**	Voyager Metals	Mont Sorcier
Nord-du-Québec	**Lithium**	Allkem	James Bay Lithium Mine
Nord-du-Québec	**Lithium**	Sayona Nord	Moblan
Nord-du-Québec	**Lithium**	Critical Elements Lithium Corporation	Rose
Nord-du-Québec	**Lithium**	Nemaska Lithium	Whabouchi
Nord-du-Québec	**Gold**	Maple Gold Mines	Douay
Nord-du-Québec	**Gold**	Fury Gold Mines	Eau Claire
Nord-du-Québec	**Gold**	Wallbridge Mining Company	Fenelon
Nord-du-Québec	**Gold**	Osisko Mining	Lac Windfall
Nord-du-Québec	**Gold**	Troilus Gold Corp.	Troilus
Nord-du-Québec	**Rare earths**	Torngat Metals	Strange Lake/B-Zone
Nord-du-Québec	**Zinc**	Yorbeau Resources	Lac Scott
Outaouais	**Graphite**	Lomiko Metals	La Loutre Graphite
Saguenay–Lac-Saint-Jean	**Apatite**	Arianne Phosphate	Lac à Paul

Underground mine

Lamaque Mine – Eldorado Gold Québec

Photo credit: Mathieu Dupuis, Eldorado Gold Québec

Technology for training at CFP de l'Estuaire

By Centre de formation professionnelle de l'Estuaire

Located at the gateway to the Côte-Nord region, Centre de formation professionnelle (CFP) de l'Estuaire offers 10 training programs leading to the careers most in demand in the mining industry. Our educational institution has long been recognized as a benchmark in the forestry industry and has also developed expertise in the mining sector thanks in particular to its heavy equipment operation and diamond drilling programs. But what sets CFP de l'Estuaire apart is its use of technology to enhance training in order to keep up with the realities of the job market and train workers who can respond quickly to industry needs in an ever-changing world.

In recent years, with financial assistance from the Workforce Skills Development and Recognition Fund, CFP de l'Estuaire completed a project to acquire new state-of-the-art equipment for its heavy equipment operation program. Valued at nearly $1.2 million, the project included the acquisition of a **grader** and a wheel loader with electrohydraulic joystick. This machinery keeps pace with the industry's needs for heavy equipment operators.

In addition to these two pieces of equipment, which round out its already well-stocked fleet of machinery, the educational institution has also added three dynamic simulation platforms to its teaching materials, as well as simulation software for excavators, graders, articulated trucks, articulated wheel loaders and **bulldozers**. "These new simulators bring our fleet up to five, and we now have software for all modules of the heavy equipment operator program," explains CFP de l'Estuaire coordinator Denis Boulianne, pointing out that all software is transferable from one simulation platform to another.

Highly safe, stress-free training

By using simulators and machinery in a combined formula, CFP de l'Estuaire aims to create a learning environment where students can quickly assimilate the complexity of different operations, while helping them build muscle memory and confidence to reduce their stress level. "Simulators enable us to develop programmable learning paths for fine-tuned operations, with a focus on precision and quality," explains educational consultant Marjorie Lebreux. It's a safe environment for learning basic handling skills, but is also used for development and assessment. "Simulators are integrated into the theoretical portion of training from the very start. Students are scheduled to work on this equipment every day, and teachers say this better prepares them for work in the field." According to Ms. Lebreux, such equipment also enables students who have more difficulty with one or more modules to train safely and receive personalized support.

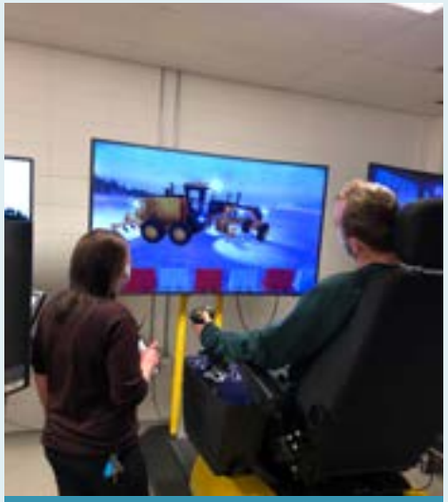


Photo credit: CFP de l'Estuaire

The networked environment also provides an opportunity for students to learn a very important part of operating heavy equipment, namely teamwork. Technology makes it possible to run multiple simulators in the same virtual environment, enabling students to learn how to operate a machine in collaboration with others. That way, they train to be as productive as possible without risk, fuel expenses or equipment breakdowns.

Photo credit: CFP de l'Estuaire

A mining simulator

CFP de l'Estuaire is completing the installation of a sixth mining simulator, which is by no means the least as it is from CAE, a high-tech company specializing in digital immersion and recognized for its expertise in training operators in the aeronautical, maritime and military fields, and even for power plants. Housed in a container, the mining simulator is a true state-of-the-art training room with a 360-degree screen that mimics the different conditions in a mine.

Industry-based training schedules

CFP de l'Estuaire is a pioneer in the field of dynamic simulators that give students a feel for the machines, and is also known for its training schedules. It is the only facility of its kind to accommodate cohorts of heavy equipment operators 12 months of the year and provides on-the-job training on a schedule based on that of job sites and the industry. Students work 12-hour shifts, alternating seven days on and seven days off. This schedule also applies to the diamond drilling program offered in Forestville, with three cohorts per year. CFP de l'Estuaire, which is constantly on the lookout for new technologies, hopes to introduce simulator-based training into this program specializing in **prospecting** core drilling for the mining industry. To this end, it is stepping up contacts with potential suppliers.

Photo credit: CFP de l'Estuaire

Training tailored to Indigenous communities

CFP de l'Estuaire has been very active throughout the Côte-Nord region and has developed expertise over the years to meet the needs of Indigenous communities, offering them training tailored to their reality. To facilitate their access to training, it has even set up a daily transportation service linking the main towns of the territory of Centre de services scolaire de l'Estuaire and the Innu community of Pessamit. It also has the resources and expertise to provide tailored training directly in communities.

With a focus on the values of commitment, respect and user-friendliness, CFP de l'Estuaire has made it its mission to support students throughout their personal, professional and social development and is committed to providing specialized and innovative education in all the sectors offered, in a dynamic environment that reflects the realities of the job market. To accomplish its mission, it has a dedicated, student-focused team with diverse expertise.

Unique training connected to mining operations: An ideal formula for integrating students into the job market

By Sonia Caron, Director, Centre de formation professionnelle de la Baie-James, in collaboration with Nichèle Compartino, Communications Advisor

The proximity of CFP de la Baie-James to mining sector partners operating projects in the Nord-du-Québec region enables the training centre to offer a unique formula adapted to the industry's needs. On-the-job learning provides students with a much deeper understanding of the profession and the responsibilities that await when they obtain their Diploma of Vocational Studies (DVS) in the ore mining program.

The students' presence at mining sites gives them a full, hands-on experience of what life is like "in the mines" as they become part of the various work teams. This form of learning integrated into mining operations helps them quickly confirm their career choice and find out whether the host company's culture is what they're looking for in a workplace.

In just six months, students can earn their diploma in ore mining on a rotating schedule. What's a rotating schedule? It's a way of organizing work that involves several days of continuous work followed by several days of rest. For example, at CFP de la Baie-James, rotating schedules are organized according to those of the partner mining companies, thus strengthening the students' sense of being truly part of the work teams. What's more, when students are in training at a mine site, accommodation, meals and **commuting** are sometimes taken care of by the partner mining company. It's a great way to study, work and live in James Bay.

Photo credit: CFP de la Baie-James

Photo credit: CFP de la Baie-James

THE USE OF COMMUTING

A way to cope with labour shortages in the mining sector

The growing practice of **commuting** by plane or by road, commonly known as *fly-in, fly-out* and *drive-in, drive-out*, involves transporting workers to mining sites, which are generally a long way from urban areas, for a period of one to a few weeks, at the employer's expense. At CFP de la Baie-James, students receive the same support from mining partners, who are their potential future employers. That way, they can enjoy the nature, wide-open spaces, and pace and quality of life that James Bay has to offer.

Commuting also means a rotating work schedule. After a period of intense work and study, rotating shifts enable our students to enjoy a long period of rest, giving them the opportunity to spend time with their families and carry out personal projects in parallel with their studies at CFP de la Baie-James. Rotating schedules vary from cohort to cohort, depending on the mining partner, but typically include 7, 10 or 14 days of learning and about the equivalent in days of rest.

At CFP de la Baie-James, two programs are offered in partnership with companies in the mining sector, such as Chibougamau Drilling, Newmont, Stornoway Diamonds, Osisko Mining Inc., CMAC-Thyssen Mining Group, Hecla Québec and more. The six-month model offered by CFP de la Baie-James is well-suited to the company's needs, culture, values and procedures and helps students find a job at the end of their training and build a network of contacts in the mining sector. Placement rates vary by mining company and can be as high as 100% for some cohorts!

In short, for those interested in the mining sector and the incredible quality of life in James Bay, the DVS program in ore mining offered at CFP de la Baie-James, combined with all the DVS programs in the mining sector, is an excellent launch pad for a stimulating career and life in the Nord-du-Québec region.

Mining training: Practical and innovative

By Centre de formation professionnelle Val-d'Or

Located in the Abitibi-Témiscamingue region, 500 km north of Montréal, Centre de formation professionnelle Val-d'Or (CFP Val-d'Or) trains nearly 200 students each year in one of four mining-related programs leading to a Diploma of Vocational Studies: diamond drilling, drilling and blasting, ore mining and ore processing machine operation.

Having a diploma is important for working in the mining industry. "Getting a qualification and a diploma is key," says Jason Yergeau, director of CFP Val-d'Or. "Vocational training graduates have acquired knowledge, interpersonal skills and know-how. They're competent workers, ready to enter the job market."

Major, essential partnerships

Training future workers in mining programs takes strong partnerships with various companies in the mining industry. CFP Val-d'Or works with Abitibi-Témiscamingue mines to offer mining programs. Students can opt for the work/study model. After spending a few weeks at the Centre at the start of their training, they then learn directly in the field in a real work environment. In diamond drilling, for example, partnerships have been established with companies so that students can get to know the realities of the field in the first few weeks.

Photo credit: CFP Val-d'Or

The hands-on component is offered in collaboration with Agnico Eagle's Goldex mine.

This is where all students enrolled in ore mining do their pre-practical training. It allows them to quickly grasp the concepts explained in class, and teachers to tailor their courses to the group's learning needs.

A number of operating mines enable the Centre to provide ore mining training. These include the LZ5 mine at Agnico Eagle's LaRonde mining complex, Monarch Mining Corporation's Beaufor mine and Eldorado Gold Québec's Lamaque mine. Learning in a real-life work environment helps students integrate into the job market. The placement rate for students at the end of training is excellent, as the industry badly needs new workers.

Drilling and blasting training is also provided in real-life work settings at the Canadian Malartic mine. This is one of the largest open-pit gold mines in operation in North America.

Collaboration with the mine goes beyond providing a teaching area. The blasting areas designated by Canadian Malartic are used for production. That way, students learn and practise right in the middle of the action while contributing to the mine's development.

CFP Val-d'Or boasts the only plant-training facility of its kind in Canada for the ore processing machine operation program. It means students only have to take a few steps from their classroom to the plant to see how the concepts they have learned are applied in real life. Since plant work is done only on the surface, this is the only one of the Centre's four programs that accepts students age 16 and over.

Mining expertise

The national mining centre (Centre national des mines) at CFP Val-d'Or is recognized both in Québec and internationally for the quality of its training programs and for its expertise. "The entire team at Centre national des mines, including instructors, teachers and administrators, is focused on helping students succeed by providing training that meets the highest industry standards," explains Jason Yergeau.

Photo credit: CFP Val-d'Or

Centre national des mines at CFP Val-d'Or is also in charge of modular training for mine workers (*formation modulaire du travailleur minier*, or FMTM) in Québec. This training is mandatory for all those who work in underground mines in Québec.

The allure of Val-d'Or

According to Jason Yergeau, it's easy to settle in Val-d'Or because of the quality of life it offers, along with the wide range of cultural, sporting and family-oriented activities. "Val-d'Or is an excellent choice for training, but also for settling down," he says. "The fact that the mines in the Abitibi-Témiscamingue region are not too far away makes it easy for workers and their families to be both close to services and the workplace."

Student residences for students from outside the region are located on the same site as the training centre.

The city of Val-d'Or and its mining-related training programs are also attractive to foreign students, explains Mathieu Ouellet, coordinator at CFP Val-d'Or: "A lot of students from Africa and France choose Val-d'Or because of the quality of our training, our mining expertise and the fact that it's easy to become part of the community. These are important and reassuring factors for anyone coming to study in Québec." Quality and expertise are the main focus of teaching for all training programs at CFP Val-d'Or. "It's extremely important for the Centre to train qualified workers who are independent and ready to work as soon as they graduate," says Mr. Yergeau.

The installation of the Centre's first mining simulator in September 2017 is part of this vision. "The simulator complements the modular training for mine workers (FMTM)," explains the director. "In addition to training workers on conventional and mechanized equipment, we can now add training on automated equipment already in use at Québec mines."

Looking to the future

Technological tools have been developed to enhance the content of mining training courses. A dedicated team of developers, audiovisual technicians and modellers are working to create digital applications.

For example, in hands-on ore mining training, students use these new technological tools one day a week. In rotating workshops, they practise operating equipment with mining simulators, inspect virtual reality vehicles and workplaces, and participate in a video game simulation of underground mine production, development and services.

Another example of technological tools used in training is the digitization of existing work environments. Through a Google Street View with interactive capabilities, students can virtually visit ore processing plants and mine shafts or maneuver different vehicles or equipment used in their hands-on training.

All these tools help students better understand and prepare for the realities of mining. In addition, a number of mines are introducing remote surface operating stations, which require knowledge of the use of simulators and simulation applications.

Partnerships exist between the Canadian Malartic Partnership's Odyssey mine, Epiroc and CFP Val-d'Or. Epiroc's mining equipment simulators are installed at the Centre and are used by both Odyssey mine workers and students in training.

Other applications are being developed and will lend further credibility to CFP Val-d'Or's vocational diploma program. In short, many projects are under way to improve training in the mining sector. Centre de formation professionnelle Val-d'Or has a vision that will position it as a major player in education, at the forefront of future developments.

Photo credit: CFP Val-d'Or

RioTinto

IOC

Du savoir-faire, des défis, un environnement et une équipe qui donnent envie de faire le

GRAND SAUT!

Grâce à une équipe de plus de 2 600 employés, nous offrons qualité, valeur et pérennité à nos clients et communautés. Notre approche unique d'opérations intégrées et nos infrastructures nous permettent de livrer avec succès nos produits de minerai de fer à travers le monde, et ce depuis plus de 60 ans.

www.ironore.ca

PGL Centre de formation professionnelle Paul-Gérin-Lajoie

PROGRAMMES OFFERTS

- **Usinage**
- **Mécanique d'engins de chantier**
- **Mécanique de véhicules lourds routiers**
- **Électromécanique de systèmes automatisés**

DEP UNIQUE AU QUÉBEC - CONDUITE DE PROCÉDÉS DE TRAITEMENT DE L'EAU

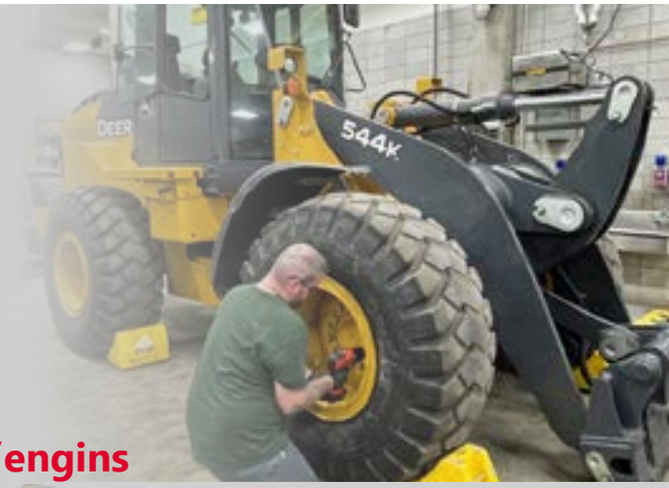
Excellentes perspectives d'emploi dans l'ensemble du Québec!

Centre de services scolaire des Trois-Lacs
Québec

400, avenue Saint-Charles,
Vaudreuil-Dorion (Qc) J7V 6B1

514 477-7020, poste 5999
pgl.cstrois-lacs.qc.ca

École des métiers de l'équipement motorisé de Montréal



Formation en mécanique d'engins de chantier

Nous formons les meilleurs depuis 100 ans !

Inscrivez-vous !
ecole-metiers-motorise.cssdm.gouv.qc.ca/

Centre de services scolaire de Montréal
Québec

Viens étudier au

CENTRE POLYMÉTIER
DE ROUYN-NORANDA

DES PARCOURS DE FORMATION **FLEXIBLES, DIVERSIFIÉS** ET AXÉS SUR LE **MARCHÉ DU TRAVAIL ACTUEL**. UN DIPLÔME EN 10 À 16 MOIS, UN TAUX DE PLACEMENT **GARANTI!**

Inscris-toi!
polymetier.qc.ca
service-elevefp@cssrn.gouv.qc.ca
819 762-8161, poste 6612

Psst...
Besoin d'aide pour l'inscription? Appelle-nous!

CENTRE POLYMÉTIER

YAMANAGOLD
PROJET MINIER SOUTERRAIN WASAMAC

FAMILLE INCLUSION ÉQUITÉ AUDACE

Une approche soucieuse de **l'environnement et des communautés** dans toutes les étapes du projet Wasamac, grâce à des façons de faire **audacieuses** et **innovantes**, dont l'utilisation **d'équipements électrifiés** et des **processus automatisés**.

BÂTIR LA MINE DU FUTUR, ENSEMBLE

Pour connaître nos opportunités de carrières et en savoir plus sur le projet, consultez le
consultationswasamac.com

WESDOME

NOUS RECRUTONS!

Une équipe solide t'attend !

kiena.wesdome.com/carrieres

Meaning of the icons at the bottom of each sheet

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

In the bottom left-hand corner of each job sheet are five icons indicating the work locations associated with the job. They enable you to quickly identify jobs in underground mines, open-pit mines, plants, laboratories, workshops, garages, warehouses and company administrative offices.

In an underground mine, a number of jobs are carried out several metres below ground.

In an open-pit mine, a number jobs are carried out in the pit where ore is extracted, as well as in nearby facilities such as **crushers** and **conveyors**.

A number of jobs are carried out in the ore processing plant, more commonly known as the **concentrator**, which is generally located close to the mine where the ore is extracted. This icon also represents other facilities, such as laboratories and water treatment plants.

A number of jobs are performed in workshops, garages and warehouses to ensure the upkeep and maintenance of equipment, and to manage the inventory of tools and materials.

Administrative offices may be located close to the mine or in a large city to facilitate business connections with partners. Some jobs may involve work that alternates between the mine site and the administrative offices.

At the bottom right, four icons represent the main stages in a mine's lifecycle. Some professions play an important role at a specific stage in the cycle, while others are necessary throughout the cycle.

Mining exploration involves finding sites where minerals can be extracted. Core samples are collected during drilling programs and are analyzed to determine the volume and content of the deposit. Technical, financial and environmental feasibility analyses complete the first stage of the mining cycle.

Development involves planning the mine, completing various public consultations for the project, assessing the financial benefits and environmental impacts and obtaining the necessary site permits. Once the development stage is completed, construction of the mine and its ore processing facilities can begin.

Mining involves extracting ore from a deposit and processing it to obtain a mineral product of value to society. After being extracted from the rock, the ore is sent to a processing plant, where it is crushed and ground. Then, using various processes, useful minerals are extracted from the **waste rock**. The ore thus processed is called "concentrate." This concentrate is then refined to increase its purity.

Mine closure is the last stage in the mining cycle, but site restoration is planned before the mine opens and the first tonne of ore is extracted. The closure process is carried out in an orderly and environmentally friendly manner. Areas that have been transformed by the mining of mineral resources must be returned to ecosystem status.

OFFICE AGENT

A mining company's office agents perform a variety of administrative duties and work with various departments such as administration, human resources, community relations, health and safety, and operations support. They help prepare presentations, brochures, publications, reports and other documents. They perform a variety of administrative tasks such as filing, data entry, invoice compilation and transaction tracking. They respond to telephone and email inquiries and relay calls and messages. They may also set up and maintain computerized filing systems.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Secretarial Studies**
  001--002--003--004--005--006--007--013--014--015--016--024--025--026--027--029--031--032--044--045--052--053--054--055--056--057--058--063--064--068--070--072--073--078--083--112--113--114--115--116--120--121--122--123--124--127--128--132--133--137--138--139--142--144--146--148--149--150--157--161--162--163--167--169--171--172--173--174--175--180--181--182--186--187--188--189--190--191--192--193--194--196--197--207--210--211
- **DVS for Administrative Assistant (double DVS)**
  006--007--015--027--044--045--054--055--056--057--064--072--112--113--115--144--150--162--174--189--190--191--192--197--207--211

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency
- DVS in Accounting
- DCS in Office System Technology

OTHER JOB TITLES

- Administrative agent
- Administrative clerk
- Accounting clerk
- Office clerk
- Secretary/receptionist

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Roxane Jacques, Receptionist and Administrative Clerk | Eldorado Gold Québec

Roxane Jacques is a receptionist and administrative clerk on the Human Resources team. One of her responsibilities is to follow up on prehire files. In concrete terms, she communicates with applicants, schedules interviews and ensures that she obtains all the documents usually required for hiring. Since her position is also a point of welcome for the company, she must embody its image and values. That's why she advocates respect, discretion, cooperation and leadership. These values are also reflected in her oral and written communications, thanks to her excellent command of French. Last but not least, she is concerned about health and safety issues in both industrial and office environments. In her opinion, the importance of ergonomics at work should not be underestimated!

AREAS OF INTEREST

- Providing help or advice
- Writing, communication and information
- Entering, checking, sorting and filing data or information
- Working with people
- Working in an office

MY ADVICE

There are many avenues for this occupation, and my advice is to take the time to explore the different fields available to you. The important thing is to trust yourself and not hesitate to step up to the plate if necessary.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Written comprehension
- Oral comprehension
- Self-confidence
- Active listening skills
- Excellent writing skills
- Quick learner
- Versatility
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

COOK

Cooks are responsible for preparing meals at mining facilities, which are generally located in remote areas and provide accommodation. They must produce a very high volume of food to serve between 100 and 1,000 people, which includes not only the three meals served at specific times, but also ready-to-eat meals, snacks and pastries, distributed or available on a self-service basis. They may be responsible for preparing food, cooking meats, assembling and finishing dishes, serving meals and assisting with menu development. They label, date and store food and beverages appropriately, rotate products and manage inventory. They are also required to comply with various measures concerning food hygiene, facility sanitation and kitchen health and safety.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Professional Cooking**
  005--016--024--030--035--045--052--063--064--067--077--080--086--115--121--127--132--138--144--146--158--163--173--176--180--195--197--206--210
- **DCS in Food Service Management**
  018--039--041--099--101--160--177--199--201
- **DVS in Pastry Making**
  016--030--035--045--052--064--067--086--115--158--176--195--210

OTHER REQUIREMENTS AND ASSETS

- AVS in Market-Fresh Cooking
- Bilingual proficiency
- Training courses offered by Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ)

OTHER JOB TITLES

- Kitchen assistant
- Pastry chef

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Maxime Fouquet, Professional Cook 1 | Glencore – Raglan Mine

As a Professional Cook 1, Maxime Fouquet is responsible for assembling prepared items, cooking pasta, soups and sauces, and ensuring that the service team has everything they need. Maxime particularly likes the diversity of the menu and the possibility of incorporating recipes that are a bit unusual in order to introduce workers to new flavours. According to him, the most important things for good cohesion in the kitchen are communication, mutual support and listening. Fun fact: On pizza nights, Maxime and his colleagues have to prepare around 70 pizzas of 24 servings each to serve the entire mine staff.

AREAS OF INTEREST

- Quality control
- Creation, design
- Logistics management
- Working with people
- Manual work

MY ADVICE

The job of a mine cook is not well known, yet it's so interesting! You need to learn more about this career option. If you have an interest, don't hesitate to take the plunge. It's an accessible occupation, and the work schedules are appealing.

SKILLS AND ABILITIES

- Ability to pay attention
- Creativity/originality
- Active listening skills
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Thoroughness/precision
- Sense of initiative
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

INDUSTRIAL DESIGNER

Industrial designers are responsible for developing plans for specialized parts or equipment, with the aim of improving equipment performance and worker safety. This may include mobile equipment, machinery and tools, industrial facilities or prototypes to meet new needs. They make 2D and 3D sketches and drawings using software, which also enables them to test their prototypes virtually against defined resistances, temperatures or environments. Their designs provide an overall view of the object, as well as sectional and cutaway views. They need excellent three-dimensional perception to produce drawings and manufacturing plans integrating all adjacent elements, such as hydraulic, pneumatic, mechanical and electrical circuits. They work closely with engineers, welders and machinists to meet all standards and requirements.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Industrial Design**
  016--026--052--074--075--076--085--087--116--122--128--151--157--167--174--183--197--210

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency

OTHER JOB TITLES

- Draftsperson
- Mechanical engineering designer

Steve Legault, Mechanical Engineering Designer | CMAC-Thyssen Mining Group

Steve Legault loves the manufacturing and mechanical aspects of his job. With his experience, he's well qualified to suggest adjustments to improve equipment safety, and he thinks beyond just using equipment to propose solutions that facilitate assembly and disassembly or equipment maintenance, for example. For him, there's nothing more motivating than taking part in a major project, finding ways of improving it and then seeing the final product in action. It's a huge team effort, and the possibilities are endless. Today, he's still excited about learning more and wants to understand other professions so he can come up with products that meet demand and also respond to the speed of innovation in the mining industry.

AREAS OF INTEREST

- Continuous improvement of work processes
- Analysis and problem-solving
- Conceptualization
- Creation, design
- Reading and producing plans or technical drawings

MY ADVICE

To progress in this occupation, you need to persevere and seek to learn more. By demonstrating an interest and striving to better understand mechanical or other elements, for example, you're on the right track to succeed and develop ever more suitable concepts.

SKILLS AND ABILITIES

- Attention
- Analytical skills
- Creativity/originality
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Open-mindedness
- Methodical thinking
- Perseverance
- Proactiveness
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

ELECTRICIAN

Electricians are responsible for installing, troubleshooting and repairing all electrical systems required for the smooth operation of various mining facilities, including stationary equipment, mobile equipment, automated systems, control systems and power installations. They may be called upon to work underground or on the surface. They're involved in the assembly and disassembly of electrical cables, lighting fixtures, medium- and high-voltage electrical equipment, communication devices and industrial electrical installations. They're also called upon to perform current, voltage and resistance tests. They perform preventative maintenance and use their expertise to diagnose and correct anomalies by modifying settings or replacing components, in accordance with trade standards and health and safety procedures.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Electricity**
  005--016--022--034--046--052--064--075--079--087--113--124--127--128--136--148--151--156--161--174--190--192--196--197--210

OTHER REQUIREMENTS AND ASSETS

- C licence
- General explosives permit
- Modular training for mine workers (FMTM) (for underground mines)
- Class 5 driver's licence
- DCS in Electrical Engineering Technology: Automation and Control (formerly DCS in Industrial Electronics Technology)
- ACS in Instrumentation, Automation and Robotics

OTHER JOB TITLES

- Mine electrician
- Maintenance electrician
- Industrial electrician

François Lortie, Surface Electrical Planner | Agnico Eagle Mines Limited – Goldex Mine

In his career, François Lortie has had the opportunity to perform a variety of functions, making him very versatile today. He has held positions as an underground electrician and instrumentation and control technician and has also worked in continuous improvement. As a surface electrical planner, he plans and coordinates electrical maintenance in collaboration with the foreperson. He manages the inventory of spare parts and the various components required for maintenance. As the person responsible for planning scheduled maintenance shutdowns, he interacts regularly with the other maintenance sectors of the mine.

AREAS OF INTEREST

- Analysis and problem-solving
- Configuration, programming
- Innovation/technology
- Inspection, assessment and diagnostics
- Reading blueprints

MY ADVICE

In this business, you have to be prepared to deal with the unexpected and be able to handle pressure. When equipment breaks down, there may be many people relying on your skills to get the system running again. You have to keep your cool and be resourceful.

SKILLS AND ABILITIES

- Dedication to the job
- Autonomy
- Ability to adapt
- Analytical skills
- Teamwork and collaboration
- Stress management/ability to work under pressure
- Problem-solving skills
- Organizational/planning skills
- Perseverance
- Versatility

Strong commitment to occupational health (physical and psychological) and safety

ELECTROMECHANIC

Electromechanics install, maintain, troubleshoot and repair the various stationary and mobile equipment found at a mining company. They're responsible for pumps, ventilation, heating and refrigeration systems, automatic doors, overhead cranes, hoists and all mobile and remote-controlled equipment. They're specialized in responding to electrical, electronic and mechanical malfunctions by reading and interpreting blueprints and using programming and maintenance tracking software. They may work in workshops and perform mainly maintenance, be in the field and respond to breakdown calls or work in the mine's power plants. They work closely with operators to diagnose breakdowns of stationary or mobile equipment and safely restart production.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Automated Systems Electromechanics**
  005--006--016--028--046--052--066--074--085--113--124--127--138--147--157--161--174--175--180--183--189--190--192--210
- **DVS in Automated Systems Electromechanics and Industrial Mechanics (double DVS)**
  027--149--151--157--212
- **DVS in Industrial Construction and Maintenance Mechanics**
  004--006--016--044--056--075--085--115--120--127--128--149--159--161--167--175--180--183--186

OTHER REQUIREMENTS AND ASSETS

- AVS in Industrial Control Maintenance Mechanics
- DCS in Electrical Engineering Technology: Automation and Control (formerly DCS in Industrial Electronics Technology)

OTHER JOB TITLES

- Workshop electromechanic
- Power plant electromechanic
- Site electromechanic

Maxime Laforest, Electromechanic | Canadian Malartic Partnership – Canadian Malartic Mine

Maxime Laforest primarily maintains and troubleshoots the mine's mobile equipment. He receives service calls and has to travel to the field to repair broken down equipment. Because of the variety of equipment he works on, his work is not routine. In his opinion, the most important skill is a good analytical mind, as problems with heavy machinery are not always apparent, and in some cases you have to follow technical drawings and be patient. Generally speaking, you need to be resourceful in quickly finding effective solutions to get production back on track.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Continuous improvement of work processes
- Manufacturing, construction, repair, maintenance and installation
- Inspection, assessment and diagnostics
- Reading blueprints

MY ADVICE

The electromechanical profession presents wonderful challenges for people with a passion for electronics and mechanics. You have to keep an open mind and be curious, because the mining sector is unique, and once you leave school, there's still a lot to learn. So there will be an adjustment period.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Analytical skills
- Curiosity
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Versatility
- Problem-solving skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

DIAMOND DRILLER

Diamond drillers install and operate **diamond drill rigs**, which are used to remove soil samples called **core samples** and have extremely resistant diamond tips capable of rotary drilling for any other element contained in the soil. During the exploration phase, diamond drillers may be called upon to drill in untapped natural areas in order to find a deposit with high potential. Then, in the mining phase, in both underground and open-pit mines, they are tasked with locating nearby deposits with a view to extending the life of the mine. They analyze plans to determine drilling requirements and properly position their drill rigs, then determine the number of revolutions per minute for the **drill** and check the pressure and depth of the equipment. They are also responsible for maintaining their equipment and ensuring a safe work environment.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Diamond Drilling**
  122--127--131

OTHER REQUIREMENTS AND ASSETS

- General explosives permit
- Modular training for mine workers (FMTM) (for underground mines)
- Class 5 driver's licence
- Workplace first aid certification

OTHER JOB TITLES

- Exploration driller
- Drilling helper

Yan Proulx, Diamond Driller | Orbit Garant Drilling

Yan Proulx is a diamond driller working underground in enclosed, undeveloped spaces, where he operates equipment suitable for the underground environment. What he loves about his job is the lack of routine, because he performs a variety of tasks involving the mechanics and maintenance of his equipment. His favourite part of the job is arriving at a new workstation and setting up his drill rig and various equipment to optimize the actions and manipulations to be performed in his environment. Lastly, Yan finds it particularly rewarding to have the responsibility of exploring and discovering an environment where no one has ever been before.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Quality control
- Inspection, assessment and diagnostics
- Working in contact with nature or animals
- Physical work

MY ADVICE

You should know that being a diamond driller can be a very physical job, and it's important not to neglect your rest. It's an incredible job for people who are results-driven.

SKILLS AND ABILITIES

- Ability to adapt
- Ability to pay attention
- Endurance
- Results-oriented mindset
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Problem-solving skills
- Accountability
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

DRILLER/BLASTER

Drillers and blasters work in open-pit mines. They are responsible for measuring and determining where to drill, according to plans drawn up by engineers. Drill holes are used to insert explosives into the ground in order to detach rock containing minable minerals. They may carry out their work using electric, hydraulic or automated drill rigs, which they also inspect and service. Throughout their shift, they're responsible for their immediate environment and for complying with health and safety regulations. At the blasting stage, they determine the safety perimeter for blasting, after consulting plans and obtaining information on the nature and quantity of explosives required for the sequence. Next, they make adjustments and fill the boreholes with explosives, then connect and blast. In the mining industry, a distinction is often made between drilling and blasting.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Drilling and Blasting**
  052--122--128--131

OTHER REQUIREMENTS AND ASSETS

- Blaster's certificate
- General explosives permit
- Class 5 driver's licence

OTHER JOB TITLES

- Dynamiter
- Surface blaster
- Surface driller
- Drill rig operator

Éric Veilleux, Drill Rig Operator | Canadian Malartic Partnership – Canadian Malartic Mine

Éric Veilleux is a drill rig operator who quickly advanced his career by becoming a guide for the drilling team at the mine. For him, although the job is mainly a solitary one, teamwork is nevertheless essential. You need to maintain excellent communication with your teammates to plan tasks efficiently and maintain a safe work environment. In his role as guide, he also assists and shares his experience with the other drill rig operators on site. Teamwork gets the job done and keeps the drilling going.

AREAS OF INTEREST

- Quality control
- Innovation/technology
- Reading blueprints
- Working outdoors
- Manual work

MY JOB 4.0

The profession is set to evolve, as automation is rapidly making its way into the mining industry. Drill rigs are already being developed to operate remotely in restrictive environments and will soon be able to move around accurately at drilling sites. Drill rig operators will have to manage various parameters that will indicate, for example, preventive maintenance requirements.

SKILLS AND ABILITIES

- Dedication to the job
- Attention
- Autonomy
- Efficiency
- Results-oriented mindset
- Team spirit and collaboration
- Thoroughness/precision
- Versatility
- Concern for a job well done
- Vigilance

Strong commitment to occupational health (physical and psychological) and safety

MACHINIST

Machinists make, repair and fit parts and machines for the smooth operation of mobile and stationary equipment at mines and ore processing plants. They interpret manufacturing drawings, specifications and technical drawings, then determine the appropriate metals and alloys for the components to be produced. They use a variety of machine tools for sawing, turning, **milling**, **planing**, drilling, **grinding** and welding, then determine the adjustments to be made by programming various commands to be performed simultaneously. They calculate dimensions, angles and speeds and assess constraints such as material tolerance and finishing options. They work with precision and attention to detail to meet the required quality standards.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Machining**
  004--005--006--007--013--026--027--044--052--
  054--056--065--074--075--081--113--120--127--
  138--146--149--151--161--163--173--174--180--
  183--189--190--196--197--210

OTHER REQUIREMENTS AND ASSETS

- AVS in Numerical Control Machine Tool Operation

OTHER JOB TITLES

- Machining specialist
- Tooling inspector

Jean-Luc Lachance, Machining Supervisor | Orbit Garant Drilling

Jean-Luc Lachance oversees a team of machinists in the design of specialized mechanical drilling equipment. This equipment has very complex parts with elements as thin as an eighth of the diameter of a hair! Manufacturing such high-precision components requires considerable planning. You have to think through all the production stages, establish the order of handling and select the appropriate materials and tools based on an analysis of margins of error and tolerances. For Jean-Luc, there's nothing more rewarding than building fully adapted machines from scratch that incorporate the latest technologies and have a flawless finish.

AREAS OF INTEREST

- Creation, design
- Inspection, assessment and diagnostics
- Reading blueprints
- Mathematics
- Device operation

MY ADVICE

The most important thing in this profession is math. Knowing and understanding formulas and being comfortable with numbers is essential. You need to be proficient in the fundamental concepts of mathematics, such as geometry and trigonometry.

SKILLS AND ABILITIES

- Diligence
- Attention
- Ability to synthesize, analyze and summarize information
- Analytical skills
- Written comprehension
- Stress management/ability to work under pressure
- Thoroughness/precision
- Methodical thinking
- Problem-solving skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

MILLWRIGHT

Millwrights are highly versatile, able to detect anomalies and repair, adjust and maintain industrial machinery using mechanical, hydraulic, pneumatic, compressed air and electrical systems. Working closely with operators, they maintain the **hoist**, **conveyors** and the **concentrator**, as well as the main ventilation equipment and pumping systems. Assisted by computers or automatic consoles, they assess the cause of a breakdown or failure and align, repair, clean or replace defective parts according to plant plans. They're also responsible for inspections and preventive maintenance of equipment, such as lubricating circuit components or performing vibration analyses. They may also be called upon to produce parts using their welding and machining skills.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Industrial Construction and Maintenance Mechanics**
  004--006--016--044--056--075--085--115--120--127--128--149--159--161--167--175--180--183--186
- **DVS in Automated Systems Electromechanics and Industrial Mechanics (double DVS)**
  027--149--151--157--212
- **DVS in Stationary Engine Mechanics**
  016--028--069--161--163--182--187--207

OTHER REQUIREMENTS AND ASSETS

- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit
- Class 5 driver's licence
- AVS in Industrial Control Maintenance Mechanics
- DCS in Industrial Maintenance Technology

OTHER JOB TITLES

- Industrial mechanic
- Maintenance mechanic
- Stationary equipment mechanic
- Plant mechanic

Mario Miousse, Millwright | Windsor Salt Ltd. – Mines Seleine

Mario Miousse has 34 years of experience in the mining industry and has had the opportunity to hold a variety of positions where he has developed his skills and versatility. Mario's career path has included working as a workplace first aider and a member of the mine rescue team. It goes without saying that Mario is a proud ambassador of health and safety. Today, as a millwright, Mario enjoys the variety of his tasks, and although maintenance work is required periodically, this doesn't make his job routine. What he loves most is the family atmosphere and team spirit in his workplace.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Configuration, programming
- Manufacturing, construction, repair, maintenance and installation
- Inspection, assessment and diagnostics
- Reading blueprints

MY JOB 4.0

Clearly, technological advances are still transforming work processes and health and safety measures. Increasing automation and electronics systems in stationary equipment requires state-of-the-art computers for analysis and diagnosis.

SKILLS AND ABILITIES

- Ability to adapt
- Analytical skills
- Creativity/originality
- Efficiency
- Results-oriented mindset
- Team spirit and collaboration
- Judgment and decision-making skills
- Versatility
- Problem-solving skills
- Thoroughness/attention to detail

Strong commitment to occupational health (physical and psychological) and safety

HEAVY EQUIPMENT MECHANIC

Heavy equipment mechanics are responsible for the maintenance and repair of all mobile mechanical, electrical, pneumatic and hydraulic equipment found in underground and open-pit mines. They inspect, repair, replace or fit faulty parts or components on heavy and light equipment, such as **bolters**, **drill rigs**, **scooptrams**, **dump trucks**, hydraulic or electric cable shovels, **graders** and service vehicles. They may be called upon to respond to breakdown calls in the field or to work in a garage. They use technical drawings and computerized control equipment to diagnose the source of a breakdown, perform breakdown analysis or carry out preventive maintenance to limit and prevent the risk of malfunction. They clean and lubricate equipment and perform other routine maintenance.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Construction Equipment Mechanics**
  005--015--033--044--052--082--121--128--131--132--133--134--145--171--189
- **DVS in Heavy-Duty Road Vehicle Mechanics**
  005--014--033--044--052--082--113--121--128--145--170--189--210

OTHER REQUIREMENTS AND ASSETS

- Class 5 driver's licence
- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit

OTHER JOB TITLES

- Construction equipment mechanic
- Mobile equipment mechanic
- Heavy-duty vehicle mechanic

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Eric Taillon, Mobile Mechanic | Eldorado Gold Québec

Éric Taillon is a leader on the mechanical team and enjoys the team spirit and mutual support in his profession, where everyone works toward a common goal. Equipment maintenance and preventive maintenance are important to smooth operations, and Eric enjoys being in the thick of things and responding quickly to help out his colleagues in the field. In his career, he has seen great technological improvements, and today, mechanics have at their disposal a number of tools such as computers and state-of-the-art software to pinpoint the source of problems more quickly and restore operations.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Continuous improvement of work processes
- Manufacturing, construction, repair, maintenance and installation
- Reading blueprints
- Manual work

MY JOB 4.0

The profession is set to evolve technologically, given the great potential of automation and electronics. Mechanics will become increasingly specialized and be able to work not only on diesel- and electric-powered machines, but also on all electronic accessories, such as sensors and remote controls.

SKILLS AND ABILITIES

- Diligence
- Autonomy
- Ability to synthesize, analyze and summarize information
- Ability to adapt
- Team spirit and collaboration
- Time and priority management skills
- Perseverance
- Problem-solving skills
- Concern for a job well done
- Conscientious work

Strong commitment to occupational health (physical and psychological) and safety

UNDERGROUND MINER

Underground miners play a variety of roles depending on the development stage of the mine where they work. Overall, they are responsible for developing underground passageways, loosening and transporting rock and securing all production areas by installing **support** systems. During the construction phase, they are responsible for building tunnels and laying foundation structures for the mine. They perform concrete work, install anchor cables, erect walls and secure ceilings. During the production phase, they drill and place explosive charges to extract the rock, then excavate and transport the ore. They may be called upon to install support and basic services such as piping, ventilation and blasting lines. They operate **drill rigs**, trucks, **bolters** and **scooptrams**.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Ore Extraction**
  122--131

OTHER REQUIREMENTS AND ASSETS

- Modular training for mine workers (FMTM)
- General explosives permit
- Class 5 driver's licence

OTHER JOB TITLES

- Construction miner
- Conventional miner
- Development miner
- Production miner
- Long-hole driller
- Mechanized drill rig operator

Adamie Tookalook, Underground Miner – Transport Truck Operator | Canadian Royalties Inc.

Adamie Tookalook has seven years of experience working underground and is currently an underground truck operator. He's responsible for transporting ore and **waste rock** to the appropriate facilities and may also provide assistance to the various underground teams. Adamie also has experience operating scooptrams and in development departments. What he finds interesting about his work is that he's always learning new things, and he likes the team environment. And because the mining industry as a whole hires people who care about health and safety, he feels perfectly safe in his workplace.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Continuous improvement of work processes
- Equipment operation
- Reading blueprints
- Device operation

MY JOB 4.0

The profession is set to evolve with the rapid integration of new technologies. For example, we're starting to see underground devices remotely operated from the surface, as well as systems for geolocating people and equipment, which improve the management of resource allocation.

SKILLS AND ABILITIES

- Dedication to the job
- Autonomy
- Ability to adapt
- Ability to pay attention
- Efficiency
- Results-oriented mindset
- Team spirit and collaboration
- Time and priority management skills
- Perseverance
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

HEAVY EQUIPMENT OPERATOR

Heavy equipment operators work primarily in open-pit mines and at various outdoor locations. They're required to operate various production equipment such as loaders, **bulldozers**, **dump trucks**, excavators, **graders** and **backhoes**. They're responsible for handling ore and materials safely and efficiently in accordance with established laws and procedures. They must also perform regular inspections, basic troubleshooting and preventive maintenance of their equipment. They may also be called upon to drive trucks for maintenance and service at various sites, such as tankers, pump trucks, semi-trailers, buses and straight trucks. Among other things, they're responsible for certain deliveries and for road maintenance at the mine site, such as grading roads or removing snow in winter.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Construction Equipment Operation**
  152--179
- **DVS in Heavy Equipment Operation for Forestry Road Systems**
  015--047--120--127--131--171

OTHER REQUIREMENTS AND ASSETS

- Class 1 driver's licence
- Class 5 driver's licence
- General explosives permit

OTHER JOB TITLES

- Heavy equipment driver
- Mining equipment operator
- Operator of oversized mining equipment
- Heavy vehicle operator

Lydia Chiasson-Ward, Mining Equipment Operator | ArcelorMittal Mining Canada G.P.

Lydia Chiasson-Ward operates production equipment such as 400-tonne capacity trucks, and likes the level of responsibility that comes with her job. She also enjoys all the mechanical aspects, such as preventive maintenance and troubleshooting on the equipment she drives. She's interested in how equipment works and how to properly maintain it on a regular basis. It's a job that requires a high level of attention and vigilance, for example in bad weather conditions and on icy roads. Health and safety start with you, but you're also responsible for looking after each other.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Equipment operation
- Inspection, assessment and diagnostics
- Working outdoors
- Transportation and maintenance work

MY ADVICE

The oversized machinery used in the mining sector is very impressive and, fortunately, the company makes sure that its operators are fully equipped to operate these giants. With time and ongoing training, you improve your skills and develop confidence in yourself and the equipment. With experience, you can even aspire to the position of trainer.

SKILLS AND ABILITIES

- Ability to adapt
- Ability to pay attention
- Self-confidence
- Active listening skills
- Results-oriented mindset
- Team spirit and collaboration
- Flexibility
- Versatility
- Accountability
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

ORE PROCESSING OPERATOR

Ore processing operators ensure the smooth operation of all stationary machinery at the ore processing plant. Their main objective is to maintain an efficient circuit to process as much ore as possible by optimizing the recovery and content of concentrates. They are required to work in all areas of the plant, such as crushing, grinding, physical and chemical separation processes, reagents, filtration, **backfill**, the control room, sorting, **flotation** and dewatering. They monitor measuring equipment and perform periodic inspections to prevent breakdowns caused by normal wear and tear. They also apply the recommendations of mineral processing technicians and engineers regarding adjustments to production equipment settings. They sample and collect data accurately using various automated systems.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Ore Processing Machine Operation**
  122--131
- **ACS in Ore Processing Processes**
  018

OTHER REQUIREMENTS AND ASSETS

- DCS in Mineral Technology: Mineral Processing

OTHER JOB TITLES

- Concentrator operator
- Crusher operator
- Plant operator
- Ore processing plant operator

Amavi Émile Fafa Amavigan, Concentrator Operator | Nouveau Monde Graphite

One of Amavi Fafa Amavigan's great strengths is his ability to convey information. That's why he quickly advanced in his career by becoming a trainer for the operations team at the ore processing plant. He prioritizes health and safety both as a trainer and a concentrator operator. The most interesting aspect of his job is stabilizing the circuit, i.e., ensuring that the right amount of reagent is present, the density is adequate, the speed of the pumps is well established and so on. In doing so it's worth pausing for a second to contemplate the work as a whole, because it's a job that requires great attention to detail.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Analysis and problem-solving
- Quality control
- Inspection, assessment and diagnostics
- Device operation

MY JOB 4.0

The profession is set to evolve rapidly with technological advances. Device and equipment settings will be increasingly automated, and operators will have to operate stationary equipment remotely. Automation will increase circuit accuracy and production quality, while improving the safety of the work environment.

SKILLS AND ABILITIES

- Diligence
- Attention
- Ability to adapt
- Analytical skills
- Results-oriented mindset
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Organizational/planning skills
- Attention to detail

Strong commitment to occupational health (physical and psychological) and safety

WATER TREATMENT PLANT OPERATOR

Water treatment plant operators are responsible for the various wastewater, drinking water and process water treatment systems in accordance with established standards and guidelines. They monitor and operate various stations, including pump stations and pre-treatment equipment. They clean or recharge filters and prepare solutions for washing the circuit. They carry out water quality tests and then make any necessary adjustments based on the results. For this purpose, they collect and analyze samples or send them to the laboratory. They compile and interpret data and track the various stages of the circuit. They also maintain the facilities and may be required to perform basic machining and plumbing work to maintain the circuit. They ensure compliance with environmental standards and prioritize sustainable development.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Water Treatment Process Operation**
  189
- **DCS in Water Technology (formerly DCS in Water Purification)**
  093

OTHER REQUIREMENTS AND ASSETS

- Certification in wastewater treatment

OTHER JOB TITLES

- Water sanitation operator
- Water processing plant operator
- Wastewater treatment plant operator

Harry Grant, Water Treatment Plant Operator | Osisko Mining Inc.

Harry Grant truly cares about the impact his work can have on the environment. In fact, it's why he chose this profession in the first place. When he first started out, he wanted to find out more about the impact mining companies could have on the environment. He soon discovered that processes were in place to ensure proper management of wastewater and redistribution of treated water. What he finds most interesting about his job are the many chemical manipulations required to manage the water components. According to him, there's always something new to learn.

AREAS OF INTEREST

- Continuous improvement of work processes
- Analysis and problem-solving
- Inspection, assessment and diagnostics
- Device operation
- Writing, communication and information

MY ADVICE

It can be demanding at first, but don't panic. You have to be receptive, open-minded and a good listener. Above all, remember that all questions are good ones, and that you shouldn't be embarrassed to ask.

SKILLS AND ABILITIES

- Attention
- Autonomy
- Team spirit and collaboration
- Ability to adapt
- Analytical skills
- Efficiency
- Problem-solving skills
- Accountability
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

PLUMBER

Plumbers are responsible for installing, repairing, maintaining and replacing all piping systems and plumbing equipment for industrial buildings at mining and metallurgy companies, including very large piping systems that can withstand high pressures and varying temperatures. They ensure the maintenance and smooth operation of process piping, heating systems, fire protection structures, drinking water distribution, wastewater disposal and various plumbing equipment such as valves, sprinklers, pumps, power systems and sanitary equipment. They produce and read technical drawings and perform routine and preventive maintenance. They are required to comply with industry standards and legislation applicable to their field of expertise regarding best practices and all workplace health and safety rules.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Plumbing and Heating**
  005--016--022--023--032--064--068--079--113--123--131--139--159--168--196--211

OTHER REQUIREMENTS AND ASSETS

- AVS in Natural Gas Appliance Repair
- Certificate in gas piping installation (ITG)
- ASP Construction card
- Certificate of qualification (CCQ)

OTHER JOB TITLES

- Industrial plumber
- Maintenance plumber
- Pipefitter

Hugo Labrecque, Pipefitter | Glencore – Horne Smelter

Hugo Labrecque is an industrial pipefitter, and what he finds most interesting about his job is the hands-on approach he takes to solving problems by finding lasting solutions. In his work environment, he contributes to effective problem-solving by working with staff from various fields, whether it's industrial mechanics, instrumentation, welding or operations. He finds it rewarding to see projects develop and to participate in the smooth operation of the plant's production. For Hugo, it's not a routine job, as the facilities are varied and require a wide range of procedures and interventions, whether working at heights, in confined spaces or outdoors.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Continuous improvement of work processes
- Manufacturing, construction, repair, maintenance and installation
- Inspection, assessment and diagnostics
- Reading blueprints

MY ADVICE

As you figure out your career, exploring your interests is key. You have nothing to lose by trying and taking the time to discover what you love, because everything you learn is rewarding. All professions offer opportunities for development, and there's no one-size-fits-all career path.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Manual dexterity
- Team spirit and collaboration
- Time and priority management skills
- Versatility
- Problem-solving skills
- Sense of initiative
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

BUILDING MAINTENANCE WORKER

Building maintenance workers perform a variety of installation, maintenance and repair work inside and outside the mine's various facilities. They have general knowledge of carpentry, painting, piping, electricity, heating, air conditioning and mechanics. They diagnose problems with building mechanical systems, perform the work and contact the appropriate professionals when more extensive repairs are required. They ensure compliance of the equipment required for maintenance services and may also be responsible for the housekeeping and sanitary facilities of buildings. In addition, they perform certain seasonal functions, such as snow removal and maintenance of green spaces.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in General Building Maintenance**
  005--016--032--052--064--069--084--112--124--141--159--173--184
- **DVS in Carpentry**
  005--016--023--034--046--052--079--113--124--128--132--136--141--144--150--156--163--168--172--185--190--194--196--209--210

OTHER REQUIREMENTS AND ASSETS

- Class 5 driver's licence
- Modular training for mine workers (FMTM) (for underground mines)

OTHER JOB TITLES

- Woodworker
- Building maintenance supervisor
- Maintenance worker

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Francis Gauthier, Team Leader – Surface Building Maintenance | Agnico Eagle Mines Limited – Goldex Mine

For Francis Gauthier, the most interesting aspect of his job is the diversity. Every day, he's sure to be doing different tasks and using his knowledge in a variety of projects. As a team leader, he often has to assess upcoming work and schedule the time and equipment needed. His assessments help him plan his team members' days and set priorities based on time management. For him, it's a rewarding job, because you help all sectors of the mine and get a lot of recognition for it. It's a job that's essential to the smooth running of all operations.

AREAS OF INTEREST

- Manufacturing, construction, repair, maintenance and installation
- Project management
- Inspection, assessment and diagnostics
- Reading blueprints
- Working outdoors

MY ADVICE

Since this profession requires versatility, it may be helpful to take additional training courses or develop a few additional skills. These are important assets in the hiring process.

SKILLS AND ABILITIES

- Autonomy
- Manual dexterity
- Team spirit and collaboration
- Motivation
- Open-mindedness
- Versatility
- Proactiveness
- Problem-solving skills
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

WELDER

Welders carry out manufacturing, maintenance and repair work on stationary and mobile production equipment using a variety of welding processes. They read blueprints and sketches and select metals and alloys that meet the requirements of the work to be carried out. They draw, cut, assemble and weld metal parts on site or in the workshop. Their responsibilities may vary depending on the work environment. In equipment manufacturing, they may design templates and samples for one-of-a-kind or mass-produced parts. In the maintenance department, they repair and maintain equipment according to the manufacturers' repair procedures. In all cases, they're responsible for the inspection and maintenance of their welding tools, accessories and equipment and for maintaining a safe work environment.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DVS in Welding and Fitting**
  001--002--004--005--006--007--013--014--015--
  022--024--027--028--046--052--054--056--065--
  071--075--079--087--113--116--121--128--133--
  138--147--149--151--157--163--168--174--180--
  186--187--188--190--191--197--206--210

OTHER REQUIREMENTS AND ASSETS

- AVS in High-Pressure Welding
- Welding certification or qualification
- Bilingual proficiency
- Class 5 driver's licence
- Modular training for mine workers (FMTM) (for underground mines)

OTHER JOB TITLES

- Welding and soldering machine operator
- Industrial welder
- Welder-assembler
- Welder-fitter

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Daniel Rollin, Welder-Assembler | CMAC-Thyssen Mining Group

Daniel Rollin is involved in manufacturing machinery and equipment for the mining industry. The variety of projects is very stimulating, and he enjoys participating in the various stages of manufacturing, from parts design to assembly. Although he performs his tasks on his own, he works as part of a large team that draws on the skills of different professionals, who share their pride in a finished product that meets the requirements. According to Daniel, it's essential to be rigorous, precise, meticulous and consistent in this profession. Among the various manufacturing stages, he particularly likes assembly, which requires the ability to read and interpret a blueprint.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Quality control
- Manufacturing, construction, repair, maintenance and installation
- Reading blueprints
- Device operation

MY ADVICE

This profession requires excellent dexterity and hand-eye coordination, as it demands a very high level of precision. In the mining sector, the projects are huge, and you have to be willing to go the extra mile. That's what makes you proud of what you've accomplished.

SKILLS AND ABILITIES

- Autonomy
- Analytical skills
- Ability to pay attention
- Efficiency
- Stress management/ability to work under pressure
- Time and priority management skills
- Thoroughness/precision
- Accountability
- Coordination skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

BESOIN DE TES **MODULES MINIERS?**

LA FORMATION MODULAIRE DU TRAVAILLEUR MINIER (FMTM)

OBLIGATOIRE POUR EXERCER UN TRAVAIL DANS UNE MINE SOUTERRAINE AU QUÉBEC

Objectif de la formation :

- Uniformiser et structurer la formation dans le secteur minier
- Abaisser la fréquence et la gravité des accidents
- Attester et valider les connaissances du travailleur minier en matière de santé et sécurité au travail.

Les modules :

- **Module 1** Santé et sécurité au travail - 16 heures
- **Module 2** Instructions générales - 12 heures
- **Module 3** Écaillage secondaire - 16 heures
- **Module 4** Échafaudage - 8 heures
- **Module 5** Consolidation du terrain - 16 heures
- **Module 6** Forage - 32 heures
- **Module 7** Matériel et équipement de sautage - 8 heures
- **Module 8** Déblaiement du minerai : treuil-râcloir - 16 heures
- **Module 9** Déblaiement du minerai : chargeuse pneumatique - 24 heures
- ***Module 10*** Déblaiement du minerai : chargeuse-navette - 24 heures

La durée et le coût de la formation varient en fonction du nombre de modules désirés.

NOUS REJOINDRE

cfpvaldor.qc.ca
819 825-6366
cfpvd@csob.qc.ca

Centre de formation PROFESSIONNELLE VAL-D'OR

Centre de services scolaire de l'Or-et-des-Bois Québec

Career Index

Glossary

Forages Rouillier Drilling

UN CHOIX DE CARRIÈRE POUR TOI!

- Foreur au diamant
- Aide-foreur au diamant
- Plusieurs autres métiers!

INNOVATION | TRAVAIL D'ÉQUIPE | PERFORMANCE

POSTULE DÈS MAINTENANT!

www.foragesrouillier.com

www.mbiglobal.ca

GR GROUPEROUILLIER

TON AVENIR EST AVEC NOUS!

- Machiniste CNC conventionnel
- Opérateur de production
- Mécanicien assembleur
- Soudeur
- Commis réception expédition
- Et plus encore...

MBI GLOBAL

Career Index

Glossary

Career Index

Glossary

JOIGNEZ-VOUS À NOUS POUR UN AVENIR BRILLANT!

MINE RAGLAN

25 ANS D'ACTIVITÉS

APPLIQUEZ DÈS MAINTENANT
glencore.ca/fr/raglan/careers

ArcelorMittal

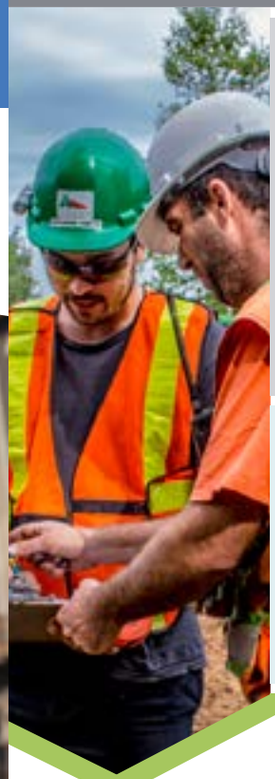
Envie de faire carrière dans un environnement à la hauteur de tes aspirations?

Joins-toi à notre grande famille dès maintenant!

emploidegeant.com

UNE RÉFÉRENCE EN MINES ET FORÊTS AU QUÉBEC

LE CFP DE L'ESTUAIRE, UNE FORCE MAJEURE POUR L'ÉCONOMIE



- DES FORMATIONS SUR MESURE DIRECTEMENT DANS LES ENTREPRISES PRIVÉES DES SECTEURS MINIER ET FORESTIER
- UNE FORMATION PRATIQUE ADAPTÉE AU MARCHÉ DU TRAVAIL
- DES ÉQUIPEMENTS À LA FINE POINTE DE LA TECHNOLOGIE
- UN PAVILLON DE FORMATION EN FORESTERIE ENTIÈREMENT RÉNOVÉ
- DES FORMATIONS MENANT À DES MÉTIERS AUX SALAIRES TRÈS CONCURRENTIELS
- AIDE À LA PENSION POUR LES ÉLÈVES DE L'EXTÉRIEUR
- SERVICE DE TRANSPORT QUOTIDIEN ENTRE BAIE-COMEAU, PESSAMIT ET FORESTVILLE

PROJET PASSERELLE (DES-DEP) PERMETTANT D'ENCOURAGER LA DIPLOMATION DES ÉLÈVES EN DIFFICULTÉ SCOLAIRE

POUR CONNAÎTRE LES DATES DE NOS PROCHAINES COHORTES EN :

- Conduite de machinerie lourde
- Comptabilité
- Cuisine
- Électricité (offert en continu sur 14 mois)
- Électromécanique de systèmes automatisés
- Entretien général d'immeubles
- Forage au diamant
- Mécanique industrielle de construction et d'entretien
- Secrétariat

CONTACTEZ-NOUS AU
418 587-4735, POSTE 6306

VISITEZ NOTRE SITE WEB
CFPESTUAIRE.CA

CFP DE L'ESTUAIRE

Centre de services scolaire de l'Estuaire
Québec

ADMINISTRATIVE ASSISTANT

Administrative assistants support a mining company's managers and professionals. Their expertise is useful to various departments at the mine, so they may be called upon to work in operations, the process plant, and human resources or community relations. They manage schedules, prepare agendas, coordinate and attend meetings and take minutes. They produce and review letters, documents and reports for internal and corporate use. They open and distribute postal and electronic mail and other documents received, and coordinate the distribution of information to other departments and agencies. They are also responsible for maintaining and updating registers and databases. In addition, they may have to deal with confidential files, which require a great deal of discretion.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Office System Technology**

  018--038--042--049--050--059--088--092--104--117--130--154--155--160--164--178--199--202--213

- **DVS for Administrative Assistant (double DVS)**

  006--007--015--027--044--045--054--055--056--057--064--072--112--113--115--144--150--162--174--189--190--191--192--197--207--211

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency
- DVS in Secretarial Studies

OTHER JOB TITLES

- Secretary
- Office automation technician

Raymonde Baker, Administrative Assistant | Windsor Salt Ltd. – Mines Seleine

Raymonde Baker has 25 years of experience at Mines Seleine in Îles-de-la-Madeleine, where she is the administrative assistant to the director of human resources. While she mostly works on her own, it is nevertheless a big team effort, with everyone working towards the same goal. Raymonde knows the whole organization and the people who work there. For her, it's very motivating to have special contact with staff members, meet them and get to know their stories. That's what she likes best about her job: being able to communicate with people, respond to their requests and contribute to their happiness at work.

AREAS OF INTEREST

- Providing help or advice
- Understanding a company's values and actions
- Writing, communication and information
- Entering, checking, sorting and filing data or information
- Working in an office

MY ADVICE

A good way to grow in this profession is to get more involved with the organization and its staff. It's interesting to get to know the jargon and work environment of the people you work with, and it helps you better understand the purpose of your job and stay informed.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Discretion
- Active listening skills
- Efficiency
- Excellent writing skills
- Stress management/ability to work under pressure
- Methodical thinking
- Organizational/planning skills
- Concern for a job well done
- Conscientious work

Strong commitment to occupational health (physical and psychological) and safety

NURSE

Nurses provide frontline medical and advisory services within the organization. They assess the health conditions of employees during consultations and provide first aid when necessary. In some cases, they refer staff to the mine doctor or specialists when their condition requires it. They provide medical and administrative follow-up of personnel files and work stoppages related to illness or accidents, and conduct screening tests as required. To prevent the risk of injury, they develop awareness programs for situations deemed problematic or dangerous and prepare documentation on best health practices. They may also organize first aid training courses. In addition, they organize, maintain and evaluate the activities of the health department and facilitate the supply of drugs, equipment and first aid equipment.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Nursing**

  008--009--010--011--017--018--019--020--037--038--039--048--049--059--060--088--090--091--092--093--094--095--096--098--104--117--118--125--129--130--143--153--154--155--160--164--177--178--198--199--200--201--202--203--204--205--213--214

- **Bachelor's degree in nursing**

  012--021--043--051--062--109--111--119--126

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des infirmières et infirmiers du Québec
- Class 5 driver's licence
- Bilingual proficiency
- Workplace first aid certification

OTHER JOB TITLES

- Industrial nurse
- Occupational health nurse
- Clinical nurse

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Stéphanie Nolet, Clinical Nurse | Canadian Malartic Partnership – Odyssey Mine

Stéphanie Nolet holds a DEC-BAC (DCS and bachelor's degree) in nursing and a certificate in occupational health and safety. She believes this is a highly relevant asset for a career in health in the mining industry. The content of the program is complementary and links risk situations to prevention. This is one of the things that Stéphanie finds most interesting about her job. She loves being out in the field and carrying out prevention activities with workers. She is particularly grateful for the great autonomy and trust she is given in decision-making.

AREAS OF INTEREST

- Providing help or advice
- Teaching and training
- Assessment and diagnosis
- Caring for or assisting people
- Working with people

MY ADVICE

It's important to have basic experience to get a position like this in the mining sector. Because the level of autonomy required is very high, some experience in emergency or intensive care is essential.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Self-confidence
- Active listening skills
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Critical thinking
- Sense of initiative
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

MINING TECHNICIAN

Mining technicians may be employed in drilling and blasting, mine surveying, mine ventilation, mine planning, field control and rock mechanics. In general, they are involved in the planning and supervision of open-pit and underground mining operations. They may work on mine construction, development and production plans using digital instruments and software. Depending on their specialty, they conduct **topographical surveys** and monitor production drilling activities. They plan and coordinate the mine's ventilation system and ensure it operates smoothly. They inspect passageways and work sites and ensure compliance with **structure support** methods, ground control and seismic data. They carry out inspections and make health and safety recommendations.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Mineral Technology: Mining**

  125---130--155

OTHER REQUIREMENTS AND ASSETS

- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit
- Class 5 driver's licence

OTHER JOB TITLES

- Field control technician
- Mine technician
- Drilling and blasting technician
- Geology technician
- Mine planning technician
- Mining ventilation technician
- Mining survey technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Marie-Hélène Brousseau, Survey Technician | Agnico Eagle Mines Limited – LaRonde Mining Complex

As a mining survey technician, Marie-Hélène Brousseau works both in the field and in an office. She enjoys the diversity of her work as well as the decision-making power and level of responsibility she is given. For example, she is responsible for collecting data before, during and after a passageway is mined. She must contact the foremen to determine the real-time progress of the work and determine her daily schedule accordingly. She organizes her own time and must be very independent. For her, communication and leadership are essential in this job.

AREAS OF INTEREST

- Analysis and problem-solving
- Quality control
- Creation, design
- Reading blueprints
- Science

MY JOB 4.0

The use of drones and digital sensors in mine surveying will make it possible to obtain more data and access hard-to-reach areas. The use of these machines is also a major step forward in terms of health and safety.

SKILLS AND ABILITIES

- Analytical skills
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Judgment and decision-making skills
- Leadership
- Proactiveness
- Thoroughness/attention to detail
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

ACCOUNTING TECHNICIAN

Accounting technicians perform a variety of tasks related to a mining company's accounting. Depending on the size of the company, they may be required to work in one or more of the following departments: accounts payable or receivable, payroll, billing, accounting, administration and operations. Generally speaking, they track transactions, then process them in the accounting system. They ensure that supporting documents are obtained and that invoices are approved where necessary. They may also produce certain analytical reports, assist in the monitoring of operating costs and projects, make accounting entries for individual departments and help prepare for audits. Depending on their function, they may be in contact with the purchasing department, equipment or service providers, members of management and the accounting or administration team.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Accounting and Management Technology**
  008--010--011--017--018--019--020--037--038--039--040--042--048--049--059--060--088--089--091--092--094--095--098--099--117--118--125--129--130--143--153--154--155--160--164--165--166--177--178--198--199--200--201--202--203--213--214
- **DVS in Accounting**
  001--003--004--005--006--007--013--014--015--016--024--025--026--027--031--032--044--045--052--053--054--055--056--057--058--063--064--068--070--072--073--078--083--112--113--114--115--116--124--127--128--132--133--135--137--138--139--140--144--146--148--149--150--157--161--162--163--167--169--171--172--173--174--175--180--181--182--186--187--188--189--190--191--192--193--194--196--197--207--210-211

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency

OTHER JOB TITLES

- Accounting clerk
- Paymaster
- Administrative technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Sophie Michaud, Accounts Payable Officer | Wesdome

Sophie Michaud works in the Accounts Payable Department and is in regular contact with the Purchasing Department and field supervisors. She believes it's important for this position to have an overview of the company's activities and know the chain of operations and who is involved. Good communication and an open mind are also essential to thrive in this profession. Sophie likes that her job has a certain routine, but also that she can still organize her time to vary her tasks. She feels it's important to take a methodical, in-depth approach in order to see beyond simply entering accounting data. Among other things, this makes it possible to identify avenues for continuous improvement.

AREAS OF INTEREST

- Understanding a company's values and actions
- Quality control
- Entering, checking, sorting and filing data or information
- Working with numbers
- Working in an office

MY ADVICE

Because you communicate with different parts of the mine, it's important to understand all the steps involved in a request. This means also taking into account the scope of the work of other stakeholders and being understanding. In other words, you have to look at the big picture.

SKILLS AND ABILITIES

- Diligence
- Analytical skills
- Curiosity
- Team spirit and collaboration
- Thoroughness/precision
- Open-mindedness
- Critical thinking
- Methodical thinking
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

LABORATORY TECHNICIAN

Laboratory technicians are responsible for quality control and compliance of a mining company's raw materials, intermediate products and end products. They receive various samples from mining sites and plant processing circuits and perform a number of mechanical and chemical manipulations, such as weighing, **crushing**, pulverizing, smelting and adding reagents, in order to carry out a comprehensive study of the ore mined. They use various measuring instruments that provide them with data for analysis. They are also responsible for calibrating and maintaining these instruments. They prepare daily reports on their observations and interpretations of results. Lastly, they work closely with the geology, mineral processing, plant and environment sectors.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Laboratory Technology: Analytical Chemistry**
  018--049--089--098--154--201
- **DCS in Industrial Process Technology (new version of DCS in Chemical Engineering Technology)**
  018--091--154
- **DCS in Mineral Technology**
  125--130--155

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency

OTHER JOB TITLES

- Quality control technician
- Chemical technician
- Chemical analyst technician
- Chemical process technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Aurélie Pandosy, Laboratory Technologist – Production | ArcelorMittal Mining Canada G.P.

Aurélie Pandosy is an essential link in the company's production chain, whose goal is to obtain suitable, high-quality ore. For her, it's very rewarding to be able to certify products that meet customer needs. She believes that in her profession, you need to be organized and practise good time and priority management, as laboratory results are needed to make decisions about whether to maintain or adjust plant processes. Still, you need to take the time to do things right to guarantee high quality analyses and results while keeping in mind health and safety.

AREAS OF INTEREST

- Analysis and problem-solving
- Understanding a company's values and actions
- Quality control
- Entering, checking, sorting and filing data or information
- Tests or trials, process control

MY JOB 4.0

I expect that the integration of robotics and automation, which has already begun, will increase in the coming years. We'll be able to get more and more accurate data with considerable time savings. The automation of some tasks will also make the work environment even safer.

SKILLS AND ABILITIES

- Diligence
- Autonomy
- Ability to synthesize, analyze and summarize information
- Team spirit and collaboration
- Time and priority management skills
- Methodical thinking
- Problem-solving skills
- Organizational/planning skills
- Concern for a job well done
- Conscientious work

Strong commitment to occupational health (physical and psychological) and safety

INDUSTRIAL ELECTRONICS TECHNICIAN

Industrial electronics technicians install, inspect, repair and maintain all electrical, electronic, digital, mechanical and automated machinery and infrastructure, such as power circuits, remote controls and various automated measuring instruments. This may be equipment in the ore processing plant or production equipment for the mine. They perform preventive maintenance and troubleshooting diagnostics on this equipment. They adjust and calibrate machines, replace parts, program and install wiring, devices and electrical circuits with different voltages. They use various software to plan maintenance, program PLCs and draw up plans. They assist engineers and participate in optimization projects that aim to increase equipment reliability and worker safety.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Electrical Engineering Technology: Automation and Control (formerly DCS in Industrial Electronics Technology)**
  009--011--017--018--039--048--059--088--089--094--103--104--125--129--130--154--160--166--198--199--201--214
- **DCS in Computer Systems Technology**
  039--059--091--095--104--117--178

OTHER REQUIREMENTS AND ASSETS

- DVS in Automated Systems Electromechanics
- C licence
- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit

OTHER JOB TITLES

- Electrical technician
- Electrical planner
- Automation technician
- Electrodynamics technician
- Instrumentation and control technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Hugues Morin, Industrial Electronics Technician | Niobec Inc.

For Hugues Morin, the most rewarding part of his job is finding solutions and ideas for improvement. Diagnosing and solving problems to restore the production system to full capacity are major sources of motivation in his work. One thing's for sure: it's important to keep your cool and take the time to think things through. Working with power sources is fraught with risks, so good stress management and a health and safety approach are essential to maintaining an optimal work environment. You also need to be resourceful and self-reliant in an environment like the mining sector.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Analysis and problem-solving
- Configuration, programming
- Inspection, assessment and diagnostics
- Reading blueprints

MY JOB 4.0

The mining industry is increasingly using automation to simplify and optimize production. Realistically, technicians will need to specialize in one of the branches of industrial electronics and will have to incorporate new technological innovations.

SKILLS AND ABILITIES

- Autonomy
- Analytical skills
- Drive
- Judgment and decision-making skills
- Methodical thinking
- Problem-solving skills
- Accountability
- Organizational skills
- Conscientious work
- Vigilance

Strong commitment to occupational health (physical and psychological) and safety

ENVIRONMENTAL TECHNICIAN

Environmental technicians are responsible for inspection and quality control of the various mining facilities, green spaces and tailings facility. They ensure compliance with environmental standards set by the government and those set by the company. To this end, they plan and manage sampling schedules for water, soil, air quality and waste. They use manual and digital instruments and update the database on a daily basis. They also follow up on analytical results from the laboratory and provide technical interpretation of data in line with environmental requirements. They are also responsible for developing, implementing and enforcing environmental procedures.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Environmental and Occupational Health and Safety**
  018--059--093--199
- **DCS in Natural Environment Technology**
  019
- **DCS in Water Technology (formerly DCS in Water Purification)**
  093
- **DCS in Mineral Technology**
  125--130--155

OTHER REQUIREMENTS AND ASSETS

- ACS in Technical Specialization in Mining Environment
- Class 5 driver's licence

OTHER JOB TITLES

- Water sanitation technician
- Water treatment technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Michael Paquin, Environmental Technician | Canadian Malartic Partnership – Canadian Malartic Mine

For Michael Paquin, the most interesting part of his job is working specifically to protect the environment and actively helping to develop safe and efficient work practices. In his job, he enjoys incorporating new measuring devices or updating procedures by making adjustments and corrections. He also loves problem-solving. He believes it's very important to have good analytical skills in this line of work. Sometimes a number of things may cause a variation in results. In such cases, you need to understand the situation as a whole in order to draw conclusions and make suggestions for improvement.

AREAS OF INTEREST

- Analysis and problem-solving
- Quality control
- Data management
- Research
- Working outdoors

MY ADVICE

It can be very interesting to gain professional experience with outside firms. That way, you can discover different types of projects and develop versatility by exploring a variety of work environments.

SKILLS AND ABILITIES

- Autonomy
- Analytical skills
- Stress management/ability to work under pressure
- Time and priority management skills
- Methodical thinking
- Versatility
- Problem-solving skills
- Organizational/planning skills
- Concern for a job well done
- Conscientious work

Strong commitment to occupational health (physical and psychological) and safety

GEOLOGICAL TECHNICIAN

Geological technicians play an important role in the field. They collect data, assess **waste rock** and ore quantities, survey active work sites, map the various development areas of the mine and geologically monitor the progress of the pit or underground passageways. They analyze the contents of samples, produce reports and work closely with geologists and engineers on mine sequence planning, drilling design and mineral resource modelling. They also liaise with the plant to track production forecasts. During the exploration phase, they collaborate with geologists on field work, updating geological databases, planning drilling operations and drawing up various geomatic and drilling tracking maps.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Mineral Technology: Geology**
  125--130--155
- **DCS in Geomatics Technology**
  039--089--117

OTHER REQUIREMENTS AND ASSETS

- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit
- Class 5 driver's licence

OTHER JOB TITLES

- Production geology technician
- Geomatics and geology technician
- Mining technician – Geology

Mathieu Bernier, Geological Technician | Agnico Eagle Mines Limited – LaRonde Mining Complex

Mathieu Bernier is happy to work in two very different environments. Each day, he goes underground to perform tasks in the thick of things, then returns to the surface to analyze the data collected. He finds it particularly interesting to see the perspectives of the various mine production players and to bring together the theoretical and practical elements to ensure operations run smoothly. What he loves most about his job is understanding how a mine's production chain works. His knowledge enables him to characterize the mining environment, guide decision-making and give direction to mine development.

AREAS OF INTEREST

- Quality control
- Innovation/technology
- Producing plans or technical drawings
- Working with people
- Physical work

MY ADVICE

Because the program of study offers many opportunities in the job market, it's important to explore the different options and focus on your interests. This is the best time to try different avenues. The important thing is to find out what you like.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Results-oriented mindset
- Team spirit and collaboration
- Time and priority management skills
- Judgment and decision-making skills
- Problem-solving skills
- Accountability
- Attention to detail
- Vigilance

Strong commitment to occupational health (physical and psychological) and safety

COLLEGE LEVEL

COMPUTER TECHNICIAN

Computer technicians support users in all departments and provide them with information on computer tools. They are required to install cabling and may also install and configure telephone systems. They are responsible for maintaining all IT systems and updating them by installing new versions. They are able to provide support for business applications, operating systems, various virtualization technologies, a variety of software, remote access solutions and network connections. They are also responsible for data backup and security of the company's network infrastructure and servers. They may also hold specialized positions as programmer analysts, developing applications or software specifically designed for mining operations.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Computer Science Technology**

  008--009--010--011--017--018--019--020--037--038--039--042--048--049--059--060--088--089--090--091--092--094--095--096--097--098--099--100--102--103--104--117--118--125--130--143--153--154--155--160--164--177--178--198--199--200--201--202--203--204--213--214

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency
- Bachelor's degree in computer science

OTHER JOB TITLES

- Computer scientist
- Computer support technician
- Network management technician
- Programmer analyst

Frédéric Lord, IT Technician | Glencore – Raglan Mine

Frédéric Lord provides support to all his colleagues in various sectors of the mine. With significant technological advances in recent years, most operations depend on good IT management and maintenance. It's not uncommon for him to be called the saviour of the day! Although he works essentially on his own, communication is still important. That's what Frédéric loves most about his job. He's constantly in contact with other people in the company. One of the major challenges of this job is managing time and patience. When problems persist, you have to keep your cool.

AREAS OF INTEREST

- Providing help or advice
- Analysis and problem-solving
- Computer or information and communications technology (ICT)
- Innovation/technology
- Working with people

MY JOB 4.0

The tools, work methods and systems used are bound to evolve. It will be necessary to specialize. Networks, databases, programming and automation will become more complex, and specializations will become more and more advanced.

SKILLS AND ABILITIES

- Autonomy
- Curiosity
- Active listening skills
- Quick learner
- Stress management/ability to work under pressure
- Patience
- Problem-solving skills
- Thoroughness/attention to detail
- Conscientious work
- Teamwork

Strong commitment to occupational health (physical and psychological) and safety

INDUSTRIAL MAINTENANCE TECHNICIAN

Industrial maintenance technicians are responsible for the installation, compliance and maintenance of the various stationary equipment used in mining operations. They maintain the **hoist**, **conveyors**, **concentrator** and all adjacent components such as pumps, piping, fans and variable speed drives. They diagnose faults and repair hydraulic, pneumatic, mechanical and electrical systems. They prepare daily reports on interventions performed on the production line. In addition, they establish and coordinate preventive maintenance programs for equipment to prevent breakdowns caused by normal wear and tear or circuit malfunctions. In other situations, they analyze the performance of production equipment and suggest ways of optimizing and continuously improving it. They also have welding and machining skills that enable them to manufacture parts to replace or modify a system, if required.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Industrial Maintenance Technology**
  010--048--059--094--125--130--143--154
- **DCS in Mechanical Engineering Technology**
  010--018--039--048--049--059--093--094--098--117--154--155--177--198--199--201--203--213

OTHER REQUIREMENTS AND ASSETS

- Modular training for mine workers (FMTM) (for underground mines)
- Class 5 driver's licence
- General explosives permit
- Bilingual proficiency

OTHER JOB TITLES

- Industrial mechanics technician
- Industrial instrument technician
- Maintenance mechanic
- Millwright
- Mechanical planner

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Jean-Étienne Tessier, Industrial Mechanic | L. Fournier & Fils Inc.

In his job, Jean-Étienne Tessier plays a tangible role in plant production and is proud to have a positive influence on the smooth running of operations. His maintenance and repair work requires contextual analysis and thoughtful decision-making. Jean-Étienne believes that a fairly high degree of autonomy is required for a position such as his, although the work is carried out in collaboration with the supervisory team and operators. His tasks are quite varied, given the plant's different facilities. What he particularly enjoys is being involved in projects aimed at improving safety and production.

AREAS OF INTEREST

- Adjustment or alignment of machinery
- Continuous improvement of work processes
- Analysis and problem-solving
- Manufacturing, construction, repair, maintenance and installation
- Inspection, assessment and diagnostics

MY JOB 4.0

With recent and future technological innovations, the profession is set to evolve, and technicians will be working on more sustainable, higher-performance equipment. Technology will facilitate more diagnostics and data analysis.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Analytical skills
- Curiosity
- Efficiency
- Team spirit and collaboration
- Time and priority management skills
- Judgment and decision-making skills
- Sense of initiative
- Conscientious work

Strong commitment to occupational health (physical and psychological) and safety

MINERAL PROCESSING TECHNICIAN

Mineral processing technicians participate in ore processing in collaboration with mineral processing engineers and the operations team, with the common goal of recovering as many mined minerals as possible, such as gold, iron, niobium, zinc, etc. Their role is to monitor processes, compile and analyze data and participate in sampling campaigns. They are responsible for calibrating control devices, preparing reagent chemicals and supplying them. They monitor the quality of product processing through laboratory and plant testing to maintain optimized circuits. To this end, they support the operations team by consulting production reports, drawing up recommendations and making adjustments to improve equipment performance and increase production profitability.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Metallurgical Engineering Technology**
  017--048
- **DCS in Mineral Technology: Mineral Processing**
  125--130--155
- **DCS in Industrial Process Technology (formerly DCS in Chemical Engineering Technology)**
  018--091--154
- **ACS in Ore Processing**
  018

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency

OTHER JOB TITLES

- Quality control technician
- Industrial process technician
- Process control technician
- Metallurgical technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Michael Boutin, Senior Metallurgical Technician | Eldorado Gold Québec

In his career, Michael Boutin has had the opportunity to work on some great projects, such as the restart of the Sigma plant in Val-d'Or. It required a great deal of teamwork, and that's what Michael loves most about his job. Collaboration between the plant's various departments is an essential part of his job—he is in constant interaction with the operations team. He finds it particularly interesting to study the plant's circuitry, which involves checking the status of ore processing and identifying any problems that affect its smooth operation. The job may also involve innovation to optimize production.

AREAS OF INTEREST

- Continuous improvement of work processes
- Analysis and problem-solving
- Quality control
- Inspection, assessment and diagnostics
- Tests or trials, process control

MY ADVICE

The best way to get better at this job is to be curious and always ask yourself why things work the way they do. It's also a good way to encourage continuous improvement in the plant and in the lab.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Analytical skills
- Curiosity
- Team spirit and collaboration
- Time and priority management skills
- Proactiveness
- Accountability
- Organizational skills
- Attention to detail

Strong commitment to occupational health (physical and psychological) and safety

FIRE PREVENTION TECHNICIAN

Fire prevention technicians are responsible for the installation, inspection, maintenance, minor repair and ongoing operation of a mining company's fire protection systems, such as fire extinguishers, respirators, fixed protection systems, fire hoses, alarms and emergency lighting. During inspections, they assess risks, issue opinions and make recommendations. They enforce all fire prevention regulations and work with the health and safety department to develop staff training courses. They may be called upon spontaneously to rectify a situation deemed to be at risk or to provide advice in specific contexts. They are also responsible for the training and education of the fire brigade, made up of people from different areas of the mine who are qualified to respond to emergencies.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Fire Safety Technology**
  036--160
- **ACS in Fire Prevention**
  010--017--038--160--214

OTHER REQUIREMENTS AND ASSETS

- DVS in Fire Safety Techniques
- DVS in Fire Protection Mechanics
- Class 5 driver's licence
- Class 4A driver's licence (emergency vehicle)

OTHER JOB TITLES

- Fire prevention advisor

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Martin Breault, Fire Prevention Advisor, and Joanie Raiche, Fire Prevention Trainee | Québec Iron Ore

Based on his fire prevention and response experience, Martin Breault believes that nothing is more important than enforcing occupational health and safety rules. This is a top priority, and his role enables him to take concrete action within the company and with his colleagues. He finds it very rewarding to structure and implement organizational processes and foster involvement throughout the organization. His favourite task is coordinating the emergency brigade, as he enjoys passing on his knowledge and helping develop the group's skills, while seeing its continued progress.

AREAS OF INTEREST

- Providing help or advice
- Continuous improvement of work processes
- Quality control
- Inspection, assessment and diagnostics
- Reading blueprints

MY ADVICE

Applicants are sometimes taken aback by the sheer scale of a mining company's facilities and equipment. Instead of being swayed by this, you should try to get comfortable with the environment. It's an incredible place to work that provides all the resources you need to integrate and develop as a preventionist.

SKILLS AND ABILITIES

- Ability to adapt
- Results-oriented mindset
- Team spirit and collaboration
- Judgment and decision-making skills
- Critical thinking
- Proactiveness
- Problem-solving skills
- Accountability
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

LITHIUM AMÉRIQUE DU NORD | SAYONA

C’est 100 emplois à pourvoir dans la prochaine année

Rejoins-nous!

sayona.ca/emplois

CÉGEP DE L’ABITIBI-TÉMISCAMINGUE

ÉTUDIER LES MINES DE PLUS PRÈS

FORMATION TECHNIQUE

TECHNOLOGIE MINÉRALE

- GÉOLOGIE
- EXPLOITATION
- MINÉRALURGIE

FORMATION CONTINUE

FORMATIONS ADAPTÉES À L’INDUSTRIE

TAUX DE PLACEMENT ÉLEVÉ

ENSEIGNANTS ISSUS DE L’INDUSTRIE

INSTALLATIONS MODERNES

NOUVEAU

4

FORMATION INDUSTRIE INTELLIGENTE 4.0

VIENS ÉTUDIER DANS UNE RÉGION RECONNUE POUR SON POTENTIEL MINÉRAL EXCEPTIONNEL CEGEPAT.QC.CA

Cégep de l’Abitibi-Témiscamingue

ÊTRE UNIS. ÊTRE FIERS.
ÊTRE AGNICO EAGLE.

VOTRE AVENIR COMMENCE AVEC NOUS!

Nous offrons divers postes aux étudiants, stagiaires et diplômés talentueux qui souhaitent débuter leur carrière dans notre entreprise. En vous joignant à nous, vous pourriez être :

- Encadré par les meilleurs de notre secteur d'activité ;
- Encouragé à développer votre expertise ;
- Amené à bâtir une carrière gratifiante au sein d'une entreprise en pleine croissance et socialement responsable.

POSTULEZ EN LIGNE

Consultez régulièrement notre section « Carrières » afin de connaître les nouvelles opportunités d'emploi. Nous vous invitons également à créer votre profil et télécharger votre curriculum vitae.

www.agnicoeagle.com/french/carrieres

@AgnicoGoldex

@AgnicoLaRonde

AGNICO EAGLE

CÉGEP DE JONQUIÈRE

DES PROFESSIONS À DÉCOUVRIR

Procédés industriels (DEC)
Génie industriel (DEC)
Environnement, hygiène et sécurité au travail (DEC)
Génie mécanique (DEC)
Électronique : Automatisation et contrôle (DEC)

Procédés de traitement de minerai (AEC)
Gestion et assainissement des eaux (AEC)
Hygiène du travail (AEC)

cegepjonquiere.ca

BUYER

Buyers manage the procurement of all equipment, materials, services and other supplies required for the smooth operation of the mine. They work very closely with all the company's departments and possess a certain amount of technical knowledge. They're responsible for buying mining machinery and all the equipment necessary to build, operate and restore a mine site. To meet established budgets, they must negotiate with different suppliers, taking into account the quality of goods and services, their availability, delivery times and best business conditions. They call for tenders, analyze bids and draw up contracts. They then plan the logistics of transportation and deliveries while ensuring ongoing follow-up with suppliers.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in business administration**
  012--021--043--051--061--062--106--108--110--111--119--126--215
- **DCS in Operations and Supply Chain Management (new version of DCS in Transportation Logistics Technology)**
  038--048--088--178--213

OTHER REQUIREMENTS AND ASSETS

- University certificate in procurement
- Bilingual proficiency
- ACS in Supply Management

OTHER JOB TITLES

- Purchasing coordinator
- Purchasing logistics coordinator
- Procurement coordinator
- Supply chain manager

Johan Chagneaud, Purchasing Logistics Coordinator | G Mining Services

Johan Chagneaud works mainly for mining companies in the construction phase, which requires a great deal of business analysis and project management. Since he often works with companies abroad, he has to take into account different time zones. In his opinion, procurement during the construction phase poses challenges due to the highly technical nature of the goods, as many facilities are tailored to specific needs. The absence of routine and the new challenges he faces every day are his greatest sources of motivation. Clearly, you have to be well organized and very disciplined to do this job, but teamwork is the key to success. Because you're in contact with multiple areas of the company at the same time, it's important not to work on your own, but to be able to rely on others.

AREAS OF INTEREST

- Project management
- Logistics management
- Research
- Writing, communication and information
- Negotiation/persuasion

MY ADVICE

Accountability and transparency are important qualities in this profession. It's a demanding job, but you need to keep going, because you learn something new every day.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Active listening skills
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Thoroughness/attention to detail
- Coordination skills
- Negotiating skills
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

ACCOUNTANT

Accountants play a critical role in the planning, monitoring and evaluation of a mining company's overall financial activities and must comply with applicable laws and regulations and corporate policies. They are involved in preparing budgets for different projects, make financial forecasts for various scenarios and carry out risk analyses. They record expenses and revenues and integrate all this data into accounting software. To ensure close monitoring of the company's financial transactions, they produce financial statements and assist the external auditors at the close of the fiscal year. They are also responsible for the assessment and detailed analysis of project costs and the acquisition costs of capital assets and inventories. Because each mining company is unique, the duties of accountants can vary greatly from one company to another.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in business administration with a specialization in accounting**
  043--061--062--106--108--110--111--215
- **Bachelor's degree in accounting**
  012--021--051--119--126

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des comptables professionnels agréés du Québec
- Bilingual proficiency

OTHER JOB TITLES

- Financial analyst
- Financial controller

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Pier-Élise Hébert-Tremblay, Chief Financial Officer/CFO | Arianne Phosphate Inc.

Pier-Élise Hébert-Tremblay works for a mining company currently in the development phase. Formerly a financial controller and now chief financial officer, she is in regular contact with various stakeholders, including external accountants, investors, lawyers, consultants and government authorities. For her, it's very rewarding to be part of a project of this scale and to participate in every stage of development. She enjoys being able to work on less recurrent transactions, which allow her to learn more, push her limits and develop her skills. This requires her to be flexible and find the necessary information and resources, which may be outside the scope of accounting expertise.

AREAS OF INTEREST

- Providing help or advice
- Analysis and problem-solving
- Understanding a company's values and actions
- Working with numbers
- Working in an office

MY ADVICE

You have to be curious, ask questions and seek out information to get an overall view of the company's economic environment. For example, you have to take the time to talk to technical teams, familiarize yourself with their jargon and learn more about the transformation process to better understand the synergy between operations and accounting.

SKILLS AND ABILITIES

- Analytical skills
- Curiosity
- Honesty
- Judgment and decision-making skills
- Methodical thinking
- Proactiveness
- Problem-solving skills
- Thoroughness/attention to detail
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

COMMUNICATIONS ADVISOR

Communications advisors have a dual mandate: develop methods and tools to execute dissemination strategies for traditional and social media, and implement a strategic plan for social and community engagement with the stakeholders of the mine's business plan. Their responsibilities include developing and rolling out communication plans, promoting messages related to the company's strategic orientations and liaising with various stakeholders to effectively position the company with target audiences, both internally and externally. They create communication tools for social networks and websites and prepare or oversee the preparation of reports, speeches, presentations and press releases. They act as spokespeople for the company and respond to verbal and written inquiries. They establish and maintain relations with the media and arrange interviews and press conferences.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in communications**
  021--043--051--062--108--109--110--111--119--215
- **Bachelor's degree in business administration with a specialization in marketing**
  012--021--043--051--061--062--106--108--110--111--119--126--215

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency

OTHER JOB TITLES

- Community relations and administrative support officer
- Public affairs advisor
- Communications and community relations advisor
- Community relations advisor
- Communications coordinator

Elaisa Uqittuq, Supervisor, Inuit Employment and Training | Canadian Royalties Inc.

Working closely with the Human Resources Department, Elaisa Uqittuq plays an important role in the company's relations with Inuit communities and organizations. She is responsible for radio and print communications for local Inuit communities and advises the company on issues related to Inuit work and intercultural relations. She also supports the human resources team in labour relations with Inuit staff, training programs for them, and onboarding Inuit workers who live in the Nord-du-Québec mining region. As the multicultural lead, she also provides training to all mine site staff on open-mindedness and acceptance of cultural differences.

AREAS OF INTEREST

- Providing help or advice
- Understanding a company's values and actions
- Creation, design
- Project management
- Working with people

MY ADVICE

Everything happens for a reason, you just have to be patient. Even in an atypical career, the important thing is to persevere and believe in yourself. There's always something to learn.

SKILLS AND ABILITIES

- Ability to persuade and promote
- Ability to synthesize, analyze and summarize information
- Active listening skills
- Interpersonal skills
- Team spirit and collaboration
- Excellent writing skills
- Time and priority management skills
- Thoroughness/precision
- Thoroughness/attention to detail
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

HUMAN RESOURCES ADVISOR

Human resources advisors may work as generalists or have a specialized field. In staffing, they assess human resource needs, conduct recruitment, coordinate the onboarding of new employees and plan their integration. They also design performance evaluation systems, help staff understand policies, collective agreements and benefits, and manage occupational health and safety and absenteeism issues. They support employee engagement and play an important role in labour relations by helping prepare collective agreement negotiations. They may also manage compensation, payroll and work schedules and establish skills development plans and training programs to expand staff members' knowledge.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in business administration with a specialization in human resources management**
  012--021--043--051--061--062--106--108--110--111--119--126--215
- **Bachelor's degree in human resources management**
  110
- **Bachelor's degree in industrial relations**
  043--109--111--119

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des conseillers en ressources humaines et en relations industrielles agréés du Québec (CRHA, CRIA)
- Bilingual proficiency

OTHER JOB TITLES

- Organizational development advisor
- Staffing advisor
- Training advisor
- Labour relations advisor
- Human resources coordinator

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Laurence Tremblay, Human Resources Advisor | Monarch Mining Corporation

Laurence Tremblay completed the DEC-BAC bridging program and earned a college diploma in accounting and management techniques, followed by a bachelor's degree in business administration with a specialization in human resources management. Today, what she loves most about her job is communicating with people in a climate of trust and being in contact with all sectors of the mine. The most gratifying aspect of her work is what she affectionately calls "heart pay," i.e., when employees are happy at work and happy to come to work. In this profession, you have to be very sociable and a good listener, and Laurence fits the bill perfectly.

AREAS OF INTEREST

- Providing help or advice
- Continuous improvement of work processes
- Understanding a company's values and actions
- Project management
- Conducting interviews

MY ADVICE

A good strategy for entering the mining industry during your studies is to show interest by taking part in job shadowing days or applying for a summer job in the industry, for example. These are good ways to make yourself known and demonstrate your potential.

SKILLS AND ABILITIES

- Ability to adapt
- Discretion
- Active listening skills
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Judgment and decision-making skills
- Leadership
- Versatility
- Sense of initiative
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

HEALTH AND SAFETY ADVISOR

Health and safety advisors contribute to the health and safety of workers by ensuring that applicable laws and standards are respected within their organization. They implement preventive measures related to the **lockout** of energy sources, the wearing of personal protective equipment, working at heights and in confined spaces, the use of hazardous materials, respiratory protection and fire hazards. They carry out workplace inspections and make recommendations to reduce the risk of incidents, accidents and occupational illnesses. They support managers in implementing and monitoring prevention activities. They produce various documents and tools that promote best occupational health and safety practices. They may be called upon to coordinate first responder teams and actively participate in incident and accident analyses.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in industrial relations**
  043--109--111--119
- **DCS in Environmental and Occupational Health and Safety**
  018--059--093--199

OTHER REQUIREMENTS AND ASSETS

- University certificate in occupational health and safety management
- Mining rescue certification
- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit
- Certification or training for on-the-job trainers
- Class 5 driver's licence
- Bilingual proficiency

OTHER JOB TITLES

- Prevention advisor
- Health and safety coordinator
- Preventionist

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Joanie Haché, Health & Safety Advisor | Newmont – Éléonore

Joanie Haché is a sportswoman at heart who loves to raise awareness of the importance of self-care. As a former elite athlete, she has mastered a key to injury prevention: take the time to do each task well. This is evident in the way she analyzes situations and makes recommendations. She enjoys being in the field and constantly learning. No one can master all the jobs at a mining site, but she likes being in the workers' environment, analyzing the risks associated with work methods and identifying areas for improvement with a view to optimizing occupational health and safety.

AREAS OF INTEREST

- Providing help or advice
- Continuous improvement of work processes
- Analysis and problem-solving
- Teaching and training
- Promoting health and safety

MY ADVICE

In this profession, it's essential to believe in what you preach so you can convey it sincerely to others. The ability to communicate information effectively and alert workers to good OHS reflexes contributes to better integration of preventive measures. These qualities are essential to having a credible influence in a company.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Analytical skills
- Active listening skills
- Results-oriented mindset
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Leadership
- Critical thinking
- Versatility
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

CONTINUOUS IMPROVEMENT COORDINATOR

Continuous improvement coordinators assist managers and staff in identifying and prioritizing areas for improvement in mining operations. With the help of multidisciplinary teams, they analyze work methods and detect problems at the source by observing the various departments of the mine or plant. They identify areas for improvement, investigate project profitability and participate in the development and implementation of tools and methods for continuous improvement, while facilitating their integration within teams. They enforce and promote health, safety and environmental policies and regulations. They have a good understanding of business processes and production costs and act as agents of change to achieve desired outcomes. They establish performance indicators to measure the progress and proper execution of projects.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Mineral Technology**
  125--130--155
- **DCS in Industrial Maintenance Technology**
  010--048--059--094--125--130--143--154
- **Bachelor's degree in business administration**
  012--021--043--051--061--062--106--108--110--111--119--126--215
- **DCS in Engineering Technology (multiple fields)**
  009--010--011--017--018--039--048--049--059--088--089--093--094--098--103--104--117--125--129--130--154--155--160--166--177--198--199--201--203--213--214
- **Bachelor's degree in engineering (multiple fields)**
  012--021--043--051--062--105--107--108--110--111--119--126

OTHER REQUIREMENTS AND ASSETS

- Lean, Six Sigma, Kaizen or other relevant training and/or certification
- Bilingual proficiency
- Modular training for mine workers (FMTM) (for underground mines)

OTHER JOB TITLES

- Project manager/Continuous improvement leader
- Business improvement project manager
- Production improvement coordinator
- Continuous improvement specialist
- Continuous improvement technician

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Hugo Bergeron, Continuous Improvement Specialist | Eldorado Gold Québec

Hugo Bergeron has been in the mining business for 20 years. After graduating in mining technology, he quickly progressed to supervisor and trainer. Certified Lean Master diamond level and soon Lean Six Sigma black belt, he is now taking on new challenges in continuous improvement. He enjoys the constant change in his work and contact with all areas of the mine. In practical terms, he doesn't need to be an expert in every field. His role is to take an outside look at a situation to help the teams see it from another angle. For him, continuous improvement is like the cement of a brick wall, where each brick represents a sector of the organization. His job is to bring people together to find opportunities.

AREAS OF INTEREST

- Providing help or advice
- Analysis and improvement
- Leadership, management and motivation
- Project management
- Innovation/technology

MY ADVICE

You have to listen to others and be open to innovation. I feel that the best way to succeed in this field is to be curious and ask questions, to try to understand the real reason behind problem situations. The best question is yet to come.

SKILLS AND ABILITIES

- Analytical skills
- Creativity/originality
- Curiosity
- Team spirit and collaboration
- Time and priority management skills
- Leadership
- Motivation
- Open-mindedness
- Perseverance
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

ENVIRONMENTAL COORDINATOR

Environmental coordinators oversee all of the company's environmental activities. They monitor water management, air quality, dust and greenhouse gas control, soil protection, respect for biodiversity, noise and variation reduction, and waste management. They conduct compliance audits, ensure compliance with environmental standards, make recommendations to prevent environmental damage and prioritize sustainable development. They analyze data with reference to specific performance indicators. They apply for authorizations and permits, enforce legal requirements and coordinate reporting to provincial and federal authorities. They are in high demand at all stages of the mining cycle and play a critical role in the mine closure and reclamation phases.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in environmental studies**
  043--062--108--110--111--119
- **Bachelor's degree in biology**
  012--021--043--051--061--062--108--109--110--111
- **Bachelor's degree in chemistry**
  012--021--043--051--061--062--108--109--110--111
- **Bachelor's degree in chemical engineering**
  043--062--107--111
- **Bachelor's degree in civil engineering**
  012--021--043--062--107--108--111

OTHER REQUIREMENTS AND ASSETS

- Bilingual proficiency
- Class 5 driver's licence

OTHER JOB TITLES

- Environmental advisor
- Environmental control and mining reclamation coordinator

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Valérie Roy, Environmental Control and Mine Reclamation Coordinator | Agnico Eagle Mines Limited – LaRonde Mining Complex

Valérie Roy earned a bachelor's degree in chemical engineering and went on to complete a master's degree in mineral engineering research, with a focus on the mining environment. What she liked most about her studies was the comprehensive management of her research project, from start to finish. Today, she's proud to be working in a job that suits her and her interests, while having a positive impact on the environment. In her opinion, this job requires excellent analytical skills, as environmental sampling and data collection generate an impressive amount of data.

AREAS OF INTEREST

- Continuous improvement of work processes
- Quality control
- Leadership, management and motivation
- Project management
- Inspection, assessment and diagnostics

MY ADVICE

Being an environmental coordinator brings its own set of challenges, so it's important to be able to manage time and priorities well, as it's not uncommon to work on multiple projects simultaneously. The key is good organization and stress management.

SKILLS AND ABILITIES

- Autonomy
- Analytical skills
- Active listening skills
- Team spirit and collaboration
- Quick learner
- Stress management skills
- Time and priority management skills
- Judgment and decision-making skills
- Coordination skills
- Organizational skills

Strong commitment to occupational health (physical and psychological) and safety

GEOLOGIST

Geologists analyze and interpret data from various underground and surface mineralized areas to locate the most mineral-rich areas. During the exploration phase, they oversee mining **prospecting** projects and coordinate diamond drilling activities. Their mission is to detect and study ore deposits. Using information collected from drill **core samples**, they enter data into software, then do 3D modelling of the deposit and precisely delineate its shape for the eventual development of a mine. They make recommendations on the feasibility of a mining project or on extending the life of an active mine. During the production phase, they carry out daily monitoring and mapping of the various mining areas. They are called upon to validate or correct the direction and general development of production, in addition to calculating the tonnage and ore content of mining sites.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in geology**
  021--043--111
- **Bachelor's degree in earth and atmospheric science**
  110--111
- **Bachelor's degree in geological engineering**
  021--043--107

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des géologues du Québec
- Class 5 driver's licence
- General explosives permit
- Modular training for mine workers (FMTM) (for underground mines)
- Bilingual proficiency

OTHER JOB TITLES

- Exploration geologist
- Production geologist
- Project geologist
- Resource geologist

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Céline Korol-Paradis, Candidate to the Exploration Geologist Profession | Newmont – Éléonore

Currently a candidate to the profession of geologist, Céline Korol-Paradis is on the exploration team. One of her tasks is to analyze the mineral potential that could extend the life of the mine. To do this, she refers to the core sample descriptions and gold content analysis results, which she compares to the current model. For her, it's very gratifying to come up with positive findings that suggest a possible extension of the mine. It's a big team effort, involving mining engineers, drilling crews, production geologists and data managers. Of all her responsibilities, she particularly enjoys 3D modelling, which gives a more concrete idea of all the geological elements.

AREAS OF INTEREST

- Analysis and problem-solving
- Conceptualization
- Producing plans or technical drawings
- Research
- Entering, checking, sorting and filing data or information

MY ADVICE

Geology offers many career opportunities. You can choose a job based on your interests, the work environment and the type of tasks involved. There are exploration, operations and environmental positions, and opportunities to work in the field and/or in an office.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Analytical skills
- Curiosity
- Results-oriented mindset
- Team spirit and collaboration
- Time and priority management skills
- Judgment and decision-making skills
- Thoroughness/precision
- Perseverance
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

MINING ENGINEER

Mining engineers are involved in all phases of a mine's life. During the exploration and construction phases, they plan, organize and supervise development and field control work. They design plans for permanent infrastructure and the construction of tunnels or pits. In the operations phase, they're responsible for short- and long-term planning. They assess the duration of mining cycles, determine objectives and prepare and track excavation plans and specifications for the various mining operations. They may specialize in a specific field, such as mine planning, field control, mine ventilation or rock mechanics. They plan and conceptualize drilling and blasting. They are involved in the design of excavations, the selection of extraction methods and the production sequence. They are also responsible for minimizing operating costs without neglecting the health and safety of workers, and for suggesting ways of optimizing production.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in mining engineering**
  043--107--111--126

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- General explosives permit
- Modular training for mine workers (FMTM) (for underground mines)
- Class 5 driver's licence

OTHER JOB TITLES

- Field control/rock mechanics engineer
- Mining exploration engineer
- Mining production engineer
- Mining project engineer
- Mining ventilation engineer
- Mining planner

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Winnie Chun Yin Shaw, Senior Mining Project Engineer | Glencore – Raglan Mine

Winnie Chun Yin Shaw takes pride in excelling as a woman in a traditionally male-dominated environment. In the Mining Projects Department, she is particularly focused on long-term planning. For her, it's not just the results that matter. It's the whole process, with all the people involved, that gives her a sense of satisfaction. Her biggest challenge is being innovative in the face of unforeseen developments in the extended life of a mine. In long-term planning, discoveries are often made that mean plans have to be readjusted, but that's what makes the job particularly interesting.

AREAS OF INTEREST

- Analysis and problem-solving
- Understanding a company's values and actions
- Creation and design
- Leadership, management and motivation
- Project management

MY ADVICE

It's important to be curious, ask questions and do your research to identify your interests and choose the right program of study. To learn more, you can meet with teachers of courses in a specific program or people who work in that field. Take the time to explore.

SKILLS AND ABILITIES

- Autonomy
- Ability to adapt
- Team spirit and collaboration
- Time and priority management skills
- Leadership
- Accountability
- Thoroughness/attention to detail
- Sense of initiative
- Organizational/planning skills
- Conscientious work

Strong commitment to occupational health (physical and psychological) and safety

CHEMICAL ENGINEER

Chemical engineers work closely with members of the plant's production team. They analyze processes and propose improvements to ore processing circuits to optimize the quantity and quality of ore recovery, energy demand, reagent consumption and plant productivity in general. They track multiple activities, design experimental circuits, establish control and improvement strategies and write compliance reports. They may be called upon to take part in prevention and environmental protection activities, such as the water treatment process or the management of the tailings facility. They also play an important role in the plant construction phase, directing plant development and determining production specifications.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in chemical engineering**
  043--062--107--111
- **Bachelor's degree in metallurgical and materials engineering**
  043

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- Class 5 driver's licence
- Bilingual proficiency

OTHER JOB TITLES

- Process engineer
- Industrial process engineer
- Metallurgist

Renée Dupéré, Senior Metallurgist | Canadian Malartic Partnership – Odyssey Mine

Previously at the Canadian Malartic mine, Renée Dupéré now works as a senior metallurgist on the Odyssey mine construction team. As part of her duties, she participates in the engineering of the paste **backfill** plant and works with various professionals, since multiple sectors of the mine are involved. For her, a chemical engineer's greatest strength is their involvement. In other words, it's important to have a sense of initiative, good team spirit and openness to change. It's a really interesting job, and the problem-solving is particularly rewarding. It's gratifying to find solutions that enable the entire production team to continue its operations.

AREAS OF INTEREST

- Continuous improvement of work processes
- Analysis and problem-solving
- Leadership, management and motivation
- Project management
- Tests or trials, process control

MY ADVICE

Personal and professional growth in your career means building self-confidence and not being afraid to go for it. It's important to be curious and not hesitate to ask questions in order to better understand.

SKILLS AND ABILITIES

- Autonomy
- Ability to synthesize, analyze and summarize information
- Creativity/originality
- Curiosity
- Interpersonal skills
- Team spirit and collaboration
- Judgment and decision-making skills
- Critical thinking
- Problem-solving skills
- Sense of initiative

Strong commitment to occupational health (physical and psychological) and safety

ELECTRICAL ENGINEER

Electrical engineers are responsible for the design and development of a mine's entire electrical network. They ensure the start-up and operation of industrial equipment by selecting the instrumentation needed to meet process requirements and by integrating control and communication strategies into industrial programmable logic controllers. They coordinate maintenance work and schedule preventive shutdowns to inspect the various systems to diagnose failures and make adjustments. They also oversee the integration of new automated equipment or facilities to optimize the performance, sustainability and safety of operations. In addition, they ensure that electrical and electronic networks comply with the regulations specific to this field of expertise. They may also provide technical assistance to the operations, maintenance and construction sectors.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in electrical engineering**
  012--021--043--051--062--105--107--108--111--119--126
- **Bachelor's degree in automated manufacturing engineering**
  105

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- C licence
- Class 5 driver's licence
- General explosives permit
- Modular training for mine workers (FMTM) (for underground mines)
- Bilingual proficiency

OTHER JOB TITLES

- Electrical reliability specialist
- Automation engineer
- Instrumentation and control engineer
- Automated production engineer

Didier Leblanc, Electrical Engineer | Windsor Salt Ltd. – Mines Seleine

For Didier Leblanc, being an electrical engineer means working in a multidisciplinary field. Electrical engineering covers a wide range of specialties. Not only is professional development an annual requirement of Ordre des ingénieurs du Québec, but Didier feels it's also essential, given the various fields of expertise related to his profession, such as computer networks, coordination of electrical protection, use of automation software and occupational health and safety. Since it's impossible to master every field, professional development enables you to update your knowledge and develop versatility. Among his tasks, Didier has a penchant for anything to do with automation, because it leaves room for creativity and because any project is possible.

AREAS OF INTEREST

- Continuous improvement of work processes
- Configuration, programming
- Innovation/technology
- Inspection, assessment and diagnostics
- Reading blueprints

MY ADVICE

The mining industry operates 24 hours a day, 7 days a week. This pace places certain demands on team performance. You have to learn how to let go of the pressure so that you can channel your energy and get the most out of it for the company and yourself, while keeping in mind occupational health and safety rules.

SKILLS AND ABILITIES

- Autonomy
- Ability to synthesize, analyze and summarize information
- Results-oriented mindset
- Team spirit and collaboration
- Time and priority management skills
- Thoroughness/precision
- Problem-solving skills
- Sense of initiative
- Organizational/planning skills
- Concern for a job well done

Strong commitment to occupational health (physical and psychological) and safety

AUTOMATION ENGINEER

Automation engineers coordinate the development, deployment and maintenance of automated systems that help modernize and optimize the production of mining and metallurgical equipment. They interact with the entire engineering department to propose and integrate automation systems adapted to different needs. They have the expertise to develop high-performance equipment that maximizes production and prevents health and safety risks for workers. They program the PLCs, conduct preliminary tests, make adjustments and maintain systems. They work in the fields of mechanics, electricity and electronics. They produce plans and technical drawings for the integration or renewal of automated equipment. They coordinate improvement projects and are also responsible for establishing budgets and schedules.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in automated manufacturing engineering**
  105
- **Bachelor's degree in software engineering**
  043--105--107--108--110--111
- **Bachelor's degree in robotics engineering**
  062
- **Bachelor's degree in electrical engineering**
  012--021--043--051--062--105--107--108--111--119--126
- **Bachelor's degree in electromechanical engineering**
  012--126

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- Class 5 driver's licence
- Bilingual proficiency

OTHER JOB TITLES

- Automation coordinator
- Electrical engineer
- Automated production engineer
- Robotics engineer
- Electromechanical systems engineer
- Automation specialist

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Pascal Neveu-Duhaime, Automation & Control Engineer | Glencore – Horne Smelter

Pascal Neveu-Duhaime enjoys adjusting systems to make his colleagues' lives easier and optimize the company's production. His projects may include improving measuring instrument precision, facilitating handling for operations personnel or preventing environmental or health and safety risks, to name but a few. All suggested measures must be supported by rigorous risk analyses. Among his tasks, Pascal particularly enjoys coordinating projects and integrating new equipment. As this job touches on different fields of expertise, it's important to develop versatility and logical reasoning.

AREAS OF INTEREST

- Continuous improvement of work processes
- Creation, design
- Project management
- Innovation/technology
- Systems programming

MY ADVICE

To thrive in a career in automation, you need to be curious and want to learn more about related fields. In the mining sector, for example, it's helpful to acquire knowledge of metallurgy and understand the transformation process that you're trying to improve.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Ability to adapt
- Results-oriented mindset
- Team spirit and collaboration
- Time and priority management skills
- Critical thinking
- Problem-solving skills
- Coordination skills
- Sense of initiative
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

GEOLOGICAL ENGINEER

Geological engineers contribute their expertise at different stages of the mining cycle. During the exploration phase, they plan, design and coordinate drilling activities, then collect and analyze geomechanical data. During the construction and operation phases, they coordinate and monitor geological, geotechnical, hydrogeological and geophysical activities involved in the development of underground and open-pit mines. In collaboration with mining engineers and geologists, they participate in mine planning, conduct various feasibility studies, produce predictive 3D development plans and calculate mining reserves. They draw up drilling plans and conduct rock stability analyses, taking into account the various terrain constraints. They ensure that all field work complies with operational guidelines and environmental protection and occupational health and safety legislation.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in geological engineering**
  021--043--107

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec (requirement)
- Be a member of Ordre des géologues du Québec (asset)
- Class 5 driver's licence
- Modular training for mine workers (FMTM) (for underground mines)
- General explosives permit

OTHER JOB TITLES

- Geotechnical engineer
- Rock mechanics engineer
- Geophysical engineer

Abdon Randrianandraisana, Geological Engineer | Windsor Salt Ltd. – Mines Seleine

Abdon Randrianandraisana works for a company that mines salt for de-icing and has to deal with very specific constraints since the mine's underground operations are partly located under the sea. When preparing plans for the development of passageways, Abdon has to thoroughly study the various geological, geotechnical and hydrogeological components of the mining environment to ensure the long-term stability of the facilities. What's more, since this is a salt mine, the water used during operations must itself be saturated with salt so as not to interfere with ore extraction. As part of his overall responsibilities, Abdon particularly enjoys predictive passageway design.

AREAS OF INTEREST

- Analysis and problem-solving
- Data management
- Project management
- Producing plans or technical drawings
- Science and geology

MY JOB 4.0

The profession of geological engineer is set to evolve in line with new technologies, which will continuously improve the accuracy of data for both exploration and mining. Geology software is becoming increasingly sophisticated and enables the integration of unique factors and constraints adapted to any environment.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Ability to adapt
- Team spirit and collaboration
- Time and priority management skills
- Judgment and decision-making skills
- Critical thinking
- Methodical thinking
- Versatility
- Accountability
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

WATER MANAGEMENT ENGINEER

Water management engineers supervise the operation of the tailings facility and ensure that environmental discharge criteria are met. They ensure that facilities maintain their level of performance by carrying out regular inspections, verifying the procedures and analysis methods used, then developing improvement plans and making the necessary adjustments to the system. They are responsible for maintaining the efficiency of the water treatment plant and reservoirs and ensuring a continuous supply of recycled water to the ore processing plant. On occasion, they supervise the water management teams and coordinate the many daily, weekly and monthly sampling events. They lead all environmental monitoring and management activities, ensure that monitoring facilities and procedures meet environmental and government requirements and inform the company of environmental issues.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in water engineering**
  043
- **Bachelor's degree in civil engineering**
  012--021--043--062--107--108--111
- **Bachelor's degree in mining engineering**
  043--107--111--126

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- Drinking water certification
- Certification in wastewater treatment
- Bilingual proficiency
- Class 5 driver's licence

OTHER JOB TITLES

- Water engineer
- Hydrology or environmental hydraulics engineer
- Tailings management engineer
- Water management coordinator

Maxime St-Pierre, Water and Tailings Management Engineer | Québec Iron Ore

Maxime St-Pierre's greatest pride is assisting with the extraction of ore that brings wealth to Québec, in compliance with the highest standards of environmental protection. As an avid fisherman, he sees the impact of his work in everyday life. He is keenly aware of the importance of each action and its long-term effects. At the Bloom Lake mine, there's a large lake in the middle of the facilities, and staff members have the opportunity to observe the benefits of their efforts when they see fish jumping out of the water! For Maxime, it's important to have an environmental conscience and a strong interest in sustainable development.

AREAS OF INTEREST

- Providing help or advice
- Continuous improvement of work processes
- Analysis and problem-solving
- Project management
- Inspection, assessment and diagnostics

MY ADVICE

You have to be willing to open up your horizons, because multidisciplinary skills are highly advantageous, especially for developing excellent adaptability and critical thinking skills. The most important thing is to persevere when you have a plan in mind.

SKILLS AND ABILITIES

- Analytical skills
- Results-oriented mindset
- Team spirit and collaboration
- Quick learner
- Motivation
- Open-mindedness
- Proactiveness
- Problem-solving skills
- Accountability
- Organizational skills

Strong commitment to occupational health (physical and psychological) and safety

MINERAL PROCESSING ENGINEER

Mineral processing engineers are responsible for analyzing all the processing circuits of an ore processing plant to obtain ore that meets the properties and characteristics required by the company and its customers. They review multiple databases from connected measuring equipment and work with the technical team and operators to optimize plant performance and profitability, including at the **crushing**, grinding, physical and chemical separation, reagent, filtration, **backfill**, **flotation** and dewatering stages. They plan and coordinate sampling sequences and, when they detect a production flaw, make the necessary corrections. In addition, they incorporate continuous improvement techniques to continually optimize circuits. Lastly, they manage budgets and assess the cost-effectiveness of operations.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in metallurgical and materials engineering**
  043
- **Bachelor's degree in mining engineering**
  043--107--111--126
- **Bachelor's degree in chemical engineering**
  043--062--107--111

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- Bilingual proficiency

OTHER JOB TITLES

- Process engineer
- Ore processing engineer
- Metallurgist

Sarah Lamontagne, Process Engineer | ArcelorMittal Mining Canada G.P.

Sarah Lamontagne believes that working as a team with her colleagues and the other departments involved is critical to having a global view of operations. Thanks to a wealth of digital data, you can get a real-time picture of the situation. Production lines are complex and have their own personality, and that's what Sarah finds interesting about her job. No two circuits are exactly alike, so you have to pay attention to detail. Sarah particularly enjoys data analysis, which is used to evaluate production line performance.

AREAS OF INTEREST

- Analysis and problem-solving
- Chemistry and geology
- Conceptualization
- Inspection, assessment and diagnostics
- Tests or trials, process control

MY ADVICE

When you enter the job market, you discover that environments can vary from the more standard models you see at school. Processes can be very different from one company to another. It's therefore important to adopt the right behaviours, such as listening and recognizing that there are still things to learn.

SKILLS AND ABILITIES

- Ability to adapt
- Analytical skills
- Team spirit and collaboration
- Time and priority management skills
- Integrity
- Leadership
- Open-mindedness
- Perseverance
- Problem-solving skills
- Coordination skills

Strong commitment to occupational health (physical and psychological) and safety

MECHANICAL ENGINEER

Mechanical engineers plan and carry out medium- and long-term projects aimed at improving the safety, reliability, efficiency and performance of mining equipment and facilities. They establish budgets and schedules and coordinate the execution of mechanical work. They ensure compliance with industry requirements and operational standards. They work closely with different areas of the mine and conduct maintenance programs, inspections and analyses to prevent and solve mechanical problems and to recommend avenues for continuous improvement. In the manufacturing field, they work on the design of prototypes that meet specific needs and require the integration of customized components. They are called upon to propose effective health and safety solutions and to estimate production costs.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **Bachelor's degree in mechanical engineering**
  012--021--043--051--062--105--107--108--111--126
- **Bachelor's degree in electromechanical engineering**
  012--126

OTHER REQUIREMENTS AND ASSETS

- Be a member of Ordre des ingénieurs du Québec
- General explosives permit
- Modular training for mine workers (FMTM) (for underground mines)
- Class 5 driver's licence
- Bilingual proficiency

OTHER JOB TITLES

- Mechanical reliability specialist
- Electromechanical engineer
- Mechanical maintenance engineer
- Industrial mechanical engineer
- Mechatronics engineer

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

William Levesque, Candidate to the Mechanical Engineering Profession | CMAC-Thyssen Mining Group

William Levesque works on manufacturing projects, such as the design of mining equipment, that meet specific needs. He comes up with conceptual ideas and performs multiple calculations to determine the feasibility and robustness of the machinery. In his job, it's also very important to properly represent the environment and consider all the factors that can affect the machinery, because the health and safety of the people who will be using it are paramount. According to William, it's important to look at the big picture, i.e., see the project as a whole and recognize that each part contributes to the end result and that everyone is aiming for the same goal of excellence.

AREAS OF INTEREST

- Analysis and problem-solving
- Creation, design
- Innovation/technology
- Mechanics and mathematics
- Working with people

MY ADVICE

Internships give you the opportunity to experience different work environments and different things. This can be essential in pinpointing your interests and choosing a career you love. One thing is certain: you need to have a keen interest in mathematics.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Ability to adapt
- Ability to pay attention
- Creativity/originality
- Team spirit and collaboration
- Quick learner
- Leadership
- Critical thinking
- Problem-solving skills
- Accountability

Strong commitment to occupational health (physical and psychological) and safety

POUR DES
FORMATIONS UNIQUES
DANS LE SECTEUR MINIER,

UQAT

CHOISISSEZ L'UQAT !

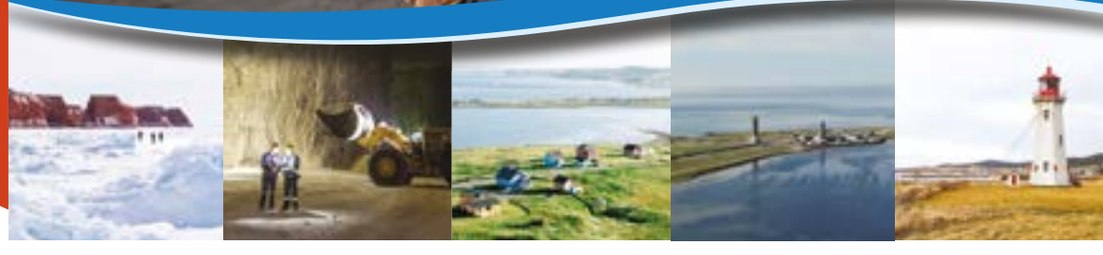
Programmes de 1er, 2e et 3e cycles

- Environnement minier
- Hydrogéologie appliquée
- Génie
- Gestion appliquée à l'industrie minérale
- Sciences de l'environnement

et plus encore !

> Plusieurs cours sont offerts en classe et à distance

Et si le vent des Îles te menait à de nouveaux défis?



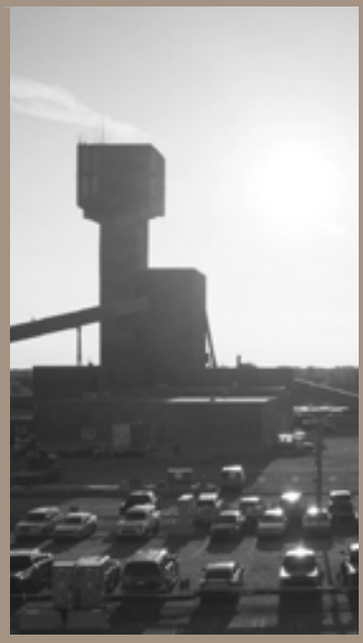
Pour une qualité de vie exceptionnelle,
choisis les Îles-de-la-Madeleine.

windsor
SINCE 1893 DEPUIS
selwindsor.com/carrieres/

les Îles.
etsilesiles.ca

MINE MATAGAMI

Une Compagnie GLENCORE



Explorez toutes vos options pour faire grandir
votre carrière sur www.minematagami.ca

Le Syndicat des Métallos représente les travailleurs et travailleuses de plusieurs mines au Québec, et ce, depuis plus de 70 ans.

CÔTE-NORD

- ArcelorMittal exploitation minière Canada (Mont Wright et Port Cartier)
- Minerai de Fer Québec (Lac Bloom)
- Rio Tinto Fer et Titane
- Compagnie minière IOC

NUNAVIK

- Glencore Canada (Mine Raglan)
- Canadian Royalties inc. (Entente Nunavik Nickel)

ABITIBI-TÉMISCAMINGUE

- IAMGOLD Corporation (Mine Westwood)
- Mines Abcourt inc. (Division Géant Dormant)
- Corporation minière Monarch (Mine Beaufor)

NORD-DU-QUÉBEC

- Breakwater Ressources Ltd (Nyrstar Langlois)
- Glencore Canada (Mine Matagami)

CHARLEVOIX

- Sitec Amérique du Nord Inc

À vous maintenant de faire partie de la famille !
1 866 382-5567

Le secteur minier, une grande variété de carrières qui s'offrent à vous !

EXPLORE LES MINES.COM

COMITÉ SECTORIEL DE MAIN-D'ŒUVRE DE L'INDUSTRIE DES MINES

WAREHOUSE CLERK

Warehouse clerks are responsible for receiving, shipping, identifying and controlling incoming and outgoing warehouse materials. They check receiving and shipping slips, the condition of goods and the correspondence of orders in transition, and follow up on errors in the ordering process. They must identify the storage location and record the route of supplies in the electronic system, while keeping the computer database up to date. They inventory stored materials and ensure the procurement of missing supplies by processing requests from the various areas of the mine. They place materials in the warehouse in an orderly manner and coordinate the transportation of supplies to the appropriate locations at the mine site. They practise and implement safe work practices and maintain a clean work environment.

QUALIFICATIONS GENERALLY REQUIRED

- **High school diploma**

OTHER REQUIREMENTS AND ASSETS

- Forklift operator training
- Transportation of Dangerous Goods (TDG) training
- Workplace Hazardous Materials Information System (WHMIS) training

OTHER JOB TITLES

- Procurement officer
- Inventory management clerk
- Storekeeper

Pierre St-Georges, Warehouse Clerk | Hecla Québec

Pierre St-Georges places the utmost importance on occupational health and safety. He believes it's essential to adopt a preventive approach to accidents, not a reactive one. Even when deadlines are tight and you're in a hurry, you have to keep in mind the risks involved in the work environment. Apart from that, the job of warehouse clerk requires good time and priority management, as well as good organizational skills. What's more, because many of the mine's departments are stocked with supplies on a daily basis, it's a very busy work environment where the tasks are quite varied. What Pierre loves most is being around people and contributing to the smooth running of operations.

AREAS OF INTEREST

- Providing help or advice
- Continuous improvement of work processes
- Logistics management
- Working with people
- Physical work

MY ADVICE

You have to be ready for challenges and enjoy physical work. There's no shortage of work, and collaboration with other teams is the key to success. It's also important to remember that health and safety come first.

SKILLS AND ABILITIES

- Attention
- Ability to adapt
- Drive
- Efficiency
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Proactiveness
- Thoroughness/attention to detail
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

TRAINER

Mining company trainers are responsible for the theoretical and practical training and evaluation of employees in various fields, depending on the different operational practices of a plant or mine. They have extensive experience in a particular field and strong technical and teaching skills. They prepare, plan, deliver and follow up on training sessions. They're also involved in developing, updating and improving training materials in line with technological and procedural changes as well as new equipment acquisitions. They ensure compliance with health and safety rules and standards set by the company. They pass on their knowledge, facilitate coaching and ensure participants are properly trained through assessments and feedback.

QUALIFICATIONS GENERALLY REQUIRED

- **High school diploma**
- **Any education related to operational practices**

OTHER REQUIREMENTS AND ASSETS

- Certification or training for on-the-job trainers

OTHER JOB TITLES

- In-house trainer
- Support guide
- Instructor

Where do they primarily work?

What stages of the mining cycle are they primarily involved in?

Michael Rochette, Support Guide for Heavy Machinery Operation Training | Canadian Malartic Mine Partnership – Canadian Malartic Mine

Michael Rochette is a support guide for operational services at the Canadian Malartic Mine, and more specifically for heavy machinery operation training. He devotes most of his time to supporting participants in the field. The open-pit mine is unique, with its oversized equipment. Michael helps new team members adjust and assists experienced workers who want to progress within the company. For him, nothing is more important than instilling occupational health and safety standards and regulations, an essential part of training.

AREAS OF INTEREST

- Providing help or advice
- Leadership, management and motivation
- Teaching and training
- Writing, communication and information
- Working with people

MY ADVICE

Trainers need to develop positive working relationships with participants and avoid making hasty judgments. Drive, interpersonal skills, patience and understanding are essential for success in this career.

SKILLS AND ABILITIES

- Ability to synthesize, analyze and summarize information
- Ability to adapt
- Understanding
- Drive
- Active listening skills
- Interpersonal skills
- Team spirit and collaboration
- Patience
- Organizational/planning skills
- Coordination skills

Strong commitment to occupational health (physical and psychological) and safety

TRAIN ENGINEER

Train engineers are responsible for initiating, controlling and managing the mechanical movements of a train. They operate locomotives and apply the appropriate controls to adjust their operation to procedures, restrictions, operating bulletins and railway signals. They ensure the safe transportation of minerals and goods by rail over long distances. Their journeys may last several days and include rest periods in camps. They monitor mechanical settings such as brake air pressure, engine temperature and speed. Based on this data, they may be called upon to inspect the entire convoy as it moves. When a trip requires pick-up and/or detachment of cars en route, they must be accompanied by a conductor, who will then make all decisions.

QUALIFICATIONS GENERALLY REQUIRED

- **High school diploma**

OTHER REQUIREMENTS AND ASSETS

- ACS in Rail Transport – Conductors
- Canadian Rail Operating Rules Certificate
- Compliance with the *Railway Medical Rules for Positions Critical to Safe Railway Operations*

OTHER JOB TITLES

- Locomotive agent
- Railway worker
- Locomotive driver
- Locomotive engineer

Serge Lebel, Locomotive Engineer | Rio Tinto IOC

Serge Lebel likes to call his profession a lifestyle rather than a career. The job does impose an irregular schedule and require a lot of discipline. You have to know how to set up your life so you're fresh and available at all times. You also need to be in excellent physical shape, as inspections of the locomotive and cars en route are frequent, and the entire load can be up to 3 km long. Not to mention having to check each side! Because Serge's trips are in unit trains, i.e., they consist of a single car type and don't require any additional switching, he's alone in his locomotive and therefore simultaneously acts as driver and conductor.

AREAS OF INTEREST

- Equipment operation
- Inspection, assessment and diagnostics
- Mechanics
- Working outdoors
- Physical work

MY ADVICE

Being a railway worker is an exciting and rigorous job. It requires physical fitness and good lifestyle management to balance work, family and personal life. It's important to learn about all the specifics and obligations of the profession and then take the time to discuss them with your loved ones.

SKILLS AND ABILITIES

- Diligence
- Autonomy
- Ability to pay attention
- Flexibility
- Stress management/ability to work under pressure
- Judgment and decision-making skills
- Accountability
- Organizational skills
- Concern for a job well done
- Vigilance

Strong commitment to occupational health (physical and psychological) and safety

CORE SHACK WORKER

Core shack workers assist the geology team in its daily tasks. They're responsible for receiving, classifying and storing drilling samples, called "**core samples**," which are very useful in determining the various components of the soil and the ore content to be extracted. To classify core samples, they label and measure them. They're responsible for sawing, splitting and orienting core samples to facilitate geological analysis of the segments. Then they help handle the boxes of core samples destined for laboratory analysis or storage. They may also be required to work in the field to help prepare drilling sites.

QUALIFICATIONS GENERALLY REQUIRED

- **High school diploma**

OTHER REQUIREMENTS AND ASSETS

- Class 5 driver's licence
- Training in a related field

OTHER JOB TITLES

- Core shack day labourer
- Sample clerk
- Geological clerk
- Core shack technician

Joanie Sigouin, Team Leader – Core Shack Worker | Eldorado Gold Québec

Joanie Sigouin has been working in the core shack department for 10 years now. She has advanced within a dynamic team that always works with precision and is well organized. As team leader, she's responsible for supervising her team and working closely with the drilling and geology teams. She's also a member of the Health and Safety Committee and ensures compliance with current policies and regulations. For her, an environment with plenty of teamwork, humour and good cheer is a must. She's passionate and ambitious and aspires to increase her management knowledge.

AREAS OF INTEREST

- Providing help or advice
- Analysis and problem-solving
- Quality control
- Entering, checking, sorting and filing data or information
- Physical work

MY ADVICE

It's important to have a good attitude and be curious. In interviews, for example, you have to express your interest and ask questions. I think the most important thing is to have a health and safety mindset and want to learn new things.

SKILLS AND ABILITIES

- Ability to adapt
- Analytical skills
- Efficiency
- Team spirit and collaboration
- Quick learner
- Versatility
- Accountability
- Thoroughness/attention to detail
- Organizational/planning skills
- Vigilance

Strong commitment to occupational health (physical and psychological) and safety

DISPATCHER

Dispatchers are responsible for coordinating the movement of mobile equipment at a mine site. They ensure that mine planning for the transportation of ore, **waste rock**, processed products and equipment is respected, executed and optimized. Their job is to continuously optimize all production operations, ensure safety and respond to emergencies at the mine site. They assign and allocate mobile equipment based on performance targets, operational constraints and equipment maintenance. Using various geolocation and communication tools such as frequency radios, GPS, monitors and surveillance cameras, they continuously assess the physical environment and communicate frequently with operators to instruct them regarding their tasks, movements and adjustments to be made along the way.

QUALIFICATIONS GENERALLY REQUIRED AND WHERE THIS TRAINING IS AVAILABLE

- **DCS in Operations and Supply Chain Management (new version of DCS in Transportation Logistics Technology)**
  038--048--088--178--213
- **High school diploma**

OTHER REQUIREMENTS AND ASSETS

- Class 5 driver's licence
- Training in a related field

OTHER JOB TITLES

- Route and crew scheduler

Mathieu Pominville, Supervisor, Mine Dispatcher | Québec Iron Ore

Mathieu Pominville enjoys being in a dynamic profession, where every day is different. Similar to an air traffic controller, Mathieu liaises between operations and the mine's various departments by land. He is continually informed of situations arising in the field and keeps his dispatch software up to date to ensure optimal operational planning. In his role as supervisor, he's also called upon to supervise his production team. For Mathieu, the job of dispatcher is based on good management skills. You need to know how to set the right goals based on mine planning, and you also need good problem-solving and decision-making skills and an excellent ability to adapt.

AREAS OF INTEREST

- Continuous improvement of work processes
- Communication and information
- Understanding a company's values and activities
- Logistics management
- Systems programming

MY ADVICE

The job of dispatcher is very interesting and requires a great deal of self-confidence. Clearly, it takes time to master your field of specialization, which is why you need to be kind to yourself and persevere. You have to be a go-getter and willing to learn.

SKILLS AND ABILITIES

- Ability to adapt
- Ability to pay attention
- Results-oriented mindset
- Team spirit and collaboration
- Stress management/ability to work under pressure
- Time and priority management skills
- Judgment and decision-making skills
- Problem-solving skills
- Coordination skills
- Organizational/planning skills

Strong commitment to occupational health (physical and psychological) and safety

OSISKO

MINIÈRE OSISKO

Viens prendre l'air
et découvrir
l'aventure **Windfall** !

Pour la liste complète
des postes disponibles visitez
miniereosisko.com/carrieres/

eldorado gold

Québec | Société minière

ENGAGÉE POUR DES COLLECTIVITÉS PROSPÈRES ET DURABLES

POUR VOIR NOS POSTES DISPONIBLES
eldoradogoldquebec.com (section carrières)

stornoway

Fais briller
TON TALENT

Contribue à un projet unique

Joins-toi à notre équipe

www.stornowaydiamonds.com

Modular training for mining workers: OHS training for workers in the sector

By Martin Gagnon, Director, Prevention, Occupational Health and Safety, Québec Mining Association

One of the mining industry's strengths is its commitment to occupational health and safety (OHS), which it is proud to see reflected in mining workers in everything they do. The Québec Mining Association (QMA) and its partners have been implementing various training programs to help prevent accidents in mines for a number of years. One of these programs is modular training for mining workers (FMTM), which is mandatory for all workers who go underground in the course of their duties, regardless of their job.

Working underground requires a great deal of rigour and vigilance, which is why this training is mandatory for all mining industry personnel and service providers. It consists of twelve modules, covering topics such as working at heights, ground consolidation, explosives and occupational health and safety (OHS) regulations in mines. The mandatory 76-hour basic training course (Modules 1-5 and 7) is offered at educational institutions and, in some cases, supported and paid for by the employer on hiring.

The objectives of modular training for mining workers are to:

- Standardize and structure training in the mining sector
- Reduce the frequency and severity of accidents
- Certify and validate mining workers' OHS knowledge

A number of renowned training centres in Québec offer Diplomas of Vocational Studies (DVS) and other certifications required in the mining sector. However, modular training for mining workers is offered only by Centre de formation professionnelle (CFP) Val-d'Or.

Photo courtesy of CFP Val-d'Or

All trainers offering modular training for mining workers must be approved by an Accreditation Committee consisting of the QMA's Director, Prevention, Occupational Health and Safety, a representative of Association des entrepreneurs miniers du Québec (AEMQ), a representative of the mining companies, a representative of the workers' union and a representative of Centre de formation professionnelle Val-d'Or.

Training quality is ensured by a Monitoring Committee, which meets three times a year to make sure that training is up to date and that regulations are being followed and complied with. This committee is made up of representatives of the Accreditation Committee, plus representatives of the drilling companies, Institut national des mines du Québec (INMQ) and Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST). Thanks to the teamwork and collaboration of all these mining players, the underground mining environment is one of the safest and best supervised.

The *Regulation respecting occupational health and safety in mines* (ROHSM) contains three sections specific to mandatory training:

- Section 27.1 states that any person working underground must receive OHS training.
- Section 27.2 states that any person using manually operated underground drilling equipment must also complete OHS training.
- Section 27.3 states that any person who uses a slusher, pneumatic loader or **scooptram** must also complete OHS training.

The modules for modular training for mining workers are updated on an ongoing basis, and all modules are reviewed annually. In addition, two new modules on shaft-related jobs are currently being developed: Module 13, Communication and Safety Around Mine Shafts, and Module 14, Shaft Inspection and Work.

Photo courtesy of CFP Val-d'Or

Photo courtesy of CFP Val-d'Or

Mining safety – A matter of legislation, training and innovation

By Chanelle Drouin, Prevention Advisor, Association paritaire pour la santé et la sécurité du travail du secteur minier

Since modular training for mining workers was created in 1994, nearly 160,000 training modules have been delivered, including 68,000 on the job and 90,000 in Québec educational institutions.

In CNESST's 2020 annual statistics report, the mining industry is proud to note its excellent results in terms of workplace accident frequency. Mining is the top-performing industry, accounting for just 729 work-related injuries, far ahead of the transport and warehousing (5,093), retail (7,193), construction (7,497) and durable and non-durable goods manufacturing (over 16,000) sectors.

Modular training for mining workers certainly helps reduce workplace accidents, particularly for new workers in the mining sector. Mining companies make every effort to ensure the safety of their employees through various means, including leadership training, the establishment of OHS committees, audits to conduct OHS management diagnostics and prevention programs such as the Supervisory Formula-Work Card (SFWC), which makes it possible to identify risks before a task is performed. These numerous measures enable employees to work in the safest possible environments.

Mining companies, often the victims of preconceived notions regarding occupational health and safety (OHS), leave no stone unturned in this area. Since workers are invaluable resources who are central to day-to-day operations, their safety is a top priority. While Québec's OHS legislation has contributed to increased investment in this area, the many prevention initiatives and the cultural shift in the industry clearly attest to the importance of OHS.

Laws designed for safety

Act respecting occupational health and safety

A number of laws support the prevention efforts of Québec mining companies. This economic sector, like all others, is governed by the *Act respecting occupational health and safety* (AOHS), which seeks to eliminate risks to the health, safety and physical and psychological well-being of employees at the source. To support the introduction of prevention measures, it sets out rights and obligations for workers and employers, including those in the mining industry. This law is key because it stipulates, among other things, the obligation to take the necessary measures to protect the health, ensure the safety and preserve the physical integrity of employees. In other words, it governs the implementation and meticulous application of OHS mechanisms within organizations.

Photo credit: APSM

Regulation respecting occupational health and safety in mines

The nature of the risks to the health and safety of workers in the mining industry makes it a priority sector for Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST). As such, it is subject to a regulation specifically aimed at its organizations: the *Regulation respecting occupational health and safety in mines* (ROHSM). It sets out a number of legal obligations, such as standards for the construction of underground passageways, emergency procedures and personal protective equipment for the various professions. The ROHSM therefore encourages optimal, sustainable OHS management.

Combined with regulatory committees and Association paritaire pour la santé et la sécurité du travail – Mines (APSM), whose mission is to assist mining workers and employers in preventing risks, Québec's legal framework, consistent with the sector's needs, ensures greater support for the industry in terms of occupational health and safety.

A trained worker is a safe worker

To improve OHS at their facilities, companies have had to meet a number of challenges, with training being one of the most important. The constant evolution of health and safety training is key to success in the industry. First, in order to do their jobs safely, employees are receiving more initial training. Vocational, college and university programs have been set up, standardizing the teaching of work methods. Second, the introduction of onboarding programs in mining companies is helping to contextualize learning. It's important for workers to know how to do their jobs safely in their organization's environment and context. Lastly, ongoing training, which aims to improve knowledge of existing risks and hazards, is now making it easier for staff to identify potentially dangerous situations and therefore prevent them.

Innovating to protect

Every day, mining workers have to go several kilometres underground and work alongside heavy equipment to do their jobs. These unique conditions have motivated the industry to find innovative safety solutions.

Photo credit: APSM

Nowadays, it's possible to instantly know the underground position of workers and their equipment. This geolocation is made possible by the introduction at mine sites of various information dissemination channels, which are effective even at depths of several kilometres (e.g., LTE network, tracking chips, RFID, etc.). In addition to ensuring that precise evacuation protocols are in place in the event of an accidental event, geolocation is useful for other innovations such as on-demand ventilation. Underground ventilation based on air requirements, gas emissions and the perceived temperature can be activated based on workers' position. Good air quality and a stable temperature are essential to the concentration and vigilance of underground workers, and therefore crucial to their safety.

In addition to technological advances that make underground passageways increasingly safer, it is now possible to simply keep workers away from high-risk areas. Remote operation and automation of various mining equipment, still under development in this sector, minimize workers' exposure to sources of danger.

These examples highlight the metamorphosis of health and safety in mines. They show the benefits of technology in dealing with unpredictable risks in a mining environment.

A top priority, key players

The use of new technologies, the structured legislative framework and a training program tailored to the realities of the mining environment are the result of the involvement of key players who care about employee health and safety. Thanks to their open-mindedness and desire to help reduce risks in mines, these leaders have advanced OHS and made it a daily priority. Who will be the next champions of OHS in mining?

Making a choice for your future

By the Québec Mineral Exploration Association

Are you familiar with the Québec mineral industry? Among other things, it involves mineral exploration, the development of discoveries, mineral production and site restoration in part of Québec. Many different trades work together in this industry. Jobs are therefore varied, and different levels of education are required. With the aging of the population, workforce needs will continue to grow over the next decade. Technicians, professionals, labourers and support, supervisory and management staff will all be in demand.

Québec's mining exploration industry creates nearly 3,900 direct jobs. In addition to these direct jobs, there are 2,511 jobs at companies' internal and external suppliers. The average salary in the exploration sector in 2017 was $80,500.

The field of earth sciences has evolved enormously, thanks in particular to digital and technological tools, as well as the democratization and adaptation of data science capabilities to this sector. Geology and earth sciences in general are becoming more and more quantitative. The role and responsibilities of geologists will remain fundamentally the same. However, their tools, work methods and expectations of their collaborators in the field (service providers) will increasingly involve the ability to capture, transmit, manage and analyze geological data.

The term "digital geosciences" has even appeared in the literature to describe this combination of quantitative geological theory and information and telecommunication technologies. The aim is to discover underground anomalies using geological databases. Information to identify and predict geological structures and deposits deep underground will be extracted from these databases.

Photo credit: QMEA

Photo credit: QMEA

Going forward, data acquisition and management skills will be very important. Geological teams will increasingly rely on data analysis to make quick and effective decisions in the field. New generations of mineral exploration workers will be quite comfortable not only in the field, but also with computer technology and software.

Technological advances will improve equipment performance, precision and efficiency. Equipment automation will transform operators' jobs into technology-driven positions. We will therefore see a migration of tasks and responsibilities.

With the advent of information technology, companies are looking for professionals with expertise in the use of advanced software. Companies recently surveyed indicated a particular need for database management, 3D modelling, resource estimation, financial performance optimization and the use of mapping software (GIS).

In the short term, machine learning will continue to be integrated into all stages of mining exploration. This means that geologists and other specialists will also need to have knowledge of artificial intelligence.

Companies are increasingly looking for employees with advanced knowledge of compliance. Given the large and growing number of laws and regulations in force, particularly for access and movement within the territory, applicants familiar with Québec regulations are in high demand. For example, exploration companies are increasingly integrating environmental specialists into their teams. As social acceptability is crucial to a project's success, firms are looking for people who can connect with communities, especially First Nations.

Issues such as climate change and social inequality are transforming the business environment and shaping the evolution of environmental, social and governance (ESG) risks and opportunities for organizations. Stakeholders—including investors, regulators, consumers and employees—increasingly expect organizations to manage the effects of these issues.

Exploration companies must ensure that they identify, manage and respond to ESG risks and opportunities, both within the organization and across the supply chain.

Photo credit: QMEA

To make the most of evolving practices and achieve the highest standards in field work in the most innovative way possible, Underwriters Laboratories of Canada (ULC) established a new certification for mineral exploration in 2019.

It is the first comprehensive certification for mineral exploration companies and their service providers, concluding with an external, independent audit of the application of environmental, social and economic best practices. Through a process that includes field visits and a thorough review of documentation, ULC's ECOLOGO® certification enables mineral exploration companies to identify, manage and promote the application of best practices in sustainable development.

That way, activities leading to the discovery of a deposit and then the construction, production and restoration of a mine will be documented and potentially quantifiable. We could go one step further with an "eco-friendly" label on our products and, consequently, the batteries and electric vehicles that contain them. That's where Québec's true strength will lie—in the ability to produce all the components of a battery here, according to high environmental and social standards.

The Québec Mineral Exploration Association (QMEA) has close to 1,000 individual members (prospectors, geologists, geophysicists, brokers, tax specialists, lawyers, etc.) and nearly 150 corporate members (junior exploration and mining companies, geological and geophysical consulting engineering firms, drilling companies, service companies, equipment manufacturers, etc.).

Québec mining contractors: Essential partners for local companies

By Association des entrepreneurs miniers du Québec

Association des entrepreneurs miniers du Québec (AEMQ) is a group of independent mining contractors who work together to promote the health and safety of mine workers. Despite the competition between them when it comes time to bid on a contract, this group of contractors openly discusses any topic dealing with occupational health and safety. The well-being of mining employees and the continuous improvement of work methods are a top priority.

A contractor is a party who provides contractual services for different companies. These contracts are awarded following a rigorous tendering process that contractors go through. Depending on the need, a company will invite contractors to participate in the process.

In the mining industry, many contractors provide services in a wide range of fields. Mining contractors are often the first to access the land on which a mine will be built. After prospectors have discovered a deposit, diamond drilling contractors perform exploration drilling. From shaft collar and ramp collar preparation to metal production, contractors are essential partners in helping mining companies achieve their goals. Underground development, construction of underground or surface infrastructure, exploration drilling, production drilling and electrical work are carried out by contractors specializing in these different fields. Contractors also own specialized mining equipment used for this work, such as **scooptrams**, heavy trucks, pickup trucks, tractors, **diamond drill rigs**, development **drill rigs**, **bolters** and scissor lifts, to name but a few. With this equipment, there's little work that contractors can't do.

Photo credit: QMEA

A number of professions are in demand for contractors, including engineering, specialized drilling and mining equipment operations, and all positions related to mining and construction operations, such as technicians, electricians and mechanics.

Work schedules can take any form imaginable, such as **commuting** with 21 days on and 24 days off (or 14 days on/14 days off) or, for work in urban areas, a daytime schedule from Monday to Thursday (4 days on and 3 days off), or a 7 days on/7 days off formula. In short, think of a schedule and it most certainly exists.

Contractors see themselves as open and inclusive employers. For example, women are becoming more and more prominent in the industry as a whole. Their hard work, rigour and health and safety mindset have helped create an accessible, versatile work environment. In addition, most contractors have partnership agreements with First Nations, as work is carried out on their territory. These agreements provide not only for economic benefits, but also jobs and training tailored to the specific realities of First Nations. What's more, with labour shortages on the rise, many contractors are also encouraging the hiring of foreign workers. Specific and ongoing training programs are being set up to facilitate their integration.

Most of our members have contracts all over Québec, in the rest of Canada and even abroad. Working for them is an opportunity to see the country and learn about other cultures. Worker mobility for the same contractor is an added benefit, allowing workers to change contracts without losing their sense of belonging, while continuing to promote the company's culture.

Photo credit: QMEA

The world of mining contractors offers numerous opportunities and rewarding experiences. You'll meet hard-working people, dedicated managers and management teams who care about the well-being of their employees.

We look forward to working with you!

The QMEA was founded in 1982 when a small number of representatives met in Val-d'Or under the leadership of Maurice Parent, founding president and OHS manager of Ross-Finlay. Other founding companies included Forage RM, J.S. Redpath, Aurora and Dynatec. Today, the QMEA has eight regular active members and about 15 associate members, some of whom sit on regulatory committees of Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST).

Photo credit: QMEA

An increasingly educated workforce and the skills needed for a competitive, greener mining sector!

By Christine Duchesneau, President and CEO, Institut national des mines du Québec

Mining companies are hiring an increasingly skilled workforce. According to *Portrait de la formation dispensée par les entreprises minières à leur personnel* [Portrait of Training Provided by Mining Companies to their Staff], between 2013 and 2019, there was a 33% increase in the number of mining companies requiring a Diploma of Vocational Studies (DVS) for entry-level positions.

As technology becomes increasingly present in various industries, including mining, training is one way of facilitating adaptation to technological change by promoting the acquisition of new skills to properly equip the next generation, but also to upgrade the skills of current workers throughout their working lives. In collaboration with Institut national des mines, Québec educational institutions offering mining training at the vocational, college and university levels are updating their training offerings to meet the growing needs of a mining sector that is evolving and reinventing itself, thanks in part to new technologies.

Greener industry and electrical skills for mechanics

Have you ever bought or had the opportunity to drive an electric vehicle? The mining industry, too, is being changed by technologies, particularly those that reduce the carbon footprint. Hybrid and electric mining machinery will play an increasingly important role in mines in the coming years. In fact, the entire Québec mining industry aims to reach the target of 50% hybrid and electric mining equipment in its fleets by 2034. The industry will transition to this greener technology with a qualified mining workforce that has the skills to maintain this type of equipment. The industry aims in particular to acquire knowledge of circuits and symbols, workplace safety and high voltage wiring for millwright mechanics. Is this a profession that appeals you? One thing's for sure: the electrification of transportation will also transform the training required.

Measuring digital technology to improve skills

To better meet the industry's needs, a variety of research is being conducted to more accurately determine the training required and the desired skills. As such, it seems appropriate to evaluate current training programs in order to situate them on the digital stage. In 2020, Institut national des mines developed a tool to measure the integration of digital technology in mining sector training programs, which has even been validated for two programs: Heavy Equipment Operation for Forestry Road Systems (DVS) and Mineral Technology (DCS). This tool, which has been recommended to the Ministers of Education and Higher Education, will soon make it possible to digitally diagnose a study or training program and identify digital skills to be developed, both among students and in the educational community, such as managers and education professionals.

Courtesy: Meglab/photography Geneviève Rouleau

Specific skills were studied to better situate their importance in the mining industry. With the advent of certain technologies, two skills caught the Institute's attention and were studied: cybersecurity skills resulting from the emergence of data from connected tools, and the skills required to maintain hybrid and electric mining equipment, which is increasingly present in the Québec mining sector.

Industry 4.0 and cybersecurity skills

To protect data and gain a better understanding of security measures in a digital environment, it's essential to use digital equipment properly and securely, protect an organization's personal and corporate data, and manage risks. Cybersecurity skills need to be integrated into training programs. The educational institutions surveyed in the study "Portrait de la cybersécurité dans les programmes de formation professionnelle et les programmes d'études collégiales" [A Portrait of Cybersecurity in Vocational and College Programs] said they were aware of the importance of cybersecurity in the industry and the development of skills among their students.

Lifelong learning, even in business

The digital shift is pushing today's mining workers to continually learn more, acquire new skills and use new tools to ensure the successful implementation of new technologies. To support this shift, companies provide their staff with ongoing training. The latest *Portrait de la formation dispensée par les entreprises minières à leur personnel* [Portrait of Training Provided by Mining Companies to their Staff] revealed how the skills to be acquired have evolved. In 2016, a number of mining companies saw the emergence of new skills to deploy the digital technologies associated with automation and robotics, which have remained a priority ever since. However, the picture of priority digital skills is becoming clearer. Today, cross-functional skills come second, highlighting the growing need for versatile, critical-thinking, creative and problem-solving employees. Six in-demand skills have been identified by the mining sector:

1. Robotics and automation
2. Cross-functional skills
3. Programming and maintenance
4. Cybersecurity, data and connectivity
5. Sensors
6. Drones

Courtesy: Meglab/photography Geneviève Rouleau

The introduction of new technologies is already helping to improve the health and safety of workers by moving them away from ore mining areas. The deployment of new, higher-performing technologies will be facilitated by the availability of workers who demonstrate leadership, openness and adaptability. This development will certainly require high-quality initial training from Québec's educational institutions, which are committed to producing the best mining workforce in the world.

To learn more about the skills in demand in the mining sector, go to www.inmq.gouv.qc.ca.

Open-pit mine

Bloom Lake mine – Québec Iron Ore

Photo credit: Québec Iron Ore

Useful mining industry vocabulary

Commuting (also known as *fly in/fly out* or *drive in/drive out*): Transportation of a worker by plane, bus or car between their home and their remote workplace. The worker stays at the mine site for a predetermined period and is provided with room and board by the employer.

Concentrator: Ore concentration plant consisting of various facilities.

Conveyor: Continuously moving device on which ore is transported.

Core sample: Cylindrical rock sample removed from the ground by a diamond drill rig, used to characterize soil properties and measure ore content.

Crusher **crushing*: Stationary device used to crush rock to reduce its size.

Drill: Tool used to bore holes.

Flotation: Chemical process for separating minerals according to their affinity to water and air. This involves introducing air bubbles into the bottom of the tank. Hydrophobic particles attach to these bubbles and rise to the surface.

Hoist: Motorized device for lifting ore, merchandise and personnel, moving loads by means of a chain or rope wound around a drum.

Lockout: Installation of a padlock or tag on an energy-isolating device in accordance with an established procedure, indicating that the device in question must not be operated before the padlock or tag is removed.

Mineral prospecting: Study of a defined area to locate high-content mineral deposits.

Paste backfill: Mixture of mine tailings, water and cement used to further stabilize the mining environment and underground worksites.

Support system: General term designating all means for keeping mine excavations open and safe, using mechanical methods determined by an engineer.

Topographical survey: Plan or map depicting the terrain and details visible in the field.

Waste rock: Rock with no mineral value removed during ore processing.

Heavy machinery

Backhoe: Excavator fitted with an articulated arm and a digger bucket facing downwards at the end to remove soil and excavate ore.

Bolter: Free-standing motorized machine used to support the walls of passageways dug into rock.

Bulldozer: Powerful earthmoving machine used to level the ground and move materials.

Dump truck: Vehicle designed to transport ore and materials, with a bed that tilts backwards to empty the load.

Grader: Self-propelled earthmoving machine with a wide, steerable blade between the front and rear wheels, used to level the ground surface.

Scooptram: Machine used underground to load ore and materials onto a transport vehicle.

Machine tools

Development drill rig: Machine tool designed to bore deep holes in rock or soil for depositing explosives.

Diamond drill rig: Machine tool used to produce long soil samples called core samples. Diamonds at the drill tip make it possible to drill through all types of elements in the ground.

Grinding machine **grinding*: Device fitted with a grinding wheel used for sharpening, cutting or polishing.

Milling machine **milling*: Device used to shape or sculpt a part.

Planer **planing*: Device used to work wood to correct imperfections.

Acronyms

ACS . . . . . Attestation of College Studies

AEMQ . . . . . Association des entrepreneurs miniers du Québec

AOHS . . . . . Act respecting occupational health and safety

APSM . . . . . Association paritaire pour la santé et la sécurité du travail du secteur minier

AVS . . . . . Attestation of Vocational Specialization

CCQ . . . . . Commission de la construction du Québec

CFP . . . . . Vocational training centre

CIM . . . . . Canadian Institute of Mining, Metallurgy and Petroleum

CNESST . . . . . Commission des normes, de l'équité, de la santé et de la sécurité du travail

CONSOREM . . . . . Consortium de recherche en exploration minérale

Corem . . . . . Mineral Research Consortium

CSMO Mines . . . . . Comité sectoriel de main-d'œuvre de l'industrie des mines

DCS . . . . . Diploma of College Studies

DVS . . . . . Diploma of Vocational Studies

ESG . . . . . Environmental, social and governance factors

FMTM . . . . . Modular training for mining workers

FNHRDCQ . . . . . First Nations Human Resources Development Commission of Québec

GIS . . . . . Geographic Information System

INMQ . . . . . Institut national des mines

MAPAQ . . . . . Ministère de l'Agriculture des Pêcheries et de l'Alimentation

MEQ . . . . . Ministère de l'Éducation

MERN . . . . . Ministère de l'Énergie et des Ressources naturelles

MES . . . . . Ministère de l'Enseignement supérieur

MiHRC . . . . . Mining Industry Human Resources Council

OHS . . . . . Occupational health and safety

QMA . . . . . Québec Mining Association

QMEA . . . . . Québec Mineral Exploration Association

ROHSM . . . . . Regulation respecting occupational health and safety in mines

SFWC . . . . . Supervisory Formula-Work Card

TJCM . . . . . Table jamésienne de concertation minière

VT . . . . . Vocational training

WHMIS . . . . . Workplace Hazardous Materials Information System

WIM . . . . . Women in Mining

Index of the 50 careers presented in the guide

Vocational level

Office agent 38
Cook 40
Industrial designer 42
Electrician 44
Electromechanic 46
Diamond driller 48
Driller/blaster 50
Machinist 52
Millwright 54
Heavy equipment mechanic 56
Underground miner 58
Heavy equipment operator 60
Ore processing operator 62
Water treatment plant operator 64
Plumber 66
Building maintenance worker 68
Welder 70

College level

Administrative assistant 78
Nurse 80
Mining technician 82
Accounting technician 84
Laboratory technician 86
Industrial electronic technician 88
Environmental technician 90
Geological technician 92
Computer technician 94
Industrial maintenance technician 96
Mineral processing technician 98
Fire prevention technician 100

University level

Buyer 106
Accountant 108
Communications advisor 110
Human resources advisor 112
Health and safety advisor 114
Continuous improvement coordinator 116
Environmental coordinator 118
Geologist 120
Mining engineer 122
Chemical engineer 124
Electrical engineer 126
Automation engineer 128
Geological engineer 130
Water management engineer 132
Mineral processing engineer 134
Mechanical engineer 136

Other requirements

Warehouse clerk 142
Trainer 144
Train engineer 146
Core shack worker 148
Dispatcher 150

Directory of educational institutions by administrative region

This directory lists the educational institutions offering one of the training programs mentioned in this guide that lead to one of the 50 careers.

Educational institutions marked with an asterisk (*) are subsidized/non-subsidized private schools recognized by Ministère de l'Éducation et de l'Enseignement supérieur.

Schools marked with two asterisks (**) are English-language institutions.

01 BAS-SAINT-LAURENT

Vocational level

001 Centre de formation professionnelle de Mont-Joli-Mitis
002 Centre de formation professionnelle de Rimouski-Neigette
003 Centre de formation professionnelle du Fleuve-et-des-Lacs
004 Centre de formation professionnelle Matanie – Vallée et Foresterie
005 Centre de formation professionnelle Pavillon-de-l'Avenir
006 CFPRO à Amqui
007 CFPRO à Matane

College level

008 Cégep de La Pocatière
009 Cégep de Matane
010 Cégep de Rimouski
011 Cégep de Rivière-du-Loup

University level

012 Université du Québec à Rimouski (UQAR)

02 SAGUENAY–LAC-SAINT-JEAN

Vocational level

013 Centre de formation professionnelle Alma
014 Centre de formation professionnelle du Grand-Fjord
015 Centre de formation professionnelle du Pays-des-Bleuets
016 Centre de formation professionnelle Jonquière

College level

017 Cégep de Chicoutimi
018 Cégep de Jonquière
019 Cégep de Saint-Félicien
020 Collège d'Alma

University level

021 Université du Québec à Chicoutimi (UQAC)

03 CAPITALE-NATIONALE

Vocational level

022 Aviron Québec, campus Charest*
023 Aviron Québec, campus Jonquière*
024 Centre de formation professionnelle de Charlevoix
025 Centre de formation professionnelle de Limoilou
026 Centre de formation professionnelle de Neufchâtel
027 Centre de formation professionnelle de Portneuf
028 Centre de formation professionnelle de Québec
029 Eastern Québec Learning Centre**
030 Centre de formation professionnelle Fierbourg
031 Centre de formation professionnelle Marie-Rollet
032 Centre de formation professionnelle Samuel-De Champlain
033 Centre de formation professionnelle Wilbrod-Bherer
034 École des métiers et occupations de l'industrie de la construction de Québec (EMOICQ)
035 École hôtelière de la Capitale

College level

036 Campus Notre-Dame-de-Foy*
037 Cégep de Sainte-Foy
038 Cégep Garneau
039 Cégep Limoilou
040 Collège Bart*
041 Collège Mérici*
042 Collège O'Sullivan de Québec inc.*

University level

043 Université Laval

04 MAURICIE

Vocational level

044 Carrefour Formation Mauricie
045 Centre de formation professionnelle Bel-Avenir
046 Centre de formation professionnelle Qualitech
047 École forestière de La Tuque

College level

048 Cégep de Trois-Rivières
049 Cégep de Shawinigan
050 Collège Ellis, campus de Trois-Rivières*

University level

051 Université du Québec à Trois-Rivières (UQTR)

05 ESTRIE

Vocational level

052 Centre de formation professionnelle 24-Juin
053 Centre de formation professionnelle de Coaticook (CRIFA)
054 Lennoxville Vocational Training Centre**
055 Centre de formation professionnelle du Haut-Saint-François
056 Centre de formation professionnelle EXPÉ
057 Centre de formation professionnelle Le Granit
058 Collège de comptabilité et de secrétariat du Québec, campus Sherbrooke*

College level

059 Cégep de Sherbrooke
060 Champlain Regional College – Lennoxville Campus**

University level

061 Bishop's University**
062 Université de Sherbrooke (UdeS)

06 MONTRÉAL

Vocational level

063 St. Pius X Career Centre**
064 Pearson Adult and Career Centre**
065 Centre de formation professionnelle Anjou
066 Centre de formation professionnelle Antoine-de-Saint-Exupéry
067 Centre de formation professionnelle Calixa-Lavallée
068 Centre de formation professionnelle Daniel-Johnson
069 Centre de formation professionnelle de Lachine
070 Centre de formation professionnelle des Carrefours
071 Laurier Macdonald Career Centre**
072 Centre de formation professionnelle Léonard-De Vinci
073 Shadd Health and Business Centre**
074 Rosemount Technology Centre**
075 Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
076 Herzing College*
077 LaSalle College (VT)*
078 Collège Supérieur de Montréal*
079 École des métiers de la construction de Montréal
080 École des métiers de la restauration et du tourisme de Montréal
081 École des métiers de l'aérospatiale de Montréal
082 École des métiers de l'équipement motorisé de Montréal
083 École des métiers de l'informatique, du commerce et de l'administration de Montréal
084 École des métiers du meuble de Montréal
085 École des métiers du Sud-Ouest-de-Montréal
086 Institut de tourisme et d'hôtellerie du Québec (VT)
087 Aviron Technical Institute of Montréal*

College level

088 Cégep André-Laurendeau
089 Cégep d'Ahuntsic
090 Cégep de Bois-de-Boulogne
091 Cégep de Maisonneuve
092 Cégep de Rosemont
093 Cégep de Saint-Laurent

College training (cont.)

094 Cégep du Vieux Montréal
095 Cégep Gérald-Godin
096 John Abbott College**
097 Cégep Marie-Victorin
098 Dawson College**
099 LaSalle College*
100 O'Sullivan College of Montréal*
101 Institut de tourisme et d'hôtellerie du Québec
102 Institut Grasset*
103 Institut Teccart*
104 Vanier College**

University level

105 École de technologie supérieure (ÉTS)
106 École des hautes études commerciales (HEC)
107 Polytechnique Montréal
108 Concordia University**
109 Université de Montréal (UdeM)
110 Université du Québec à Montréal (UQAM)
111 McGill University**

07 OUTAOUAIS

Vocational level

112 Centre de formation professionnelle Compétences Outaouais
113 Centre de formation professionnelle des Portages-de-l'Outaouais
114 Centre de formation professionnelle Pontiac
115 Centre de formation professionnelle Relais de la Lièvre-Seigneurie
116 Western Québec Career Centre**

College level

117 Cégep de l'Outaouais
118 CÉGEP Heritage College**

University level

119 Université du Québec en Outaouais (UQO)

08 ABITIBI-TÉMISCAMINGUE

Vocational level

120 Centre de formation professionnelle Harricana
121 Centre de formation professionnelle Lac-Abitibi
122 Centre de formation professionnelle Val-d'Or
123 Centre Frère-Moffet
124 Centre Polymétier

College level

125 Cégep de l'Abitibi-Témiscamingue

University level

126 Université du Québec en Abitibi-Témiscamingue (UQAT)

09 CÔTE-NORD

Vocational level

127 Centre de formation professionnelle de l'Estuaire
128 Centre de formation professionnelle de Sept-Îles

College level

129 Cégep de Baie-Comeau
130 Cégep de Sept-Îles

10 NORD-DU-QUÉBEC

Vocational level

131 Centre de formation professionnelle de la Baie-James
132 Kativik School Board
133 Sabtuan Adult Education Services

11 GASPÉSIE–ÎLES-DE-LA-MADELEINE

Vocational level

134 Centre de formation professionnelle L'Envol
135 The Anchor Academic & Vocational Education Centre**
136 Centre de formation professionnelle Bonaventure
137 Centre de formation professionnelle Chandler-Paspébiac
138 Centre de formation professionnelle de La Côte-de-Gaspé
139 Centre de formation professionnelle de La Haute-Gaspésie
140 Wakeham Adult and Vocational Education Centre**
141 Centre de formation professionnelle des Îles
142 Listuguj Adult and Vocational Education Centre**

College level

143 Cégep de la Gaspésie et des Îles

12 CHAUDIÈRE-APPALACHES

Vocational level

144 Centre de formation des Bâtisseurs
145 Centre de formation en mécanique de véhicules lourds
146 Centre de formation professionnelle de l'Envolée
147 Centre de formation professionnelle de Lévis
148 Centre de formation professionnelle Gabriel-Rousseau
149 Centre de formation professionnelle Le Tremplin
150 Centre de formation professionnelle Pozer
151 Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
152 Centre national de conduite d'engins de chantier

College level

153 Cégep Beauce-Appalaches
154 Cégep de Lévis
155 Cégep de Thetford

13 LAVAL

Vocational level

156 Centre de formation Le Chantier
157 École des métiers spécialisés de Laval
158 École hôtelière et d'administration de Laval
159 École Polymécanique de Laval

College level

160 Cégep Montmorency

14 LANAUDIÈRE

Vocational level

161 Centre de formation professionnelle des Moulins
162 Centre de formation professionnelle des Riverains
163 Centre multiservice des Samares

College level

164 Cégep régional de Lanaudière à Joliette
165 Cégep régional de Lanaudière à L'Assomption
166 Cégep régional de Lanaudière à Terrebonne

15 LAURENTIDES

Vocational level

167 Laurier Competency Development Centre**

Vocational training (cont.)

168 Centre de formation Construc-Plus
169 Centre de formation des Nouvelles-Technologies
170 Centre de formation du transport routier de Saint-Jérôme
171 Centre de formation professionnelle de Mont-Laurier
172 Centre de formation professionnelle des Sommets-L'Horizon
173 Centre de formation professionnelle, L'Émergence
174 Centre d'études professionnelles Saint-Jérôme
175 Centre Performance Plus
176 École hôtelière des Laurentides

College level

177 Cégep de Saint-Jérôme
178 Cégep Lionel-Groulx

16 MONTÉREGIE

Vocational level

179 Atelier-école Les Cèdres
180 Campus Brome-Missisquoi
181 Centre de formation professionnelle à La Prairie
182 ACCESS Adult Education and Career Training Centre**
183 Centre de formation professionnelle Bernard-Gariépy
184 Centre de formation professionnelle Charlotte-Tassé
185 Châteauguay Valley Career Education Centre**
186 Centre de formation professionnelle des Moissons-et-Pointe-du-Lac
187 Centre de formation professionnelle des Patriotes
188 Nova Career Centre**
189 Centre de formation professionnelle Paul-Gérin-Lajoie
190 Centre de formation professionnelle Pierre-Dupuy
191 Centre de formation professionnelle Sorel-Tracy
192 Centre régional intégré de formation
193 Collège de comptabilité et de secrétariat du Québec, campus de Longueuil*
194 École de formation professionnelle de Châteauguay
195 École hôtelière de la Montérégie
196 École professionnelle de Saint-Hyacinthe
197 École professionnelle des Métiers

College level

198 Cégep de Granby
199 Cégep de Sorel-Tracy
200 Cégep de Saint-Hyacinthe
201 Cégep de Valleyfield
202 Cégep Édouard-Montpetit
203 Cégep Saint-Jean-sur-Richelieu
204 Champlain Regional College – Saint-Lambert–Longueuil campus**
205 Collège Ellis, campus de Longueuil*

17 CENTRE-DU-QUÉBEC

Vocational level

206 Centre de formation professionnelle André-Morissette
207 Centre de formation professionnelle de la Riveraine
208 Centre de formation professionnelle de Nicolet
209 Centre de formation professionnelle Le Trécarré
210 Centre de formation professionnelle Paul-Rousseau
211 Centre de formation professionnelle Vision 20 20
212 Centre intégré de formation et d'innovation technologique (CIFIT)

College level

213 Cégep de Drummondville
214 Cégep de Victoriaville

DISTANCE LEARNING

University level

215 Télé-Université (TELUQ)

This directory, developed in July 2022, was produced with the help of various tools, including lists from Ministère de l'Éducation and Ministère de l'Enseignement supérieur du Québec. Please note that some information may be missing or out of date.

Directory of the main organizations and resources in the mining sector

Government departments

Ministère de l'Éducation (MEQ)
Toll-free: 1-866-747-6626
Website: www.education.gouv.qc.ca

Ministère de l'Énergie et des Ressources naturelles (MERN)
Toll-free: 1-866-248-6936
Website: www.mern.gouv.qc.ca

Ministère de l'Enseignement supérieur (MES)
Toll-free: 1-877-266-1337
Website: www.education.gouv.qc.ca

Government bodies

Institut national des mines (INMQ)
Phone: 819-825-4667
Website: www.inmq.gouv.qc.ca

Société du Plan Nord
Toll-free: 1-855-214-9807
Website: https://www.quebec.ca/gouvernement/ministeres-et-organismes/societe-plan-nord

Mining sector organizations

Québec Mineral Exploration Association (QMEA)
Toll-free: 1-877-762-1599
Website: aemq.org/en/

Association des entrepreneurs miniers du Québec (AEMQ)
Website: www.aemq.net/fr/

Québec Mining Association (QMA)
Phone: 418-657-2016
Website: www.amq-inc.com/en/

Association paritaire pour la santé et la sécurité du travail du secteur minier (APSM)
Phone: 418-653-1933
Website: www.aspmines.qc.ca/en/

Canadian Institute of Mining, Metallurgy and Petroleum (CIM)
Phone: 514-939-2710
Website: www.cim.org

The MISA Group
Phone: 819-279-7195
Website: legroupemisa.com/?lang=en

Table jamésienne de concertation minière (TJCM)
Phone: 418-748-1141
Website: www.tjcm.ca

Women in Mining (WIM)
Websites:
Québec www.facebook.com/wimquebec
Abitibi www.facebook.com/wimabitibi

Workforce development

Comité sectoriel de main-d'œuvre de l'industrie des mines (CSMO Mines)
Phone: 418-653-9254
Website: www.explorelesmines.com

First Nations Human Resources Development Commission of Québec (FNHRDCQ)
Phone: 450-797-2589
Website: www.cdrhpnq-fnhrdcq.ca/en/

Mining Industry Human Resources Council (MiHR)
Phone: 613-270-9696
Toll-free: 1-877-424-8913
Website: www.mihr.ca

Professional orders

Ordre des comptables professionnels agréés du Québec
Phone: 514-288-3256
Toll-free: 1-800-363-4688
Website: www.cpaquebec.ca/en/

Ordre des conseillers en ressources humaines et en relations industrielles agréés du Québec
Phone: 514-879-1636
Toll-free: 1-800-214-1609
Website: www.ordrecrha.org

Ordre des géologues du Québec
Phone: 514-278-6220
Website: www.ogq.qc.ca

Ordre des infirmières et infirmiers du Québec
Phone: 514-935-2501
Toll-free: 1-800-363-6048
Website: www.oiiq.org

Ordre des ingénieurs du Québec
Phone: 514-845-6141
Toll-free: 1-800-461-6141
Website: www.oiq.qc.ca/en/

Research centres

Consortium de recherche en exploration minérale (CONSOREM)
Phone: 418-545-5011
Website: www.consorem.ca

Corem Mineral Research Consortium
Phone: 418-527-8211
Website: www.corem.qc.ca/en/

Partners and advertisers

We would like to thank our partners and advertisers, who made a key contribution to the creation of this new edition of the *Guide to Careers in the Mining Industry*.

Partners

The cover photos are courtesy of:

Centre de formation professionnelle de la Baie-James – **Tommy Nadeau**
Centre de formation professionnelle Val-d'Or – **Jonathan O'Farrell**
Centre de formation professionnelle de l'Estuaire – **Kateri Napish**

Advertisers

Canadian Malartic Partnership – Canadian Malartic Mine
Eldorado Gold Québec
ArcelorMittal Mining Canada G.P.
Institut national des mines du Québec (INMQ)
Glencore – Horne Smelter
Centre de formation professionnelle de l'Estuaire
Centre de formation professionnelle Val-d'Or
Centre de formation professionnelle de la Baie-James
Québec Iron Ore
Ministère de l'Énergie et des Ressources naturelles
Agnico Eagle Mines Limited
Rio Tinto IOC
Centre de formation professionnelle Paul-Gérin-Lajoie
École des métiers de l'équipement motorisé de Montréal
Centre Polymétier de Rouyn-Noranda
Yamana Gold Québec Inc.
Wesdome
Rouillier Drilling
Hecla Québec
Newmont – Éléonore
Glencore – Raglan Mine
North American Lithium
Cégep de l'Abitibi-Témiscamingue
Québec Mining Association
Cégep de Jonquière
Université du Québec en Abitibi-Témiscamingue
Windsor Salt Ltd. – Mines Seleine
Glencore – Matagami Mine
Syndicat des Métallos
Comité sectoriel de main-d'œuvre de l'industrie des mines
Osisko Mining Inc.
Stornoway Diamonds
Niobec Inc.
Canadian Malartic Partnership – Odyssey Mine

Production team and acknowledgements

Project coordinator

Valérie Dubreuil

Graphic design

Valérie Dubreuil

Contributors

Kathy Gauthier
Audrey Dumont
Nathalie Beaulieu
Françoise Colombani
Guy Auger

Contributors (articles)

Antoine Marineau Bélanger, Centre de formation professionnelle Val-d'Or
Patricia Lavoie, Centre de formation professionnelle de l'Estuaire
Nichèle Compartino, Centre de formation professionnelle de la Baie-James
Sonia Caron, Centre de formation professionnelle de la Baie-James
Valérie Fillion, Québec Mineral Exploration Association
Christian St-Amour, Machines Roger International
Martin Gagnon, Québec Mining Association
Anne-Marie Painchaud, Québec Mining Association
Christine Duchesneau, Institut national des mines du Québec (INMQ)
Karine Lacroix, Institut national des mines du Québec (INMQ)
Chanelle Drouin, Association paritaire pour la santé et la sécurité du travail du secteur minier
Audrey Dumont, Comité sectoriel de main-d'œuvre de l'industrie des mines

Advisory Committee

Katie Deneault, Québec Mining Association
Karine Lacroix, Institut national des mines du Québec (INMQ)
Anne Rousseau, Université Laval
Paméla Poirier, Centre de formation professionnelle Val-d'Or
Mathieu Ouellet, Centre de formation professionnelle Val-d'Or
Joanie Guillemette-Simard, Centre de formation professionnelle de la Baie-James
Marc Bertrand, Cégep Abitibi-Témiscamingue
Mylène Boulianne, Cégep de Jonquière
Denis Boulianne, Centre de formation professionnelle de l'Estuaire
Sandra Bolduc, ArcelorMittal Mining Canada G.P. (until June 2021)
Valérie Bellehumeur, Eldorado Gold Québec
Josée Coutu, Agnico Eagle Mines (LaRonde Division)

Participating companies and featured employees

ArcelorMittal Mining Canada G.P.

Logistics and coordination
Anne-Marie Dontigny

Featured employees
Aurélie Pandosy
Lydia Chiasson-Ward
Sarah Lamontagne

Arianne Phosphate Inc.

Logistics and coordination
Gabrielle Côté

Featured employee
Pier-Élise Hébert-Tremblay

Canadian Royalties Inc.

Logistics and coordination
Logan Dumouchel-Levesque
Suzanne Dubé

Featured employees
Adamie Tookalook
Elaisa Uqittuq

Monarch Mining Corporation

Logistics and coordination
Laurence Tremblay

Featured employee
Laurence Tremblay

Eldorado Gold Québec

Logistics and coordination
Amélie Barbe
Doris Blackburn
Marie-Christine Ruel
Véronique Fortier

Featured employees
Éric Taillon
Hugo Bergeron
Joanie Sigouin
Michael Boutin
Roxane Jacques

Orbit Garant Drilling

Logistics and coordination
Anny Fortin

Featured employees
Jean Luc Lachance
Yan Proulx

Glencore – Horne Smelter

Logistics and coordination
Cindy Caouette

Featured employees
Hugo Labrecque
Pascal Neveu Duhaime

Glencore – Raglan Mine

Logistics and coordination
Véronique Gagnon

Featured employees
Frédéric Lord
Maxime Fouquet
Winnie Chun Yin Shaw

CMAC-Thyssen Mining Group

Logistics and coordination
Catherine St-Laurent
Geneviève Martin

Featured employees
Daniel Rollin
Steve Legault
William Levesque

G Mining Services

Logistics and coordination
Laurence Godin

Featured employee
Johan Chagneaud

Hecla Québec

Logistics and coordination
Mélissa Larouche

Featured employee
Pierre St-Georges

L. Fournier & Fils Inc.

Logistics and coordination
Julie Martin
Sarah-Eve Renaud-Ouellette

Featured employee
Jean-Étienne Tessier

Québec Iron Ore

Logistics and coordination
Audrey Giboulet
Pierre-Frédéric Mathieu
Suzie Therriault

Featured employees
Martin Breault
Mathieu Pominville
Maxime St-Pierre

Agnico Eagle Mines Limited

Logistics and coordination
Jenny-Lee Falardeau
Melissa East

Featured employees
Francis Gauthier
François Lortie
Marie-Hélène Brousseau
Mathieu Bernier
Valérie Roy

Osisko Mining Inc.

Logistics and coordination
Chantal Girard

Featured employee
Harry Grant

Newmont – Éléonore

Logistics and coordination
Claudie Champagne

Featured employees
Céline Korol-Paradis
Joanie Haché

Niobec Inc.

Logistics and coordination
Claudia Bolduc

Featured employee
Hugues Morin

Nouveau Monde Graphite

Logistics and coordination
Daniel Guénette

Featured employee
Amavi Émile Fafa Amavigan

Canadian Malartic Partnership

Logistics and coordination
Amélie Simard
Magali Desjardins
Mélissa Demontigny

Featured employees
Éric Veilleux
Maxime Laforest
Michael Paquin
Michael Rochette
Renée Dupéré
Stéphanie Nolet

Rio Tinto IOC

Logistics and coordination
Marie-Josée Carrier

Featured employee
Serge Lebel

Windsor Salt Ltd. – Mines Seleine

Logistics and coordination
Evelyn Gauthier
Raymonde Baker

Featured employees
Abdon Randrianandraisana
Mario Miousse
Didier Leblanc
Raymonde Baker

Wesdome

Logistics and coordination
Charles-Robert Vennes
Isabelle Brochu

Featured employee
Sophie Michaud

Date of publication – September 2022
Legal deposit – Bibliothèque et Archives nationales du Québec, 2022
Legal deposit – Libraries and Archives of Canada, 2022

ISBN
978-2-9818745-4-2 (print)
978-2-9818745-5-9 (PDF)

The *Guide to Careers in the Mining Industry* is published by Comité sectoriel de main-d'œuvre de l'industrie des mines (CSMO Mines).

COMITÉ SECTORIEL DE L'INDUSTRIE DES MINES — MAIN-D'ŒUVRE

Comité sectoriel de main-d'œuvre
de l'industrie des mines
979 avenue de Bourgogne, Suite 420
Québec City, QC G1W 2L4
Phone: 418-653-9254
Info@csmomines.qc.ca
Explorelesmines.com

COMITÉ SECTORIEL DE L'INDUSTRIE DES **MAIN-D'ŒUVRE MINES**

Centre de formation professionnelle Val-d'Or

cfp Baie-James
CENTRE DE FORMATION PROFESSIONNELLE DE LA BAIE-JAMES

CFP CENTRE DE FORMATION PROFESSIONNELLE DE L'ESTUAIRE