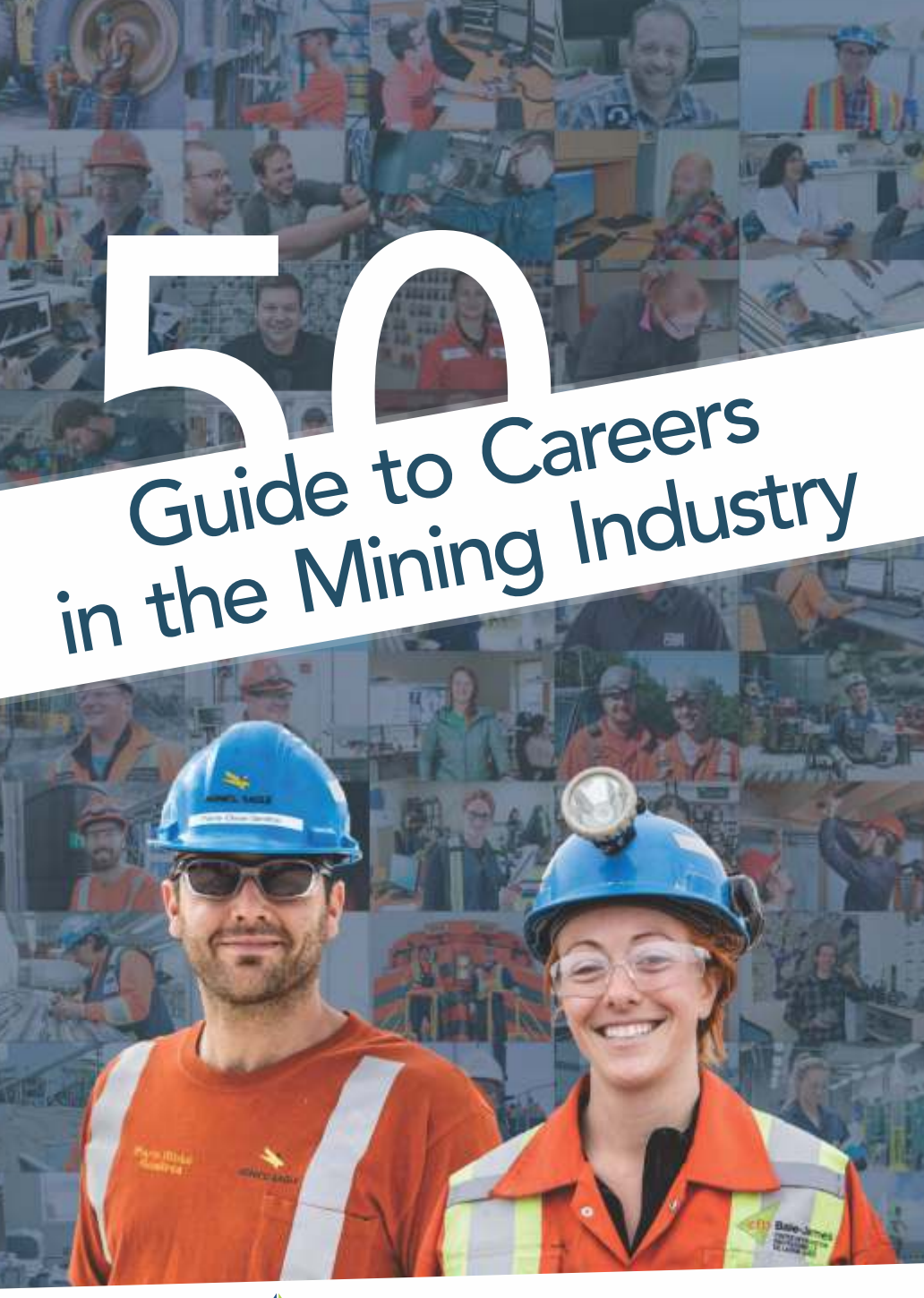

50 Guide to Careers in the Mining Industry

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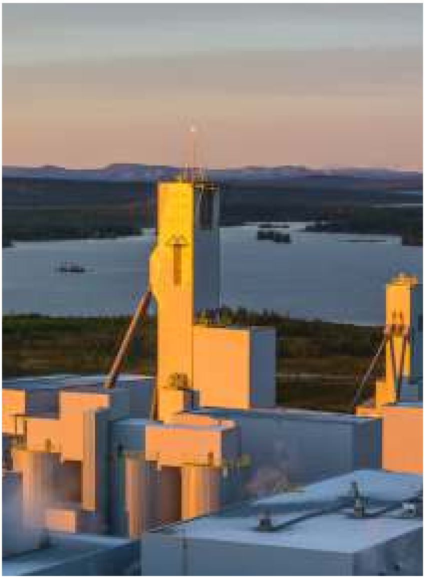

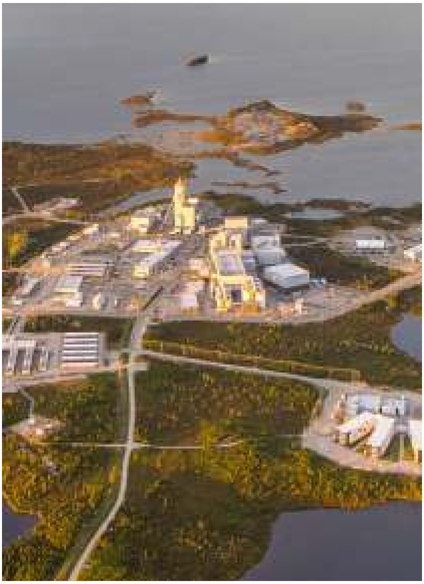

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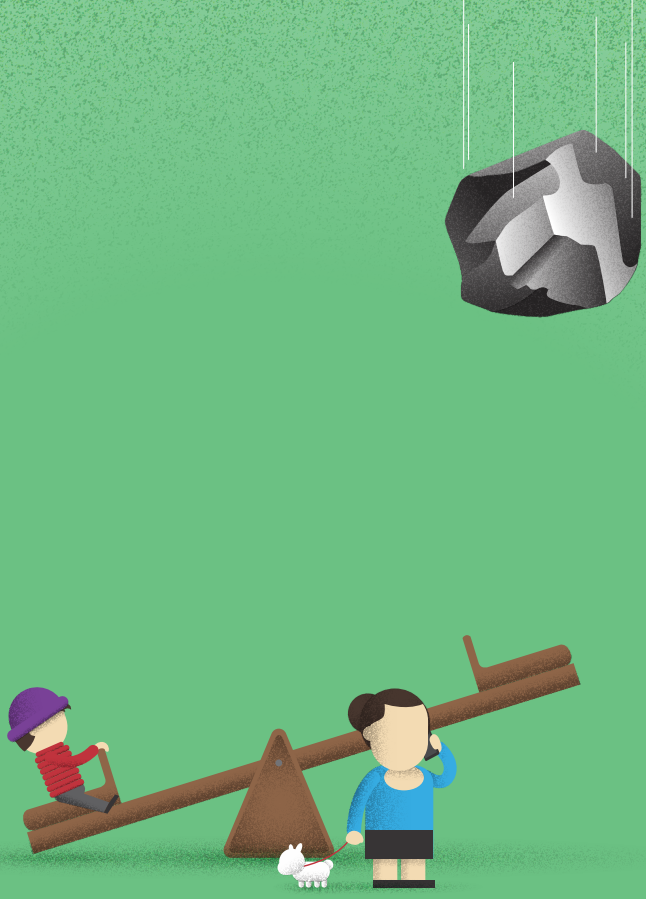

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INTRODUCTION

The world of mining: a wealth of discovery

Photo: Canadian Malartic Mine

Do you ride a bike? Use a smartphone? Play hockey, using ice-skates and a hockey stick?

Without the mining industry and the thousands of people who work in it, we would not have bikes, smartphones, skates or hockey sticks. These items, and many more that we use on a daily basis, are made from minerals. How much do you know about the role played by minerals, and the mining industry, in our everyday lives? You can get some clues from the article by the Québec Mining Association on page 27, because "Believe it or not, metal doesn't grow on trees."

A fascinating industry

Most people are amazed by what they see when they first come into contact with the world of mining: the energy involved, the over-sized equipment, the amount of work that goes into planning and designing a mine, the distance that must be covered to reach mineralized zones, the precision of the mechanisms used to extract ore-bearing rock while leaving other rock in place, and the colossal quantity of rock that must be moved to pour a single gold ingot or build a lithium-ion battery to power an electric car.

Another aspect that fascinates people new to the mining sector is the workplace culture. In addition to the precise vocabulary used in workshops and production areas, the dynamics and culture of the mining sector are influenced by more abstract factors such as traditions, attitudes, values and behaviour patterns. Comradeship and good-natured banter mark the start of each work shift. Workers naturally look out for each other, and this focus on other people is often expressed through jokes and team spirit. All employees are encouraged to become involved in all stages of production, and mine workers at all levels experience great pride in their trade and in their industry.

Photo: Québec Mining Association

An outstanding career choice

Anyone hoping to build a career in the mining industry must have the necessary qualifications. The mining sector includes a

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wide range of jobs and, to progress, it is essential to possess the key skills needed for your chosen profession. This **Guide to Careers in the Mining Industry** describes 50 career paths in various fields, all of which lead to stimulating careers where workers are encouraged to progress, become more aware of the world and exceed their expectations. Community development is also a value that drives actions and projects.

The 50 career paths are presented in 5 main categories. The first contains 10 "featured" professions which, according to many experts, will be in most demand over the next 5 years. The next category, "non-specialized" trades, contains 3 trades that generally required only a Secondary School Diploma (SSD) (in French, *diplôme d'études secondaires or DES*) or an Attestation of Equivalence of Secondary 5 Studies (AESS) (in French, *attestation d'équivalence d'études secondaires* or *AENS*). The remaining 37 professions are listed by the level of qualification required, from a Diploma of Vocational Studies (DVS) (in French, *diplôme d'études professionnelles* or *DEP*) to a Diploma of College Studies (DCS) (in French, *diplôme d'études collégiales* or *DEC*) or a university qualification (Bachelor's degree or certificate).

Each trade is presented in a way that gives you an idea of the job tasks it generally involves, the skills required and the specific working conditions. You can quickly identify the related training program using the icon . Last, the directory on page 114 lists the educational institutions that offer the program concerned.

Working environment

The mining industry offers an unusual working environment. Whether at 2 kilometres below the surface of the Earth or 1,000 kilometres north of Montréal, it is clear that employees are not working in ordinary

Photo: Canadian Royalties (credit: Dominique Lebrun)

conditions. People who spend their working days in a mine can testify to the daily challenges of their jobs, but also to the professional experience they gain.

Mines and exploration camps in remote regions without road access rely on large residential complexes where employees live for periods of one, two or three consecutive weeks. A landing strip near the mine infrastructures allows workers to **fly in and fly out**. Obviously, they will be away from their homes and families while working, but living in the North has its compensations. Mining companies make a big effort to make their employees' stay as enjoyable as possible and give them time off between

>>>

Photo: IAMGOLD – Westwood Mine

work shifts, which generally last 10 to 12 hours. For example, they have access to the Internet, weight-training facilities and, in some cases, shows by humourists, concerts and friendly hockey tournaments.

Several skills are essential for everyone working in the mining sector, regardless of their trade or profession. They include a commitment to health and safety, and team spirit. For some companies, bilingual employees have an advantage, and for some trades the ability to speak two languages is a necessity. A valid Class 5 driver's licence is often required by employers, but not for all trades. You can see the requirements for the trades you are interested in at the bottom of each information sheet.

As part of their selection process, some employers, for some positions, may require candidates to have a clean criminal record. In addition, a medical examination that includes a drug test is part of the recruitment process.

Safety first!

Mining companies apply a range of strategies to strengthen their health and safety culture, and are glad to find employees who already share the same values. Their objective is to ensure that vigilance and safety are constantly applied in the performance of every action and become a permanent part of the working culture as second nature.

To find out more about the health and safety measures applied in the mining industry you can read the article by the joint association for workplace health and safety in the mining sector (*Association paritaire pour la santé et la sécurité du travail du secteur minier*, or *APSM*) on page 30.

Technological innovation

The mining industry uses the latest cutting-edge technology to improve its operations and the safety of its workers. For example, there is a clear trend to introduce remote-controlled mobile equipment, to install dynamic position systems, to automate processes of all kinds, and to rely more on digitization, robotization and the ongoing use of Internet in surface and underground mining operations. The use of these technologies influences the skills that current and future workers in the mining industry must have. Many news opportunities

Photo: CMAC-Thyssen Mining Group

are opening up for workers with skills in electronics, instrumentation, programming and the operation of control systems; the mining sector is open to the world and aware of the latest developments, offering an enriching and stimulating working environment.

To find out more on this topic, read the article by the national mining institute (*Institut national des mines*, or *INMQ*) on page 20.

Gender balance and social diversity

A job in the mining industry today is a long way from the typically masculine occupation of the past, which required great physical strength. Many women currently work in the mining sector in engineering, administration and accounting. In addition, to fill the positions traditionally held by men, recruiters are now targeting women for their potential in operational positions, where they tend to be careful and conscientious. An increasing number of women are working as heavy equipment operators, underground miners and instrumentation and control technicians, for example. Gender and social diversity in work teams are considered to be an advantage by mining companies, and mining sector jobs offer several advantages for female workers: good pay, and an opportunity to upgrade their skills constantly in a work environment where transfer of knowledge is a priority.

Photo: Goldcorp – Éléonore

Understanding the icons at the bottom of each information sheet

At the bottom of the information sheet for each trade, the four icons on the left indicate where the job is performed. You can quickly identify the trades that involve working underground, outdoors, inside a plant, or in a company's administrative offices.

The operation of an **underground mine** requires workers to perform their daily job tasks many metres, and sometimes kilometres, below the surface.

The operation of an **open-pit mine** requires workers to perform their jobs in the pit where ore is extracted, and also in nearby facilities such as the **crusher** and **conveyors**.

The **ore treatment plant**, often called the concentrator, is generally located close to the mine where the ore is extracted. Many workers perform their jobs in the concentrator. The icon also represents other similar facilities, such as **laboratories** and **water treatment plants**.

The **administrative offices** may be located close to the mine or in a big city to facilitate business connections with partners. Some trades may involve work that alternates between the mine site and the administrative offices.

The icons on the right show the four main stages in a mine's lifecycle. Some trades play an important role at a specific stage in the lifecycle, while others are necessary throughout the cycle.

Exploration involves identifying sites where minerals can be extracted. Core samples are collected during drilling programs, and are then analyzed to determine the size and mineral content of the ore deposit. Feasibility studies, whether technical, financial or environmental, complete the first stage in the mine lifecycle.

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

Production involves extracting ore from a deposit and treating it to obtain a mineral product that has value for society, such as a metal. After being extracted, the ore is sent to a treatment plant where it is crushed into a fine powder. Using various processes, the mineral-bearing rock is separated from the sterile rock and becomes a "concentrate", which is then refined to increase its purity.

Closure is the last stage in the mine lifecycle, but **site rehabilitation** is planned before the mine opens and before it produces its first tonne of ore. Mine closure is an orderly process that ensures respect for the environment. The zones affected by the extraction of mineral resources must once again become home to ecosystems, which is why all excavations are filled, all rock piles are levelled, and the site is replanted with trees. In this way, a new ecosystem is created.

ACTIVE MINES AND MINE PROJECTS UNDER DEVELOPMENT

Photo: Nemaska Lithium Inc.

KEY

MINING COMPANIES

1. ArcelorMittal Mining Canada G.P.
2. Beaufor (Monarques Gold Corporation)
3. Bracemac-McLeod (Glencore Canada Corp.)
4. Canadian Malartic (Canadian Malartic GP)
5. Casa Berardi (Hecla Québec)
6. Iron Ore Company
7. DSO (Tata Steel Minerals Canada)
8. Elder (Abcourt Mines)
9. Éléonore (Goldcorp)
10. Fire Lake (ArcelorMittal Mining Canada G.P.)
11. Goldex (Agnico Eagle Mines Limited)
12. Bachelor Lake (Bonterra Resources Inc.)
13. Bloom Lake (Québec Iron Ore)
14. Lac-des-Îles (Imerys Graphite & Carbon Canada)
15. Lac Letondal (Imerys Mica Suzorite)
16. Lac Tio (Rio Tinto Fer et Titane)
17. Langlois (Nyrstar Canada Resources)
18. Lapa (Agnico Eagle Mines Limited)
19. LaRonde (Agnico Eagle Mines Limited)
20. Mont-Wright (ArcelorMittal Mining Canada G.P.)
21. Niobec (Niobec)
22. North American Lithium (CATL)
23. Nunavik Nickel (Canadian Royalties)
24. Othmer (Dentsply Canada)
25. Raglan (Glencore Canada Corporation)
26. Renard (Stornoway Diamond)
27. Seleine Mines (K+S Windsor Salt)
28. Vezza (Procon Mining)
29. Westwood (IAMGOLD Corporation)

KEY

METAL, MINERAL AND TYPE OF OPERATION

- Diamond
- Iron
- Ilmenite
- Industrial minerals: graphite, salt, etc.
- Apatite
- Nickel
- Niobium
- Gold
- Gold, silver, zinc and copper
- Rare earth minerals
- Zinc
- Feldspath
- Lithium
- ▲ Mine project
- ★ Mine project under development
- ■ Underground mine
- ● Open-pit mine
- ⬟ Underground and open-pit mine
- ◆ Pellet plant and/or port

Version dated October 2018
Source: *Ministère de l'Énergie et des Ressources naturelles*

ARTICLE

Mining: more than just a labouring job

Agnico Eagle | Photo: Institut national des mines

By Valérie Bellehumeur, Institut national des mines

Automated vehicles, drones, and 3D visualization software are just some of the new technologies increasingly present in the daily lives of workers in the mining sector, replacing the unflattering image of a dirt-encrusted minor holding his pickaxe with pride.

The new technologies associated with automation, robotics and **artificial intelligence** in the mining sector are having an impact on job tasks. Mine workers must now have a broader range of skills and abilities than their predecessors, as technological innovations are introduced to reduce the need for physical, monotonous and repetitive work. The same tasks can now be performed with increasingly automated tools and devices. In an environment peopled by collaborative machines, known as **cobots**, workers must learn to adapt to the new reality.

Québec's mining institute (*the Institut national des mines*, or *INMQ*) has created an overview of the skills and abilities that future mine workers will need in light of new industry trends. To make the overview clearer, it has focused on four key trades in the mining sector that are likely to be transformed by the arrival of new technologies: heavy equipment operator, mine technician, mechanic and geologist.

Heavy equipment operator

Thanks to increased automation, the job of heavy equipment operator is one of the most likely to experience change. New technologies change the nature of operators' tasks, since they can now direct and supervise several pieces of machinery remotely at the same time. Automated and semi-automated mine machinery is increasingly found in mines, programmed and supervised from a control centre that may be several kilometers away from the mine itself. Operators must now control their equipment and interact with its environment using a digital interface, meaning that they must master new skills to deal with new technological tools.

Operators must have good **spatial perception** and be able to find their bearings in a digital or virtual environment. They must be methodical and painstaking. They must ensure that operations run smoothly, while seeking out new creative solutions that comply with established standards.

Mine technician

Mine technicians perform various tasks, from surveying, drilling and blasting operations to the control of ventilation systems. As a result, they manage an array of devices and instruments. New technologies are appearing on many mine sites to improve the accuracy of the measurements taken and record them more quickly. For example, drones can be used to gather precise data from the air, reducing risk and the time spent in the field. The mass of data collected is then

»→

transferred, processed and interpreted using specialized software. Technicians must know how to pilot these devices and use them to their full advantage.

In addition to good **spatial awareness**, mine technicians must have critical judgment when organizing and analyzing data. The tasks performed by mine technicians increasingly require precision and dexterity, as well as an ability to adapt and a willingness to show initiative in finding new ways to use the new technologies.

Mechanic

The tasks accomplished by mechanics when repairing equipment are changing, thanks to the **Internet of things** and the increased ability of integrated systems to process data. These innovations require a predictive maintenance approach, in other words an approach based on statistical data analysis to predict the reliability of the equipment they maintain.

Mechanics must have the ability to visualize and schematically represent the data provided by on-board computers. They must also be able to understand plans and 3D diagrams when fabricating and installing parts. Their tasks are increasingly based on collaboration with machine tools, requiring them to apply critical judgment and make enlightened decisions.

Geologist

Geologists must deal with rapid changes in the processes used to define geological and mineral models, which increasingly use artificial intelligence and machine-learning **algorithms**. The mass of data gathered is integrated into specialized modelling and planning software. The new tools, based on artificial intelligence, require reasoning and judgment to interpret all available data and improve the decision-making process. Geologists also use software combined with 3D visualization goggles to represent deposits and mine workings in virtual reality.

Horne Smelter | Photo: Institut national des mines

Geologists must be able to summarize information in order to gain an overview that takes into account all the data they have organized and analyzed. They must be creative in the creation of innovative models and scenarios and in the search for sometimes unusual solutions.

Profiles in demand in the mining sector

The mining sector now offers numerous career paths that combine technology, innovation and information technology. As a result, mining companies need a diversified, multidisciplinary workforce that is able to use the new tools developed and implemented in an effective way. To meet the technological challenges involved and help workers move to the digital economy, companies rely on experts in emerging fields.

In addition to attention to detail, other supplementary abilities have acquired new importance. The industry values critical sense, the ability to solve problems, and intuition in its workers. They must be able to work effectively with the new technology and possess the skills needed in an increasingly automated and robotic environment. Collaboration between human beings and robots is now a big part of the mine worker's task. Mine workers must be able to collaborate with robots, interpret the digital signals sent by various systems, and make enlightened decisions based on their own analysis of the data supplied. Tasks such as these also require an ability for abstract thought.

In the coming years, it is expected that mining companies will continue to introduce new technologies. They will need workers who demonstrate an excellent ability to adapt to constant change, have a positive attitude towards innovation, and are not afraid of new methods. They will look for workers who are highly creative and able to propose innovative ideas and solutions while taking existing rules and standards into account. A curious nature and a willingness to learn throughout their lives will clearly be traits that are attractive to companies. Last, in the workplace, cross-disciplinary skills, the ability to work in multi-disciplinary teams, and virtual collaboration will all be considered essential.

ARTICLE

A focus on training at CFP Val-d'Or

Photo: CFP Val-d'Or

By Centre de formation professionnelle Val-d'Or

The Val-d'Or vocational training centre (*Centre de formation professionnelle Val-d'Or*, or *CFP Val-d'Or*), is located in the Abitibi-Témiscamingue region 500 km north of Montréal. Each year, approximately 200 students graduate and work in the mining sector after completing one of four mining-related programs leading to a diploma of vocational studies, in diamond drilling (*forage au diamant*), drilling and blasting (*forage et dynamitage*), ore extraction (*extraction de minerai*) and the operation of ore processing machines (*conduite de machines de traitement du minerai*).

It is important to have a diploma in order to work in the mining industry. "The key goal is to obtain a qualification and a diploma," says Jason Yergeau, director of CFP Val-d'Or. "Vocational training graduates have acquired knowledge, attitudes and skills. They are competent workers, ready to join the labour market."

Major and essential partnerships

The training of future workers in mining-related programs relies on strong partnerships with various companies in the mining industry. CFP Val-d'Or works with mines in the Abitibi-Témiscamingue region to provide programs based on a work/study formula.

Students spend a few weeks at the Centre at the beginning of their program, before going to a mine site to learn directly in a real-life work setting. For example, for the diamond drilling program, students study the theoretical aspects for two weeks and then, the following week, begin their practical training in above-ground and below-ground locations. The practical components of the program are made possible through the assistance of Agnico Eagle's Goldex Mine.

In the same mine, all the students enrolled in the ore extraction program complete their pre-practical training."This allows the students to quickly understand the notions explained in the classroom, and allows the teachers to adapt their course to what the students learn on-site," explains John Bellè, a pedagogical counsellor at CFP Val-d'Or and also a mining engineer.

Several operating mines help the Centre provide training for the ore extraction program, including Agnico Eagle's LaRonde Mine and Goldex Mine, IAMGOLD's Westwood Mine, Monarques Gold's Beaufor Mine and, in the near future, Eldorado Gold's Lamaque Mine. "Learning in a real-life working environment promotes integration into the labour force. The placement rate for students at the end of the program is high, and the industry badly needs new workers," Mr. Bellè points out.

The drilling and blasting program is also given in a real-life working situation at the Canadian Malartic Mine, the largest open-pit mine currently operating in North America. Collaboration with the mine is not limited to providing an area for teaching purposes, since the zones designated by Canadian Malartic for blasting exercises are then used for production. In this way, students learn and apply their knowledge at the heart of the action, and assist in the mine's development.

Photo: CFP Val-d'Or

CFP Val-d'Or has a combined school/ore treatment plant that is unique in Canada and is used for the ore treatment program. The plant is located at the training centre. Students only have to take a few steps to move from their classroom to the plant, where they can see how the notions they have learned are applied in real life. Since all the work in the treatment plant takes place on the surface, this is the only one of the four programs offered by the Centre where students can enrol at the age of 16.

Mining expertise

The national mining centre (*Centre national des mines*) at CFP Val-d'Or is recognized throughout Québec, and also internationally, for the quality of the training it provides and for its expertise. "The whole team at the Centre, including instructors, teachers and administrators, is focused on helping students succeed by providing training that matches the highest industry standards," says the director, Jason Yergeau.

In addition, the Centre national des mines at the CFP Val-d'Or offers the modular training program for mine workers (*formation modulaire du travailleur minier*, or *FMTM*) in Québec. The training is mandatory for

Photo: CFP Val-d'Or

Photo: CFP Val-d'Or

everyone working in an underground mine in Québec. Its objectives are to standardize the health and safety training provided in mines, and to reduce the frequency and seriousness of accidents. The last objective of the training is to validate and certify each mine worker's health and safety knowledge.

This is one aspect of the teaching work performed by the Centre, since it also trains workers in other fields: engineers, electricians, mechanics, etc. In addition, the Centre trains trainers who can then work for companies or educational institutions, enabling them to provide their own modular training. To ensure the quality of the training provided, the Centre carries out a subsequent assessment of each worker's health and safety knowledge, before official certification is issued.

The attraction of Val-d'Or

According to the director, settling in Val-d'Or is an attractive proposition because of the large number of cultural, sports and family-oriented activities available. "Val-d'Or is an excellent choice for students, but also for workers," he says. "The fact that the mines in the Abitibi-Témiscamingue region are not too far away are means that workers and their families can easily be close to both services and the workplace."

The city of Val-d'Or and the training programs in the mining field are also attractive for foreign students, explains Mathieu Ouellet, communications advisor at CFP Val-d'Or: "A lot of students from Africa and France choose Val-d'Or because of the quality of the training offered, the mining expertise available and the fact that it is 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 the training programs at CFP Val-d'Or. "For the Centre, it is extremely important to train workers who are qualified and, as soon as they graduate, ready to work without supervision," Mr. Yergeau explains.

The installation of the Centre's first mine simulator in September 2017 supports this approach. "The simulator will add a new aspect to the modular training for mine workers program," says Mr. Yergeau. "In addition to training workers on conventional and mechanized equipment, we will now be able to offer training on the automated equipment already in use in Québec mines."

Looking to the future

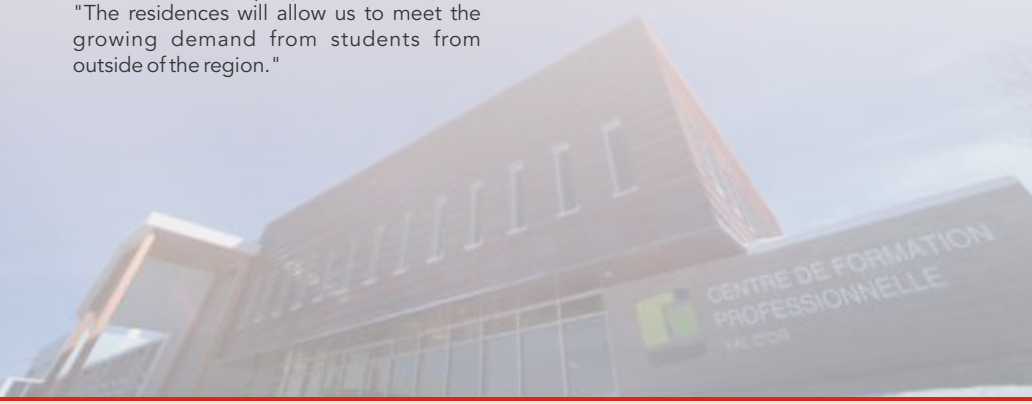
The new simulator is the first stage in a major project for CFP Val-d'Or over the coming years: the creation of a teaching centre using mine simulators. A physical location has already been planned as part of the expansion of CFP Val-d'Or, and will house six simulators in shipping containers, allowing them to be moved to wherever training is needed. "Having mobile simulators will help us meet the Centre's primary goal, which is to train future workers but also to provide continuing education for workers who already have a job," Mr. Yergeau explains.

Another long-term goal of CFP Val-d'Or is to become Québec's first vocational training campus. "The campus project will confirm that vocational training is a valid choice, in the same way as going to college or university," says Mr. Yergeau. This major project will be implemented in three phases. The first, an extension of the CFP buildings, was completed in 2017 and added new classrooms and conference rooms, as well as providing space for the creation of the mine simulator teaching centre.

The second phase of the project will be completed in 2019, when two student residences will be built, each containing 24 units. Students from outside Val-d'Or will be able to find affordable housing right next to the Centre. "Val-d'Or is currently experiencing a housing crisis, and it was hard for our students to find a place to live for the duration of their program,"Mr. Yergeau. "The residences will allow us to meet the growing demand from students from outside of the region."

The third and last phase in the vocational training campus project will be the construction of a daycare centre. This is scheduled for 2020, and will allow students with families to continue their studies. "This is extremely important if students are to succeed in their program," the director explains. "Bringing the service on-site will reduce the strain on students of having to find daycare places for their children, and will also eliminate the need to travel long distances to other daycare centres."

In short, many projects are under way to develop training in the mining sector. The Val-d'Or vocational training centre has a vision that will make it a significant player in the teaching sector and place it at the heart of future developments.



ARTICLE

Believe it or not, metal doesn't grow on trees!

Photo: Québec Mining Association

By Josée Méthot, President and CEO of the Québec Mining Association

Every object we use in our everyday lives depends, in some way, on mining. From forks and cellphones to the bridges we cross and the scissors and needles used to make our clothes, the mining industry is omnipresent in our lives.

According to a survey conducted by the Mining Association of Canada in 2017, 26% of Quebecers do not realize that metals and minerals play an essential role in their daily lives. In other words, over a quarter of the Québec population believe they could live without the mining industry and do not realize that without its contribution we would have none of the objects we use every day. This statistic was a wake-up call for the mining industry, which wants to do more to remind people of the key role it plays in society. It really does need saying: metals does not grow on trees.

Photo: Québec Mining Association

In addition to improving the quality of our lives, the mining industry contributes to Québec's socio-economic prosperity. With annual spending of $5.8 billion in all regions, 45,550 direct, indirect and **induced** jobs, over $1 billion paid each year to the Québec government, and a network of 4,100 suppliers, its contribution to Québec's growth is unquestionable. Obviously, the direct benefits are more visible for people living in the mining regions, and less so for the population in the major urban centres—even though they have the same impact. This is why it is essential for the mining industry to do more to inform the population about its role and its usefulness, helping to demystify its activities and the value it adds to the economy and, we hope, helping to interest more people in a career in the mining industry.

The use of gold in our everyday lives

So many elements of the mining industry remain in the shadows! For example, gold is often considered to be useful only for **jewellery**. Nothing could be further from the truth! Gold's many different properties, and in particular its malleability, resistance to corrosion and high electrical and thermal conductivity, make it indispensable in several industrial sectors. The electronics industry is a major consumer of gold because it conducts electricity so well. We may not realize it, but our tablets and smartphones all contain gold. Although copper and silver are better conductors of electricity, they also tarnish, which is why companies prefer to spend more to use gold and extend the life of their products. Gold's resistance to corrosion makes it the best choice to ensure the safety of car drivers. It is used in airbag control circuits because its resistance to corrosion and conductivity ensure that electronic information circulates in all conditions, from minus 30 to plus 30 degrees Celsius, allowing airbags to inflate immediately in the event of an accident.

Québec, and more specifically the Abitibi-Témiscamingue and Nord-du-Québec regions, is home to several gold mines, including Agnico Eagle's LaRonde Mine, at 3.1 km the deepest mine in North America; Canadian Malartic Mine, the largest open-pit mine in Canada; and Goldcorp's Éléonore Mine, the latest gold mine to begin production. With more than 10 active gold mines in Québec, the resource will continue to be a focus of interest.

Photo: Québec Mining Association

Growth of the lithium market

Lithium, which is lighter and softer than other metals, is a key component in battery manufacturing. With the introduction of electric vehicles the demand for lithium has grown considerably, and production has increased. In Québec, Nemaska Lithium will extract lithium in the Nord-du-Québec region from one of the world's richest deposits, in terms of both size and lithium content. North American Lithium also produces lithium in the Abitibi-Témiscamingue region.

In addition to the battery industry, several other industries use lithium, for example to make touch screens for smartphones. Its properties help the screens resist scratching and breaking. For the same reasons, lithium is often used in tableware and porcelain. A plate that contains lithium can be moved straight from fridge to oven, because it is resistant to thermal shocks.

Minerals that have beneficial effects on the body

Our bodies need minerals to function properly. The minerals can be provided in various forms, such as vitamins or dietary supplements, to compensate for the essential minerals that human beings do not get from their food. For example, zinc is found in our muscles and bones. It is also recognized for its role in strengthening our immune system and neurological functions, and in supporting growth. In addition, it helps neutralize the negative impacts of acne. Thanks to research, we are continually surprised by zinc's properties. Québec has two zinc mines: Glencore's Matagami Mine, and Nyrstar's Langlois Mine.

Québec salt to improve road safety

Since 1981, the Québec government and many municipalities around the province, as well as in neighbouring provinces, get road de-icing salt from Mines Seleine on the Îles-de-la-Madeleine, Québec's only operating salt mine. The salt is used on the roads during winter to ensure user safety. This is a clear example of the importance of Québec's mining industry and the indispensable role it plays in our lives.

As we can see, the world of mining is vast and diverse, just like the range of jobs it offers. Miner, laboratory technician, mining engineer, environmental specialist, heavy equipment operator or mechanic—the choices are endless. This guide will allow both women and men with an interest in the mining industry to make an enlightened choice and also make a contribution to the everyday lives of all Quebecers. More than ever before, we can be proud of the actions of our mining companies and state loud and clear that the mining industry is truly Québec's inner strength!

Sources: Nemaska Lithium, North American Lithium, Passeport Santé, Gouvernement du Québec, Or des Amériques (les éditions du Septentrion)

Photo: Québec Mining Association

ARTICLE

Workplace health and safety, a key concern for the mining sector

Photo: CMAC-Thyssen Mining Group

By Paul Potvin, General Manager, Association paritaire pour la santé et la sécurité du travail du secteur minier

Working in a mine is said to be dangerous, but this is not necessarily true. The reality is that it is dangerous to work in any environment where there are uncontrolled risks. When the *Act respecting occupational health and safety* came into force 35 years ago, there were far too many accidents in different sectors of activity. The Act made it possible to introduce mechanisms to allow both employers and employees to take control of safety in the workplace and, over the years, the accident rate and number of deaths have both declined gradually in Québec.

Here are some examples:

Between 2009 and 2013, the number of accidents in which the injured worker had to miss work (known as lost-time injuries) decreased by 7.5%, but since the total number of workers increased over the same period, it is more useful to look at the accident rate per 100 workers. This has declined from 3.8 to 2.8 annually, for all sectors.

Does this mean that in 2017, the number of accidents is acceptable and the situation is under control? Of course not. An accident is always one accident too many, especially since once a proper investigation is completed it is generally shown that the accident could have been avoided. So what is the current situation?

In the mining sector

The accident rate in mines has continued to drop since the early 2000s. During this period, for every 200,000 hours worked, or for every 100 mine workers, there were 11 lost-time injuries or injuries that forced the worker to move to light/modified duties. By December 2016, this rate had declined to 2.4. If only accidents involving lost-time injuries are counted, the rate is 0.8 in the mining sector (compared to 2.3 in 2000), is well below the provincial average for all sectors.

The same applies to fatal injuries in mines. The total has decline from an annual average of 26 deaths in the 1950s, to 17 in the 1960s and 14 in the 1970s, just before the *Act respecting occupational health and safety*. Since 2010, the rate has been one fatal injury per year, including accidents involving contractors working on mine sites. The rate per 10,000 workers is well below the rate of other sectors of activity.

How was this result achieved?

There are several reasons for the reduction of the accident rate and the number of deaths in mines. The first is that employers, workers and their representatives are now more aware of the fact that working safely is a realistic possibility. Because of this, the

mining sector has, over the years, introduced tools and methods to reduce exposure by eliminating and controlling risks, and by making significant improvements in the training provided for workers and new recruits. Health and safety committees and prevention programs now exist at all companies in the mining sector in Québec.

There are other reasons too. **Mechanization** and automation have greatly reduced exposure to various risks. Some equipment is operated remotely, and tools have been developed to eliminate part of the physical work connected with manual drilling. A range of new technologies have been adopted quickly in the mining sector and have changed the way work is done, at the same time eliminating or reducing various risks. This includes, for example, the use of drones to inspect rock faces, the operation of underground equipment from the surface, the remote locating of equipment and workers, and so on.

In addition, the growing presence of multinational corporations in the mining sector has led to the adoption of new standards and procedures and a world-class culture. Thanks to willingness on all sides, the world of mining has genuinely changed in recent years and especially in terms of workplace health and safety. In keeping with this new culture, danger is no longer tolerated and mining has become increasingly safe.

Looking to the future

Accidents still occur in the workplace. For example, in 2014, for the province of Québec, young people aged under 24 had 11,000 compensated accidents, accounting for one out of every eight accidents. Even here, however, the news is encouraging, since over the last 10 years the accident rate for young people under 24 has decreased by 45%. Workplaces are now more focused on safety and today, high-performing businesses go even further. Workers intervene immediately and bravely whenever a risk arises or a person is in danger. In these workplaces, the accident rate is close to zero, and this is not down to chance.

Prevention produces results, and this has been understood by the mining sector, which has shown that when steps are taken to eliminate or control risks and when no dangerous situations are tolerated, the number of workplace accidents can be reduced substantially in any sector of activity.

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IS THE MINING INDUSTRY FOR ME?

Photo: Québec Mining Association

The following pages contain testimony from male and female workers in trades that are representative of the mining industry and also offer strong prospects for the future.

You will discover four people with a passionate interest in their work, and who also appreciate the variety of the job tasks they perform each day, their outstanding conditions of employment and their working environment.

Environmental coordinator

- Jescika Lavergne

NEMASKA LITHIUM

Instrumentation and control engineer

- Christian Gilbert, ing.

meglab

Energy coordinator

- David Labrecque, ing.

GOLDCORP ÉLÉONORE

Production shovel operator

- Dany Lauzon

MINE CANADIAN MALARTIC

PORTRAIT

ENVIRONMENTAL COORDINATOR

Photo: Nemaska Lithium Inc.

Name: **Jescika Lavergne**
Employer : **Nemaska Lithium Inc.**

As an environmental coordinator, Jescika has a number of areas to supervise: the operation of systems to manage waste and hazardous materials, compliance with the obligations resulting from ministerial authorizations, the drafting and application of environmental monitoring programs, the implementation of rehabilitation activities on the site of the former pulp and paper plant whose buildings have been partly taken over by her company, and the development of a sense of environmental and social responsibility among employees.

What motivates Jescika in her job as an environmental coordinator?

Jescika's primary objective is to minimize the impact of human activities, and to protect the environment. She is currently working at a plant that produces lithium hydroxide using ore from Whabouchi Mine; the product is destined for use in the green energy sector, in particular to produce batteries. Environmental protection and sustainable development are key values for her employer. She makes recommendations and draws up strategies that can be implemented using cutting-edge technologies. To provide positive leadership and encourage the members of various teams to work together on an interdisciplinary basis, her communications skills are an important asset.

What are the educational requirements to become an environmental coordinator?

There are several possible approaches, but most environmental coordinators complete studies in Earth sciences or biology. For Jescika, an interest in biology led to her enrolment in the program of inventory techniques and biological research (*technique d'inventaire et de recherche en biologie*) at Cégep de Sainte-Foy. After several years on the labour market, Jescika wanted to extend her knowledge and enrolled at Université de Sherbrooke in a Bachelor's program in biology with a concentration in ecology. After returning to the labour market, she continued her postgraduate university studies part-time.

What are the essential job tasks of an environmental coordinator?

When Jescika analyzes the lithium lifecycle, she calls on all her knowledge and skills to ensure that the resource, produced locally in Québec, can be as useful as possible for human beings while retaining its durability and longevity. Cutting-edge technologies are used to monitor the performance of various processes and make informed decisions. Jescika uses powerful control systems and software to gather, record and process an enormous quantity of data at each step in the ecological process used to produce lithium salt. Consumption, flow and other rates are measured for all the elements of the production process, recorded in real time thanks to computer chips or detectors. For example, continuous monitoring and georeferencing provide information on the quantity of wastewater generated, thanks to probes installed on the equipment. As a result, Jescika can work with the operations team to minimize or precisely correct operations, or intervene to adjust, calibrate or improve mechanisms to reduce impacts and risks quickly, sometimes remotely.

Find out more on page 96!

PORTRAIT

INSTRUMENTATION AND CONTROL ENGINEER

Photo: Meglab

Name : **Christian Gilbert, ing.**
Employer : **Meglab**

When Christian took the plane for the first time to Éléonore Mine, heading to his first job for his employer, Meglab, he had no idea that he would be plunged into the construction of a major infrastructure using the most recent technologies at all stages of the production process.

The size of the infrastructures needed for a mine, whether underground or above-ground, is something that Christian still finds fascinating and stimulating. He works for a company that specializes in the design, manufacturing and installation of equipment, instruments and electrical systems and industrial control systems.

What type of personality does an instrumentation and control engineer need?

Instrumentation and control engineers need to like problem-solving, because the operation of automated systems is based on the specialized programming of algorithms, robots and industrial processes to operate equipment in places where human beings also work. This is why an interest in detecting and solving problems are key skills for the profession.

Christian admits that his passionate interest in LEGO® as a child probably had an influence over his career choice, and also gave him the ability to understand a project as a whole. Since instrumentation and control engineers must understand various codes and the technical terms used by the mechanics, electricians and computer specialists they work with, their interpersonal skills are also important in order to maintain effective communications between the various fields of expertise represented in each team.

What are the educational requirements to become an instrumentation and control engineer?

Christian graduated with a Bachelor's degree in automated process engineering after four years studying at École de technologie supérieure in Montréal. The program gives students skills in various fields such as mechanics, industrial engineering, electronics, computer science and robotics, which is Christian's speciality.

What are the day-to-day challenges of being an instrumentation and control engineer?

When Christian designs a system program, he must consider all the required functions and possible conditions of use. When a project moves on from plans to reality, he is excited. The critical moment for each project comes when the systems he has designed and that technicians have installed are switched on. Unexpected situations can require complex adjustments to ensure that the actions planned for a machine or object are performed in the required sequence and time frame. In an underground environment the level of difficulty increases, because the dust, sand, humidity and vibrations from regular blasting operations affect both instruments and equipment.

Find out more on page 100!

Photo: Goldcorp - Éléonore

PORTRAIT

ENERGY COORDINATOR

Name: **David Labrecque, ing.**
Employer: **Goldcorp – Éléonore Mine**

How does an elevator manage demands and priorities, how does it know what level to stop at, when to open its doors and how to avoid collisions? These are the kinds of questions David asked as he explored and tried to understand how systems could be automated to allow them to function autonomously. During a tour of colleges as a secondary school student, his attention was drawn to the program of industrial electronics technology (*technologie de l'électronique industrielle*).

After returning to the Abitibi-Témiscamingue region, David was brought into close contact with the mining industry. One of the clients of his new employer was building the future Éléonore Mine in the James Bay area over 1,000 km north of Montréal. David now works there as an Energy Coordinator.

What type of personality does an energy coordinator need?

Curiosity, a need to find out how things work, and an interest in the operation of autonomous systems are essential values for an industrial electronics technician. The range of the tasks performed and responsibilities assigned as part of the job in the mining sector are some of the elements that David appreciates, since he enjoys going beyond his limits and responding to challenges.

When he coordinates the installation of underground measurement systems, David discusses the situation with workers from other sectors. The ability to express needs clearly and obtain the cooperation of other workers is a relational skill that is extremely important in his job.

What are the educational requirements to become an industrial electronics technician?

David completed a college program in industrial electronics technology (*technologie de l'électronique industrielle*), with a specialization in instrumentation and control systems. The three-year program was offered at Cégep de l'Abitibi-Témiscamingue, and is also available in several other regions of Québec.

David decided to continue his studies at the university level in automated manufacturing engineering after getting his college diploma in industrial electronics technology. Today, he still enjoys learning, and he considers it is essential to his professional and personal development.

What are the day-to-day challenges of being an industrial electronics technician?

The mining industry uses a wide array of technology. This includes systems that rely on remote operation to allow machinery to be operated from the surface, and anti-collision systems that geolocate workers in relation to equipment. It also includes on-demand ventilation systems that detect the position of each piece of equipment using ID tags and Wifi infrastructures to send exactly the right quantity of fresh air to each sector of the mine.

All these systems generate a mass of information that must be processed and interpreted to improve performance. The power of modern computers and their ability to process data, along with new information and telecommunications technologies, are put to good use.

For example, electrical equipment includes power monitors or recorders, and the measurements taken are transmitted in real time. David uses his expertise, skills and tools to detect and eliminate energy wastage as it occurs.

Find out more on page 49!

PORTRAIT

PRODUCTION SHOVEL OPERATOR

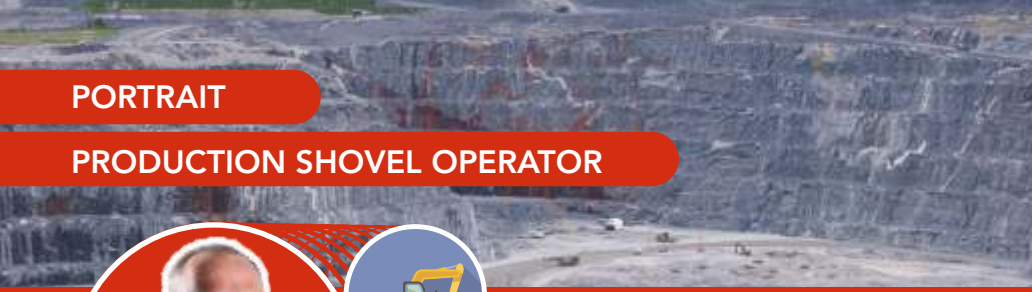

Photo: Canadian Malartic Mine

Name: **Dany Lauzon**
Employer: **Canadian Malartic Mine**

Dany Lauzon is a production shovel operator who seems to have a sixth sense—a sharp perception or instinctive feeling that is shared by truck enthusiasts. Beyond taking pleasure in being at the controls, Dany has learned the abilities and skills needed to play a strategic role in the open-pit mine where he works. He is one of four operators who share the privilege of operating the ultimate oversized piece of mining equipment: a production shovel.

The shovel, able to move 56 tonnes of rock in a single load and equipped with an 11,000-litre fuel tank, can be operated in one of two ways: directly from the cab, or remotely. In some conditions, when there is a safety risk, Dany can operate the shovel remotely, since it is equipped with technology that can capture information precisely. He leaves the cab and moves to an identical cab located 100 feet away that offers a good view.

What type of personality does a production shovel operator need?

Dany has operated heavy equipment for 11 years and has acquired numerous crucial reflexes needed for the job. He checks his blind angles more frequently than usual because his field of vision is limited by the size of the shovel. The fully integrated operation of all mining systems increases his perception of the surrounding environment, helping him avoid potential dangers in the work area he shares with other vehicles. The risk of collision increases when vehicles enter Dany's immediate working environment, as there are some critical areas around the shovel. This frequently occurs, which is why Dany must remain alert at all times.

What are the educational requirements to become a production shovel operator?

Having a Diploma of Vocational Studies in heavy equipment operation or heavy equipment operation for forestry road systems (*conduite d'engins de chantier* or *conduite de machinerie lourde en voirie forestière*) is an asset for production shovel operators in an open-pit mine. However, professional experience combined with other professional qualifications can also lead to a position as a shovel operator. This is the route Dany took—he has a Diploma of Vocational Studies in Construction Equipment Mechanics (*mécanique d'engins de chantier*).

Dany's mechanical knowledge gives him a key advantage, since he knows exactly how the machinery works and is familiar with all its components. An unusual noise, vibration or smell is a sign of a mechanical problem, and he can quickly identify its source.

What are the day-to-day challenges of being a production shovel operator?

Dany's working environment presents a number of challenges. For example, he must operate and move his shovel precisely in close proximity to other equipment, vehicles and workers, during a shift of 12 consecutive hours. He must remain alert to the various signals he is sent, and also to all the unpredictable events that may occur, in order to detect possible dangers. If an unforeseen situation arises, he must make the right decisions quickly and act safely.

Find out more on page 42!

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- Module 7 Blasting Material and Equipment – 8h
- Module 8 Ore Extraction (scraper hoist) – 16h
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Featured

HEAVY EQUIPMENT OPERATOR

Danielle Mattawashish | Goldcorp – Éléonore

Heavy equipment operators operate various pieces of heavy equipment, such as **loaders**, **graders**, **backhoes**, excavators and **dump trucks**, mainly for construction and production work in open-pit mines and quarries and the handling of ore and materials. They can perform on-site tasks such as snow removal, earthmoving, road maintenance and **grading**, and fuel delivery. They perform **preventive maintenance** and routine repairs. They also carry out checks before using heavy equipment, clean and lubricate it, and fill the fuel tank. The operators of over-sized heavy equipment must establish visual markers, check their blind angles frequently as a matter of course because of their limited field of vision, and develop the ability to hear instructions transmitted by radio on an ongoing basis.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Northern Heavy Equipment Operations or**
- **DEP en conduite d'engins de chantier (French only) or**
- **DEP en conduite de machinerie lourde en voirie forestière (French only)**

SPECIFIC JOB CONDITIONS

- The work is performed in all kinds of weather, sometimes harsh.
- The work space is often restricted (vehicle cab) and the job involves sitting for long periods of time.
- The work schedule is often irregular.

SKILLS REQUIRED

- Focus on health and safety
- Autonomy
- Organizational skills
- Teamwork
- Long attention span

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Driver's licence, Class 1
- Driver's licence, Class 5
- Mechanical knowledge

Where do people work?

At what stage in the mining cycle do they work?

MOBILE EQUIPMENT MECHANIC

Mary Kitty | Stornoway Diamond Corporation

Mobile equipment mechanics repair, adjust and maintain the mobile heavy equipment used in construction, transportation and production work at mine sites, and work both above and below ground. They identify problems and failures on mobile equipment using computerized monitoring equipment and other measurement instruments to determine the repairs needed. On a daily basis, they adjust equipment and repair or replace components or defective parts using various manual and mechanical tools. They help develop preventive maintenance procedures for mobile equipment to improve working procedures for maintenance operations and to reduce the number of failures and breakages. They clean and lubricate equipment and carry out other scheduled maintenance.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Construction Equipment Mechanics or**
- **DEP en mécanique de véhicules lourds routiers (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in difficult physical or environmental conditions (darkness, heat or cold).
- The working environment may be dusty, noisy or hard to access.
- The work involves handling parts, tools and equipment of various weights.

SKILLS REQUIRED

- Good sight and hearing
- Problem-solving ability
- Attention to detail and precision
- Resourcefulness
- Manual dexterity

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- AVS in a related field
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

MILLWRIGHT

Jean-Philippe Bédard-Pépin and Mathieu Côté | North American Lithium

Millwrights are responsible for the proper operation of various infrastructures used in mines, which normally operate 24 hours a day, every day. For example, the **hoist**, **conveyors** and **concentrators** are infrastructures that must be functional at all times. Millwrights have the knowledge and skills needed to ensure that the infrastructures meet and are maintained in accordance with the strictest standards. They inspect and examine many different kinds of fixed equipment such as pumps, ventilators and generators in all mine facilities to detect signs of wear or malfunction, and then plan and carry out repair work or preventive maintenance to avoid future failures and breakages. Their extensive professional knowledge allows them to maintain **flexible AC transmission**, vacuum, hydraulic and pneumatic systems.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Industrial Construction and Maintenance Mechanics or**
- **DEC en technologie de maintenance industrielle (French only)**

SPECIFIC JOB CONDITIONS

- The work may require fine muscular control for the adjustment of high-precision machine tools.
- The working environment may be dusty, noisy or hard to access.
- The work may induce stress because of the need to meet deadlines and production quotas.

SKILLS REQUIRED

- Problem-solving ability
- Manual dexterity
- Attention to detail and precision
- Teamwork
- Resourcefulness

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- AVS or ACS in a related field
- Welding skills

Where do people work?

At what stage in the mining cycle do they work?

UNDERGROUND MINER

Vicki | Glencore – Raglan Mine

Underground miners perform the duties required to ensure safety and to support the mining advance, such as **scaling** loose rock from walls and roof and installing **support systems** to secure underground passageways. They are able to operate heavy equipment to extract, load and transport ore, including scooptrams and ore haul trucks, and perform related tasks to extract ore in underground mines and build tunnels, passageways and shafts to facilitate ore extraction. They are able to drill rock and operate specialized drilling machines. They load explosives, set **detonators**, and detonate explosives. They may operate hoists that transport people, equipment and materials through mine shafts from above to below ground.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Ore Extraction**

SPECIFIC JOB CONDITIONS

- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or vibrations).
- Some activities may involve the handling of hazardous products (explosives, compressed air or oil).
- Some activities impose repetitive physical constraints.

SKILLS REQUIRED

- Focus on health and safety
- Good sight and hearing
- Good coordination
- Ability to concentrate
- Methodical approach

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- General explosives permit

Where do people work?

At what stage in the mining cycle do they work?

DRILLER/BLASTER

Marcel Lévesque | Canadian Malartic Mine

Drillers and blasters select and measure drill hole locations. They perform various drilling operations in open-pit mines and quarries based on the engineer's plans. They operate various types of machines such as manual, pneumatic and hydraulic drills. They connect electrical wires, fuses or **detonating cords** into series and connect series to **blasting machines**. They conduct field tests to determine the type and quantity of explosives required. They load explosives into blast holes and detonate charges to dislodge rock. They inspect blast zones and carry out maintenance and minor repairs on the drills they use.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Drilling and Blasting**

SPECIFIC JOB CONDITIONS

- The work is performed in all kinds of weather, sometimes harsh.
- The work requires constant attention when handling tools and hazardous materials (explosives).
- The working environment may be dusty, noisy or hard to access.

SKILLS REQUIRED

- Attention to detail and precision
- Vigilance
- Good eyesight, hearing and sense of smell
- Manual dexterity
- Ability to read and interpret plans

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Blaster Certificate
- General explosives permit
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

MINING TECHNICIAN

Rita and Stéphanie | Glencore – Raglan Mine

Mining technicians perform various tasks depending on the specialization they choose during their program: geology, extraction or **minerallurgy**. In general, they help plan and supervise extraction operations in open-pit or underground mines to ensure that the work proceeds as planned by the engineering team and in compliance with the safety standards, but they may develop expertise in a specific field, such as geology, mine planning, **mine ventilation** or **ground control**, and perform more specialized tasks. Many of their tasks require them to configure and use measuring instruments for various types of analysis. They may conduct quality control inspections in various mine sectors and make recommendations in order to eliminate risks and optimize the work process.

QUALIFICATION GENERALLY REQUIRED

- **DEC en technologie minérale (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or vibrations).
- The work may require fine muscular control for the adjustment of high-precision machine tools.
- The work involves handling parts, tools and equipment of various weights.

SKILLS REQUIRED

- Ability to adapt
- Ability to prioritize
- Communication
- Sense of observation
- Focus on health and safety

OTHER REQUIREMENTS & ASSETS

- Modular Training for Mine Workers
- General explosives permit
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

INDUSTRIAL MAINTENANCE TECHNICIAN

Student | Cégep de Sept-Îles (photo: Christine Blaney)

Industrial maintenance technicians maintain all the fixed and mobile equipment in a mining company's facilities. They ensure that the facilities and equipment comply with the standards and the plans drawn up by the company. They are able to identify and analyze operating problems in the equipment and make the necessary repairs, and help optimize existing equipment. They design and implement preventive maintenance programs and coordinate and supervise the company's maintenance activities. They may be responsible for managing and directing a work team that includes millwrights, electricians and welders. They are responsible for updating maintenance logs or computerized systems in order to plan and improve the preventive maintenance program and provide follow-up. They collect and compile operational and maintenance data, and keep an inventory of parts to ensure that they are available when required.

QUALIFICATION GENERALLY REQUIRED

- **DEC en technologie de maintenance industrielle (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).
- The work involves handling parts, tools and equipment of various weights.

SKILLS REQUIRED

- Organizational and planning skills
- Leadership
- Versatility
- Teamwork
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- DVS in Industrial Construction and Maintenance Mechanics
- Knowledge of mobile mechanical equipment

Where do people work?

At what stage in the mining cycle do they work?

INSTRUMENTATION AND CONTROL TECHNICIAN

Pascale Croussette | Goldcorp – Éléonore

Instrumentation and control technicians perform various technical and manual tasks in open-pit or underground mines in connection with the installation, repair, maintenance and programming of various types of electronic, electrical, mechanical, pneumatic, hydraulic, **analog** and digital equipment. To ensure the proper operation of the main measuring instruments, they inspect them regularly. They perform adjustments, **calibration** and troubleshooting on various electrical and electronic devices in the industrial equipment used to extract, transport and process ore, such as hoists, conveyors and concentrators, and apply preventive maintenance techniques to the equipment. Currently, since many devices are **automated**, instrumentation and control technicians are responsible for programming electrical and electronic equipment.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Industrial Electronics Technology or**
- **DCS in Computer Engineering Technology or**
- **ACS in a related field**

SPECIFIC JOB CONDITIONS

- The work may require fine muscular control for the adjustment of high-precision machine tools.
- The work space is sometimes hard to access or restricted.
- Some activities require a high level of attention and concentration.

SKILLS REQUIRED

- Problem-solving ability
- Focus on detail and disciplined approach
- Teamwork
- Autonomy
- Manual dexterity

OTHER REQUIREMENTS & ASSETS

- ACS in a related field
- DVS in Automated Systems Electromechanics
- Certificate in electricity (CÉ)

Where do people work?

At what stage in the mining cycle do they work?

GEOLOGIST

Laura Guillaume | Eldorado Gold Lamaque

Geologists perform various tasks at various stages in the **mining cycle**. They may work in **exploration** to conduct geo-scientific surveys and below-ground exploration to **characterize** and asses **geological formations** and **mineral deposits**. During the mine development stage, they are closely involved in planning the extraction of minerals, and in designing and commissioning mine facilities. In the production stage, they may quantify the mechanical properties of rock, delimit the precise shape of a deposit, and analyze the mineral content of the ore to locate the richest zones. Last, they indicate to drillers where to develop extraction sites using 3D software that displays the shape of the deposit and the mine workings on-screen.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in geology or**
- **Baccalauréat en sciences de la Terre et de l'atmosphère (French only) or**
- **Baccalauréat en génie géologique (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in difficult physical or environmental conditions (darkness, dust, heat or cold).
- The work may be performed in an office environment or on-site.
- Some activities impose repetitive physical constraints.

SKILLS REQUIRED

- Ability to analyze and summarize
- Organizational and planning skills
- Autonomy
- Teamwork
- Good physical condition

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des géologues du Québec
- Master's degree in a related field

Where do people work?

At what stage in the mining cycle do they work?

MINING ENGINEER

Sarah Royer | Hecla Québec

Mining engineers perform many different tasks connected with the planning, design, organization and supervision of the construction of mines and mine facilities. They create 3D plans of galleries, tunnels and pits, plan **mining sequences** and analyze optimization projects. In general, they prepare and supervise ore extraction, but may also develop expertise in a specific field, such as mine planning, ground control or rock mechanics, and perform more specialized tasks. They determine safe and efficient methods to extract ore and appropriate drilling and blasting methods for the construction or operation of a mine. They plan and design or select mineral extraction and ore treatment machinery and supervise the development of mines and mine structures, as well as mine operation and maintenance.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in mining engineering or**
- **Baccalauréat en génie géologique (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).

SKILLS REQUIRED

- Project management skills
- Organizational and planning skills
- Ability to adapt
- Autonomy
- Teamwork

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec
- Master's degree in a related field

Where do people work?

At what stage in the mining cycle do they work?

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Non-specialized

WAREHOUSE CLERK

Vanessa Hester | Stornoway Diamond Corporation

Warehouse clerks coordinate warehouse activities and control access to warehouses. They manage stocks and the incoming and outgoing materials and parts needed for routine activities in various departments of the mine. They are responsible for receiving and unloading materials in the warehouse on the mine site. In addition, they label and place the materials in the warehouse in an orderly fashion to ensure quick access. They handle materials within the warehouse and deliver materials to other mine facilities. Warehouse clerks follow up on orders of services and supplies for mine activities, keeping up-to-date logs and a computerized inventory system. They are responsible for keeping an inventory to ensure that the quantities in the warehouse match the quantities indicated in the system as being available.

QUALIFICATION GENERALLY REQUIRED

- **Secondary School Diploma**

SPECIFIC JOB CONDITIONS

- The work involves handling parts, tools and equipment of various weights.
- The work requires constant attention when handling tools or hazardous materials.
- The work space is sometimes hard to access or restricted.

SKILLS REQUIRED

- Good physical condition
- Organizational skills
- Focus on health and safety
- Ability to adapt
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- DVS in a related field
- Training as a **lift truck operator**
- Knowledge of the **WHMIS**

Where do people work?

At what stage in the mining cycle do they work?

DISPATCHER

Marc-Antoine Langlois | Canadian Malartic Mine

Dispatchers play a vital role in production, safety and emergency communications on the mine site. They provide overall supervision for communications and worker movement on the site using radios and other telecommunications devices. They act as coordinators, answering emergency calls, dispatching the necessary resources and following the **protocol** established by the company for the specific problem reported. On a daily basis, they process and forward information and instructions in order to coordinate the activities of vehicle drivers and teams, and movements of material. They dispatch workers based on work schedules and work sheets. Last, they supervise vehicle traffic at the mine using cameras to ensure that all vehicles arrive at their destination.

QUALIFICATION GENERALLY REQUIRED

- **Secondary School Diploma or**
- **DEC en techniques de la logistique du transport (French only)**

SPECIFIC JOB CONDITIONS

- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.
- Some activities require a high level of attention and concentration.

SKILLS REQUIRED

- Ability to work under pressure
- Organizational and planning skills
- Communication
- Active listening
- Rapidity and efficiency

OTHER REQUIREMENTS & ASSETS

- DVS in a related field
- Specialized training in a related field

Where do people work?

At what stage in the mining cycle do they work?

CORE SHACK LABOURER

Lyne Dubé | Hecla Québec

Core shack labourers assist the geology team in their everyday tasks. They **code**, sort and store core samples in a precise order and sequence. **Core samples** are cylindrical in shape and of great value because of the expense of removing them from the ground during drilling operations. **Core shack** labourers may also work in the field to help prepare drilling sites. They are responsible for sectioning or splitting core samples so that geology technicians can analyze their appearance and determine which samples will be analyzed in the laboratory to detect the presence of minerals. Once the samples have been analyzed, the core shack labourers close the sample boxes and transport them to the storage section.

QUALIFICATION GENERALLY REQUIRED

- **Secondary School Diploma**

SPECIFIC JOB CONDITIONS

- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or vibrations).
- Some activities require the frequent lifting of heavy loads.

SKILLS REQUIRED

- Organizational skills
- Focus on detail and disciplined approach
- Versatility
- Autonomy
- Teamwork

OTHER REQUIREMENTS & ASSETS

- DVS in a related field

Where do people work?

At what stage in the mining cycle do they work?

RioTinto | IOC | QNS&L

La Compagnie minière IOC est l'un des principaux fournisseurs canadiens de boulettes et de concentré de minerai de fer pour des clients du monde entier. La Compagnie dirige une mine, un concentrateur et une usine de bouletage à Labrador City (Terre-Neuve-et-Labrador) et des installations portuaires situées à Sept-Îles (Québec). Elle exploite également un chemin de fer de 418 kilomètres qui relie la mine au port.

Rio Tinto, société minière internationale qui exerce ses activités dans plus de 40 pays, est le principal actionnaire d'IOC.

Du mineur d'extraction à l'ingénieur métallurgiste, la Compagnie minière IOC emploie actuellement plus de 2 500 employés et sa capacité de production est d'environ 22 millions de tonnes de concentré de minerai de fer par année.

- Administration
- Vente et marketing
- Finance
- Approvisionnement et chaîne d'approvisionnement
- Ressources Humaines
- Systèmes et technologies de l'information
- Communications
- Ingénierie
- Superviseurs
- Gestion des actifs
- Gestion de projets
- Santé, sécurité et environnement
- Technicien de laboratoire
- Opérateur d'équipements miniers et ferroviaires
- Procédés minéralurgiques
- Entretien mécanique (mécanique diesel, mécanique de chantier, menuiserie, tuyauterie)
- Entretien électrique (électricité de bâtiment, électronique)
- Contrôleur de circulation ferroviaire

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Vocational level

DIAMOND DRILLER

Steeve Rioux | Orbit Garant Drilling

Diamond drillers install and operate diamond **drills** and maintain drills and related drilling equipment. To ensure that the drill controls operate correctly, they must frequently check the dials that measure pressure, depth and drill bit revolutions per minute. At the exploration stage, diamond drilling is used to analyze and validate the future potential of the mine site. During the production stage, diamond drillers are assigned to drilling and sampling to locate other nearby deposits to extend the life of the mine. They may work in aboveground or underground mine facilities during the exploration stage, and also for mine **contractors** with service contracts at various mine sites in the production stage.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Diamond Drilling**

SPECIFIC JOB CONDITIONS

- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or vibrations).
- The work involves handling parts, tools and equipment of various weights.
- The work may require fine muscular control for the adjustment of high-precision machine tools.

SKILLS REQUIRED

- Resourcefulness
- Autonomy
- Willingness to work outdoors
- Focus on detail and disciplined approach
- Manual dexterity

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- General explosives permit
- Modular Training for Mine Workers
- Driver's licence, Class 5
- First aid certificate

Where do people work?

At what stage in the mining cycle do they work?

MILL OPERATOR

Norman Hughboy | Goldcorp – Éléonore

Mill operators perform tasks at a mining company's ore treatment plant. They operate various machines used in the treatment process for the ore extracted by the company. They ensure the proper operation of equipment in all sections of the plant, overseeing crushing, flotation, reagent feeders, control rooms, filter presses, and thickener tanks. Mill operators monitor valves, dials, computerized data, and screens for circuits and products to ensure that operations are proceeding correctly, and verify the specific operations for the process. Last, they adjust devices as needed. They can also help mechanics during maintenance work and production stoppages.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Machine Operations, Mineral and Metal Processing**

SPECIFIC JOB CONDITIONS

- The work requires constant attention when handling tools or hazardous materials.
- The work may require fine muscular control for the adjustment of high-precision machine tools.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).

SKILLS REQUIRED

- Attention to detail and precision
- Problem-solving ability
- Sense of observation
- Versatility
- Manual skills

OTHER REQUIREMENTS & ASSETS

- SSD or AESS

Where do people work?

At what stage in the mining cycle do they work?

SECURITY GUARD

Denis Lachance | Goldcorp – Éléonore

Security guards perform a large number of tasks relating to the safety of a mining company's employees, visitors and the general public living near the facilities. For example, they control access to sites, keep logs and direct visitors to their destination. They ensure compliance with the rules for the site, including the wearing of safety equipment by visitors and delivery procedures for goods on the site. They respond to various alarms and inform the appropriate authorities. They also assist the team providing first aid in the workplace. They conduct inspections for fire prevention, vandalism and theft. When they work on mine sites at a remote location where employees must fly in, they may also check the loading of passengers and baggage.

QUALIFICATION GENERALLY REQUIRED

- **STC in Private Security Guarding or**
- **DCS in Police Technology**

SPECIFIC JOB CONDITIONS

- The work is performed in all kinds of weather, sometimes harsh.
- The work schedule is often irregular.
- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.

SKILLS REQUIRED

- Discipline
- Sound judgment
- Ability to act swiftly
- Sense of observation
- Self-control

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Agent's licence from the Bureau de la sécurité privée
- Driver's licence, Class 5
- First aid certificate

Where do people work?

At what stage in the mining cycle do they work?

ELECTRICIAN

Marc | Glencore – Raglan Mine

Electricians install and repair power cables, electrical devices, lighting systems, control devices and related apparatus in buildings and other facilities on mine sites. They may be required to work underground or in workshops on the surface, alongside several other trades during work days, since they are part of multi-disciplinary teams and must be extremely versatile. They may install and connect power cables in underground galleries or maintain circuits on conveyors. They can install, handle, repair and maintain many different types of electrical devices and industrial equipment with the most recent automation technologies used in the mining industry, and diagnose problems. In some cases, they are the only people holding the necessary certification to handle and troubleshoot some electrical devices.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Electricity or**
- **DCS in Industrial Electronics Technology**

SPECIFIC JOB CONDITIONS

- The work may require fine muscular control for the adjustment of high-precision machine tools.
- The working environment may be dusty, noisy or hard to access.
- Some activities require a high level of attention and concentration.

SKILLS REQUIRED

- Focus on health and safety
- Resourcefulness
- Versatility
- Attention to detail and precision
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Certificate in electricity (CÉ)

Where do people work?

At what stage in the mining cycle do they work?

PLUMBER

Students | Centre de formation professionnelle de la Baie-James

Plumbers are responsible for building, installing and adjusting a wide range of piping systems and plumbing, heating, drinking water and wastewater treatment equipment in a mine company's facilities. They can also make changes to, clean and maintain piping systems and plumbing equipment such as drinking water, sanitary and sprinkler systems. They must read plans, drawings and specifications to determine the layout of plumbing, water supply and drainage systems. They locate and mark the position of pipe connections and pipe-routing holes.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Plumbing and Heating**

SPECIFIC JOB CONDITIONS

- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or restricted access).
- Some activities impose repetitive physical constraints.
- The work involves handling parts, tools and equipment of various weights.

SKILLS REQUIRED

- Good physical condition
- Conception spatial 3D
- Manual dexterity
- Resourcefulness
- Ability to adapt

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- ASP en réparation d'appareils au gaz naturel (French only)
- Certificate of qualification in gas piping installation (ITG)

Where do people work?

At what stage in the mining cycle do they work?

WELDER

Benigna | Glencore – Raglan Mine

Welders work in various sectors of a mine. Their role is to carry out all forms of welding, **brazing** and cutting, on all types of metal, on-site or in the workshop, using various welding processes and equipment for gas and electric welding. They can read and interpret welding plans and technical specifications. They select materials and tools for the job, clean and prepare the surfaces to be welded, and install and assemble the components. They use metal-forming machines such as **metal-folding machines** and **shearing machines**, and other machines for straightening, grinding and **bending** metal. They repair worn metallic components from equipment, machinery and pipework, and maintain welding and cutting equipment.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Welding and Fitting**

SPECIFIC JOB CONDITIONS

- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or restricted access).
- The work involves handling parts, tools and equipment of various weights.
- Some activities may involve the handling of hazardous products (gas under pressure).

SKILLS REQUIRED

- Good visual acuity
- Manual dexterity
- Ability to read and interpret plans
- Attention to detail and precision
- Focus on health and safety

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- AVS in High-Pressure Welding
- Welding certificate or qualification

Where do people work?

At what stage in the mining cycle do they work?

WATER TREATMENT PLANT OPERATOR

Joanik Rochon | Goldcorp – Éléonore

Water treatment plant operators perform work to treat and filter water at the facilities used by some mining companies to house and feed employees, which use large quantities of potable water. They operate and oversee computer control systems and related equipment in wastewater treatment plants for the elimination of sewage and waste and the treatment and distribution of drinking water. They read **flow meters**, level gauges and other data-recording instruments to measure water flow, level of use, bacterial concentration, and the concentration of chlorine and **fluoride**. They are also the first responders if the system fails, and responsible for the ongoing surveillance of all the equipment and instruments in water treatment plants.

QUALIFICATION GENERALLY REQUIRED

- **DEP en conduite de procédés de traitement de l'eau (French only)** or
- **DVS in Machine Operations, Mineral and Metal Processing** or
- **DEC en technologie de l'eau (French only)**

SPECIFIC JOB CONDITIONS

- The work is performed in all kinds of weather, sometimes harsh.
- Some activities require a high level of attention and concentration.

SKILLS REQUIRED

- Attention to detail and precision
- Sense of initiative
- Teamwork
- Autonomy
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- SSD or AESS

Where do people work?

At what stage in the mining cycle do they work?

MACHINIST

Timmy Brooks | Goldcorp – Éléonore

Machinists work in mechanical and welding workshops in mining company facilities. Their role is, in particular, to fabricate or modify components and products to repair equipment on the mine site and improve its efficiency. Based on their observations, they take precise measurements to prepare a drawing of the equipment component to be fabricated, or use technical drawings from the manufacturer. Machinists use various tools found in a mechanical workshop, such as **lathes**, **milling machines** and **grinding machines**, and program various commands on the **machine tools** used to cut metal as indicated on the fabrication plan. When the machine tool has completed the sequence programmed, machinists make checks and adjustments before using the new component to replace a broken or worn part.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Machining Technics**

SPECIFIC JOB CONDITIONS

- Some activities require the frequent lifting of heavy loads.
- The working environment may be dusty, noisy or hard to access.
- The work may require fine muscular control for the adjustment of high-precision machine tools.

SKILLS REQUIRED

- Attention to detail and precision
- Ability to read and interpret plans
- Ingenuity
- Autonomy
- Versatility

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- AVS in Numerical Control Machine Tool Operation

Where do people work?

At what stage in the mining cycle do they work?

COOK

Stéphane Belley and Marise Swallow | Goldcorp – Éléonore

Cooks generally work for mining companies in remote areas, providing food for employees living on-site for periods of one to three weeks. They coordinate the preparation of three meals per day for employees, which may represent between 100 and 1,000 people to serve at each meal. They supervise kitchen activities and keep an inventory of food, supplies and materials. They draw up menus, determine the quantities of ingredients needed, assess needs and the cost of ingredients, and order what is necessary. They may have responsibility for managing a team of up to ten employees and supervise and train kitchen staff. It is important for cooks to ensure that standards of hygiene and cleanliness are strictly observed at all times.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Professional Cooking**

SPECIFIC JOB CONDITIONS

- The work schedule is often irregular.

SKILLS REQUIRED

- Ability to plan
- Teamwork
- Friendliness
- Focus on detail and disciplined approach
- Creativity

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- MAPAQ training course

Where do people work?

At what stage in the mining cycle do they work?

BUILDING MAINTENANCE LABOURER

Aina Mae | Glencore – Raglan Mine

Building maintenance labourers clean or maintain the inside and outside of various facilities on the mine site. For example, in offices they clean and disinfect work surfaces, sanitary facilities, walls and floors. They also clean changehouses and bedrooms, if applicable. They may perform various seasonal maintenance tasks such as snow removal or the maintenance of green spaces accessible to employees. They are able to carry out other routine maintenance tasks, such as painting and simple tasks involving furnishings, cladding and insulation. They may adjust heating, cooling, ventilation, plumbing and electrical systems, and carry out a few minor repairs or contact the relevant trade when major repairs are necessary.

QUALIFICATION GENERALLY REQUIRED

- **DVS in General Building Maintenance or**
- **DVS in Carpentry or**
- **DVS in Northern Building Maintenance**

SPECIFIC JOB CONDITIONS

- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).
- The work involves handling parts, tools and equipment of various weights.
- Some activities impose repetitive physical constraints.

SKILLS REQUIRED

- Good physical condition
- Versatility
- Resourcefulness
- Manual skills
- Good time management

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

ELECTRICAL MECHANIC

Student | Centre de formation professionnelle de la Baie-James

Electrical mechanics work in various sectors of the mine where electrical, electronic and automated devices and equipment are installed, including pumps, ventilation, heating and cooling systems, automatic doors, **gantries** and **hoists**. They can also repair and maintain mobile equipment such as drills and power shovels. They maintain, repair and inspect devices and equipment, as well as electrical cables and circuits that could be defective and cause work stoppages or a risk to employee health and safety. They are responsible for taking electrical measurements, for example concerning ventilator speeds in underground galleries, and making the necessary calibrations. They may also determine the origin of a malfunction in a mine's power plant, such as a thermal, electric or gas-powered power plant.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Automated Systems Electromechanics or**
- **DCS in Industrial Electronics Technology**

SPECIFIC JOB CONDITIONS

- The work may require fine muscular control for the adjustment of high-precision machine tools.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).
- The work involves handling parts, tools and equipment of various weights.

SKILLS REQUIRED

- Attention to detail
- Versatility
- Resourcefulness
- Manual skills
- Autonomy

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Knowledge of electricity
- Knowledge of mobile mechanical equipment

Where do people work?

At what stage in the mining cycle do they work?

INDUSTRIAL DESIGNER

Steve Legault | CMAC-Thyssen Mining Group

Industrial designers produce drawings and plans based on production standards for the design and modification of equipment or components. In general, they work for companies that design specialized equipment for the mining industry such as drills, conveyors and **head frames**. They work with engineers and technicians to produce drawings, plans and diagrams from sketches, engineering calculations, specifications and other data. They must ensure that the standards and techniques for producing plans and drawings are respected and that the plans and drawings match the initial specifications. They optimize equipment or adapt it to specific constraints or situations. They sometimes visit the mining company facilities to gather the data needed to design detailed plans.

QUALIFICATION GENERALLY REQUIRED

- **DVS in Industrial Drafting**

SPECIFIC JOB CONDITIONS

- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.
- The work may sometimes be performed on-site.

SKILLS REQUIRED

- Focus on work and disciplined approach
- Creativity
- Ability to analyze
- Vision 3D
- Autonomy

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

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College level

CIVIL ENGINEERING TECHNICIAN

Workers | WSP

Civil engineering technicians perform their tasks for engineering firms working, as subcontractors, on mining sites that are operating or under construction. They provide support and technical services for scientists, engineers and other professionals during the design and supervision of work to assist the company in its construction, expansion and optimization projects. They perform 3D design tasks and complete plans for steel and concrete structures using **CAD** tools. They prepare construction specifications, cost estimates, and estimates of the materials required, establish work schedules and draft reports. On-site, they may supervise or direct surveys, inspections or technical studies in connection with **topography**, soils, road infrastructures, buildings and structures, in order to gather data for engineering projects.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Civil Engineering Technology**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).

SKILLS REQUIRED

- Organizational and planning skills
- Proactive approach
- Focus on detail
- Ability to read and interpret plans
- Sense of observation

OTHER REQUIREMENTS & ASSETS

- ASP Construction Certification
- Mastery of AutoCAD software

Where do people work?

At what stage in the mining cycle do they work?

LABORATORY TECHNICIAN

Siméon Petawabano | Goldcorp – Éléonore

Laboratory technicians provide technical services for the various sectors of a mining company, for example in connection with quality control, improvements to ore treatment processes, and environmental protection. In the ore treatment plant, they conduct analyses to monitor all the chemical compounds used at various stages in the ore treatment process. For the exploration division, they may analyze samples to validate their mineral content. They must then interpret the results and draft reports. They set up and conduct experiments, tests and chemical analyses using various techniques. They ensure that raw materials, intermediate products and finished products meet quality standards, and conduct analyses to ensure that the environment is protected at all times.

QUALIFICATION GENERALLY REQUIRED

- **DEC en techniques de procédés chimiques (French only) or**
- **DCS in Laboratory Technology (Analytical Chemistry) or**
- **DEC en techniques de génie chimique (French only)**

SPECIFIC JOB CONDITIONS

- The work requires constant attention when handling hazardous materials.
- The work may induce stress because of the need to meet deadlines and production quotas and provide quality assurance.

SKILLS REQUIRED

- Methodical approach
- Teamwork
- Focus on detail and disciplined approach
- Organizational skills
- Sense of responsibility

OTHER REQUIREMENTS & ASSETS

- DEC en technologie minérale – Minéralurgie (French only)

Where do people work?

At what stage in the mining cycle do they work?

NURSE

Lucie Ruest | Monarques Gold Corporation

Nurses are the first responders when a workplace accident occurs, and may accompany the injured worker to the nearest hospital. They are also responsible for training mine rescue teams in first aid and emergency response techniques. They coordinate the health services needed to operate a mine and refer workers to the relevant professionals. They meet each employee on an annual basis and ensure that medical records are kept up to date in accordance with industry standards, while taking care to check for the appearance of certain symptoms. They carry out pre-hiring medical examinations and drug detection tests. They take part in educational and awareness-raising programs to promote and maintain the health, safety, wellbeing and quality of life of workers.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Nursing or**
- **Bachelor's degree in nursing**

SPECIFIC JOB CONDITIONS

- The work schedule is often irregular.
- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.

SKILLS REQUIRED

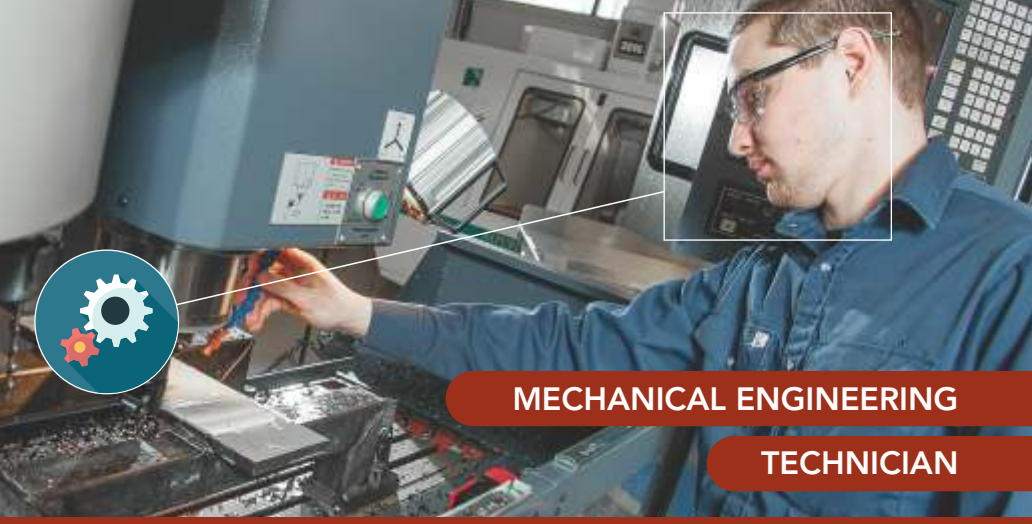
- Calmness
- Ability to adapt
- Interpersonal skills
- Ability to analyze
- Respect for confidentiality

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des infirmières et infirmiers du Québec
- Certification in related areas

Where do people work?

At what stage in the mining cycle do they work?



MECHANICAL ENGINEERING TECHNICIAN

Student | Cégep de Jonquière

Mechanical engineering technicians provide support and technical services for the design, construction, maintenance and testing of machines, components and tools, with respect to **machining**, the development of **operation sheets**, the programming of machines with digital controls, the production of **tools**, and quality control. They also cooperate with other trades in planning and carrying out maintenance work on machinery and organizing production work. During the construction phase, mining companies may give mechanical engineering technicians responsibility for conceiving and designing some equipment generally found in an ore treatment plant. They are able to draw up plans, drawings, technical specifications and 3D prototypes using traditional or computer-aided methods to support the company's engineering team.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Mechanical Engineering Technology**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).
- The work may require fine muscular control for the adjustment of high-precision machine tools.

SKILLS REQUIRED

- Focus on detail and disciplined approach
- Problem-solving ability
- Teamwork
- Sense of responsibility
- Ability to read and interpret plans

OTHER REQUIREMENTS & ASSETS

- Mastery of 3D design software
- DVS in Industrial Drafting

Where do people work?

At what stage in the mining cycle do they work?

TELECOMMUNICATIONS TECHNICIAN

Frédéric Lemieux and Jérémy Dumais | Canadian Malartic Mine

Telecommunications technicians are responsible for providing suitable support for mining company workers in the field of telecommunications services. They ensure that all the telecommunications systems under their responsibility remain in an operational state. They perform maintenance, detect and correct telecommunications problems on various systems, such as wired, wireless and optical networks, cameras and surveillance equipment, access control systems and telephone systems. Telecommunications technicians support the technological projects introduced by a company to improve its operations. They may also install and maintain remote-control systems and work with computer technicians as required.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Electrotechnology (Telecommunications) or**
- **DCS in Industrial Electronics Technology**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- Some activities require a high level of attention and concentration.
- The work may require fine muscular control for the adjustment of high-precision machine tools.

SKILLS REQUIRED

- Problem-solving ability
- Ability to learn independently and autonomously
- Sense of initiative
- Manual dexterity
- Ability to adapt

OTHER REQUIREMENTS & ASSETS

- Knowledge of computers
- Knowledge of electricity
- Certificate in electricity (CÉ)

Where do people work?

At what stage in the mining cycle do they work?

COMPUTER TECHNICIAN

Mark | Glencore – Raglan Mine

Computer technicians are responsible for all of a company's computer assets. There are three main specializations for computer technicians in the mining sector. Technicians who specialize in computer support provide front-line computer and technical support for users at all a mining company's facilities. They configure new workstations, troubleshoot and maintain computers, photocopiers and peripheral devices, and install and update software. Technicians who specialize in network management ensure the proper operation of the company's network infrastructures and servers, and ensure maintenance, data backup, and data security. They keep an inventory of computer equipment. Last, programmer-analysts develop and optimize Web-based applications and program the management and production software developed for the mine.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Computer Engineering Technology or**
- **Bachelor's degree in computer science**

SPECIFIC JOB CONDITIONS

- The work schedule is often irregular.
- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.

SKILLS REQUIRED

- Interest in new technologies
- Problem-solving ability
- Logic
- Teamwork
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- University diploma in a related field
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

ENVIRONMENTAL TECHNICIAN

Audrey Gauthier | Hecla Québec

Environmental technicians help ensure compliance with the environmental standards imposed by the government, and those established by the company, throughout the extraction and ore treatment process. On a daily basis, they take samples of soil, groundwater and surface water, process water, drinking water and ambient air, and coordinate the dispatching of samples to laboratories. They maintain the filing systems for laboratory analysis results. They are responsible for reporting all irregularities observed in the course of their work, and help define solutions. They are also responsible for various measuring devices and for their maintenance. They provide support in the field to prevent environmental incidents and ensure compliance with the company's environmental rules.

QUALIFICATION GENERALLY REQUIRED

- **DEC en environnement, hygiène et sécurité au travail (French only) or**
- **DEC en technologie de l'eau (French only) or**
- **DEC en techniques du milieu naturel (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work is performed in all kinds of weather, sometimes harsh.
- Some activities may involve the handling of hazardous products.

SKILLS REQUIRED

- Scientific curiosity
- Focus on detail and disciplined approach
- Autonomy
- Teamwork
- Methodical approach

OTHER REQUIREMENTS & ASSETS

- University diploma in a related field
- College diploma in a field related to mining
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

METALLURGICAL TECHNICIAN

Marie-Eve Riopel | Goldcorp – Éléonore

Metallurgical technicians help plan and implement sampling campaigns and contribute to the ongoing improvement of the company's ore treatment processes. Working with a metallurgist, they plan and supervise production operations, control the quality of the processed products, and measure the proper operation of the equipment used to crush and treat ore. They monitor the plant's daily production and constantly check the various elements in the transformation process, such as the temperature and consistency of the solutions of reagents in tanks in order to obtain the greatest possible quantity of the target metal. They may also perform laboratory tests to check the quality of the process and the plant's production, and take part in projects to improve the process. Using their observations and the results of the laboratory tests they compile, they produce follow-up reports for metallurgists.

QUALIFICATION GENERALLY REQUIRED

- **DEC en technologie du génie métallurgique (French only) or**
- **DEC en technologie minérale – Minéralurgie (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).
- The work requires constant attention when handling tools or hazardous materials.

SKILLS REQUIRED

- Good eyesight, hearing and sense of smell
- Focus on detail
- Ability to analyze
- Disciplined approach
- Focus on health and safety

OTHER REQUIREMENTS & ASSETS

- College diploma in a field related to mining

Where do people work?

At what stage in the mining cycle do they work?

ADMINISTRATIVE ASSISTANT

Stéphany Gaudreault | Goldcorp – Éléonore

Administrative assistants support mining company managers and professionals as they perform various tasks. They use computers to prepare, revise and re-read correspondence, invoices, presentations, brochures, publications, reports and other related documents, using dictated or handwritten notes. They manage the diary, prepare agendas for meetings, attend meetings and draw up minutes. They open and distribute paper and electronic mail and the other documents received, and coordinate the circulation of information within the company and with other services and organizations. They answer requests for information made by telephone or e-mail and forward calls and messages. They may also establish and maintain manual and computerized systems for filing information.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Office System Technology or**
- **DVS in Secretarial Studies**

SPECIFIC JOB CONDITIONS

- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.

SKILLS REQUIRED

- Professionalism
- Ability to prioritize
- Proactive approach
- Interpersonal skills
- Mastery of written and spoken language

OTHER REQUIREMENTS & ASSETS

- University certificate in commerce
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

ACCOUNTS PAYABLE AND PAYROLL CLERK

France Careau | Canadian Malartic Mine

Accounts payable and payroll clerks process all the invoices that a mining company receives for purchases made or services used. They are responsible for the systems used to manage invoices and purchase orders. They contact various company suppliers for follow-up and verify statements of account. When payment is authorized, they enter invoices in the batch of invoices that will be paid at the next cheque issue. They give employees information on questions about pay, social benefits and the application of the **collective agreement**. In addition, they may administer the payroll, compile timesheets, and prepare various documents in connection with the payroll and employee hiring.

QUALIFICATION GENERALLY REQUIRED

- **DCS in Accounting and Management Technology or**
- **DVS in Accounting**

SPECIFIC JOB CONDITIONS

- Some activities require a high level of attention and concentration.

SKILLS REQUIRED

- Respect for confidentiality
- Ability to prioritize
- Professionalism
- Focus on detail and disciplined approach
- Autonomy

OTHER REQUIREMENTS & ASSETS

- University diploma in commerce
- Accreditation from the Canadian Payroll Association (CPA)
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

WATER TREATMENT TECHNICIAN

Pierre-Olivier Gendron | Agnico Eagle – LaRonde Mine

Water treatment technicians are responsible for the proper operation and maintenance of the equipment used to treat the water from mining activities. Before being released into the environment, wastewater must be decontaminated and purified in order to meet stringent environmental standards. Water treatment technicians ensure that the processes are complied with at all times, and that situations such as sudden snow-melt or heavy rain disrupt the operations of the water treatment plant as little as possible. On a daily basis, they help draw up and apply protocols for chemical and biological treatment to eliminate contaminants and control acidity. They perform various technical and analytical tasks that include sampling, data collection, instrument reading, the interpretation of results and the surveillance of control systems.

QUALIFICATION GENERALLY REQUIRED

- **DEC en technologie de l'eau (French only)**

SPECIFIC JOB CONDITIONS

- The work is performed in all kinds of weather, sometimes harsh.
- The work requires constant attention when handling tools or hazardous materials.

SKILLS REQUIRED

- Teamwork
- Versatility
- Focus on detail and disciplined approach
- Problem-solving ability
- Scientific curiosity

OTHER REQUIREMENTS & ASSETS

- Bilingualism
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

TRAIN CONDUCTOR

David Déraps and Dominic Cyr | ArcelorMittal Mining Canada G.P. (photo: Stephane Gendron)

Train conductors are responsible for safe and efficient train movements. They communicate with the rail traffic control centre and track maintenance team and submit requests for authorizations and permissions before authorizing a locomotive engineer to move. They plan the handling of freight cars and direct locomotive engineers to move freight cars on the track. They are responsible for the movement of each train in compliance with the rules, and for settling problems that occur during the trip, such as the repair of train components or the inspection of brakes or obstacles on the track. They apply the rail regulations and order appropriate working methods. Train conductors must have radio communications skills and gestural skills to ensure the safe movement of locomotives and freight cars.

QUALIFICATION GENERALLY REQUIRED

- **AEC en transport ferroviaire – Chefs de train (French only)**

SPECIFIC JOB CONDITIONS

- The work schedule is often irregular.
- The work sometimes requires walking over long distances in difficult conditions (heat or cold).
- The work involves handling parts, tools and equipment of various weights.

SKILLS REQUIRED

- Leadership
- Sound judgment
- Autonomy
- Communication
- Good sight and hearing

OTHER REQUIREMENTS & ASSETS

- SSD or AESS
- Compliance under the *Railway Medical Rules for Positions Critical to Safe Railway Operations*

Where do people work?

At what stage in the mining cycle do they work?

MINE SURVEYOR

Students | Cégep de Sept-Îles (photo: Christine Blaney)

Mine surveyors perform surveying tasks, in particular to delimit excavation zones, pathways, the area of galleries and drill holes, and the placement of cables and construction zones. They use measuring instruments and equipment such as robotic total stations and a GPS locator. They are responsible for compiling and managing various databases. They draft and update development, mining, drilling and blasting plans using data gathered in the field. In an underground mine, they ensure that galleries advance in exact alignment and in the right direction, in full compliance with the original development plans. In an open-pit mine, they can check a shovel's direction of digging to ensure that it matches the **mineralization zone** exactly.

QUALIFICATION GENERALLY REQUIRED

- **DEC en technologie minérale (French only) or**
- **DEC en technologie de la géomatique (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in a hostile environment (darkness, dampness, cold, heat, dust, noise or vibrations).
- The work may require fine muscular control for the adjustment of high-precision machine tools.

SKILLS REQUIRED

- Ability to adapt
- Ability to prioritize
- Autonomy
- Ability to analyze and summarize
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- Modular Training for Mine Workers
- General explosives permit
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

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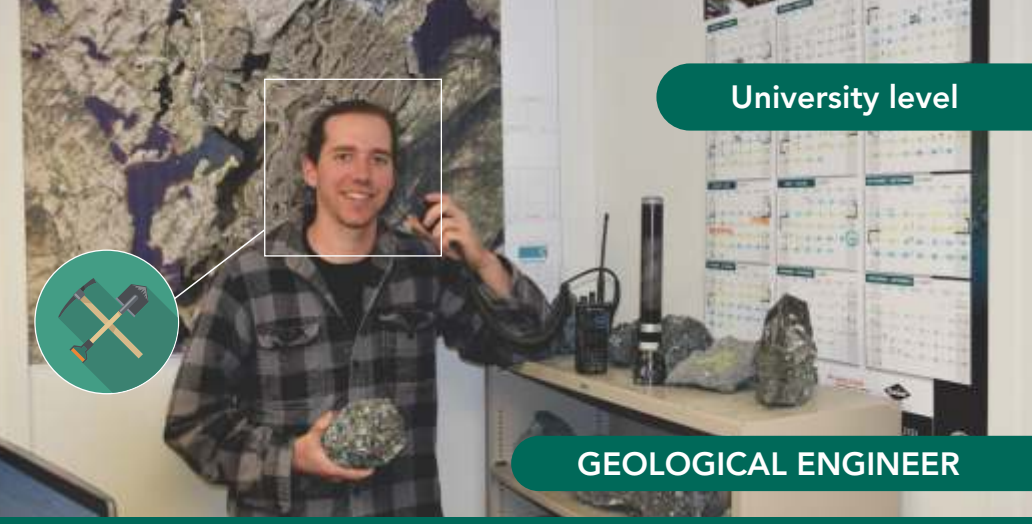

University level

GEOLOGICAL ENGINEER

Samuel Poirier | Stornoway Diamond Corporation

Geological engineers carry out geological and geotechnical studies, in particular during the deposit appraisal and mine development phases. They plan, design, test and supervise geological analysis and date collection programs, interpret and compile the information gathered, and prepare geological engineering reports and recommendations. They plan, prepare and coordinate experimental and feasibility studies for mineral deposits, ore reserve calculations and mine designs, assess possibilities and supervise activities to monitor mineral content for planning and improvement purposes. They work closely with, and supervise, technologists, technicians and other engineers and scientists.

QUALIFICATION GENERALLY REQUIRED

- **Baccalauréat en génie géologique (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in difficult physical or environmental conditions (darkness, dust, noise, heat or cold).

SKILLS REQUIRED

- Ability to analyze and summarize
- Teamwork
- Organizational and planning skills
- Leadership
- Autonomy

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec and in the Ordre des géologues du Québec
- Master's degree in a related field

Where do people work?

At what stage in the mining cycle do they work?

MECHANICAL ENGINEER

Mathieu D'Amours | ArcelorMittal Mining Canada G.P.

Mechanical engineers study, design and plan devices and systems for heating, ventilation and cooling, energy production, transportation, treatment and fabrication. They also perform tasks connected with the evaluation, placement, operation and maintenance of mechanical facilities for equipment improvement and optimization purposes. They supervise and inspect the installation, modification and commissioning of mechanical systems in various mine facilities. They draft maintenance standards, schedules and programs and supervise the industrial maintenance teams. They analyze repetitive breakages, seek the causes of mechanical failure or unexpected maintenance problems, and minimize the duration and frequency of equipment stoppages to avoid production losses. They may manage project implementation processes with outside suppliers.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in mechanical engineering or**
- **Baccalauréat en génie des systèmes électromécaniques (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).

SKILLS REQUIRED

- Problem-solving ability
- Versatility
- Project management skills
- Teamwork
- Organizational and planning skills

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec
- Knowledge of the Guide TI software

Where do people work?

At what stage in the mining cycle do they work?

HUMAN RESOURCES ADVISOR

Aida and Marie-Pier | Glencore – Raglan Mine

Human resources advisors draw up, apply and assess policies, programs and procedures for human resource management, and advise and inform managers and employees about human resources issues.Their tasks may include one or more specializations such as organizational development, training, **staffing**, labour relations, pay and benefits, health and safety, or payroll management. They design tools and programs such as job descriptions, pay scales and performance evaluation systems. They plan manpower needs and recruit workers. They plan and administer training and skills upgrading programs, employee assistance programs, and employment equity programs. They may negotiate collective agreements on behalf of employers, and act as mediators in workplace disputes and the resolution of **grievances**.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in commerce or**
- **Bachelor's degree in industrial and labour relations**

SPECIFIC JOB CONDITIONS

- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.
- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.

SKILLS REQUIRED

- Interpersonal skills
- Change management
- Ability to prioritize and plan
- Leadership
- Sense of initiative

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des conseillers en ressources humaines et en relations industrielles agréés du Québec
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

COMMUNICATIONS ADVISOR

Marie-Pier Beaucage | Canadian Malartic Mine

Communications advisors are responsible for drawing up and implementing plans for communications, the effective promotion of messages based on the company's strategic aims, and relations with stakeholders to position the company with target audiences, whether internal or external. They create communication tools for social media and websites and prepare or outsource the preparation of reports, speeches, presentations and press releases. They establish and maintain relations with the media, and prepare interviews and press conferences. They act as spokespersons for the company and respond to verbal and written requests for information. They may participate in activities to deploy and maintain the process to establish relations with the mine's host communities.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in communication studies**

SPECIFIC JOB CONDITIONS

- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.
- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.

SKILLS REQUIRED

- Professionalism
- Communication
- Organizational and planning skills
- Creativity et innovation
- Mastery of written and spoken language

OTHER REQUIREMENTS & ASSETS

- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

METALLURGIST

Vickie Cyr | North American Lithium

Metallurgists direct studies of the properties and characteristics of metals and minerals, and design and test machinery and processes to concentrate, extract, refine and treat metals, **alloys** and other materials. They are responsible for optimizing ore treatment processes, the concentrator, **tonnage** and **waste recovery** to ensure **profitability**. They ensure that objectives for production, metallurgical yields, operating costs, health and safety and environmental protection are met. They assess the viability and feasibility of the solutions and programs proposed, and draw up reports, budgets and recommendations. They take part in sampling campaigns in order to characterize process equipment. They analyze the results and verify their validity and quality. They supervise metallurgical technicians and work closely with them.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in materials engineering or**
- **Bachelor's degree in chemical engineering or**
- **Baccalauréat en génie des matériaux et de la métallurgie (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work requires constant attention when handling tools or hazardous materials.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).

SKILLS REQUIRED

- Ability to analyze and summarize
- Ability to adapt
- Sense of initiative
- Focus on detail and disciplined approach
- Organizational and planning skills

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec
- Master's degree in a related field

Where do people work?

At what stage in the mining cycle do they work?

CHEMICAL ENGINEER

Sarah Black | Goldcorp – Éléonore

Chemical engineers research, design and perfect materials and processes for chemical transformation, and supervise the production **process**. They research chemical reactions and chemicals to design and improve processes, in order to optimize production in terms of the quantity and quality of the ore processed. They assess materials and techniques for chemical transformation and determine production specifications. They design and test facilities and materials for chemical processing and other related processes. They design and direct quality control programs, operating procedures and control strategies to ensure uniform production and compliance with the standards on raw materials, products, waste and **emissions**. The management of measuring instruments and analysis methods in order to avoid non-standard results is a major challenge.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in chemical engineering or**
- **Bachelor's degree in materials engineering or**
- **Baccalauréat en génie des matériaux et de la métallurgie (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- Some activities may involve the handling of hazardous products.
- The work may be performed in difficult physical or environmental conditions (dust, noise, heat or cold).

SKILLS REQUIRED

- Problem-solving ability
- Disciplined approach
- Focus on detail
- Teamwork
- Organizational and planning skills

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec
- Master's degree in a related field

Where do people work?

At what stage in the mining cycle do they work?

ELECTRICAL ENGINEER

Christine Dufour | Goldcorp – Éléonore

Electrical engineers design, plan, study, assess and test equipment in electrical and electronic systems. They direct research to assess the feasibility, design, operation and performance of power generation and transmission systems, electrical components and apparatus, electronic communication systems, instrumentation and monitoring systems to ensure the reliable and continuous generation and distribution of electricity to the entire site. They draw up standards for the maintenance and operation of systems and electrical and electronic apparatus. They seek the causes of failures of electrical and electronic material. They work and supervise with technicians, technologists, programmers, analysts and other engineers. They may manage project implementation processes with outside suppliers.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in electrical engineering**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- Some activities may involve the handling of hazardous products.
- Some activities require a high level of attention and concentration.

SKILLS REQUIRED

- Problem-solving ability
- Project management skills
- Teamwork
- Focus on detail
- Autonomy

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec
- Knowledge of automated processes
- Certificate in electricity (CÉ)

Where do people work?

At what stage in the mining cycle do they work?

ENVIRONMENTAL COORDINATOR

Jessica Morin | Canadian Malartic Mine

Environmental coordinators mainly support and advise various mine sectors on ways to improve environmental performance and compliance. They are responsible for the quality of and compliance with environmental standards for the management of hazardous waste, **tailings sites** and **effluent** quality, for example. They collect data, plan, implement and interpret **sampling plans**, and are responsible for keeping the related logs. They are responsible for correcting and preventing failure to comply with the environmental rules and spills. When necessary, they conduct **internal environmental audits**. They provide environmental training for the company's employees. They coordinate the environmental teams and relations with suppliers. They respond to complaints from citizens and help implement the mining company's **social acceptability** strategy.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in environment or**
- **Bachelor's degree in biology or**
- **Bachelor's degree in chemistry**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work is performed in all kinds of weather, sometimes harsh.
- Some activities may involve the handling of hazardous products.

SKILLS REQUIRED

- Sense of initiative
- Sound judgment
- Organizational skills
- Communication
- Disciplined approach

OTHER REQUIREMENTS & ASSETS

- Master's degree in a related field
- University diploma in project management
- Driver's licence, Class 5

Where do people work?

At what stage in the mining cycle do they work?

BUYER

Josée DeGrandpré | Canadian Malartic Mine

Buyers manage purchase requisitions forwarded by a mining company's divisions. They launch calls for bids from suppliers, analyze the bids received, and negotiate agreements with suppliers concerning the price, quantity and quality of products, as well as delivery times. They maintain the stocks needed for ongoing operations, taking into account the needs of the company's divisions. For example, they may be responsible for purchasing mining machinery and all the equipment needed to construct, operate and rehabilitate a mine site. They need to have strong negotiating skills and technical knowledge. During the mine construction phase, buyers may make multi-million dollar purchases.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in commerce or**
- **DCS in Accounting and Management Technology or**
- **DEC en techniques de la logistique du transport (French only)**

SPECIFIC JOB CONDITIONS

- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.

SKILLS REQUIRED

- Strong negotiating skills
- Ability to plan
- Communication
- Focus on the client
- Focus on detail and disciplined approach

OTHER REQUIREMENTS & ASSETS

- Certification in the field of supply management
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

HEALTH AND SAFETY ADVISOR

Guillaume | Glencore – Raglan Mine

Health and safety advisors ensure that facilities and working conditions are compliant and monitor compliance with health and safety regulations at all times, in all a mining company's facilities. Reducing accident risks and occupational diseases is a key concern, because for the mining industry worker safety is paramount. For this purpose, health and safety advisors carry out inspections and ensure that procedures, for example concerning **padlocking** and the use of hazardous products, are complied with at all times. When incidents occur, they conduct a verification on-site, draft a report and ensure that corrective measures are implemented. They regularly collaborate with the division providing training, in order to analyze the need for preventive training for employees.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in industrial and labour relations or**
- **DEC en environnement, hygiène et sécurité au travail (French only) or**
- **Certificate in a related field**

SPECIFIC JOB CONDITIONS

- The work may be performed in difficult physical or environmental conditions (darkness, dust, heat or cold).
- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.

SKILLS REQUIRED

- Focus on health and safety
- Sense of observation
- Leadership
- Perseverance
- Interpersonal skills

OTHER REQUIREMENTS & ASSETS

- Mine rescue training course
- Modular Training for Mine Workers
- General explosives permit

Where do people work?

At what stage in the mining cycle do they work?

FINANCIAL CONTROLLER

Martin Richard | Canadian Malartic Mine

Financial controllers play a key role in a company's sound financial management. They draft reports, in particular for senior company managers and the board of directors, and ensure that budgets are respected and that expenditure has prior authorization. They may conduct financial simulations and analyses of the risk of profit loss. They record expenditure and income from sales of ore to calculate the profitability of the company's production. The senior management team and the managers of various divisions at the mine use their analyses and recommendations to make decisions. Their tasks may vary from one company to another, since each mine is unique. When they attend meetings with senior management, they may have to travel to the city where the company's head office is located.

QUALIFICATION GENERALLY REQUIRED

- **Bachelor's degree in commerce or**
- **Bachelor's degree in commerce with concentration in accounting**

SPECIFIC JOB CONDITIONS

- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.
- The work is generally performed in an office environment and requires an ability to concentrate and work methodically.

SKILLS REQUIRED

- Focus on detail and disciplined approach
- Sound judgment
- Ability to analyze and summarize
- Leadership
- Interpersonal skills

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des comptables professionnels agréés du Québec
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

AUTOMATION ENGINEER

Enrico Ménard | Tata Steel Minerals Canada

Automation engineers plan, draw up, implement and apply projects for the design, fabrication and modernization of various types of industrial production systems to automate them in whole or in part. They supervise, coordinate and manage various operations connected with automated production. They diagnose and resolve problems and optimize production systems to increase production at the plant. In a plant with little or no automation, they find innovative and productive solutions using cutting-edge technological software to adapt existing production systems or install new systems that are partly or wholly automated. They have a strong interest in emerging technologies and are able to propose technology transfers to change **operating methods** and improve the efficiency of the company's production. They may manage processes to implement automation projects with external suppliers.

QUALIFICATION GENERALLY REQUIRED

- **Baccalauréat en génie de la production automatisée (French only) or**
- **Baccalauréat en génie robotique (French only) or**
- **Baccalauréat en génie des systèmes électromécaniques (French only)**

SPECIFIC JOB CONDITIONS

- The work may be performed in an office environment or on-site.
- The work may involve frequent changes of priority requiring an excellent ability to adapt and manage stress.

SKILLS REQUIRED

- Innovation
- Focus on detail
- Problem-solving ability
- Teamwork
- Disciplined approach

OTHER REQUIREMENTS & ASSETS

- Membership in the Ordre des ingénieurs du Québec
- DCS in Industrial Electronics Technology
- Bilingualism

Where do people work?

At what stage in the mining cycle do they work?

The mining sector — a wealth of career choices!

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

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GLOSSARY

Photo: Niobec Mine

A

- **Algorithm:** Set of operating rules to resolve a stated problem through the application of a specific number of steps. An algorithm may be transformed into a computer-executable program using a programming language.
- **Alloy:** Combination of a metallic element with one or more other chemical elements, achieved by melting.
- **Analog:** Describes a system, device or process that represents, treats or transmits data as variations of a physical quantity (as opposed to "digital").
- **Artificial intelligence:** The subfield of computer science concerned with developing intelligent computer programs that can solve problems, learn from experience, understand language, interpret visual scenes, and, in general, behave in a way that would be considered intelligent if observed in a human.
- **Automated:** Describes an apparatus, machine, facility or process that is automatic and performs tasks with no input from the user.

B

- **Backhoe:** An excavator fitted with a hinged arm to which is rigidly attached a bucket that is drawn toward the machine in operation.
- **Bend:** Bending metal rods or tubes to a precise angle or radius.
- **Blasting machine:** Electrical device that generates electrical impulsions to fire detonators.
- **Brazing:** Assembly of metal components using a filler metal having a melting point below that of the metal parts to be joined, that is melted and flowed into the gap between the parts, the metal of which is not melted to form the joint.

C

- **CAD:** (Computer-aided design) design activities, including drafting and illustrating, in which data processing systems are used to carry out functions such as designing, simulating, or improving a part or a product.
- **Calibration:** Measuring the current that a device can support in continuous service to validate its accuracy.
- **Characterize:** Determine the characteristic features and physical properties of a geological deposit.
- **Cobot:** Category of (non-autonomous) robots used to handle payloads in conjunction with a human operator.
- **Code:** Sorting materials and equipment using a pre-established code.

- **Collective agreement:** Agreement governing the work conditions agreed by an employer (or group of employers) and one or more union associations representing workers.
- **Concentrator:** Ore concentration plant.
- **Contractor:** Person who, under a contract with a company, undertakes to perform work or provide human or material resources.
- **Conveyor:** Apparatus allowing the continuous movement of ore.
- **Core shack:** Place where core samples are analyzed and stored, avoiding the need for drilling in the future.
- **Core sample:** Rock sample in the form of a cylinder removed from a hole drilled into the ground, used to characterize the properties of the rock and measure its mineral content.

D

- **Deposit:** Place where an extractable mineral is located.
- **Detonating cord:** High-speed fuse which explodes, rather than burns, and is suitable for detonating high explosives.
- **Detonator:** Device used to detonate explosives.
- **Drill:** Tool used to drill long holes in rock or in the ground (for tunnels or blast holes).
- **Dump truck:** Vehicle used to transport bulk materials, that can discharge its load by tipping backwards.

E

- **Effluent:** Term generally used to designate wastewater from households and, by extension, from industrial processes.
- **Emission:** Introduction of pollutants into the environment.
- **Exploration:** Stage in the mining cycle during which sites where minerals may be extracted are identified. Technical, financial and environmental feasibility studies complete the first stage in the mining cycle.

F

- **Flexible AC transmission system:** A power electronic based system and other static equipment that provide control of one or more AC transmission system parameters to enhance controllability and increase power transfer capability.
- **Flow meter:** Apparatus used to monitor, measure or regulate the flow of a fluid, liquid or gas at atmospheric pressure or in a conduit, by volume or mass.
- **Fluoride:** A compound of fluorine with another element or radical.
- **Fly in/Fly out:** Situation in which workers commute, generally by plane, between their place of residence and their workplace, generally in a remote region. Workers live on the mine site for a predetermined period, where they are housed and fed by the employer.

G

- **Gantry:** Structure of one or two beams that can be moved along two elevated parallel rails, used to move a lifting apparatus.
- **Geological formation:** Rock strata that have a comparable lithology, facies or other similar properties.
- **Grader:** Self-propelled earth-moving machine with a pivoting blade between the front and rear wheels, used to level the ground surface.
- **Grading:** Raising or lowering the ground surface to the desired level.
- **Grievance:** Filing of a complaint with an employer by a union (or vice versa) concerning the behaviour of an individual person or a failure to respect or the interpretation of a collective agreement.
- **Grinding machine:** Machine tool that grinds metal to the required shape.
- **Ground control:** Maintaining rock mass stability by controlling the movement of excavations in the ground, which can be either rock or soil.

H

- **Head frame:** Metal or concrete frame installed at the opening of a shaft to carry the pulleys for the hoist rope.
- **Hoist (mine):** A motorized apparatus for lifting materials (ore) and workers using a rope wound around a drum.
- **Hoist (device):** Lifting apparatus which is generally suspended and is used on a fixed or mobile work station to move a load vertically.

I

- **Induced:** Jobs generated by the spending (on purchases, etc.) of employees of mining companies, contractors and suppliers.
- **Internal environmental audit:** Independent and objective activity that allows an organization to measure the degree to which it controls its operations, suggests ways to improve operations, and contributes to added value.
- **Internet of things:** Network of networks that, using standardized and unified systems for electronic identification and wireless mobile devices, makes it possible to identify, directly and unambiguously, digital entitles and physical objects and thereby recover, store, transfer and process the related data with no break between the physical and virtual worlds.

J

- **Jewellery:** Art of setting precious and semi-precious stones, pearls and various minerals to highlight their brilliance, colour and shape.

L

- **Lathe:** A motor-driven machine with a rotating shaft used to shape objects.
- **Lift truck operator:** Person who operates a power-driven truck, such as a forklift, to move goods around a mine. The lift truck operator performs various tasks: forwarding, storing and destoring.

- **Loader:** Machine used to load bulk materials onto a means of transportation (truck, conveyor) or into processing equipment (crusher, coke oven, etc.).

M

- **Machine tool:** Machine in which a horizontal or vertical shaft carries a rotating cutting tool. The workpiece is clamped to an adjustable bed that advances automatically.
- **Machining:** Shaping a material using machine tools.
- **Mechanization:** Generalized use of machinery to replace human power. The automated performance of tasks using mechanical devices or machine tools, in order to increase production.
- **Metal folding machine:** Machine tool used to fold metal.
- **Milling machine:** Machine used to shape metal.
- **Mine ventilation:** Supply of fresh air to an underground mine or tunnel (during construction or operation).
- **Mineral content:** Quantity target mineral contained in a rock sample.
- **Mineral deposit:** Substantial deposit of a specific mineral, suitable for extraction.
- **Mineralization zone:** Zone defined approximately in terms of parallel lines where a mineral is formed by other minerals, or where a mineral substance (such as copper) extends through the rock.
- **Minerallurgy:** All ore treatment processes.
- **Mining cycle:** Series of steps in the mining process, from exploration to mine closure.
- **Mining sequence:** Series of activities to extract ore from a deposit, in either an underground or open-pit mine.

O

- **Operating methods:** Set of processes, policies and procedures that govern a company's operations.
- **Operation sheet:** Document specifying the operations or sequence of operations in the fabrication of a part.

P

- **Padlocking:** Installation of a padlock or label on a device to cut off power based on an established procedure, to ensure that the device is not activated again until the padlock or label has been removed in accordance with the procedure.
- **Preventive maintenance:** Maintenance performed to extend equipment life and reduce the probability of failure.
- **Process:** Method used industrially to change the chemical composition of a product or material.
- **Profitability:** Ratio of profit over production.
- **Protocol:** Precise, detailed instructions concerning all the operations to be completed in a certain order, along with the fundamental principles that must be complied with during an action or experiment.

R

- **Rock bolter:** Self-propelled motorized equipment used to insert bolts into the rock face to help support galleries.

S

- **Sampling plan:** Plan for gathering samples.
- **Scaling:** Securing a work zone by plucking down loose rock.
- **Shears:** Tool in the scissor family, used to cut materials other than paper.
- **Social acceptability:** All the characteristics of a natural resource extraction project that make it potentially acceptable for the community.
- **Spatial awareness:** Awareness of the environment as it relates to one's own position, whether real or imagined, in a topographical perspective.
- **Spatial perception:** Perception by an individual of the spatial characteristics of objects and human beings in the immediate environment, making it possible to adapt his or her actions and movements and understand situations and events as they occur.
- **Staffing:** Process administered by the human resources division after identifying labour needs. It includes recruitment, hiring, induction and the integration of new employees into the workforce.
- **Support system:** General term for all the means used to ensure that excavations remain open and safe, using the mechanical methods determined by an engineer.

T

- **Tailings site:** Site where waste rock is deposited after the ore has been extracted; the waste rock has little or no metal content, and is not processed.
- **Tonnage:** Quantity of a material expressed tonnes, often in connection with a means of transportation or the result of a blasting operation.
- **Topography:** The practice of accurately and graphically delineating in detail, as on a map or chart or by a model, selected natural and man-made surface features of a region.

W

- **Waste recovery:** Collection and treatment of waste and by-products to prepare them for new use.
- **WHMIS:** Information system about hazardous materials in the workplace; it provides a harmonized general system for the classification and labelling of chemicals and hazardous materials.

INDEX

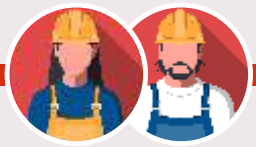
of the 50 careers in the Guide

Photo: Québec Mining Association

Featured

Non-specialized

Vocational level



College level

University level

LIST
of alternative job titles

Photo: Orbit Garant Drilling

This list shows some of the alternative names used for jobs in the mining sector. **WARNING: the list is not exhaustive, since over 300 different job titles are commonly used in the mining industry.**

Featured

- **Heavy equipment operator**
  - Surface mining equipment operator
- **Mobile equipment mechanic**
  - Heavy equipment mechanic
  - Heavy mobile equipment repairman/woman
- **Millwright**
  - Industrial mechanic
  - Industrial hoist mechanic
  - Maintenance mechanic
- **Underground miner**
  - Miner
  - Long hole driller
  - Development miner
  - Scoop operator
- **Driller/blaster**
  - Open pit miner
- **Mining technician**
  - Mine technician
  - Geology technician
  - Mine planning technician
- **Instrumentation and control technician**
  - Instrumentation technician
  - Industrial instrument technician
- **Mining engineer**
  - Mine planning engineer
  - Mine ventilation engineer
  - Ground control engineer

Non-specialized

- **Warehouse clerk**
  - Storekeeper
  - Warehouse storeman/woman
- **Core shack labourer**
  - Core library technician
  - Core shack clerk

Vocational level

- **Diamond driller**
  - Diamond drill operator
- **Mill operator**
  - Ore treatment machine operator
  - Concentrator operator
- **Electrician**
  - Industrial electrician
  - Mine electrician
- **Plumber**
  - Industrial plumber
  - Pipefitter
- **Welder**
  - Maintenance welder
  - Welder-assembler
- **Water treatment plant operator**
  - Wastewater treatment operator
- **Machinist**
  - Computer numerical control (CNC) machinist
- **Building maintenance labourer**
  - Building services worker
  - Handyman/woman

- Electrical mechanic
  - Electromechanic
- Industrial designer
  - Draftsperson

College level

- Civil engineering technician
  - Construction technician
- Laboratory technician
  - Chemical technician
  - Quality control technician
- Mechanical engineering technician
  - Machine designer
  - Robotics technician
- Computer technician
  - Computer network technician
  - Programmer analyst
- Administrative assistant
  - Secretary
  - Office clerk
- Accounts payable and payroll clerk
  - Accounts payable and pay clerk
- Water treatment technician
  - Wastewater treatment technician
- Mine surveyor
  - Mine survey technician

University level

- Geological engineer
  - Geophysical engineer
  - Geotechnical engineer
  - Ground control engineer
- Mechanical engineer
  - Electromechanical engineer
  - Mechatronic engineer
  - Mechanical maintenance engineer
- Human resources advisor
  - Human resources coordinator
  - Training advisor
- Metallurgist
  - Metallurgical engineer
- Chemical engineer
  - Chemical process engineer
  - Process control engineer
- Electrical engineer
  - Instrumentation and control engineer
  - Electronics engineer
- Environmental coordinator
  - Environmental advisor
- Buyer
  - Purchaser
- Health and safety advisor
  - Prevention counsellor
- Financial controller
  - Financial analyst
- Automation engineer
  - Electromechanical systems engineer
  - Instrumentation and control engineer
  - Electronics engineer

LIST
of training programs

Photo: Cégep de Jonquière

This list contains the main training programs mentioned in the Guide that lead to one of the 50 careers, or that may constitute an asset for employers.

Under the "Vocational level" heading you will find the programs leading to a Diploma of Vocational Studies (DVS), Attestation of Vocational Specialization (AVS) or a Skills Training Certificate (STC).

Under the "College level" heading you will find the programs leading to a Diploma of College Studies (DCS) or Attestation of College Studies (ACS).

Vocational level

STC

- Private Security Guarding STC

AVS

- High-Pressure Welding AVS
- Numerical Control Machine Tool Operation AVS
- ASP en réparation d'appareils au gaz naturel (French only)

DVS

- Accounting DVS
- Automated Systems Electromechanics DVS
- Carpentry DVS
- DEP en conduite d'engins de chantier (French only)
- DEP en conduite de machinerie lourde en voirie forestière (French only)
- DEP en conduite de procédés de traitement de l'eau (French only)
- Construction Equipment Mechanics DVS
- Diamond Drilling DVS
- Drilling and Blasting DVS
- Electricity DVS
- General Building Maintenance DVS
- Industrial Construction and Maintenance Mechanics DVS
- Industrial Drafting DVS
- Machine Operations, Mineral and Metal Processing DVS
- Machining Technics DVS

DVS (continued)

- DEP en mécanique de véhicules lourds routiers (French only)
- Northern Building Maintenance DVS
- Northern Heavy Equipment Operations DVS
- Ore Extraction DVS
- Plumbing and Heating DVS
- Professional Cooking DVS
- Secretarial Studies DVS
- Welding and Fitting DVS

College level

ACS

- AEC en transport ferroviaire – Chefs de train (French only)

DCS

- Accounting and Management Technology DCS
- Civil Engineering Technology DCS
- Computer Engineering Technology DCS
- Computer Science Technology DCS
- Electrotechnology (Telecommunications) DCS
- DEC en environnement, hygiène et sécurité au travail (French only)
- Industrial Electronics Technology DCS
- Laboratory Technology (Analytical Chemistry) DCS
- Mechanical Engineering Technology DCS
- Nursing DCS
- Office System Technology DCS
- Police Technology DCS
- DEC en techniques de génie chimique (French only)
- DEC en techniques de la logistique du transport (French only)
- DEC en techniques de procédés chimiques (French only)
- DEC en techniques du milieu naturel (French only)
- DEC en technologie de l'eau (French only)
- DEC en technologie de la géomatique (French only)
- DEC en technologie de maintenance industrielle (French only)
- DEC en technologie du génie métallurgique (French only)
- DEC en technologie minérale (French only)

University level

Bachelor's degree

- Bachelor's degree in biology
- Bachelor's degree in chemical engineering
- Bachelor's degree in chemistry
- Bachelor's degree in commerce
- Bachelor's degree in commerce with concentration in accounting
- Bachelor's degree in communication studies
- Bachelor's degree in computer science
- Bachelor's degree in electrical engineering
- Bachelor's degree in environment
- Baccalauréat en génie de la production automatisée (French only)
- Baccalauréat en génie des matériaux et de la métallurgie (French only)
- Baccalauréat en génie des systèmes électromécaniques (French only)
- Baccalauréat en génie géologique (French only)
- Baccalauréat en génie robotique (French only)
- Bachelor's degree in geology
- Bachelor's degree in industrial and labour relations
- Bachelor's degree in materials engineering (English only)
- Bachelor's degree in mechanical engineering
- Bachelor's degree in mining engineering
- Bachelor's degree in nursing
- Baccalauréat en sciences de la Terre et de l'atmosphère (French only)

LIST
of educational institutions offering specific training programs

Photo: CMAC-Thyssen Mining Group

This list shows the educational institutions offering each training program mentioned in the Guide. **WARNING: this list was updated to January 2019. Some educational institutions may have dropped or added some programs.**

Vocational level

STC

- Private Security Guarding STC
  - Pearson Electrotechnology Centre
- AEP en sécurité privée – Gardiennage
  (French option for *Private Security Guarding STC*)
  - Centre de formation Compétences-2000
  - Centre de formation professionnelle Anjou
  - Centre de formation professionnelle de Québec
  - Centre de formation professionnelle des Riverains *(Non-official course only)*
  - Centre de formation professionnelle Léonard-De Vinci
  - Centre de formation professionnelle Mont-Laurier
  - Centre de formation professionnelle Rimouski-Neigette *(Non-official course only)*
  - Centre Frère-Moffet *(Non-official course only)*
  - Commission scolaire de Montréal *(Non-official course only)*
  - Commission scolaire des Chênes *(Non-official course only)*
  - Commission scolaire des Rives-du-Saguenay *(Non-official course only)*
  - Commission scolaire des Trois-Lacs *(Non-official course only)*
  - Commission scolaire du Chemin-du-Roy
  - Commission scolaire du Pays-des-Bleuets *(Non-official course only)*
  - Commission scolaire Marie-Victorin *(Non-official course only)*
  - Parcours Formation *(Non-official course only)*

DVS

- Accounting DVS
  - ACCESS Career Centre
  - Campus Brome-Missisquoi
  - Collège de comptabilité et de secrétariat du Québec – Campus de Longueuil
  - Collège de comptabilité et de secrétariat du Québec – Campus de Sherbrooke

- Accounting DVS (continued)
  - Collège supérieur de Montréal
  - Eastern Québec Learning Centre
  - Herzing College
  - Kativik School Board
  - Laurier Competency Development Centre (Pont-Viau)
  - Lennoxville Vocational Training Centre
  - Maniwaki Adult Education and Vocational Training Centre
  - Nova Career Centre
  - PACC Career Centre
  - Pius – Culinary and Business Centre
  - Pontiac Continuing Education Centre
  - Shadd Health and Business Centre
  - Val-d'Or Continuing Education Centre
  - Western Québec Career Centre
  - West Island Career Centre
- DEP en comptabilité (French option for *Accounting DVS*)
  - Campus Brome-Missisquoi
  - Carrefour Formation Mauricie
  - Centre d'études professionnelles Saint-Jérôme
  - Centre Daniel-Johnson
  - Centre de formation Compétence-de-la-Rive-Sud
  - Centre de formation Compétences-2000
  - Centre de formation de La Côte-de-Gaspé
  - Centre de formation de La Haute-Gaspésie
  - Centre de formation de Portneuf
  - Centre de formation des Bâtisseurs
  - Centre de formation des Nouvelles-Technologies
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Alma
  - Centre de formation professionnelle Bel-Avenir
  - Centre de formation professionnelle Calixa-Lavallée
  - Centre de formation professionnelle Compétences Outaouais
  - Centre de formation professionnelle de Charlevoix
  - Centre de formation professionnelle de Coaticook – CRIFA
  - Centre de formation professionnelle de Forestville
  - Centre de formation professionnelle de l'Asbesterie
  - Centre de formation professionnelle de l'Envolée
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de la Pointe-du-Lac
  - Centre de formation professionnelle de la Riveraine
  - Centre de formation professionnelle de la Vallée-de-la-Gatineau
  - Centre de formation professionnelle de Limoilou

- DEP en comptabilité (French option for *Accounting DVS*) (continued)
  - Centre de formation professionnelle de Memphrémagog
  - Centre de formation professionnelle de Neufchâtel
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle des Carrefours
  - Centre de formation professionnelle des Moulins
  - Centre de formation professionnelle des Patriotes
  - Centre de formation professionnelle des Riverains
  - Centre de formation professionnelle des Sommets
  - Centre de formation professionnelle du Fleuve-et-des-Lacs
  - Centre de formation professionnelle du Haut-Saint-François
  - Centre de formation professionnelle du Pays-des-Bleuets
  - Centre de formation professionnelle du Pontiac
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle Gabriel-Rousseau
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle l'Émergence
  - Centre de formation professionnelle L'Envol
  - Centre de formation professionnelle L'Oasis
  - Centre de formation professionnelle La Relance
  - Centre de formation professionnelle Le Granit
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Léonard-De Vinci
  - Centre de formation professionnelle Marie-Rollet
  - Centre de formation professionnelle Mont-Joli-Mitis
  - Centre de formation professionnelle Mont-Laurier
  - Centre de formation professionnelle Paul-Gérin-Lajoie
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Performance Plus
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre de formation professionnelle Pozer
  - Centre de formation professionnelle Relais de la Lièvre-Seigneurie
  - Centre de formation professionnelle Rimouski-Neigette
  - Centre de formation professionnelle Samuel-De Champlain
  - Centre de formation professionnelle Vision 20 20
  - Centre de formation professionnelle Vision-Avenir
  - Centre d'excellence en formation industrielle
  - Centre multiservice des Samares – Pavillon de l'Argile
  - Centre multiservice des Samares – Pavillon Montcalm
  - Centre Polymétier
  - Centre régional intégré de formation (CRIF)
  - Centres de formation professionnelle et d'éducation des adultes Sorel-Tracy
  - CFPRO Matanie – Vallée & Foresterie (Amqui)

- DEP en comptabilité (French option for *Accounting DVS*) (continued)
  - CFPRO Matanie – Vallée & Foresterie (Matane)
  - Collège de comptabilité et de secrétariat du Québec – Campus de Longueuil
  - Collège de comptabilité et de secrétariat du Québec – Campus de Sherbrooke
  - Collège Herzing
  - Collège supérieur de Montréal
  - École de formation professionnelle de Châteauguay
  - École des métiers de l'informatique, du commerce et de l'administration de Montréal
  - École professionnelle de Saint-Hyacinthe
  - École professionnelle des métiers
- Automated Systems Electromechanics DVS
  - Rosemount Technology Centre
- DEP en électromécanique de systèmes automatisés (French option for *Automated Systems Electromechanics DVS*)
  - Centre Bernard-Gariépy
  - Centre d'études professionnelles Saint-Jérôme
  - Centre de formation Antoine-de-Saint-Exupéry
  - Centre de formation Compétences-2000
  - Centre de formation de La Côte-de-Gaspé
  - Centre de formation de Portneuf
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de Lévis
  - Centre de formation professionnelle de Québec
  - Centre de formation professionnelle des Moulins
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Paul-Gérin-Lajoie
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Performance Plus
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre de formation professionnelle Qualitech
  - Centre intégré de formation et d'innovation technologique (CIFIT)
  - Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
  - Centre Polymétier
  - Centre régional intégré de formation (CRIF)
  - CFPRO Matanie – Vallée & Foresterie (Amqui)
  - École des métiers du Sud-Ouest-de-Montréal
  - École des métiers spécialisés Asticou
- Carpentry DVS
  - Chateauguay Valley Career Education Centre
  - Construc-Plus Vocational Centre

- **Carpentry DVS** (continued)
  - Cree School Board
  - École des métiers de la construction de Montréal
  - Kativik School Board
- **DEP en charpenterie-menuiserie** (French option for *Carpentry DVS*)
  - Aviron Québec Collège Technique
  - Centre de formation des Bâtisseurs
  - Centre de formation Le Chantier
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Bonaventure-Paspébiac
  - Centre de formation professionnelle Construc-Plus
  - Centre de formation professionnelle de la Vallée-de-la-Gatineau
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle du Haut-Saint-François
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle L'Horizon
  - Centre de formation professionnelle Le Trécarré
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre de formation professionnelle Pozer
  - Centre de formation professionnelle Qualitech
  - Centre multiservice des Samares – Pavillon Berthier
  - Centre Polymétier
  - École de formation professionnelle de Châteauguay
  - École des métiers de la construction de Montréal
  - École des métiers et occupations de l'industrie de la construction de Québec (ÉMOICQ)
  - École des métiers spécialisés Asticou
  - École professionnelle de Saint-Hyacinthe
- **DEP en conduite d'engins de chantier** (French only)
  - Atelier-école Les Cèdres
  - Centre national de conduite d'engins de chantier
- **DEP en conduite de machinerie lourde en voirie forestière** (French only)
  - Centre de formation Harricana
  - Centre de formation professionnelle de Forestville
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle du Pays-des-Bleuets
  - Centre de formation professionnelle Mont-Laurier
  - École forestière de La Tuque
- **DEP en conduite de procédés de traitement de l'eau** (French only)
  - Centre de formation professionnelle Paul-Gérin-Lajoie

- Construction Equipment Mechanics DVS
  - Cree School Board
  - Kativik School Board
- DEP en mécanique d'engins de chantier (French option for *Construction Equipment Mechanics DVS*)
  - Carrefour Formation Mauricie
  - Centre de formation en mécanique de véhicules lourds
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle du Pays-des-Bleuets
  - Centre de formation professionnelle L'Envol
  - Centre de formation professionnelle Lac-Abitibi
  - Centre de formation professionnelle Mont-Laurier
  - Centre de formation professionnelle Paul-Gérin-Lajoie
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Wilbrod-Bherer
  - École des métiers de l'équipement motorisé de Montréal
- Diamond Drilling DVS
  - Centre de formation professionnelle Val-d'Or
- DEP en forage au diamant (French option for *Diamond Drilling DVS*)
  - Centre de formation professionnelle de Forestville
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle Val-d'Or
- Drilling and Blasting DVS
  - Cree School Board
- DEP en forage et dynamitage (French option for *Drilling and Blasting DVS*)
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle Val-d'Or
- Electricity DVS
  - Aviron Technical Institute Montréal
  - Pearson Electrotechnology Centre
- DEP en électricité (French option for *Electricity DVS*)
  - Aviron Québec Collège Technique
  - Centre d'études professionnelles Saint-Jérôme
  - Centre de formation des Bâtisseurs
  - Centre de formation Le Chantier
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Bonaventure-Paspébiac

- DEP en électricité (French option for *Electricity DVS*) (continued)
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle des Moulins
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle Gabriel-Rousseau
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre de formation professionnelle Qualitech
  - Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
  - Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
  - Centre Polymétier
  - Centre régional intégré de formation (CRIF)
  - École des métiers de la construction de Montréal
  - École des métiers et occupations de l'industrie de la construction de Québec (ÉMOICQ)
  - École des métiers spécialisés Asticou
  - École professionnelle de Saint-Hyacinthe
  - École professionnelle des métiers
  - Institut Technique Aviron de Montréal
- General Building Maintenance DVS
  - Sources Adult and Career Centre
- DEP en entretien général d'immeubles
  (French option for *General Building Maintenance DVS*)
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Charlotte-Tassé
  - Centre de formation professionnelle Compétences Outaouais
  - Centre de formation professionnelle de Lachine
  - Centre de formation professionnelle des Îles
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle l'Émergence
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Samuel-De Champlain
  - Centre Polymétier
  - École des métiers du meuble de Montréal
  - École Polymécanique de Laval
- Industrial Construction and Maintenance Mechanics DVS
  - Campus Brome-Missisquoi
  - Cree School Board
  - Laurier Competency Development Centre (Lachute)

- DEP en mécanique industrielle de construction et d'entretien (French option for *Industrial Construction and Maintenance Mechanics DVS*)
  - Campus Brome-Missisquoi
  - Carrefour Formation Mauricie
  - Centre Bernard-Gariépy
  - Centre de formation de Portneuf
  - Centre de formation Harricana
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de la Pointe-du-Lac
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle des Moulins
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Performance Plus
  - Centre de formation professionnelle Relais de la Lièvre-Seigneurie
  - Centre d'excellence en formation industrielle
  - Centre intégré de formation et d'innovation technologique (CIFIT)
  - Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
  - Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
  - CFPRO Matanie – Vallée & Foresterie (Amqui)
  - École des métiers du Sud-Ouest-de-Montréal
  - École Polymécanique de Laval
- Industrial Drafting DVS
  - Aviron Technical Institute Montréal
  - Herzing College
  - Laurier Comptency Development Centre (Pont-Viau)
  - Rosemount Technology Centre
  - Western Québec Career Centre
- DEP en dessin industriel (French option for *Industrial Drafting DVS*)
  - Centre Bernard-Gariépy
  - Centre d'études professionnelles Saint-Jérôme
  - Centre de formation Compétences-2000
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle de Neufchâtel
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Val-d'Or
  - Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
  - Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
  - Collège Herzing

- DEP en dessin industriel (French option for *Industrial Drafting DVS*) (cont.)
  - École des métiers du Sud-Ouest-de-Montréal
  - École professionnelle des métiers
  - Institut Technique Aviron de Montréal
- Machine Operations, Mineral and Metal Processing DVS
  - Centre de formation professionnelle Val-d'Or
  - Cree School Board
- DEP en conduite de machines de traitement du minerai (French option for *Machine Operations, Mineral and Metal Processing DVS*)
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle Val-d'Or
- Machining Technics DVS
  - Campus Brome-Missisquoi
  - École des métiers de l'aérospatiale de Montréal
  - Lennoxville Vocational Training Centre
  - Rosemount Technology Centre
- DEP en techniques d'usinage (French option for *Machining Technics DVS*)
  - Campus Brome-Missisquoi
  - Carrefour Formation Mauricie
  - Centre Bernard-Gariépy
  - Centre d'études professionnelles Saint-Jérôme
  - Centre de formation de La Côte-de-Gaspé
  - Centre de formation de Portneuf
  - Centre de formation Harricana
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Alma
  - Centre de formation professionnelle Anjou
  - Centre de formation professionnelle de l'Asbesterie
  - Centre de formation professionnelle de l'Envolée
  - Centre de formation professionnelle de Memphrémagog
  - Centre de formation professionnelle de Neufchâtel
  - Centre de formation professionnelle des Moulins
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle l'Émergence
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Paul-Gérin-Lajoie
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
  - Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
  - Centre multiservice des Samares – Pavillon de l'Argile

- DEP en techniques d'usinage (French option for *Machining Technics DVS*) (cont.)
  - CFPRO Matanie – Vallée & Foresterie (Matane)
  - École des métiers de l'aérospatiale de Montréal
  - École des métiers spécialisés Asticou
  - École professionnelle de Saint-Hyacinthe
  - École professionnelle des métiers

- DEP en mécanique de véhicules lourds routiers (French only)
  - Carrefour Formation Mauricie
  - Centre de formation du transport routier de Saint-Jérôme (CFTR)
  - Centre de formation en mécanique de véhicules lourds
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle en équipement motorisé (CFEM)
  - Centre de formation professionnelle Lac-Abitibi
  - Centre de formation professionnelle Paul-Gérin-Lajoie
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Wilbrod-Bherer
  - École des métiers de l'équipement motorisé de Montréal
  - École des métiers spécialisés Asticou

- Northern Building Maintenance DVS
  - Kativik School Board

- Northern Heavy Equipment Operations DVS
  - Cree School Board
  - Kativik School Board

- Ore Extraction DVS
  - Centre de formation professionnelle Val-d'Or
  - Cree School Board

- DEP en extraction de minerai (French option for *Ore Extraction DVS*)
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle Val-d'Or

- Plumbing and Heating DVS
  - Construc-Plus Vocational Centre
  - École des métiers de la construction de Montréal
  - Verdun Adult and Career Centre

- DEP en plomberie et chauffage (French option for *Plumbing and Heating DVS*)
  - Aviron Québec Collège Technique
  - Centre Daniel-Johnson
  - Centre de formation de La Haute-Gaspésie

- DEP en plomberie et chauffage (French option for *Plumbing and Heating DVS*) (continued)
  - Centre de formation professionnelle André-Morissette
  - Centre de formation professionnelle Construc-Plus
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle Le Trécarré
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Samuel-De Champlain
  - Centre de formation professionnelle Vision 20 20
  - École des métiers de la construction de Montréal
  - École des métiers spécialisés Asticou
  - École Polymécanique de Laval
  - École professionnelle de Saint-Hyacinthe
- Professional Cooking DVS
  - Campus Brome-Missisquoi
  - Collège LaSalle
  - Cree School Board
  - PACC Career Centre
  - Pius – Culinary and Business Centre
  - Kativik School Board
- DEP en cuisine (French option for *Professional Cooking DVS*)
  - Campus Brome-Missisquoi
  - Centre de formation de La Côte-de-Gaspé
  - Centre de formation des Bâtisseurs
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle André-Morissette
  - Centre de formation professionnelle Bel-Avenir
  - Centre de formation professionnelle de Charlevoix
  - Centre de formation professionnelle de l'Envolée
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de la Vallée-de-la-Gatineau
  - Centre de formation professionnelle du Pontiac
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle Fierbourg
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle l'Émergence
  - Centre de formation professionnelle Lac-Abitibi
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Relais de la Lièvre-Seigneurie
  - Collège LaSalle

- DEP en cuisine (French option for *Professional Cooking DVS*) (continued)
  - École des métiers de la restauration et du tourisme de Montréal
  - École hôtelière de la Capitale
  - École hôtelière de la Montérégie
  - École hôtelière de Lanaudière
  - École hôtelière de Laval
  - École Hôtelière de Montréal
  - École Hôtelière des Laurentides
  - École professionnelle des métiers
  - Institut de tourisme et d'hôtellerie du Québec (ITHQ)
- Secretarial Studies DVS
  - ACCESS Career Centre
  - Campus Brome-Missisquoi
  - Collège de comptabilité et de secrétariat du Québec – Campus de Longueuil
  - Collège de comptabilité et de secrétariat du Québec – Campus de Sherbrooke
  - Collège supérieur de Montréal
  - Cree School Board
  - Eastern Québec Learning Centre
  - Kativik School Board
  - Laurier Competency Development Centre (Pont-Viau)
  - Lennoxville Vocational Training Centre
  - Maniwaki Adult Education and Vocational Training Centre
  - Nova Career Centre
  - PACC Career Centre
  - Pius – Culinary and Business Centre
  - Pontiac Continuing Education Centre
  - Shadd Health and Business Centre
  - Val-d'Or Continuing Education Centre
  - Western Québec Career Centre
  - West Island Career Centre
- DEP en secrétariat (French option for *Secretarial Studies DVS*)
  - Campus Brome-Missisquoi
  - Carrefour Formation Mauricie
  - Centre d'études professionnelles Saint-Jérôme
  - Centre Daniel-Johnson
  - Centre de formation Compétence-de-la-Rive-Sud
  - Centre de formation Compétences-2000
  - Centre de formation de La Côte-de-Gaspé
  - Centre de formation de La Haute-Gaspésie
  - Centre de formation de Portneuf
  - Centre de formation des Bâtisseurs
  - Centre de formation des Nouvelles-Technologies

- DEP en secrétariat (French option for *Secretarial Studies DVS*) (continued)
  - Centre de formation Harricana
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Alma
  - Centre de formation professionnelle Bel-Avenir
  - Centre de formation professionnelle Calixa-Lavallée
  - Centre de formation professionnelle Compétences Outaouais
  - Centre de formation professionnelle de Coaticook – CRIFA
  - Centre de formation professionnelle de Forestville
  - Centre de formation professionnelle de l'Asbesterie
  - Centre de formation professionnelle de l'Envolée
  - Centre de formation professionnelle de la Baie-James
  - Centre de formation professionnelle de la Pointe-du-Lac
  - Centre de formation professionnelle de la Riveraine
  - Centre de formation professionnelle de la Vallée-de-la-Gatineau
  - Centre de formation professionnelle de Limoilou
  - Centre de formation professionnelle de Memphrémagog
  - Centre de formation professionnelle de Neufchâtel
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle des Carrefours
  - Centre de formation professionnelle des Moulins
  - Centre de formation professionnelle des Patriotes
  - Centre de formation professionnelle des Riverains
  - Centre de formation professionnelle des Sommets
  - Centre de formation professionnelle du Fleuve-et-des-Lacs
  - Centre de formation professionnelle du Haut-Saint-François
  - Centre de formation professionnelle du Pays-des-Bleuets
  - Centre de formation professionnelle du Pontiac
  - Centre de formation professionnelle et générale Manicouagan
  - Centre de formation professionnelle Gabriel-Rousseau
  - Centre de formation professionnelle Jonquière
  - Centre de formation professionnelle l'Émergence
  - Centre de formation professionnelle L'Envol
  - Centre de formation professionnelle L'Oasis
  - Centre de formation professionnelle La Relance
  - Centre de formation professionnelle Lac-Abitibi
  - Centre de formation professionnelle Le Granit
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Léonard-De Vinci
  - Centre de formation professionnelle Marie-Rollet
  - Centre de formation professionnelle Mont-Joli-Mitis
  - Centre de formation professionnelle Mont-Laurier
  - Centre de formation professionnelle Paul-Gérin-Lajoie
  - Centre de formation professionnelle Paul-Rousseau

- DEP en secrétariat (French option for *Secretarial Studies DVS*) (continued)
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Performance Plus
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre de formation professionnelle Pozer
  - Centre de formation professionnelle Relais de la Lièvre-Seigneurie
  - Centre de formation professionnelle Rimouski-Neigette
  - Centre de formation professionnelle Samuel-De Champlain
  - Centre de formation professionnelle Val-d'Or
  - Centre de formation professionnelle Vision 20 20
  - Centre de formation professionnelle Vision-Avenir
  - Centre d'excellence en formation industrielle
  - Centre Frère-Moffet
  - Centre multiservice des Samares – Pavillon de l'Argile
  - Centre multiservice des Samares – Pavillon Montcalm
  - Centre Polymétier
  - Centre régional intégré de formation (CRIF)
  - Centres de formation professionnelle et d'éducation des adultes Sorel-Tracy
  - CFPRO Matanie – Vallée & Foresterie (Amqui)
  - CFPRO Matanie – Vallée & Foresterie (Matane)
  - Collège de comptabilité et de secrétariat du Québec – Campus de Longueuil
  - Collège de comptabilité et de secrétariat du Québec – Campus de Sherbrooke
  - Collège supérieur de Montréal
  - École de formation professionnelle de Châteauguay
  - École des métiers de l'informatique, du commerce et de l'administration de Montréal
  - École professionnelle de Saint-Hyacinthe
  - École professionnelle des métiers
- Welding and Fitting DVS
  - Aviron Technical Institute Montréal
  - Campus Brome-Missisquoi
  - Centre de Formation de La Côte-de-Gaspé
  - Construc-Plus Vocational Centre
  - Laurier MacDonald Vocational Centre
  - Lennoxville Vocational Training Centre
  - Nova Career Centre
  - Western Québec Career Centre
- DEP en soudage-montage (French option for *Welding and Fitting DVS*)
  - Aviron Québec Collège Technique
  - Campus Brome-Missisquoi
  - Centre de formation professionnelle de Charlevoix
  - Centre d'études professionnelles Saint-Jérôme
  - Centre de formation de La Côte-de-Gaspé
  - Centre de formation de Portneuf

- DEP en soudage-montage (French option for *Welding and Fitting DVS*) (cont.)
  - Centre de formation en métallurgie de Laval
  - Centre de formation professionnelle 24-Juin
  - Centre de formation professionnelle Alma
  - Centre de formation professionnelle André-Morissette
  - Centre de formation professionnelle Anjou
  - Centre de formation professionnelle Construc-Plus
  - Centre de formation professionnelle de l'Asbesterie
  - Centre de formation professionnelle de la Pointe-du-Lac
  - Centre de formation professionnelle de Lévis
  - Centre de formation professionnelle de Québec
  - Centre de formation professionnelle de Sept-Îles
  - Centre de formation professionnelle des Patriotes
  - Centre de formation professionnelle du Fjord
  - Centre de formation professionnelle du Pays-des-Bleuets
  - Centre de formation professionnelle Lac-Abitibi
  - Centre de formation professionnelle Le Tremplin
  - Centre de formation professionnelle Mont-Joli-Mitis
  - Centre de formation professionnelle Paul-Rousseau
  - Centre de formation professionnelle Pavillon-de-L'Avenir
  - Centre de formation professionnelle Pierre-Dupuy
  - Centre de formation professionnelle Qualitech
  - Centre d'excellence en formation industrielle
  - Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
  - Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
  - Centre multiservice des Samares – Pavillon de l'Argile
  - Centre multiservice des Samares – Pavillon Montcalm
  - Centre régional intégré de formation (CRIF)
  - Centres de formation professionnelle et d'éducation des adultes Sorel-Tracy
  - CFPRO Matanie – Vallée & Foresterie (Matane)
  - École des métiers de la construction de Montréal
  - École des métiers spécialisés Asticou
  - École professionnelle des métiers
  - Institut Technique Aviron de Montréal

College level

ACS

- AEC en transport ferroviaire – Chefs de train (French only)
  - Cégep de Sept-Îles

DCS

- Accounting and Management Technology DCS
  - Champlain Regional College (Lennoxville)
  - Champlain Regional College (Saint-Lawrence)
  - Dawson College
  - Heritage College

- DEC en techniques de comptabilité et de gestion
  (French option for *Accounting and Management Technology DCS*)
  - Cégep André-Laurendeau
  - Cégep Beauce-Appalaches
  - Cégep de Baie-Comeau
  - Cégep de Chicoutimi
  - Cégep de Drummondville
  - Cégep de Granby
  - Cégep de Jonquière
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de l'Outaouais
  - Cégep de la Gaspésie et des Îles – Campus de Carleton-sur-Mer
  - Cégep de la Gaspésie et des Îles – Campus de Gaspé
  - Cégep de la Gaspésie et des Îles – Campus des Îles-de-la-Madeleine
  - Cégep de La Pocatière
  - Cégep de Lévis-Lauzon
  - Cégep de Matane
  - Cégep de Rimouski
  - Cégep de Rivière-du-Loup
  - Cégep de Sainte-Foy
  - Cégep de Saint-Félicien
  - Cégep de Saint-Hyacinthe
  - Cégep de Saint-Jérôme
  - Cégep de Sept-Îles
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy
  - Cégep de Thetford
  - Cégep de Trois-Rivières
  - Cégep de Victoriaville
  - Cégep du Vieux Montréal
  - Cégep Édouard-Montpetit
  - Cégep Garneau
  - Cégep Gérald-Godin

- DEC en techniques de comptabilité et de gestion (French option for *Accounting and Management Technology DCS*) (cont.)
  - Cégep Limoilou
  - Cégep régional de Lanaudière à Joliette
  - Cégep régional de Lanaudière à L'Assomption
  - Cégep régional de Lanaudière à Terrebonne
  - Cégep Saint-Jean-sur-Richelieu
  - Centre collégial de Mont-Laurier
  - Centre d'études collégiales à Chibougamau
  - Collège Ahuntsic
  - Collège Bart
  - Collège d'Alma
  - Collège de Maisonneuve
  - Collège de Rosemont
  - Collège de Valleyfield
  - Collège LaSalle
  - Collège Lionel-Groulx
  - Collège Mérici
  - Collège Montmorency
  - Collège O'Sullivan de Québec
  - Collège Shawinigan

- Civil Engineering Technology DCS
  - Dawson College

- DEC en technologie du génie civil (French option for *Civil Engineering Technology DCS*)
  - Cégep André-Laurendeau
  - Cégep Beauce-Appalaches
  - Cégep de Baie-Comeau
  - Cégep de Chicoutimi
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de l'Outaouais
  - Cégep de Rimouski
  - Cégep de Saint-Hyacinthe
  - Cégep de Sherbrooke
  - Cégep de Trois-Rivières
  - Cégep Limoilou
  - Cégep régional de Lanaudière à Joliette
  - Collège Ahuntsic
  - Collège Montmorency

- Computer Engineering Technology DCS
  - Vanier College

- DEC en technologie de systèmes ordinés
  (French option for *Computer Engineering Technology DCS*)
  - Cégep de l'Outaouais
  - Cégep de Sherbrooke
  - Cégep Gérald-Godin
  - Cégep Limoilou
  - Collège de Maisonneuve
  - Collège Lionel-Groulx
- Computer Science Technology DCS
  - Champlain Regional College (Lennoxville)
  - Champlain Regional College (Saint-Lambert-Longueuil)
  - Dawson College
  - Heritage College
  - John Abbott College
  - Vanier College
- DEC en techniques de l'informatique
  (French option for *Computer Science Technology DCS*)
  - Cégep André-Laurendeau
  - Cégep Beauce-Appalaches
  - Cégep de Chicoutimi
  - Cégep de Drummondville
  - Cégep de Granby
  - Cégep de Jonquière
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de l'Outaouais
  - Cégep de la Gaspésie et des Îles – Campus de Carleton-sur-Mer
  - Cégep de la Gaspésie et des Îles – Campus de Gaspé
  - Cégep de la Gaspésie et des Îles – Campus des Îles-de-la-Madeleine
  - Cégep de La Pocatière
  - Cégep de Lévis-Lauzon
  - Cégep de Matane
  - Cégep de Rimouski
  - Cégep de Rivière-du-Loup
  - Cégep de Sainte-Foy
  - Cégep de Saint-Félicien
  - Cégep de Saint-Hyacinthe
  - Cégep de Saint-Jérôme
  - Cégep de Sept-Îles
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy
  - Cégep de Thetford
  - Cégep de Trois-Rivières
  - Cégep de Victoriaville

- DEC en techniques de l'informatique
  (French option for *Computer Science Technology DCS*) (continued)
  - Cégep du Vieux Montréal
  - Cégep Édouard-Montpetit
  - Cégep Garneau
  - Cégep Gérald-Godin
  - Cégep Limoilou
  - Cégep régional de Lanaudière à Joliette
  - Cégep Saint-Jean-sur-Richelieu
  - Collège Ahuntsic
  - Collège d'Alma
  - Collège de Bois-de-Boulogne
  - Collège de Maisonneuve
  - Collège de Rosemont
  - Collège de Valleyfield
  - Collège LaSalle
  - Collège Lionel-Groulx
  - Collège Montmorency
  - Collège O'Sullivan de Québec
  - Collège Shawinigan
  - Institut Teccart
- Electrotechnology (Telecommunications) DCS
  - Dawson College
- DEC en technologie de l'électronique – Télécommunication (French option for *Electrotechnology (Telecommunications) DCS*)
  - Cégep de Chicoutimi
  - Cégep de Jonquière
  - Cégep de Rimouski
  - Cégep de Saint-Laurent
  - Cégep de Sherbrooke
  - Cégep de Trois-Rivières
  - Cégep Édouard-Montpetit
  - Cégep Limoilou
  - Collège Ahuntsic
  - Collège de Maisonneuve
  - Collège Lionel-Groulx
  - Institut Teccart
- DEC en environnement, hygiène et sécurité au travail (French only)
  - Cégep de Jonquière
  - Cégep de Saint-Laurent
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy

- Industrial Electronics Technology DCS
  - Vanier College
- DEC en technologie de l'électronique industrielle (French option for *Industrial Electronics Technology DCS*)
  - Cégep André-Laurendeau
  - Cégep de Baie-Comeau
  - Cégep de Chicoutimi
  - Cégep de Granby
  - Cégep de Jonquière
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de Lévis-Lauzon
  - Cégep de Matane
  - Cégep de Rivière-du-Loup
  - Cégep de Sept-Îles
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy
  - Cégep de Thetford
  - Cégep de Trois-Rivières
  - Cégep de Victoriaville
  - Cégep du Vieux Montréal
  - Cégep Limoilou
  - Cégep régional de Lanaudière à Terrebonne
  - Collège Ahuntsic
  - Collège de Valleyfield
  - Collège Montmorency
  - Institut Teccart
- Laboratory Technology (Analytical Chemistry) DCS
  - Dawson College
- DEC en techniques de laboratoire – Chimie analytique (French option for *Laboratory Technology (Analytical Chemistry) DCS*)
  - Cégep de Jonquière
  - Cégep de Lévis-Lauzon
  - Collège Ahuntsic
  - Collège de Valleyfield
  - Collège Shawinigan
- Mechanical Engineering Technology DCS
  - Dawson College
- DEC en techniques de génie mécanique (French option for *Mechanical Engineering Technology DCS*)
  - Cégep de Drummondville
  - Cégep de Granby

- DEC en techniques de génie mécanique (French option for *Mechanical Engineering Technology DCS*) (continued)
  - Cégep de Jonquière
  - Cégep de l'Outaouais
  - Cégep de Lévis-Lauzon
  - Cégep de Rimouski
  - Cégep de Saint-Jérôme
  - Cégep de Saint-Laurent
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy
  - Cégep de Thetford
  - Cégep de Trois-Rivières
  - Cégep du Vieux Montréal
  - Cégep Limoilou
  - Cégep Saint-Jean-sur-Richelieu
  - Collège de Valleyfield
  - Collège Shawinigan

- Nursing DCS
  - Champlain Regional College (Lennoxville)
  - Champlain Regional College (Saint-Lambert-Longueuil)
  - Dawson College
  - Heritage College
  - John Abbott College
  - Vanier College

- DEC en soins infirmiers (French option for *Nursing DCS*)
  - Campus Notre-Dame-de-Foy
  - Cégep André-Laurendeau
  - Cégep Beauce-Appalaches
  - Cégep de Baie-Comeau
  - Cégep de Chicoutimi
  - Cégep de Drummondville
  - Cégep de Granby
  - Cégep de Jonquière
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de l'Outaouais
  - Cégep de la Gaspésie et des Îles – Campus de Carleton-sur-Mer
  - Cégep de la Gaspésie et des Îles – Campus de Gaspé
  - Cégep de La Pocatière
  - Cégep de Lévis-Lauzon
  - Cégep de Matane
  - Cégep de Rimouski
  - Cégep de Rivière-du-Loup
  - Cégep de Sainte-Foy

- DEC en soins infirmiers (French option for *Nursing DCS*) (continued)
  - Cégep de Saint-Félicien
  - Cégep de Saint-Hyacinthe
  - Cégep de Saint-Jérôme
  - Cégep de Saint-Laurent
  - Cégep de Sept-Îles
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy
  - Cégep de Thetford
  - Cégep de Trois-Rivières
  - Cégep de Victoriaville
  - Cégep du Vieux Montréal
  - Cégep Édouard-Montpetit
  - Cégep Garneau
  - Cégep Gérald-Godin
  - Cégep Limoilou
  - Cégep régional de Lanaudière à Joliette
  - Cégep Saint-Jean-sur-Richelieu
  - Centre collégial de Mont-Laurier
  - Centre d'études collégiales à Chibougamau
  - Centre d'études collégiales de La Tuque
  - Centre d'études collégiales en Charlevoix
  - Collège d'Alma
  - Collège de Bois-de-Boulogne
  - Collège de Maisonneuve
  - Collège de Rosemont
  - Collège de Valleyfield
  - Collège Ellis – Campus de Longueuil
  - Collège Lionel-Groulx
  - Collège Montmorency
  - Collège Shawinigan

- Office System Technology DCS
  - Vanier College

- DEC en techniques de bureautique (French option for *Office System Technology DCS*)
  - Cégep André-Laurendeau
  - Cégep de Drummondville
  - Cégep de Jonquière
  - Cégep de l'Outaouais
  - Cégep de Lévis-Lauzon
  - Cégep de Sept-Îles
  - Cégep de Sherbrooke
  - Cégep de Sorel-Tracy
  - Cégep de Thetford

- DEC en techniques de bureautique (French option for *Office System Technology DCS*) (continued)
  - Cégep Garneau
  - Cégep Limoilou
  - Cégep régional de Lanaudière à Joliette
  - Collège de Rosemont
  - Collège de Valleyfield
  - Collège Lionel-Groulx
  - Collège Montmorency
  - Collège O'Sullivan de Québec
  - Collège Shawinigan

- Police Technology DCS
  - John Abbott College

- DEC en techniques policières (French option for *Police Technology DCS*)
  - Campus Notre-Dame-de-Foy
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de l'Outaouais
  - Cégep de Rimouski
  - Cégep de Sherbrooke
  - Cégep de Trois-Rivières
  - Cégep Garneau
  - Collège Ahuntsic
  - Collège d'Alma
  - Collège de Maisonneuve
  - Collège Ellis – Campus de Drummondville

- DEC en techniques de génie chimique (French only)
  - Cégep de Jonquière
  - Cégep de Lévis-Lauzon

- DEC en techniques de la logistique du transport (French only)
  - Cégep André-Laurendeau
  - Cégep de Drummondville
  - Cégep de Trois-Rivières
  - Cégep Garneau
  - Cégep Saint-Jean-sur-Richelieu
  - Collège Lionel-Groulx
  - Institut maritime du Québec

- DEC en techniques de procédés chimiques (French only)
  - Collège de Maisonneuve

- DEC en techniques du milieu naturel (French only)
  - Cégep de Saint-Félicien
  - Centre d'études collégiales à Chibougamau

- DEC en technologie de l'eau (French only)
  - Cégep de Saint-Laurent
- DEC en technologie de la géomatique (French only)
  - Cégep de l'Outaouais
  - Cégep Limoilou
  - Collège Ahuntsic
- DEC en technologie de maintenance industrielle (French only)
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de la Gaspésie et des Îles – Campus de Gaspé
  - Cégep de Lévis-Lauzon
  - Cégep de Rimouski
  - Cégep de Sept-Îles
  - Cégep de Sherbrooke
  - Cégep de Trois-Rivières
  - Cégep du Vieux Montréal
- DEC en technologie du génie métallurgique (French only)
  - Cégep de Chicoutimi
  - Cégep de Trois-Rivières
- DEC en technologie minérale (French only)
  - Cégep de l'Abitibi-Témiscamingue
  - Cégep de Sept-Îles
  - Cégep de Thetford
  - Centre d'études collégiales à Chibougamau

University level

Bachelor's degree

- Bachelor's degree in biology
  - Concordia University
  - McGill University
- Baccalauréat en biologie (French option for *Bachelor's degree in biology*)
  - Université de Montréal (UdeM)
  - Université de Sherbrooke
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Trois-Rivières (UQTR)
  - Université Laval
- Bachelor's degree in chemical engineering
  - McGill University

- Baccalauréat en génie chimique
  (French option for *Bachelor's degree in chemical engineering*)
  - Polytechnique Montréal
  - Université de Sherbrooke
  - Université Laval
- Bachelor's degree in chemistry
  - Bishop's University
  - Concordia University
  - McGill University
- Baccalauréat en chimie (French option for *Bachelor's degree in chemistry*)
  - Université de Montréal (UdeM)
  - Université de Sherbrooke
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Trois-Rivières (UQTR)
  - Université Laval
- Bachelor's degree in commerce
  - Bishop's University
  - Concordia University
  - McGill University
- Baccalauréat en administration des affaires
  (French option for *Bachelor's degree in commerce*)
  - HEC Montréal
  - Université de Sherbrooke
  - Université de Sherbrooke – Campus de Longueuil
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Rimouski (UQAR) – Campus de Lévis
  - Université du Québec à Trois-Rivières (UQTR)
  - Université du Québec en Abitibi-Témiscamingue (UQAT)
  - Université du Québec en Outaouais (UQO)
  - Université du Québec en Outaouais (UQO) – Campus de Saint-Jérôme
  - Université Laval
- Bachelor's degree in commerce with concentration in accounting
  - Bishop's University
  - Concordia University
  - McGill University

- Baccalauréat en sciences comptables (French option for *Bachelor's degree in commerce with concentration in accounting*)
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Rimouski (UQAR) – Campus de Lévis
  - Université du Québec à Trois-Rivières (UQTR)
  - Université du Québec en Abitibi-Témiscamingue (UQAT)
  - Université du Québec en Outaouais (UQO)
  - Université du Québec en Outaouais (UQO) – Campus de Saint-Jérôme
- Bachelor's degree in communication studies
  - Concordia University
  - McGill University
- Baccalauréat en communication (French option for *Bachelor's degree in communication studies*)
  - Université de Montréal (UdeM)
  - Université de Sherbrooke
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université du Québec à Trois-Rivières (UQTR)
  - Université du Québec en Outaouais (UQO)
  - Université Laval
- Bachelor's degree in computer science
  - Bishop's University
  - Concordia University
  - McGill University
- Baccalauréat en informatique (French option for *Bachelor's degree in computer science*)
  - Université de Montréal (UdeM)
  - Université de Sherbrooke
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Rimouski (UQAR) – Campus de Lévis
  - Université du Québec à Trois-Rivières (UQTR)
  - Université du Québec en Outaouais (UQO)
  - Université Laval
- Bachelor's degree in electrical engineering
  - Concordia University
  - McGill University

- Baccalauréat en génie électrique
  (French option for *Bachelor's degree in electrical engineering*)
  - École de technologie supérieure (ETS)
  - Polytechnique Montréal
  - Université de Sherbrooke
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Trois-Rivières (UQTR)
  - Université du Québec en Abitibi-Témiscamingue (UQAT)
  - Université du Québec en Outaouais (UQO)
  - Université Laval
- Bachelor's degree in environment
  - Bishop's University
  - Concordia University
  - McGill University
- Baccalauréat en études de l'environnement
  (French option for *Bachelor's degree in environment*)
  - Université de Sherbrooke
  - Université Laval
- Baccalauréat en génie de la production automatisée (French only)
  - École de technologie supérieure (ETS)
- Baccalauréat en génie des matériaux et de la métallurgie (French only)
  - Université Laval
- Baccalauréat en génie des systèmes électromécaniques (French only)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec en Abitibi-Témiscamingue (UQAT)
- Baccalauréat en génie géologique (French only)
  - Polytechnique Montréal
  - Université du Québec à Chicoutimi (UQAC)
  - Université Laval
- Baccalauréat en génie robotique (French only)
  - Université de Sherbrooke
- Bachelor's degree in geology
  - McGill University
- Baccalauréat en géologie (French option for *Bachelor's degree in geology*)
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Montréal (UQAM)
  - Université Laval
- Bachelor's degree in industrial and labour relations
  - McGill University
- Baccalauréat en relations industrielles
  (French option for *Bachelor's degree in industrial and labour relations*)
  - Université de Montréal (UdeM)
  - Université du Québec en Outaouais (UQO)
  - Université Laval

- Bachelor's degree in materials engineering (English only)
  - McGill University
- Bachelor's degree in mechanical engineering
  - Concordia University
  - McGill University
- Baccalauréat en génie mécanique
  (French option for *Bachelor's degree in mechanical engineering*)
  - École de technologie supérieure (ETS)
  - Polytechnique Montréal
  - Université de Sherbrooke
  - Université du Québec à Chicoutimi (UQAC)
  - Université du Québec à Rimouski (UQAR)
  - Université du Québec à Trois-Rivières (UQTR)
  - Université du Québec en Abitibi-Témiscamingue (UQAT)
  - Université Laval
- Bachelor's degree in mining engineering
  - McGill University
- Baccalauréat en génie des mines
  (French option for *Bachelor's degree in mining engineering*)
  - Polytechnique Montréal
  - Université du Québec en Abitibi-Témiscamingue (UQAT)
  - Université Laval
- Bachelor's degree in nursing
  - McGill University
- Baccalauréat en sciences infirmières
  (French option for *Bachelor's degree in nursing*)
  - Université de Montréal (UdeM)
  - Université de Montréal (UdeM) – Campus de Laval
  - Université de Sherbrooke
  - Université de Sherbrooke – Campus de Longueuil
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  - Université du Québec en Abitibi-Témiscamingue (UQAT)
  - Université du Québec en Outaouais (UQO)
  - Université du Québec en Outaouais (UQO) – Campus de Saint-Jérôme
  - Université Laval
- Baccalauréat en sciences de la Terre et de l'atmosphère (French only)
  - Université du Québec à Montréal (UQAM)

LIST
of educational institutions by region

Photo: Québec Mining Association

This list shows the educational institutions offering one of the 67 training programs mentioned in this Guide that lead to one of the 50 careers. **WARNING: the list was updated to January 2019.**

Educational institutions marked with an asterisk (*) are private institutions, whether subsidized or unsubsidized, that are recognized by the Ministère de l'Éducation et de l'Enseignement supérieur.

Bas-Saint-Laurent

Vocational level

- Centre de formation professionnelle du Fleuve-et-des-Lacs
- Centre de formation professionnelle Mont-Joli-Mitis
- Centre de formation professionnelle Pavillon-de-L'Avenir
- Centre de formation professionnelle Rimouski-Neigette
- CFPRO Matanie – Vallée & Foresterie (Amqui)
- CFPRO Matanie – Vallée & Foresterie (Matane)

College level

- Cégep de La Pocatière
- Cégep de Matane
- Cégep de Rimouski
- Cégep de Rivière-du-Loup
- Institut maritime du Québec

University level

- Université du Québec à Rimouski (UQAR)

Saguenay–Lac-Saint-Jean

Vocational level

- Centre de formation professionnelle Alma
- Centre de formation professionnelle du Fjord
- Centre de formation professionnelle du Pays-des-Bleuets
- Centre de formation professionnelle en équipement motorisé (CFEM)
- Centre de formation professionnelle Jonquière
- Centre de formation professionnelle L'Oasis
- Commission scolaire des Rives-du-Saguenay (Service aux entreprises)
- Commission scolaire du Pays-des-Bleuets (Service aux entreprises)

College level

- Cégep de Chicoutimi
- Cégep de Jonquière
- Cégep de Saint-Félicien
- Collège d'Alma

University level

- Université du Québec à Chicoutimi (UQAC)

Capitale-Nationale

Vocational level

- Aviron Québec Collège Technique*
- Centre de formation de Portneuf
- Centre de formation professionnelle de Charlevoix
- Centre de formation professionnelle de Limoilou
- Centre de formation professionnelle de Neufchâtel
- Centre de formation professionnelle de Québec
- Centre de formation professionnelle Fierbourg
- Centre de formation professionnelle Marie-Rollet
- Centre de formation professionnelle Samuel-De Champlain
- Centre de formation professionnelle Wilbrod-Bherer
- Eastern Québec Learning Centre
- École des métiers et occupations de l'industrie de la construction de Québec (ÉMOICQ)
- École hôtelière de la Capitale

College level

- Campus Notre-Dame-de-Foy*
- Cégep de Sainte-Foy
- Cégep Garneau
- Cégep Limoilou
- Centre d'études collégiales en Charlevoix
- Champlain Regional College (Saint-Lawrence)
- Collège Bart*
- Collège Mérici*
- Collège O'Sullivan de Québec*

University level

- Université Laval

Mauricie

Vocational level

- Carrefour Formation Mauricie
- Centre de formation professionnelle Bel-Avenir
- Centre de formation professionnelle Qualitech
- Commission scolaire du Chemin-du-Roy (Formation continue)
- École forestière de La Tuque

College level

- Cégep de Trois-Rivières
- Centre d'études collégiales de La Tuque
- Collège Shawinigan

University level

- Université du Québec à Trois-Rivières (UQTR)

Estrie

Vocational level

- Centre de formation professionnelle Le Granit
- Centre d'excellence en formation industrielle
- Centre de formation professionnelle de l'Asbesterie
- Centre de formation professionnelle du Haut-Saint-François
- Collège de comptabilité et de secrétariat du Québec – Campus de Sherbrooke*
- Centre de formation professionnelle de Coaticook – CRIFA
- Centre de formation professionnelle de Memphrémagog
- Lennoxville Vocational Training Centre
- Centre de formation professionnelle 24-Juin

College level

- Cégep de Sherbrooke
- Champlain Regional College Lennoxville

University level

- Bishop's University
- Université de Sherbrooke

Montréal

Vocational level

- Centre Daniel-Johnson
- Centre de formation Antoine-de-Saint-Exupéry
- Centre de formation professionnelle Anjou
- Centre de formation professionnelle Calixa-Lavallée
- Centre de formation professionnelle de Lachine
- Centre de formation professionnelle des Carrefours
- Centre de formation professionnelle Léonard-De Vinci

Vocational level (cont.)

- Centre intégré de mécanique, de métallurgie et d'électricité (CIMME)
- Collège LaSalle*
- Collège supérieur de Montréal*
- Commission scolaire de Montréal (Formation continue)
- École des métiers de l'aérospatiale de Montréal
- École des métiers de l'équipement motorisé de Montréal
- École des métiers de l'informatique, du commerce et de l'administration de Montréal
- École des métiers de la construction de Montréal
- École des métiers de la restauration et du tourisme de Montréal
- École des métiers du meuble de Montréal
- École des métiers du Sud-Ouest-de-Montréal
- École hôtelière de Montréal
- Herzing College*
- Institut de tourisme et d'hôtellerie du Québec (ITHQ)
- Institut Technique Aviron de Montréal*
- Laurier MacDonald Vocational Centre
- PACC Career Centre
- Pearson Electrotechnology Centre
- Pius – Culinary and Business Centre
- Rosemount Technology Centre
- Shadd Health and Business Centre
- Sources Adult and Career Centre
- Verdun Adult and Career Centre
- West Island Career Centre

College level

- Cégep André-Laurendeau
- Cégep de Saint-Laurent
- Cégep du Vieux Montréal
- Cégep Gérald-Godin
- Collège Ahuntsic
- Collège de Bois-de-Boulogne
- Collège de Maisonneuve
- Collège de Rosemont
- Collège LaSalle*
- Dawson College
- Institut Teccart*
- John Abbott College
- Vanier College

University level

- Concordia University
- École de technologie supérieure (ETS)
- HEC Montréal
- McGill University
- Polytechnique Montréal
- Université de Montréal (UdeM)
- Université du Québec à Montréal (UQAM)

Outaouais

Vocational level

- Centre de formation professionnelle Compétences Outaouais
- Centre de formation professionnelle de la Vallée-de-la-Gatineau
- Centre de formation professionnelle du Pontiac
- Centre de formation professionnelle Relais de la Lièvre-Seigneurie
- Centre de formation professionnelle Vision-Avenir
- École des métiers spécialisés Asticou
- Maniwaki Adult Education and Vocational Training Centre
- Pontiac Continuing Education Centre
- Western Québec Career Centre

College level

- Cégep de l'Outaouais
- Heritage College

University level

- Université du Québec en Outaouais (UQO)

Abitibi-Témiscamingue

Vocational level

- Centre de formation Harricana
- Centre de formation professionnelle Lac-Abitibi
- Centre de formation professionnelle Val-d'Or

Vocational level (cont.)

- Centre Frère-Moffet
- Centre Polymétier
- Val-d'Or Continuing Education Centre

College level

- Cégep de l'Abitibi-Témiscamingue

University level

- Université du Québec en Abitibi-Témiscamingue (UQAT)

Côte-Nord

Vocational level

- Centre de formation professionnelle de Forestville
- Centre de formation professionnelle de Sept-Îles
- Centre de formation professionnelle et générale Manicouagan

College level

- Cégep de Baie-Comeau
- Cégep de Sept-Îles

Nord-du-Québec

Vocational level

- Centre de formation professionnelle de la Baie-James
- Cree School Board
- Kativik School Board

College level

- Centre d'études collégiales à Chibougamau

Gaspésie–Îles-de-la-Madeleine

Vocational level

- Centre de formation de La Côte-de-Gaspé
- Centre de formation de La Haute-Gaspésie
- Centre de formation professionnelle Bonaventure-Paspébiac
- Centre de formation professionnelle des Îles
- Centre de formation professionnelle La Relance
- Centre de formation professionnelle L'Envol

College level

- Cégep de la Gaspésie et des Îles – Campus de Carleton-sur-Mer
- Cégep de la Gaspésie et des Îles – Campus de Gaspé
- Cégep de la Gaspésie et des Îles – Campus des Îles-de-la-Madeleine

Chaudière-Appalaches

Vocational level

- Centre de formation des Bâtisseurs
- Centre de formation en mécanique de véhicules lourds
- Centre de formation professionnelle de l'Envolée
- Centre de formation professionnelle de Lévis
- Centre de formation professionnelle Gabriel-Rousseau
- Centre de formation professionnelle Le Tremplin
- Centre de formation professionnelle Pozer
- Centre intégré de mécanique industrielle de la Chaudière (CIMIC)
- Centre national de conduite d'engins de chantier

College level

- Cégep Beauce-Appalaches
- Cégep de Lévis-Lauzon
- Cégep de Thetford

University level

- Université du Québec à Rimouski (UQAR) – Campus de Lévis

Laval

Vocational level

- Centre de formation Compétences-2000
- Centre de formation en métallurgie de Laval
- Centre de formation Le Chantier
- École hôtelière de Laval
- École Polymécanique de Laval
- Laurier Competency Development Centre (Pont-Viau)

College level

- Collège Montmorency

University level

- Université de Montréal (UdeM) – Campus de Laval

Lanaudière

Vocational level

- Centre de formation professionnelle des Moulins
- Centre de formation professionnelle des Riverains
- Centre multiservice des Samares — Pavillon Berthier
- Centre multiservice des Samares — Pavillon de l'Argile
- Centre multiservice des Samares — Pavillon Montcalm
- École hôtelière de Lanaudière

College level

- Cégep régional de Lanaudière à Joliette
- Cégep régional de Lanaudière à L'Assomption
- Cégep régional de Lanaudière à Terrebonne

Laurentides

Vocational level

- Centre d'études professionnelles Saint-Jérôme
- Centre de formation des Nouvelles-Technologies
- Centre de formation du transport routier de Saint-Jérôme (CFTR)
- Centre de formation professionnelle des Sommets
- Centre de formation professionnelle l'Émergence
- Centre de formation professionnelle L'Horizon
- Centre de formation professionnelle Mont-Laurier
- Centre de formation professionnelle Performance Plus
- Construc-Plus Vocational Centre
- École Hôtelière des Laurentides
- Laurier Competency Development Centre (Lachute)

College level

- Cégep de Saint-Jérôme
- Centre collégial de Mont-Laurier
- Collège Lionel-Groulx

University level

- Université du Québec en Outaouais (UQO) – Campus de Saint-Jérôme

Montérégie

Vocational level

- ACCESS Career Centre
- Atelier-école Les Cèdres
- Campus Brome-Missisquoi
- Centre Bernard-Gariépy
- Centre de formation Compétence-de-la-Rive-Sud
- Centre de formation professionnelle Charlotte-Tassé
- Centre de formation professionnelle de la Pointe-du-Lac
- Centre de formation professionnelle des Patriotes
- Centre de formation professionnelle Paul-Gérin-Lajoie
- Centre de formation professionnelle Pierre-Dupuy
- Centre régional intégré de formation (CRIF)
- Centres de formation professionnelle et d'éducation des adultes Sorel-Tracy
- Chateauguay Valley Career Education Centre
- Collège de comptabilité et de secrétariat du Québec — Campus de Longueuil*
- Commission scolaire des Trois-Lacs (Services aux entreprises)
- Commission scolaire Marie-Victorin (Service aux entreprises et projets internationaux)
- École de formation professionnelle de Châteauguay
- École hôtelière de la Montérégie
- École professionnelle de Saint-Hyacinthe
- École professionnelle des métiers
- Nova Career Centre
- Parcours Formation

College level

- Cégep de Granby
- Cégep de Saint-Hyacinthe
- Cégep de Sorel-Tracy
- Cégep Édouard-Montpetit
- Cégep Saint-Jean-sur-Richelieu
- Champlain Regional College (Saint-Lambert-Longueuil)
- Collège de Valleyfield
- Collège Ellis — Campus de Longueuil*

University level

- Université de Sherbrooke – Campus de Longueuil

Centre-du-Québec

Vocational level

- Centre de formation professionnelle André-Morissette
- Centre de formation professionnelle de la Riveraine
- Centre de formation professionnelle Le Trécarré
- Centre de formation professionnelle Paul-Rousseau
- Centre de formation professionnelle Vision 20 20
- Centre intégré de formation et d'innovation technologique (CIFIT)
- Commission scolaire des Chênes (Service aux entreprises)

College level

- Cégep de Drummondville
- Cégep de Victoriaville
- Collège Ellis — Campus de Drummondville*

LIST
of the main organizations and resources in the mining sector

Photo: CFP de la Baie-James

Government department

- **Ministère de l'Énergie et des Ressources naturelles du Québec**
  Toll-free: 1 866 248-6936
  E-mail: renseignements@mern.gouv.qc.ca
  Website: www.mern.gouv.qc.ca

Government bodies

- **Institut national des mines**
  Phone: 819 825-4667
  E-mail: secretariat@inmq.qc.ca
  Website: www.inmq.gouv.qc.ca

- **Société du Plan Nord**
  Phone: 418 643-1874
  Toll-free: 1 855 214-9807
  E-mail: information@spn.gouv.qc.ca
  Website: www.plannord.gouv.qc.ca

Mining sector organizations

- **Québec Mineral Exploration Association**
  Phone: 819 762-1599
  Toll-free: 1 877 762-1599
  E-mail: info@aemq.org
  Website: www.aemq.org

- **Association des entrepreneurs miniers du Québec**
  Website: www.aemq.net

- **Québec Mining Association**
  Phone: 418 657-2016
  E-mail: amq@amq-inc.com
  Website: www.amq-inc.com

- **Association paritaire pour la santé et la sécurité du travail du secteur minier**
  Phone: 418 653-1933
  E-mail: apsm@aspemine.ca
  Website: www.aspmines.qc.ca

- **Canadian Institute of Mining, Metallurgy and Petroleum**
  Phone: 514 939-2710
  E-mail: cim@cim.org
  Website: www.cim.org

Labour development

- **Comité sectoriel de main-d'œuvre de l'industrie des mines**
  Phone: 418 653-9254
  E-mail: info@csmomines.qc.ca
  Website: www.exploreslesmines.com

- **Mining Industry Human Resources Council**
  Phone: 613 270-9696
  E-mail: info@mihr.ca
  Website: www.mihr.ca

Professional orders

- **Ordre des comptables professionnels agréés du Québec**
  Phone: 514 288-3256
  Toll-free: 1 800 363-4688
  E-mail: info@cpaquebec.ca
  Website: www.cpaquebec.ca

- **Ordre des conseillers en ressources humaines agréés**
  Phone: 514 879-1636
  Toll-free: 1 800 214-1609
  E-mail: info@portailrh.org
  Website: www.portailrh.org

- **Ordre des géologues du Québec**
  Phone: 514 278-6220
  E-mail: info@ogq.qc.ca
  Website: www.ogq.qc.ca

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

Research centres

- **Consortium de recherche en exploration minérale (CONSOREM)**
  Phone: 418 545-5011, ext. 5634
  Website: www.consorem.ca

- **Consortium de recherche minérale (COREM)**
  Phone: 418 527-8211
  E-mail: webinfocorem@corem.qc.ca
  Website: www.corem.qc.ca

- **Société de recherche et de développement minier (SOREDEM)**
  Phone: 418 657-2016
  Website: www.amq-inc.com/lassociation/soredem

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Photo: Agnico Eagle Mines Limited

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The cover photographs are included courtesy of:

- Agnico Eagle Mines Limited
- Goldcorp – Éléonore
- Nemaska Lithium Inc.
- K + S Windsor Salt – Seleine Mines

Acknowledgements

- Anne-Marie Painchaud, Québec Mining Association
- Anny Fortin, Orbit Garant Drilling
- Ariane Jutras, Monarques Gold Corporation
- Caroline Fréchette, Goldcorp – Éléonore
- Caroline Hupé, Tata Steel Minerals Canada
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- Véronique Fortier, Hecla Québec
- Xiaoman Qi, Canadian Royalties Inc.
- Yves-Aimé Boulay, Syndicat des Métallos – FTQ

The English translation of the *Guide to Careers in the Mining Industry* has been made possible thanks to financial support from the Société du Plan Nord.

Société du Plan Nord Québec

Date of publication – March 2019

Legal deposit – Bibliothèque et Archives nationales du Québec, 2019
Legal deposit – Library and Archives Canada, 2019

ISBN
978-2-9815352-6-9 (print)
978-2-9815352-7-6 (PDF)

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

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