



EXPLORING FOR **URANIUM**

Orano Canada Inc.





Cover photo: Drill core at the Moffatt Lake camp. Core is labelled and organized for future analysis and geological mapping of the area.

Inside photo: Exploration area at Waterfound River in northwest Saskatchewan.



Orano Canada Inc.

Headquartered in Saskatoon, Saskatchewan, Orano Canada has been a leader in the exploration, mining and production of Canadian uranium for more than 55 years. Orano is the operator of the McClean Lake uranium mill and a major partner in the Cigar Lake, McArthur River and Key Lake operations located in northern Saskatchewan. The company employs over 400 people in Saskatchewan. We acknowledge that Orano's exploration activities are currently conducted on Treaty 8 and Treaty 10 Territory, and the Homeland of the Métis. We pay our respects to the ancestors of this land in a spirit of reconciliation and collaboration.

Exploration represents the future of Orano's operations; it is the first step in the development of uranium mines. Our exploration team invests countless hours in the field, drilling, collecting data, surveying, reviewing and logging drill core in the quest to discover the next economical deposit.



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The Athabasca Basin is a vast territory of 95,625 km². Orano's teams work on many projects in this region, including near existing operations, such as on the McClean Lake surface lease.

Exploration - New Deposits to be Found

Five hundred times more common than gold, uranium is found nearly everywhere on Earth, on land and in water. The highest known concentrations – with some ore grades averaging over 20% uranium – are found in northern Saskatchewan's Athabasca Basin.

These deposits have helped make Canada one of the world leaders in uranium production and have created significant employment and economic benefits for Canadians.

The majority of Orano's uranium exploration activity in Canada is currently concentrated in the Athabasca Basin. Although historical deposits were found closer to the surface, today our targets are buried deep – several hundred metres underground.

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Exploration Techniques ... Air, Ground and Below the Surface

Orano's exploration team sources, develops, and implements various techniques to help in the discovery of new deposits.

Exploration from the Air

The physical properties of many minerals and rocks can be measured by using geophysical instruments carried in a helicopter or airplane.

Aerial surveys provide data and information about what is below the surface and give indications of areas that should be further explored on the ground.

Airborne geophysical surveys are used to detect magnetism, electrical conductivity and radioactivity over large areas.

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Exploration on the Ground

There are many ground survey techniques available. Geologists make observations on rock and other surficial materials, take readings with different instruments, and gather small samples of rock for further analysis. Geophysicists use instruments to measure the physical properties of the rocks. Geochemical survey methods may range from analyzing rock samples, to digging trenches in the soil to collect samples, to taking tiny samples of leaf or other tree material from the study area.



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Line Cutting

Lines are cut in the forests to provide grid references for surveys and to allow physical access. Cut line width must be 1.5 metres or less. When possible, branches are removed rather than cutting down the entire tree. All trees are hand cut and the use of GPS guidance helps to minimize environmental impact.



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Drilling

Orano's exploration teams and our contractors regularly drill several hundred metres into rock and earth to obtain samples. Our deepest drill depth to date was over 1,000 metres below the surface.

Diamond Drilling

Drilling is the most conclusive exploration method to determine if an economical deposit exists in an exploration target area.

In order to sample the rock formations underground, a drill rig cores a small hole through the bedrock. The drill bit, covered with industrial diamonds, rotates at the end of the rod or pipe. While the bit rotates using gentle pressure, it is cooled by water to prevent overheating. The drill bit cuts a solid column of core out of the rock, which is brought to the surface for further examination and analysis.

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The drill only occupies a small area on the land but goes deep into the ground.

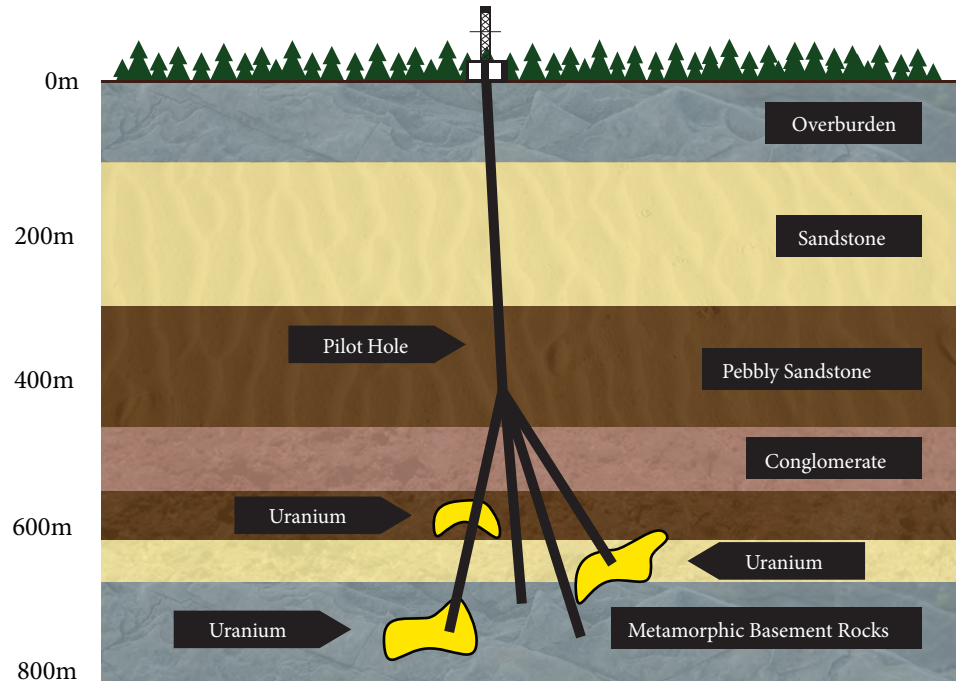
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Over 700 Metres Down

This cross section shows an example of the geology that might be found in the Athabasca Basin and how directional drilling can be used.



Directional Drilling and Wedging

Orano uses directional drilling and wedging when possible. The advantage is that multiple holes can be drilled from one drill setup location, thus minimizing surface disturbance. From a single pilot hole, operators are able to drill in many new directions, hundreds of metres below the surface.



Sustainability - Environment and Safety

In exploration and mining, Orano must comply with strict environmental and health and safety regulations. Orano's exploration department is certified to the ISO 14001 Environmental Management System and the ISO 45001 Safety Management System international standards. Under these standards, Orano must define and follow its established environmental and health and safety policies, achieve objectives and targets, as well as measure, monitor, and evaluate environmental, health and safety performance, and make continual improvements.

In 2004, Orano became the first uranium company in Saskatchewan to become ISO 14001-certified for exploration activities. In 2011, Orano's exploration activities were certified to ISO 45001. Annual audits by an external independent registrar continue to confirm that Orano adheres to, or exceeds, ISO 14001 and ISO 45001 requirements.

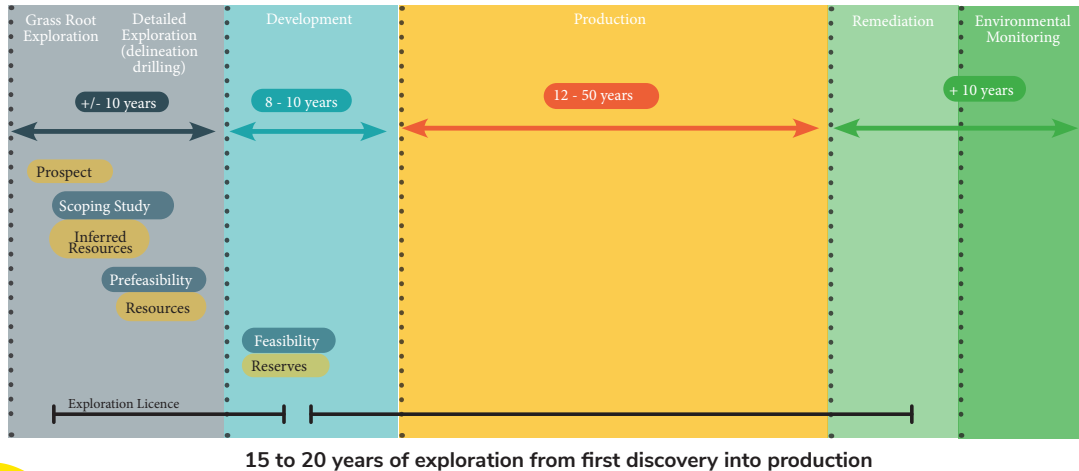
Additionally, contractors must follow and adhere to Orano's explicit and demanding environmental, health and safety policies, codes of practice, emergency response plans, and other requirements contained in permits, licences and authorizations.



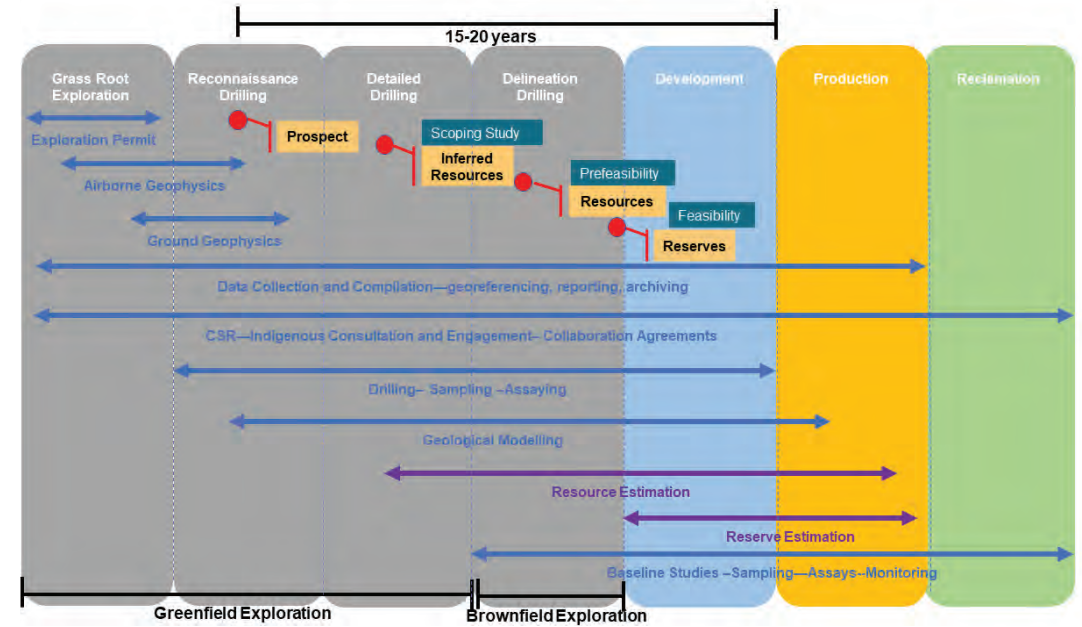
Long-Term Commitment

Exploration, like mining, is a lengthy process. Some of Orano's projects have been explored for over thirty years while others are recent acquisitions with limited exploration activities. Locating new deposits today will enable Orano to supply tomorrow's fuel for clean energy production around the world.

+ Uranium Mining: A Long-Term Activity



+ Geoscientific Activities: A Phased Approach



Campaigns - In the Field

In Canada, exploration teams generally work in what is known as field campaigns, which usually follow the seasons. Orano's teams often have a spring and summer campaign and a fall and winter campaign. Orano prefers to conduct exploration from established facilities for ease, comfort and to minimize our footprint, but remote locations require a temporary work camp



Temporary Work Camps

Temporary work camps are typically established in previously-cleared areas or natural openings in the forest. They are not allowed to be on or near heritage property sites or in areas of scientific concern, such as environmentally sensitive areas like nesting sites for endangered species.

These low-impact camp sites are monitored to ensure environmental protection and compliance. Orano's exploration teams, including employees and contractors, are encouraged to minimize waste, conserve fuel, recycle and reuse materials, and minimize disturbance to the land and wildlife.

Orano's temporary work camps are reclaimed according to jurisdictional restoration requirements. All temporary structures must be removed from the site and the results of the decommissioning are subject to independent inspection by government regulatory agencies.





Snowmobiles are often used to travel to the winter drill sites and temporary camps.

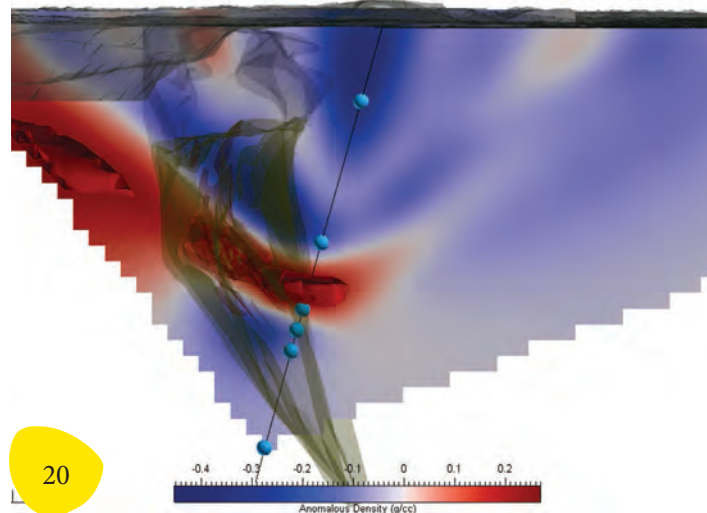
Winter Exploration

Mineral exploration activities occur year-round, but winter provides the best ground access, as lakes and muskeg areas are frozen. In the winter, some activities require the use of snowmobiles, ATVs, or snowshoes to travel along cut lines and trails. Trails provide access for trucks and drilling equipment, and existing trails are used as much as possible with restrictions in place to ensure the trails are properly developed and ultimately reclaimed.



Innovation, Research & Development

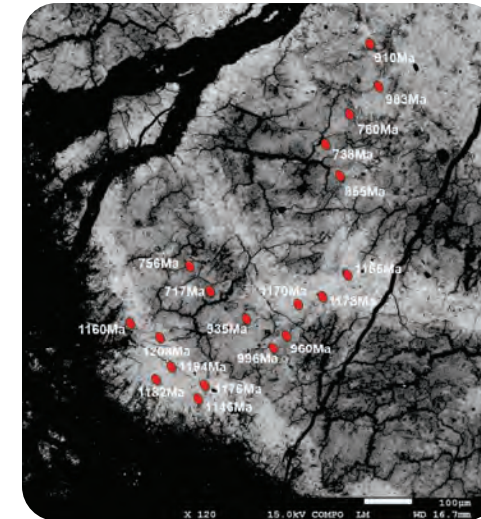
Mineral exploration is based on the scientific knowledge of when, how, where and why metals have been concentrated in the earth to a grade high enough to make a deposit. To define exploration targets, Orano's teams rely on a variety of information that our geophysicists, geologists, and geochemists are able to interpret and express in terms of potential for new discoveries.



+ Orano is working with Ideon on a trial of borehole muon tomography effectiveness. This 3D density model shows the reconstructed density model from muon data, overlain with the borehole muon detectors (blue dots) as shown positioned down the single drillhole.

Muon tomography may provide new exploration targets and could also potentially reduce drilling required to locate subsurface anomalies.

Our exploration teams' efforts in Research and Development are aimed at improving our ability to process the data collected and defining pathfinders or vectors that will increase our chances of discovering new deposits. To remain a world leader in the discovery of uranium deposits, Orano's teams use innovative new concepts in deposit formation study and exploration methods, as well as the implementation of new skills and techniques that provide opportunities to lead us toward success.



+ This electronic microscope image of a uranium ore crystal is from the Cigar Lake orebody. The red dots and numbers represent the ages (in million years, Ma) of crystallization of the mineral as determined by its isotopic ratio. Dark areas of the crystal present systematically younger ages that can be explained by the fracturing and alteration suffered by the original crystal. Absolute chronology is key for understanding the formation of ore deposits.

Exploring Data

In addition to field work, Orano's geoscientists are able to "explore" vast geological datasets through a proprietary online compilation map and database system in order to mine existing data.

This innovative Geographic Information System (GIS) allows our geoscientists to quickly access and assess exploration data from almost any source and any location within the Athabasca Basin area; including government-compiled regional products to a single competitor drill hole or sample. Geological data and historical exploration results are spatially represented with geographical and current tenement information allowing for quick and efficient land assessment and mineral potential analysis.

Thousands of individual reports with tens of thousands of datasets have been catalogued including more than 20,000 drill holes – all this data is directly available in the online map and can be shared via a simple online link. Advanced GIS analysis tools are employed to drill into this data further and provide new insights into uranium exploration within the Athabasca Basin area.



Seeing the geological data in multiple views and formats allows for greater understanding of the areas of interest.

Engagement - Community and Recruitment

Orano works proactively to engage and communicate with the people who live closest to our projects and operations, in particular northern community members.

Orano representatives visit communities to keep them informed of our activities in the north by making presentations and providing other information on upcoming projects. Orano also offers opportunities for community leadership, business and other representatives to tour the McClean Lake Operation and connect with employees.

Through Orano's community engagement program, residents become acquainted with company activities, Orano's environmental protection, health and safety policies and performance, and possible job and contracting opportunities.





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Working With Us

Working with Orano's Exploration Team

Exploration camps rely on a large team of contractors and suppliers to keep the projects running smoothly. Orano strives to employ as many northern contractors as possible.

Support jobs through contractors may include, camp cooking and maintenance, fuel supply and delivery, geophysical operator, line cutting, skidder operator or driver, driller and driller's helper, geological assistant or technician, ice flooding operator, mechanic, trail development and snow removal operator.



Reviewing drill core is an important task in the exploration data analysis process.

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McClellan Lake Mill operators learn the various circuits of the uranium milling process.



Join Orano's Team

Orano Canada offers a variety of rewarding career opportunities in many fields such as, but not limited to, engineering, environment, geology, radiation protection, metallurgy, skilled trades and many more. Our relaxed work atmosphere, competitive salaries and full range of benefits and employee support programs foster a healthy and gratifying work life.

Whether working at the McClellan Lake Operation 14 days in and 14 days out or in the Saskatoon office, we strive to ensure that we provide our employees with comfortable facilities and an enriching and engaging workplace.

For more information, to view current opportunities, or to learn more about a career with Orano, visit:

www.oranocanada.com



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