

Junior Explorers Challenge

STORY



Treasure Hunt: Saskatchewan Potash, The buried treasure that fed the world



Long before Saskatchewan became famous for its endless wheat fields, an enormous mineral deposit was hiding almost 1 kilometre beneath the vast prairie. No one could see it, and for decades, no one even knew it was there. Today, Saskatchewan produces about one third of the world's potash, making it one of the most important mining regions on Earth. Potash provides potassium, one of the three essential nutrients plants need to grow. It strengthens roots, improves drought resistance, and helps increase crop yields, making it an important part of modern agriculture. This valuable mineral even earned a nickname: pink gold.

An Ancient Sea Beneath the Prairie

The story of Saskatchewan's potash begins more than 350 million years ago, when the province was covered by a huge inland sea. Under the hot Devonian sun, the seawater slowly evaporated, leaving behind layers of salt and potassium-rich minerals on the sea floor. As more and more water evaporated, these minerals built up into thick deposits. Over millions of years, the deposits were buried beneath layers of sedimentary rock, forming what geologists call an evaporite basin, an area where minerals are left behind when ancient bodies of water evaporate. Eventually, these deposits became buried deep beneath the Canadian Prairies. For centuries, farmers had no idea that the mineral their crops needed was sitting far below their fields.



Photo courtesy of Asima Shaikh

An Accidental Discovery

Sometimes the biggest discoveries happen when you are looking for something totally different. In 1943, drillers searching for petroleum near Radville in southern Saskatchewan unexpectedly encountered thick layers of potassium-rich salts deep underground. Similar discoveries followed as oil companies drilled across the province. Geologists soon realized Saskatchewan was home to one of the largest potash deposits on Earth. Geologist F.H. Edmunds helped map the deposits and demonstrate their enormous economic potential. Mining companies from Canada, the United States, and Europe quickly became interested, but there was a huge problem: the potash was more than 1,000 metres underground in some places, beneath water-bearing rock that could flood a mine.

The Race Underground

Building the mines became a major engineering challenge. During the 1950s and 1960s, some mine shafts flooded before crews could even reach the ore, costing millions of dollars. The Patience Lake mine near Saskatoon faced particularly serious flooding and was eventually closed in 1987. Engineers later reopened it using solution mining, a technique that uses water to dissolve underground salt and bring the mineral-rich solution to the surface. Another major breakthrough was artificial ground freezing. Crews drilled rings of pipes into the earth and circulated super-cold brine through them, freezing water-bearing rock solid so they could safely sink mine shafts through it. These remarkable engineering projects helped make underground potash mining possible.

Building Cities Above and Below

As the mines expanded, communities such as Esterhazy, Lanigan, and Rocanville grew into busy mining hubs. Giant headframes rose above the flat prairie landscape, while railways carried millions of tonnes of potash toward ports on the West Coast and to Thunder Bay for shipment all around the world. Deep underground, miners worked in a strange landscape of pink and white salt. Instead of following narrow mineral veins, as miners often do in hard-rock mines, massive machines carved huge rooms and tunnels through thick salt beds. The underground networks became so large that visitors compared them to entire cities beneath the prairie.



Photo courtesy of Asima Shaikh

Saskatchewan Feeds the World

By the 1970s, Saskatchewan had become a global potash powerhouse, supplying farmers in countries including Brazil, India, and China. Today, companies such as Nutrien and Mosaic operate major mines and produce tens of millions of tonnes of potash each year. The mineral has become even more important as the global population approaches 10 billion people. Farmers around the world need to grow more food on limited farmland, while also dealing with challenges such as drought and changing climate conditions. Potash helps crops develop strong roots, use water more effectively, and produce healthy, reliable yields. Saskatchewan is also one of the world's most important sources of potash outside Russia and Belarus, making its mines an important part of keeping fertilizer supplies moving around the globe.



Lasting Treasure of the Prairies

More than 350 million years ago, an ancient sea left behind layers of salt and potassium-rich minerals that would eventually become one of Canada's most important natural resources. Today, those deposits continue to shape life across Saskatchewan. Giant white tailings piles rise beside prairie highways, made up of salt and other material left over after potash is processed. They are a visible reminder of the enormous amount of potash being brought up from deep underground. Generations of families have built their lives around the mines, and some estimates suggest Saskatchewan has enough potash reserves for hundreds of years of production. Beneath the quiet wheat fields lies a resource that helps feed people around the world, proving that some of Canada's most important treasures are the ones we cannot see.

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Potash is an important ingredient in fertilizer because it supports plant growth, increases crop yield and disease resistance, and enhances water preservation.

