

The Hudson Bay Mining and Smelting Company, Limited History

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Wholly Owned Subsidiary of Minorco

Incorporated: 1927

Employees: 2,064

Sales: C\$449 million

SICs: 1300 Oil & Gas Extraction; 1000 Metal Mining

Company History:

The Hudson Bay Mining and Smelting Company, Limited, is a major Canadian producer of copper and zinc which operates mines and metal processing facilities in remote areas of the province of Manitoba. The company has been removing metals from the ground for most of the twentieth century, and its efforts to industrialize western Manitoba have helped to foster development in the region. More than 23 mines have yielded ore to the Hudson Bay metal processing works over the last 60 years, as the company has engaged in aggressive geological exploration to support its metal refining activities.

Hudson Bay got its start in January 1915, when Tom Creighton, an early Canadian prospector, happened upon an outcropping of sulfide ore in an undeveloped area of Manitoba. In the previous decade,

prospectors had discovered that an enormous greenstone belt stretched east from Manitoba into northern Saskatchewan. This geological structure contained numerous deposits of different metals mixed together, including zinc, copper, silver, and gold.

Suspecting that the outcropping he had found could signal a valuable deposit of copper and zinc, Creighton returned in the spring with a friend to confirm his discovery and stake the first claim. The two filed an official claim in September 1915, naming the body of ore they had found "Flin Flon," after a character in a dime store novel.

Over the next ten years, the rights to the Flin Flon stake were held by a number of different mining concerns, who did not take action to develop a mine. Finally, in 1925, the option to the site was acquired by a company associated with Harry Payne Whitney in New York. Under the direction of Whitney, a sequence of metallurgical tests were performed on the ore deposit. Although the ore bodies were not found to be exceptionally rich, they were quite sizable. In December 1927, the decision was made to go ahead with mining operations, and the Hudson Bay Mining and Smelting Company, Limited, was formed to run the site.

In 1928 work began on the construction of what would become one of the largest industrial facilities in the world. The company planned an open pit mine, a vast metallurgical processing complex, and, to power these operations, the first major hydro-electric dam in northern Canada. In order to get at the mineral deposits, a lake overlying the ore was dammed and drained, and more than one million tons of mud and clay from the lake bed were removed. By October 1929, a dam had been constructed across the lake, and construction of other parts of the mine had also begun.

A dam was also built across the Churchill River, at Island Falls, Saskatchewan, to power the Hudson Bay hydro-electric plant. In addition, the company constructed a concentrator, a zinc recovery unit, and a copper smelter. Together, this enormous metallurgical complex at Flin Flon offered great economies of scale in smelting and refining. To bring the refined products of the Flin Flon mine to their ultimate users, the CN Railroad was also extended 140 kilometers, from The Pas, Manitoba, to Flin Flon.

Operations at Flin Flon began in late 1930, with ore removal from an open pit and refinement at the plant. In the ensuing decades, the metallurgical processing facility continued to operate 24 hours a day, 365 days a year, with only two interruptions ever taking place. On the strength of these operations, Hudson Bay opened a new region of Canada to further development.

From 1930 to 1935, more than two-thirds of the ore removed from Flin Flon came from the open pit, with the remainder coming from a shaft, named North Main. By 1936, however, the pit had reached its maximum depth. Exploration had revealed that the ore deposit was not contained in one large lens-shaped body, but was distributed in six distinct bodies, which angled downward to the south from the main area. In order to gain access to more of these deposits, a second shaft, South Main, was sunk in 1939. This site, one kilometer south of the North Main site, was designed to transport large quantities of ore faster than the older North facility.

Mining at Flin Flon continued throughout the 1940s. Early in the decade, Hudson Bay opened the first of many supplemental mines that the company would develop to feed its Flin Flon processing plant. Named Mandy, this facility operated for just a few years at the start of the decade before being exhausted. With the development of this ore source, Hudson Bay demonstrated its commitment to continued prospecting and the development of new small mineral deposits.

The company broke ground on five new mines during the 1950s. The Cuprus and Schist Lake sites, developed early in the decade, produced minerals for roughly a quarter of a century, shutting down in the mid-1970s. The Don Jon mine operated for several years in the middle of the decade, and the Birch Lake and North Star shafts both yielded ore in the latter part of the decade.

In 1958 Hudson Bay inaugurated operations at a second major location, east of Flin Flon, called Snow Lake. At Chisel Lake, the company opened a zinc mine with two shafts, one to transport men and equipment, and another to bring materials to the surface. Underground, Hudson Bay used the cut-and-fill and the long-hole methods to remove zinc from the earth. Also at that time, the Coronation mine came on line. Coronation continued to produce ore into the mid-1960s.

Two years after Chisel Lake was opened, in 1960, Hudson Bay started a second mining operation at Snow Lake, the Stall Lake Mine, which produced high grade copper. The cut-and-fill method was used to remove ore in this location. For the next decade, all ore mined at Snow Lake was transported by rail to Flin Flon for processing. Beginning in the 1970s, however, Hudson Bay began to phase out the use of trains for this process, relying instead on trucks to move the products of all its mines except the South Main shaft.

The early 1970s brought a large number of new mines to the Hudson Bay operation. The Ghost Lake, Anderson, and Osborne operations came on line, as did the White Lake, Dickstone, and the short-lived Flexar mine. Ghost Lake and Anderson produced ore for nearly 20 years, while Osborne yielded minerals for roughly three-quarters of that time.

In 1979 Hudson Bay constructed a processing facility adjacent to its Stall Lake Mine at Snow Lake, thus diversifying its refining capabilities from its main Flin Flon site. The Stall Lake concentrator treated copper and zinc ores in separate facilities, producing 350 tons of copper and 100 tons of zinc concentrate each day. By locating this facility near its Snow Lake ore deposits, Hudson Bay was able to increase the total ore reserves available to it by making marginal mineral deposits profitable, since the cost of shipping them to be processed had been reduced. The products of the Snow Lake concentrator were shipped by rail to the Flin Flon metallurgical plant for further refining.

In the late 1970s, Hudson Bay also commenced mining operations at the Centennial and Westarm mines. In 1982 the company began to remove minerals from Trout Lake, located five kilometers north of Flin Flon. In order to remove the ore contained in deposits beneath the lake bed, the company dug a slanted tunnel to them, through which a 27-ton ore truck moved, bringing minerals to an area just below the surface, where they were crushed. As Hudson Bay was forced to dig deeper and deeper into the ground to retrieve ore, it became less economical to bring the minerals to the surface by truck, so a shaft was built to bring materials straight to the crusher.

With this new system, ore was removed from the ground by machines and subjected to an underground crusher, before being taken up to the surface on a conveyor belt. Further development of this facility included the construction of a secondary production shaft to transfer ore from the lowest levels of the mine to the crusher. Hudson Bay developed this project in partnership with an arm of the Manitoba government, another Canadian company, and a Finnish concern.

In 1983 Hudson Bay sealed off the main shaft of its first mine, North Main, at Flin Flon, as this original source of minerals began, after 60 years, to reach its final stages of depletion. By blocking the mine shaft at the 1170 foot level, the company made it possible for the remaining ore in the mine's pillars to be removed. This material was then moved by underground train to the South Main shaft and brought to the surface.

Also in 1983, Hudson Bay's corporate ownership underwent a reorganization. At this time, Hudson Bay and a half-owned subsidiary, Plateau Holdings, restructured their assets, forming the Inspiration

Resources Corporation, based in New York. Hudson Bay then became a wholly owned subsidiary of this company. Inspiration held a wide range of natural resources properties, with operations in the agriculture, mining, base and precious metals, coal, construction, and equipment leasing industries. With the exception of Hudson Bay, all of Inspiration's holdings were located in the United States.

In the mid-1980s, Hudson Bay commenced mining at the Rod location, and at Spruce Point, part of the Snow Lake complex. The company also bought the Ruttan mining property, located in the town of Leaf Rapids, Manitoba. Construction of Leaf Rapids had begun in 1971, specifically for the purpose of making it possible for the Ruttan mine to run. The first families of the town had taken up residence by the end of that year, and the mine went into operation in the spring of 1973, under the direction of Sherritt Gordon Mines, Limited.

For the first six years, open pit methods were used at Ruttan while underground reserves were developed. During this time, because metal prices were low, the Ruttan mine operated at a loss. In 1979 the open pit was closed and the shaft mine came into full production. By the mid-1980s, however, the company that owned the property was looking for ways to shut down the mine and the town. After several years of negotiation, Hudson Bay purchased this property in 1987. In addition to mining ore, the company operated a concentrator at the site, and began aggressive exploration for new copper reserves.

Also in the late 1980s, Hudson Bay entered into a joint venture, of which it owned 60 percent, to develop the Nanew Lake Mine, 70 kilometers south of the Flin Flon area. This property contained an ore body of nickel, a new product for Hudson Bay, which rested below Nanew Lake. In November 1988, Hudson Bay began mining operations at this site. Although the company's initial efforts were hampered by the unexpected presence of two bodies of water underground, necessitating the installation of pumps, by the fourth quarter of 1989 the mine was operating at full capacity.

The company removed nickel from Nanew Lake on two levels, using two different mining techniques, and brought it to the surface through a rectangular access shaft drilled on shore. Once extracted, nickel was processed in a mill at the mine site, and then trucked to a smelter in Thompson, or shipped on rail cars to a processing facility in Fort Saskatchewan.

These activities all took place at an environmentally sensitive location, since Nanew Lake itself was a clean body of water, used for sport and commercial fishing. In addition, wildlife in the area supported hunting, nearby forests were logged, and several Indian communities lived near the lake. In order to

satisfy other users of the lake, the mining operation removed the natural fish population of Nanew Lake and replaced it with rainbow trout, a more valuable fish. Hudson Bay also established an environmental overview committee, with local citizens and government representatives, to address concerns about the mine.

In 1988 Hudson Bay also expanded its operations at Snow Lake yet again, when it inaugurated an open pit mine at the Chisel Lake site. This mine produced extremely high grade zinc ore, mixed with small quantities of lead, silver, and gold. Ore was taken from the pit by truck, crushed at Chisel Lake, and then processed at the Snow Lake mill. Within two years of opening the pit had reached a depth of nearly 250 feet.

In the same way that it had sought new resources at Snow Lake, Hudson Bay moved to further exploit its Flin Flon facilities in the late 1980s, opening a mine at Callinan, which was just one kilometer away from the Flin Flon metallurgy complex. This facility had three zones, designated North, East, and South. After purchasing the remaining interest in the Callinan project in 1989, Hudson Bay built two horizontal tunnels to reach the three ore zones from the pre-existing Flin Flon South Main shaft. In the lower tunnel, underground trains hauled ore 8000 feet from the lode to a crusher under the shaft. After being pulverized, materials were hauled to the surface in bins.

By the end of the 1980s, these activities had made Hudson Bay Canada's fourth-largest copper and zinc metal mining operation. The company mined 166 million pounds of refined zinc, 127 million pounds of refined copper, and 6.7 million pounds of nickel in 1989. In addition, it produced far smaller quantities of gold, silver, and cadmium.

In the 1990s, Hudson Bay was faced with the necessity of upgrading its somewhat antiquated facilities. By this time, its corporate parent had been transformed into Minorco. This entity, based in New York, approved plans to invest C\$155 million in new smelting technology at the end of 1990. This money would be spent on the Flin Flon metal works, which badly needed modernization. With the changes to this facility, Hudson Bay hoped to move into compliance with new Manitoba environmental regulations and to improve its efficiency, increasing profits. Along with improvements to its smelter, Hudson Bay also planned to upgrade equipment at its Trout Lake Mine, installing a new shaft and ore hauling system.

In addition, Hudson Bay planned to spend C\$17 million looking for new ore deposits to feed its processing plants, a prospect made somewhat easier by forest fires, which cleared vegetation from a

large area, making mineral outcroppings easier to view. In addition, Hudson Bay brought in new executives to strengthen its operations.

In the early 1990s Hudson Bay closed two mines that had been exhausted of ore, and began to make plans to terminate operations at two more in Snow Lake. Late in 1992, the company announced that it could lay off as many as 600 employees as a result of these changes.

By the start of the following year, Hudson Bay had commenced construction of a new zinc plant, and the company announced in late January of that year that it would need additional ore reserves to feed this plant and its Flin Flon metallurgical facility. By 1994, Hudson Bay's exploration process had yielded two new mine sites, and development had commenced at Westarm, Flin Flon, and Photo Lake, near Snow Lake.

Principal Subsidiaries: Hudson Bay Exploration and Development.

Further Reading:

"Renaissance at Hudson Bay Mining and Smelting," Canadian Mining Journal, November 1990, pp. 14-17.

Source: International Directory of Company Histories, Vol. 12. St. James Press, 1996.

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