

An event of outstanding importance was the initial production of potash from the vast deposits of Saskatchewan. Elemental sulphur was also produced in greatly increased amount and is now available in quantity for export. By the development of these basic resources Canada's production base is broadened and the country's position strengthened both in export markets and in the domestic manufacturing industries.

Potash.—An event of international importance was the initial production of potash in Saskatchewan late in 1958 by Potash Company of America Limited from its property at Patience Lake, 14 miles east of Saskatoon. Another company—International Minerals and Chemical Corporation (Canada) Limited—is sinking a shaft to the potash beds near Esterhazy in southeastern Saskatchewan and expects to be in production in 1960.

Potash Company of America reached the potash bed at a depth of 3,330 feet and found the character and quality of the potash to be equal to that indicated by core drilling. No difficulty is being experienced in the mining operations. The first potash has been successfully milled and operations are to be steadily increased until the output of fertilizer-grade material reaches 600,000 tons annually.

This development culminates years of investigation that began shortly after Imperial Oil Limited first reported the discovery of potash in 1943 during exploratory drilling for petroleum. A Canadian company—Western Potash Limited (now Continental Potash Corporation Limited)—was the first to start shaft sinking but, after reaching a depth of 1,675 feet in April 1958, work was stopped for lack of funds. The total amount being expended by the two other companies is expected to be between \$50,000,000 and \$60,000,000.

Commercial production of potash is being obtained at only two other places on this Continent—at Carlsbad, New Mexico, from bedded deposits, and at Searles Lake, California, from brine. The Carlsbad deposits, which have been the Continent's main source of potash, are approaching depletion and most of the major operating companies there have acquired properties along the Saskatchewan potash belt, now believed to be the largest and the richest source of potash in the world.

The deposits occur near the top of a great bed of rock salt of Devonian age that underlies most of the prairies. The potash is at depths of from 2,550 to 7,000 feet, but is nearest the surface (2,550 to 3,500 feet) along a belt 35 to 50 miles wide and nearly 400 miles long that extends diagonally across Saskatchewan from the Manitoba border north of Moosomin, to the Alberta border near Manito Lake. Potash of economic grade is not known to extend into Alberta but it does extend for at least 15 miles into Manitoba. The predominant potash mineral is sylvite (KC1) but in the vicinity of the Quill Lakes some beds of carnallite, the double salt of potassium and magnesium, over 30 feet thick have been found. Beds of intermixed sylvite and rock salt (referred to as sylvinite) over 10 feet thick and containing the equivalent of more than 25 p.c. of K_2O are common, and some beds containing the equivalent of 40 p.c. of K_2O are reported. The thickness and richness of the potash beds exceeds anything known elsewhere.

As a result of exploration and the data obtained from about 200 drilled wells, most of the activities of the 17 companies at present investigating the potash belt are concentrated in two main areas. The first of these extends from west of Saskatoon to the Quill Lakes. In this area Potash Company of America Limited is producing. The second area is south of Yorkton in the eastern part of the province. Near Esterhazy in this district, International Minerals and Chemical Corporation (Canada) Limited is sinking a shaft to the deposits which here are 3,000 feet beneath the surface. To these two main areas of activity may be added a third near Unity where Continental Potash Corporation Limited has holdings.

In an attempt to do away with the necessity of sinking a shaft costing from \$3,000,000 to \$4,000,000 through soft, crumbling and wet sedimentary rocks, one company is experimenting with a method of recovering the potash by a solution method. This method, if successfully worked out, would cheapen the cost of the potash and enable recovery to be made from the more deeply buried beds not considered of economic interest at the present time.