

*Alberta.*—Alberta produced 143,900,000 bbl. of crude oil in 1956, an increase of 27.3 p.c. over 1955. Many exploratory wells were drilled in the western part of the Province during 1956, particularly to test the oil and gas potential of Upper Cretaceous, Lower Cretaceous, Mississippian and Devonian formations in and near the deep Alberta Syncline of western Alberta. Two-fifths of the successful exploratory oil wells found production in Upper Cretaceous formations and one-quarter in the Lower Cretaceous; Mississippian and Devonian oil discoveries together accounted for one-quarter of exploratory successes. Triassic and Pre-Devonian wells made up the remainder. Whereas oil reserves were formerly largely confined to formations of Devonian age, an important oil reserve diversification is now developing throughout the geological sequences of the Western Canada sedimentary basin. The Cardium sand of Upper Cretaceous age, which is being extensively developed in the Pembina field southwest of Edmonton, was found to be productive in 1956 at such widespread locations as the southern part of the Peace River area 175 miles north of Pembina, and at Crossfield 18 miles north of Calgary. Another important exploratory event in 1956 was the drilling of the Union Red Earth 12-17 well, 85 miles east-northeast of Peace River town. Much land was taken up in northern Alberta and Saskatchewan following the drilling of this well and the search for oil in the "Granite Wash" formation overlying the Precambrian basement rocks is under way.

Oil-field development proceeded actively in Alberta during 1956 with the Pembina field continuing to account for a large share of the work. This field is now Canada's largest oil producer and one of the major oil sources of North America. At the end of 1956 it had 1,680 wells compared with 808 a year previously. The South Sturgeon Lake field in the Peace River area, the Joffre and Bentley fields near Red Deer in central Alberta, and the Harmattan field near the Sindre and Westward Ho fields northwest of Calgary were the other most actively developed fields in Alberta during the year. Pipeline transportation facilities were completed for these fields in 1956.

Particular attention was paid to oil conservation measures in several oil fields during 1956. In the Pembina field, water injection operations were commenced to ensure a greater ultimate recovery than would be possible by relying only on the primary producing energy in the oil reservoir. The pressure maintenance technique being used is designed to arrest reservoir pressure declines and may provide for the recovery of an additional 560,000,000 bbl. of oil in addition to the 520,000,000 bbl. of primary recoverable reserves in the field as it is now known. Secondary recovery methods are also in use in the Golden Spike, Leduc-Woodbend, Redwater, Westrose and Turner Valley fields. Close supervision of all oil fields in Western Canada is maintained by the Provincial Government to ensure that field operating procedures are in accordance with the best conservation practices.

In 1956, 134 gas wells were completed successfully. Fifty-four of these were field-development wells and the remainder, exploratory. In the past, large gas reserves were developed at the Pincher Creek, Savanna Creek, Jumping Pound, Sarcee, Harmattan-Elkton, Homeglen-Rimbey, Windfall and Chinook Ridge fields and current exploration programs continue to confirm the prospects for a large natural gas reserve growth in western and northwestern Alberta. Twelve of the natural gas discoveries made in 1956 immediately indicated reserves of 10 billion cu. feet or greater. Most of these are on the western side of the Province. Large reserves have also been built up in the plains region of the eastern half of the Province at such fields as Princess, Bindloss, Cessford, Provost and Nevis where relatively shallow drilling is an incentive to continuing search. The recent successful exploratory and development drilling throughout Alberta raised natural gas reserves from 15,600 billion cu. feet in June 1955 to 18,300 billion cu. feet by September 1956.

The present magnitude and rate of growth of natural gas reserves will ensure adequate supplies for Alberta as well as for the Trans-Canada gas pipeline project. Current reserves are estimated at four times the 20-year requirements of the Trans-Canada project.

A number of Alberta's fields produce "wet gas" and during 1956 the daily capacity of natural gas processing facilities was increased from 331,000,000 to 401,000,000 cu. feet. Ten processing plants were in operation in 1956 and a gas-cycling and sulphur-recovery plant was placed on stream in the Pincher Creek gas field early in 1957.