OIL SURVEY
IN THE PEACE RIVER DISTRICT.

In that portion of British Columbia which lies east of the Rocky Mountains, known as the Peace River District, there is a great area of country similar in geology and topography to the foot-hill country of Alberta. The Alberta foot-hills have in them coal of good quality and large extent, also a few oil-wells, numerous gas-seepages, and some oil-seepages and residues.

It seems not unlikely that these conditions of coal and oil occurrence may be found in the British Columbia portion of the Peace River District, where the Lower Cretaceous strata, which bear these minerals in Southern Alberta, occur under the same conditions. Hence it was considered advisable to place a reservation on these minerals for such a time as may be needed to make some examination of these lands.

For many years there has been an expectation that commercial bodies of oil will be found at some places along the belt of foot-hills which stretches from the boundary of Southern Alberta north-north-westward to and beyond Peace River, or in the plains which lie some distance to the east of the foot-hills.

The occurrence of oil-seepages in Southern Alberta and at places along the basin of Mackenzie River, besides the great outcropping of tar-sands on Athabaska River and tar-springs on Lower Peace River, gave evidence that this great stretch of country was, at least potentially, oil-bearing if suitable structure of the rocks would permit it to accumulate in commercial quantities; such conditions induced the Imperial Oil Company to employ twenty geologists during the season of 1919 and spend half a million dollars on it.

The recent activity in 1913-14 in oil lands in Southern Alberta was caused by finding a light oil, almost a gasoline, in the Dingman well near Black Diamond, thirty miles south of Calgary, in 1913. This Black Diamond field has five wells producing in all fifty barrels a day during the year 1918. A great extent of country was then more or less examined, and holes were put down to depths of 1,000 to 4,000 feet.

The lack of good results is due chiefly to misplaced drilling, often in broken ground, often on wrong structure of the strata, and at places where the oil-bearing strata were beyond the reach of a drill.

Later some activity was shown in the districts east and north of Edmonton, where the assumed oil-bearing strata are within drilling distance, as on Lower Athabaska and Lower Peace River. The results at these places are small amounts of a thick viscous oil from Lower Cretaceous strata which are almost flat-lying.

Within the past year some great oil corporations have interested themselves in this Western and Northern Alberta field; one of which corporations sought concessions in order to examine and develop; the other carried on an investigation of it at great expense during the past summer, and is now drilling and preparing to drill at places as far apart as Southern Alberta and in the Mackenzie River basin.

Such being the conditions to the south, the east, and the north of the Peace River District in British Columbia, it appeared worth while to at least make a reconnaissance of it, similar to such work as was being done along the same foot-hill belt by the Imperial Oil Company.

Before describing the work done within the British Columbia boundaries, north and south of Upper Peace River, it is necessary to give an outline of the general geology in relation to oil-bearing possibilities, also to understand the conditions which are favourable to the origin and retention of oil.

The geological conditions and structure of Western Alberta and the Peace River District are very similar, all the way from the Montana boundary to the Liard River, a distance of over 800 miles, 400 of which are in British Columbia.

There is the same upthrust and overthrust of the Palæozoic rocks of the Rocky Mountains front ranges, which crumpled up the overlying Cretaceous formations and caused the foot-hills,