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G. B. Morgan
State Geologist
Cheyenne, Wyoming.

SOME OIL PROSPECTS IN LARAMIE BASIN AND PRESENT DEVELOPMENT.

In view of the fact that there is considerable drilling activity in the Laramie Basin, to the west of Laramie and between Laramie and the Rock Creek field, a short description of the areas involved and the operations thereon may be of interest to the public.

Cooper Cove or Basin.

Cooper Cove is located in the southwest corner of T. 18 N., R. 77 W., and the southeast corner of T. 18 N., R. 78 W., about twelve miles southeast of the Rock Creek field and about thirty miles northwest of Laramie. It is a small natural basin practically surrounded by low hills to the north, east, and south, and the foot hills of the Medicine Bow Range to the west.

The floor of the basin is nearly level and is crossed in a northeasterly direction by Cooper Creek. The exposures in the surrounding hills show the Mesaverde sandstones and light colored shales and the dark shales of the Steele formation (Montana Group). No detailed study of the structure was made, but it is believed to be on the same general fold with the Rock Creek Structure.

Development has been going on for some time in this area, but as yet no wells have reached the oil producing sand. The Utah

Oil Refining Company of Salt Lake is operating, and work is now being done on the fifth well, which is 230 feet deep. The other four wells were abandoned for different causes. The deepest well, drilled to a depth of 1800 feet, encountered some gas at 1500 feet. The new well is located on the SW $\frac{1}{4}$ Sec. 30, T. 18 N., R. 77 W.

James Lake.

The James Lake structure is located in T. 18 N., R. 75 W., and T. 17, N., R. 75 W., about three or four miles east of James Lake and about eighteen miles northwest of Laramie. Topographically, the area presents a gently rolling surface which consists mostly of alluvium and terrace deposits. The Steele shale outcrops in a few places and the Mesaverde formation is prominent to the north and northwest. The Cactus Petroleum Company is drilling in the SE $\frac{1}{4}$ Sec. 32, T. 18 N., R. 75 W., and the hole has reached a depth of about 1600 feet or more. A thin, hard sand was struck at a depth of 1565 feet and a small showing of oil was reported. The pay sands are expected at about 2600 feet and 3500 feet. If the structure proves to be oil-bearing, a rather large producing area may be expected, owing to the slight dips of the strata and the width of the structure. The axis of the anticline appears to bear nearly north and south.

Two Rivers.

The Two Rivers anticline, lying about five or six miles east of the James Lake structure, is apparently a parallel structure, as it has a nearly north and south axis. It is located in the southwest portion of T. 18 N., R. 74 W.,

and the northwest portion of T. 17 N., R. 74 W. The Steele shale is exposed along the north bank of the Laramie River, which crosses the anticline in a westerly and northwesterly direction. This area is somewhat lower stratigraphically than the James Lake field. The Ohio Oil Company has spudded in a well in the SW $\frac{1}{4}$ Sec. 33, T. 16 N., R. 74 W.

QUEALY, REX LAKE, and MILLBROOK.

The Quealy area is located in the northwest part of T. 17 N., R. 76 W., and the northeast part of T. 17 N., R. 77 W. The Western Holding Company has a rig on the NE $\frac{1}{4}$ Sec. 3, T. 17 N., R. 76 W., west of James Lake.

The Rex area is located in the southwest part of T. 16 N., R. 76 W., and the southeast part of T. 16 N., R. 77 W. There are no operations at present in this district.

The Millbrook area is located in the northeast part of T. 16 N., R. 76 W. The Associated Oil Company has a rig on the SE $\frac{1}{4}$ of Sec. 11 of this township.

No information is available at this time as to the extent or trend of the above structures, the surface of the region being almost entirely covered by alluvium and terrace deposits. The Mesaverde formation outcrops in places to the north, west, and south of James Lake, and the Steele shale is exposed to the southeast thereof (Quealy section). Both formations are exposed along Mill Creek in the northern tier of sections in T. 16 N., R. 76 W. (Millbrook section), and the Mesaverde outcrops in the Rex Lake area. The horizons exposed on the surface indicate the necessity for deep drilling in these townships.

Lake Hattie.

The Lake Hattie anticline is located in the southwest part of T. 15 N., R. 76 W., the northwest part of T. 14 N., R. 76 W. and the southeast corner of T. 15 N., R. 77W., and the axis extends in a northeasterly direction from about the southwest corner Sec. 6, T. 14 N., R. 76 W. The structure abuts against the Sheep Mountain fault on the west and southwest, and this fact may have considerable bearing on the chances for oil, as the structure appears to be plunging to the northeast and the fault may possibly act as a seal for the oil to the southwest, or in other words, the fault may close the structure, which, however, is very problematical. The Centennial Valley Oil Company is drilling a well near the northwest corner of Sec. 29, T. 15 N., R. 76 W. The well is down about 500 feet or more in the Steele shales.

Sodergreen.

The Sodergreen structure is located in Secs. 21 and 28, T. 14 N., R. 76 W., and appears to be a small, narrow anticline with the axis running northeast and southwest. The Niobrara formation outcrops on the surface on the east and west flanks of the structure and the upper Benton outcrops across the axis. A well is being drilled by the Producers and Refiners Corporation in the NE $\frac{1}{4}$ Sec. 28, T. 14 N., R. 76 W. It is about 1100 feet deep and is probably very close to the sand.

Big Hollow.

The Big Hollow field lies mostly in T. 15 N., R. 75 W. The east Big Hollow, or Spindletop structure, takes in the north-

east part of this township, extending into the southeast of T. 16 N., R. 75 W., the southwest of T. 16 N., R. 74 W., and the northwest of T. 15 N., R. 74 W. The Wyoming Spindletop Oil Company is drilling in the SW $\frac{1}{4}$ Sec. 32, T. 16 N., R. 74 W. This well has reached a depth of 1300 feet. A little dead oil was found in the first sand at 700 feet and some gas at 1,100 feet. In Sec. 12, T. 15 N., R. 75 W., the Kasoming Oil Company abandoned its well in the southeast of the southeast quarter at a depth of 1,440 feet. Water was found in both the Muddy and Cloverly sands. In spite of this fact, the Steffin Syndicate is drilling in the SW $\frac{1}{4}$ of the same section in the belief that the Kasoming well was too far down on the structure. Steffin's well went through the Frontier sands at 480 feet with no oil showing. A comparison of the logs of the two wells indicates that the new well is from sixty to eighty feet higher on the structure.

The Big Hollow dome proper occupies the west part of T. 15 N., R. 75 W., and extends into the east part of T. 15 N., R. 76 W. A number of shallow wells drilled several years ago in the south half of Sec. 6, T. 15 N., R. 75 W., indicates the possibility of small production of heavy oil from the Harris sand at about 900 feet, but no attempt was made to market the oil, probably on account of limited production and inferior

quality. A well is being drilled at the present time by the Apex Refining Company in the SE $\frac{1}{4}$ Sec. 6, and is now 1,490 feet deep with a showing of oil at 1,300 feet. The Big Hollow Drilling Syndicate is operating on the northwest of the NE $\frac{1}{4}$ Sec. 18 of this township. This well is near the Muddy sand, which should be reached at a depth of about 900 feet. A good showing of oil was found in the Harris sand at a depth of 781 feet. Presumably this well will test out the lower sands in the northern portion of the field. In the south end of the field, or the Murphy dome, the Kasomingg people were unfortunate in their well on the NW $\frac{1}{4}$ Sec. 32, T. 15 N., R. 75 W., as water was found in both the Muddy and Cloverly sands.

As before stated, the final test of the Big Hollow district will be the well on Sec. 18.