Starting in the lower part of the Tate formation of the upper Ordovician, the well penetrated 418 feet of argillaceous limestones and shales of upper Ordovician, Maysville, Eden, and Cynthiana groups; 191 feet of middle Ordovician, Lexington limestone; 561 feet of lower Ordovician, Wells Creek dolomite; 2,936 feet Cambro-Ordovician dolomite probably more or less equivalent to the Knox arch. Starting in the lower part of the Tate formation of the upper Ordovician, the well penetrated 418 feet of argillaceous limestones and shales of upper Ordovician, Maysville, Eden, and Cynthiana groups; 191 feet of middle Ordovician, Lexington limestone; 561 feet of lower Ordovician, Wells Creek dolomite; 2,936 feet Cambro-Ordovician dolomite probably more or less equivalent to the Knox arch.

The California Company’s E. W. Beeler No. 1, located 1 mile southwest of Campbellsville, Giles County, Tennessee, reached the total depth of 5,750 feet, stopping in granite, probably pre-Cambrian in age. This well is on a prominent local closure on the southwestern extension of the axis of the Nashville dome. Starting in limestone of the Carters formation of the middle Ordovician, this well penetrated 660 feet of middle Ordovician, Black River-Stones River limestone; 66 feet of lower Ordovician, Wells Creek dolomite; 4,371 feet of Cambro-Ordovician dolomite probably correlative of the Knox and Bibb-Ketona-Brierfield groups; 338 feet of Cambrian calcareous and shaly dolomite; 77 feet of quartzite and quartzitic sandstone, Cambrian or pre-Cambrian in age; and 45 feet of granite.

The district includes the area from Muskegon, north to Manistee, west to Cadillac, and south to the vicinity of Big Rapids. The area is fortunately situated as regards transportation facilities, being served by four Lake Michigan ports and a network of railroads and highways. Although one of the major pools of the state, the Muskegon pool, was discovered in this district in 1927, the area apparently was not very attractive to the operating companies and development until recently has been slow. Other fields in the district are Hart, discovered in 1932 but now abandoned; Ravenna gas field in 1936, Dalton in 1940, Stony Lake in 1946, and Kimball Lake in 1947. All oil fields produce from the Traverse (Devonian) limestone; Muskegon also produced from the Dundee (Devonian) limestone. The Ravenna gas field produces from the “Berea,” a sandy limestone member of the Ellsworth (Mississippian) formation.

Stony Lake field, Oceana County, was discovered in December, 1946, by the Carter Oil Company. During 1947 the field was expanded to 26 wells which, by November 1, had produced approximately 275,000 barrels of oil. The field has been developed on a spacing pattern of one well to each 40-acre unit, with wells drilled in the northeast corner of each unit. The Kimball Lake field, Newaygo County, discovered by the Sun Oil Company in February, 1947, had produced by November 1, approximately 675,000 barrels of oil from 82 wells. The field is being developed on a diagonal 20-acre pattern; the wells are drilled in the northeast and southwest corners of 40-acre units. Both fields were located by core drilling. Their discovery has resulted in a renewal of interest and vigorous exploration in western Michigan.

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The discovery of the Howell gas field, Livingstone County, Michigan, with gas production from the base of the Salina formation and the top of the Niagara group, has added to the interest in the possibility of commercial production from these rocks in other areas in the Michigan basin. Gas and oil have been produced from the Cataract formation and Niagara group in fields in southwestern Ontario for many years, and showings of oil and gas were reported in Niagara rocks penetrated by wells in various areas in Michigan.

Cataract rocks of lower Silurian age and Niagara rocks of middle Silurian age occur in the subsurface in the Michigan basin, and they crop out, or underlie glacial drift, around the margin of the basin. The rocks are exposed in places in the Northern Peninsula of Michigan, eastern Wisconsin, northeastern Illinois, northern Indiana, northwestern Ohio, and southwestern Ontario, Canada.

The Cataract formation which includes the “White Medina” and “Red Medina” gas-producing sandstones in Ontario west of Niagara River, is 45-190 feet thick in the Michigan basin. The Cataract is represented by dolomite and shale in the Michigan basin, and sandstones of the eastern facies are absent.

The Niagara group of the Michigan basin is composed almost entirely of dolomite, with some chert and shale in places. Shale, which grades laterally into dolomite, occurs in the group in northern Indiana. The lower part of the Niagara in eastern Michigan and the Northern Peninsula of Michigan...