RAINBOW CITY FIELD, UNION COUNTY, ARKANSAS

Drilling activity late in 1927 in the Champagnolle district of northeastern Union County, Arkansas, which discovered a new pool of oil and gas, later named the Rainbow City field, has subsequently uncovered interesting geological conditions.

In this field are two producing horizons which according to our present understanding of the stratigraphy are in the Trinity group of the Comanche series (Lower Cretaceous). Owing to the character of the strata, which consist mainly of non-fossiliferous red clays and light-colored sands, it is difficult to recognize any definite horizon throughout the area.

The upper sand at about 2,900 feet in depth produces small quantities of oil of about 27° Bé. gravity and the lower sand at about 3,100 feet in depth, the principal horizon, produces oil of about 35° Bé. gravity.

A striking difference in conditions is shown between the Magnolia Petroleum Company’s Carroll No. 1 well, in the SE. corner of SW. 1/4, NE. 1/4, Sec. 1, T. 14 S., R. 11 W., and the Ohio Oil Company’s Crain No. 1 well, 330 feet south and 430 feet east of the center of Sec. 1, T. 14 S., R. 11 W. The Magnolia well produces 35° Bé. oil from a depth of 2,982 feet and the Ohio well 27° Bé. oil from a depth of 2,095 feet.

The marked difference in the character and gravity of the oil coming from approximately the same depths indicates faulted strata, but with the data available at this time, structural conditions are indeterminate.

On June 4, 1928, the daily production from the Rainbow City field was 34,301 barrels obtained from 16 wells located in Sections 1, 2, 10, 11, and 15, T. 14 S., R. 11 W.

The following analyses made by the Laboratory of the Kettle Creek Refining Company, El Dorado, Arkansas, indicate the character of the asphalt-base and the paraffin-base crude from practically the same subsea depth.