PETROLOGY AND DEPOSITIONAL ENVIRONMENT OF THE MITCHELL MEMBER, RODESSA FORMATION (LOWER CRETACEOUS) WEST BRADLEY FIELD, LAFAYETTE COUNTY, ARKANSAS

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ABSTRACT

Previous studies of the Lower Cretaceous Rodessa Formation in South Arkansas have interpreted it as near shore/transitional marine. Many of the Rodessa members are hydrocarbon productive horizons. Cores from the Sun Whittington wells and Lake Ronel Oil Company wells in and near the West Bradley field, Lafayette County, Arkansas were studied to identify a model for deposition of the oil productive Mitchell sand interval. The Mitchell is sandwiched between the upper Gloyd Member and the lower Gloyd Member of the Rodessa Formation. These two limestone members are productive in other areas of the Ark-La-Tex.

A thorough investigation of the sands, using core samples, geophysical log correlation and drilling reports combined with thin section, scanning electron microscopy and X-ray diffraction work yields data necessary for establishing the nature of deposition. This information will promote interest in, and further development of the hydrocarbon potential of the Mitchell Member in the Ark-La-Tex.

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