

NOTES

Abstract:

Effects of Contemporaneous Structural Movement on the Sedimentation at Thornwell Field, Jefferson Davis and Cameron Parishes, Louisiana,*
by Frank R. Hardin¹

The Lower Miocene producing trend of Southwestern Louisiana is one of the more prolific gas producing trends of the Gulf Coast Province. Thornwell field is located along this trend in Jefferson Davis and Cameron Parishes. The field was discovered in 1942 by Cities Service Oil Company which produced gas and condensate from a Planulina palmerae sand between 9,600 and 9,700 feet. After this shallower production was depleted Pan American and Austral Oil drilled deeper test wells and discovered gas and condensate in the Discorbis gravelli, Marginulina vaginata, Marginulina howei and Miogypsinoidea "A" sand sections.

The stratigraphic section penetrated in this area consists of sands and shales of varying thickness. This thickness depends on the location with reference to contemporaneous faulting where present and large structural features when the faulting is not present. The contemporaneous faulting appears not to be present on the Thornwell structure prior to Camerina time and the thickness of the older section is dependent on the structural position on the dome. After the beginning of Camerina time contemporaneous movement was taking place and the structurally high fault blocks have thin stratigraphic sections with poor sands and the section becomes thicker and the sands better in each successively lower fault block.

The Thornwell field produces from domal type structure with a complex fault pattern consisting of a large normal northeast striking fault that branches into smaller radial faults as it enters the field from the Southwest. The structurally higher fault block is the northwesterly block and each block becomes successively lower around the structure in a clockwise direction.

The Thornwell field has not been sufficiently drilled to determine its true reserves. Production has been established in six sands, most of which have not been tested or developed on the south side of the structure because of the extreme depths. The Cibicides hazzardi and Marginulina texana sections have only been penetrated in the structurally highest fault block where no sands were found. Both of these sections may possibly have productive sands in the lower fault blocks if they can be reached by the drill.

(See map on the following page.)

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¹Consulting Petroleum Geologist, Houston, Texas

