POSTER SESSION

Petroleum Geology of Block 2, Offshore Congo Basin, Angola

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The major basins of Angola include the oil producing Congo and Kwanza Basins and the non-producing Benguela and Namibe Basins. Block 2 is located within the offshore portion of the Congo Basin which extends southwards from the Cabinda area to the Precambrian Ambrizete Spur, a basement high that marks the boundary between the Congo Basin and the Kwanza Basin. Dolomitized Albian-age Pinda formation carbonates are the primary reservoirs within Block 2. Tertiary (Eocene and Oligocene) turbidite sands are also locally oil-bearing on Block 2.

Northwards trending listric and antithetic faulting has resulted in a variety of oil-trapping structures including simple rollovers and horst blocks. Salt rafting and down-to-the-basin (westwards) gravity sliding of Pinda "rafts" has resulted in a number of oil fields consisting of separated blocks of Pinda carbonate with variable oil-water contacts. Texaco (operator) and its partners, Sonangol, Braspetro and Total have recorded 3D seismic over all of the fields in Block 2 in order to optimize management of the Pinda and Tertiary reservoirs. Extensive core coverage has been obtained to develop a full understanding of the depostional environment and reservoir characteristics of the Pinda reservoirs.

Lombo East is an example of a Block 2 field producing from the Pinda formation. This field has produced over 80 million barrels of 40 degree API crude since its discovery in 1984. The Lombo East "raft" has a closure of 1600 acres, vertical relief of 250 meters and an oil column of 130 meters. The reservoir is a high-energy shoal facies with vugular porosity ranging between 15 and 20%. The Essungo field is the only field on Block 2 which produces from the Tertiary. Essungo was discovered in 1975 and has produced 30 million barrels of oil to date. Sand deposition is interpreted to have occurred in a deep-water environment. The average porosities within the field range from 16 to 22% and oil gravities vary between 32 and 39 degrees API.