MEETINGS

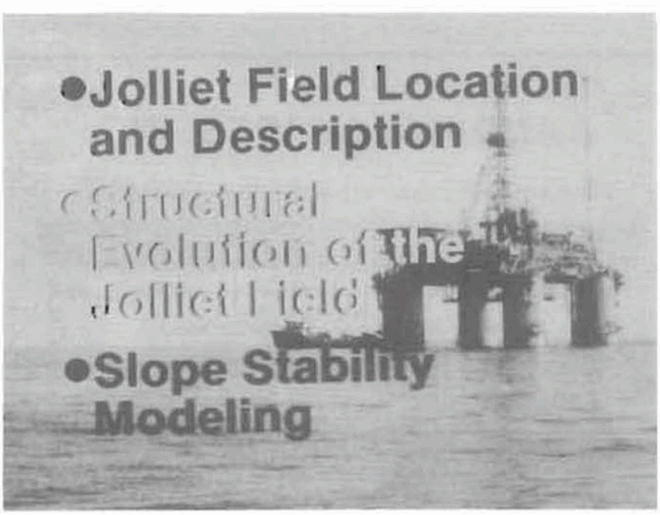
HGS DINNER MEETING—SEPTEMBER 10, 1990

DOUGLAS J. COOK—Biographical Sketch

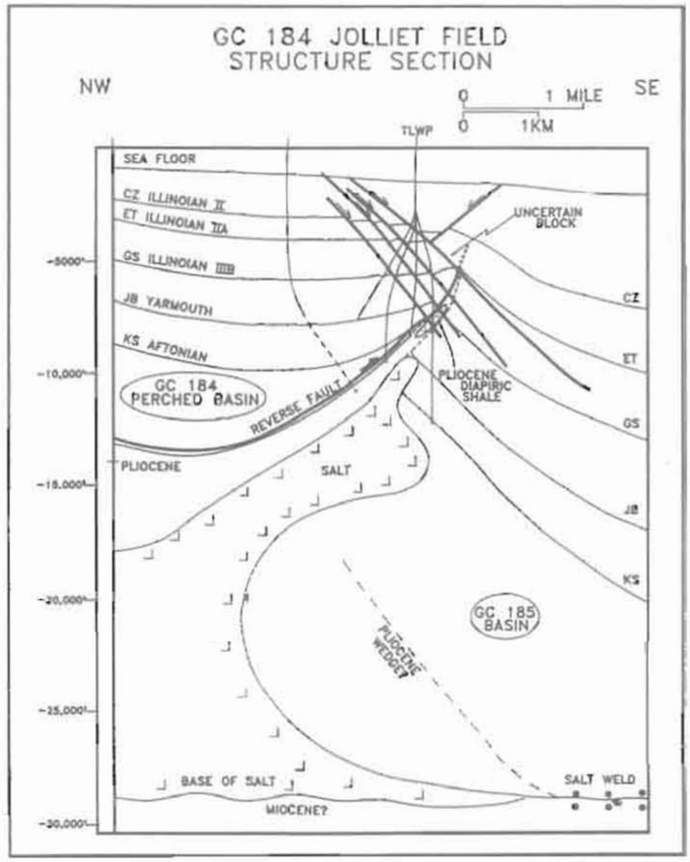
Mr. Cook received his B.S. Degree in Oceanography from the University of Michigan (1976) and a M.S. Degree in Geology from the University of Florida (1984). Since 1984 he has held a position with Conoco and is currently a Sr. Geologist involved with U.S. Gulf Coast area onshore and offshore exploration and exploitation. In 1986, he became responsible for the geological development of the deep water Jolliet Field. This work involved a career highlight of participating in research submarine dives to 1900 ft. to sample oil and gas seeps, hydrocarbon biodegrading organisms, and associated sea floor carbonates. Mr. Cook is a Volunteer Naturalist and Exhibit Diver for the new Aquarium of the Americas in New Orleans. He is an active member of the American Association of Petroleum Geologists and the New Orleans Geological Society.

JOLLIET FIELD DEVELOPMENT, STRUCTURE, AND STRATIGRAPHY - A DEEP WATER MILESTONE, GREEN CANYON, GULF OF MEXICO, OFFSHORE LOUISIANA

The Jolliet Field is believed to be the first development in the offshore U.S. Gulf of Mexico to exploit a major reverse fault trap. With the world's first tension leg well platform (TLWP) set in 1760 ft. (536 m.) of water on the upper continental slope, the field has also set a water depth record for a production platform.



The field's multiple stacked reservoirs consist of unconsolidated Pleistocene lowstand fan grain flow, debris flow, and turbidite deposits. Regionally, the area is structurally dominated by four major salt diapirs. The field is structurally complicated by an underlying salt ridge, a major syndepositional reverse fault, and late normal faults.



Reverse fault documentation includes 3-D seismic interpretation, repeated paleontological markers, prediction and correlation of up to 3000 ft. (914 m.) of repeated pay section, as well as slope stability computer modeling. One well repeated 18 of 23 known reservoir sands in the subthrust. However, syndepositional movement along the fault created an expanded subthrust section relative to the paleohigh of the overthrust section.

A structural model is presented suggesting that the reverse fault developed at the toe of a major salt flank growth fault. The fault was initiated during the Lower Pleistocene as the sediment slope was diapirically oversteepened. The resultant failure surface was cylindrically constrained by salt at its lateral limits and by higher density Pliocene shale at depth. This model is supported by slope stability computer modeling using realistic sediment strengths, densities, and pore pressure gradients.