

The Mahogany Subsalt Discovery: A Unique Hydrocarbon Play, Offshore Louisiana

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Phillips Petroleum Company, in partnership with Anadarko Petroleum Corporation and Amoco Production Company, have announced a significant discovery at the Mahogany subsalt prospect, located on Ship Shoal Blocks 349 and 359, Offshore Gulf of Mexico. The Mahogany #1 (OCS-G-12008) was drilled in 375' of water to a depth of 16,500' and tested both oil and gas below an allochthonous salt sheet. The well flowed 7,256 BO and 9,900 MCFGPD on a 32/64" choke at 7,063# FTP. The #2 delineation well (OCS-G-12008) was drilled from the same surface location to a depth of 19,101" MD (18,572' TVD). A different zone in this

well was tested during July, 1994 and flowed 4,366 BO and 5,315 MCFGPD on a 20/64" choke at 6,287# FTP. These flow rates suggest that high sustainable production rates can be expected, and they are confirmed by rock property studies and detailed well log analysis. A third well (OCS-G-12010 #2) was spudded during September, 1994.

Limited geological and geophysical interpretations of the structural and stratigraphic framework at Mahogany will be previewed along with the overall impact of the discovery for subsalt exploration in the Gulf of Mexico. Depositional environments and reservoir parameters in productive sand-

stone intervals have been defined using well log imaging. Unique log responses in some sands will be examined using new pay confirmation techniques. Structural and rheological aspects of the thick salt sill will be addressed, using selected examples of rotary sidewall cores and data on an anomalous "gumbo" shale directly below the salt, which contributes to the understanding of lateral variations at the base of the allochthonous salt.



Holly Lanan Harrison

Biographical Sketch

Holly Lanan Harrison is an associate geologist for Phillips Petroleum Co. in Houston, Texas. Holly received a B.S. in geology from the University of Delaware in 1978 and an M.A. in geology from the University of Texas at Austin in 1981. After joining Amoco Production Company in Denver, she worked on the Cretaceous and Paleozoic in foreland basins of Wyoming and Colorado. In 1984, Holly worked CO₂ enhanced oil projects in central Wyoming and other tertiary development programs. She transferred to Houston with Amoco in 1987.

Holly generated sub-granite prospects in Montana for Phillips Petroleum beginning in 1989 before moving to the subsalt play of the Gulf of Mexico in 1991. Holly was the project geologist for the Mahogany subsalt discovery. She presented this paper at the 1995 AAPG Annual Convention in March.