

**AAPG International Conference  
Barcelona, Spain  
September 21-24, 2003**

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**Hydrocarbon Charge in Deepwater Nigeria - An Evolving Story**

Prior to the initial discoveries in deepwater Nigeria, basin modeling provided support for exploration by indicating that the stratigraphic equivalent of the effective onshore and shelf source rock, the Akata Shale, could be extended. Piston core studies also confirmed the presence of an effective source rock by revealing thermogenic hydrocarbon seepage, although such studies could not confirm the presence of commercial hydrocarbon volumes.

With the drilling of wells and the discovery of commercial and sub-commercial oil, a more detailed analysis of the petroleum system was undertaken. The geochemical character of the recovered oils established that the deepwater petroleum system(s) is not simply an extension of the shelf and onshore systems. The deepwater oils seem to be either older and/or less terrestrially influenced than the proximal source rock system(s). The data also indicate that, just as observed in the proximal portion of the Niger Delta, a number of discrete sub-basins exist, each yielding a slightly different oil-type. Although the effective source was not recovered, the data confirm that the source and reservoir are disassociated. The oils appear thermally more mature than the reservoirs that contain them.

The geochemical character of the hydrocarbons and more detailed basin modeling reveal a complex migration and filling history for many of the accumulations. A number of fields appear to have formed through multiple discrete hydrocarbon charging events rather than as a result of continuous flow. Multiple charging events are indicated by internal inconsistencies in the oil resulting from differing degrees of biodegradation experienced by the various oil fractions. Such histories imply that fault systems act intermittently as conduits within portions of the basin.