

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

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Distal Incised Valley Deposits- Starfish Field, Offshore East Coast Trinidad

The Starfish-2 well was drilled in 1999 in joint partnership by British Gas and Texaco. The well is approximately 10km northwest of the Dolphin field where Texaco drilled the Dolphin-1 discovery well in 1976. The reservoir intervals of the Starfish field are Pleistocene in age and thought to be dominantly marine in origin with influence from the Proto-Orinoco delta. The delta was responsible for the deposition of a remarkable thickness of sediment during the Pleistocene, with subsequent marine reworking of these sediments. Core from the E-0 sand demonstrated that while this overall model is correct there are discrete estuarine successions produced during the late lowstand and early transgressive systems tracts of higher order cycles. These successions can form significant reservoirs but are below seismic resolution and are difficult to discern on log data.

In the E-0 sand the gamma ray log character 'cleans-up' but this does not represent a shallowing trend but actually deepening. The core evidence demonstrates tidal influence and trace fossils indicative of a brackish environment near the sequence boundary. The sequence boundary becomes conformable at this position on the shelf. The fine-grained shale laminae that create a 'shalier' gamma ray response are produced by slack-water conditions and neap tides. Above the brackish succession the sediments have been winnowed of fines by wave action, indicated by hummocky cross stratification. This represents the beginning of the marine transgression with deposition of re-worked shoreface sands across sediments of the distal incised valley system.