

**SG03****3D Seismic Facies Analysis of Pleistocene Deltaic Reservoir Complexes in the Columbus Basin, Offshore Trinidad**

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**Abstract**

The Columbus Basin, offshore Trinidad, represents a world class depositional basin which contains over 40,000 ft of Plio/Pleistocene sediment. Progradation from the Proto-Orinoco during the Pleistocene began in the Tertiary with progressive easterly deposition into the Columbus Basin which further became influenced by extensional and compressional tectonics. Productive areas within the Basin are confined within thick sandy sedimentary sections. However in the SW Block 5b area of the Basin the prograding delta is at the most distal position in the BP-AMOCO's leases.

3D seismic facies and sequence analysis was applied in the SW section of Block 5b to better define the depositional environments and reservoir play analysis in a distal shelf setting. At least 7 different target horizons over an 8000 ft interval were identified and mapped within a major fault block. Gross depositional settings were generated for each interval using facies associations between individual clinofolds assisted by results from seismic facies classification from neural network technology. 3 D seismic amplitude extraction and facies classification revealed a distal shelf/shelf edge delta that transitions to an upper slope setting with depth with evidence of complex interactions within the shelf edge environment. The results from the evaluation allowed for better estimation of the environment of deposition, reservoir distribution, and an estimation of reservoir characteristics .

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