WORKSTATION APPLICATIONS IN SAMAAN FIELD DEVELOPMENT, TRINIDAD AND TOBAGO, WEST INDIES

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ABSTRACT

Samaan Field is located approximately 30 miles (48.3 km) off the coast of Trinidad, West Indies. The field was discovered in 1971 with production commencing from Pliocene age sandstone reservoirs in 1972. Production from three platforms (47 wells) reached a peak production of 65, 000 BOPD in 1976 with current field production of around 15,000 BOPD.

The structural and producing complexities of Samaan Field were recognized early in the development of the field. Subsequent drilling, after depletion of individual fault bounded sandstones reservoirs, has confirmed the influence of the structural complexities on production between and within fault blocks. Structural and engineering interpretations of Samaan Field are in a constant state of evolution as a consequence.

A 3-D seismic survey was acquired in 1986 to address the field's complexities. The survey was reprocessed in 1994 to further enhance geophysical interpretations. Geophysical interpretations of the Samaan Field 3-D survey were made with the use of a geophysical workstation. Interpreted fault planes and reservoir horizons are transferred electronically to a geological workstation where further refinements are made utilizing dipmeter data, log information, cross sections, tops information, and engineering data. The geological model of the field is developed and alternate interpretations tested to provide the most likely interpretation.

The exchange of geophysical and geological data between workstations enhances the ability to update, modify and quality control interpretations. Geologic models of the field are examined in 3-D for a clearer understanding of the structure and production characteristics of Samaan Field.