
Interpretation Case Study of 3-D Seismic Data from the Gulf of Mexico

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ABSTRACT

An interpretation of three-dimensional seismic data from Gulf of Mexico is presented as a case study. Our case study involves well logs and marine three-dimensional seismic data of a 9-sq.-mi (23.3-sq.-km) block (GB236) located at Garden Banks in Gulf of Mexico. The general objective of this paper is to present a three-dimensional interpretation of the structural and stratigraphic settings of this seismic offshore data set. The main goal is to find possible hydrocarbon prospects in this study area. Picking and mapping have been done for several horizons and fault planes. Vertical cross sections have been made at proper traverses. We have constructed a three-dimensional image of the target. Few direct hydrocarbon indicators (DHI) are identified. Three traps for possible prospects are suggested. In order to identify the possible targets, strong negative amplitude anomalies (bright spots) have been used in combination with structure closures. All the three targets have closures that depend on fault seals. Study shows that the location of hydrocarbon traps depends on depositional setting, facies type, and spatial distribution of faults.