

A Reconnaissance AVO Analysis of the Queen Charlotte Basin

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ABSTRACT

Located offshore western Canada, the Queen Charlotte Basin has always been known for its strong petroleum potential. In the late sixties, eight offshore wells were drilled with one of them having an oil show. Since 1972, however, a federal moratorium has been in effect on all offshore drilling in western Canada. Multi-channel seismic data collected in 1988, regional geologic studies, as well as recent economic factors have revived a strong interest into further exploration of the area. A reconnaissance AVO (amplitude vs. offset) analysis is being done to try and determine the nature of bright spots in the seismic data. Intercept vs. gradient cross-plotting techniques as well as synthetic traces computed from the well logs are used to help determine if these anomalies could possibly be hydrocarbon sources. Interpretation of the seismic data is difficult due to the extensive folding and faulting located in the northern area of the Queen Charlotte Basin. The complex geology causes diffractions which cross-cut the reflectors within common-depth points causing disruptions in the AVO patterns. Therefore, establishing of a "normal" AVO trend is critical to the proper assessment of AVO anomalies.