

*Paper 3***AVO behavior on seismic data from offshore Borneo**

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The use of AVO diagnostics has become a routine part of the exploration program within SSB/SSPC. As in other parts of the world, recognition of its potential use as risk reduction tool within this geographic region has led to AVO's growing role as a viable hydrocarbon detection tool. Any fully-integrated interpretation project in today's difficult economic and technical climate requires the judicious use of all available diagnostic tools, including AVO.

Calibrated by verified AVO responses over known oil and gas fields, confidence in extending the technique to untested areas grows with an ever increasing understanding of both the capabilities and limitations of its usage. AVO modeling and Gassmann substitution have provided a framework for understanding what is observed and what can or cannot be observed on seismic. Differences in rock properties, for both reservoir and sealing lithologies, manifest themselves in different ways. AVO expressions are observed to change as a function of location within the basin and along a horizon.

AVO modeling early in the seismic acquisition and processing design phase can save valuable time and money if the appropriateness of AVO diagnostic generation is assessed and planned for. Value can be added to the interpretation through the use of AVO attribute sections. Additionally, troublesome seismic to well tie discrepancies can be reconciled by using full-offset synthetics. A wealth of vendor and proprietary software products enables easy and timely analysis of both 2D and 3D data.

For optimal use of AVO diagnostics, special attention must be given to ensuring that the seismic acquisition and processing retain "true relative" amplitudes, particularly when working with older seismic data. Multiple rejection is a key processing step and must be used with caution.