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## ABSTRACTS OF PAPERS

### THE ROLE OF GEOPHYSICS IN THE DEVELOPMENT OF MALAYSIA'S PETROLEUM INDUSTRY

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Geophysics has played a major role in the development of Malaysia's petroleum industry, contributing to the discovery and development of the 32 oilfields and 4 gasfields which are currently producing 630,000 stb/day. A total of 32 PSCs, involving 40 multinational companies are presently in various phases of exploration, development and production.

The seismic method is the most extensively used method and since 1977 a total of 465,840 km of seismic data has been acquired comprising 51% 2D marine seismic, 48% 3D marine seismic and 1% 2D land seismic data. The 3D marine seismic method, first conducted in 1984, has become increasingly prominent in the exploration and development phases and in 1991 constitutes 87% of the total seismic programme for the year. Navigation and positioning systems have been developed to fulfil the crucial requirements of highest integrity, accuracy and repeatability for the surveys both onshore and offshore.

High-speed digital computers have revolutionized the geophysical (in particular seismic) data processing and interpretation. In the highly competitive data processing market, sophisticated state-of-the-art software have been developed for cost-efficiency, reliability and speed. The use of interactive interpretation workstations have greatly enhanced the quality of interpretation. Integration and interpretation of geophysical, geological and reservoir engineering data utilising computer workstation has now become a reality.

Airborne gravity, magnetic and radar surveys are the tools to provide fast and economic reconnaissance to delineate prospective areas for more detailed exploration. With the use of aircraft (fixed wing and helicopter), remote and inaccessible areas can be explored cost-effectively.

Borehole geophysics is one of the major tools in the estimation of rock properties and saturations in the reservoir. Borehole geophysics provides direct information about the substrata and enables a geophysicist to correlate and interprete the data obtained from geophysical surveys with the borehole information.



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