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GEOCHEMISTRY OF SELECTED CRUDE OILS FROM SABAH AND SARAWAK

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A total of thirty-four crude oils from eleven fields from offshore Sabah and Sarawak have been analysed and characterised using liquid and gas chromatography, and gas chromatography - mass spectrometry. The normal alkane distributions show that the oils have three different characteristics. These are;

i) normal, non-waxy crude oils

ii) high waxy (high proportion of C_{20+} n-alkanes)

iii) biodegraded (less abundance of n-alkanes relative to isoprenoids)

Biological marker distributions (i.e. steranes and triterpanes) show that the oils were derived from source rocks of terrigenous origin containing mixtures of different types of land plant organic matter including resins. Features of these distributions include the presence of relatively high concentrations of 18∝ (H)-oleanane, a number of resin derived compounds, a predominance of C_{29} normal-, iso- and dia- steranes and relatively low concentrations of C_{28} and C_{27} steranes and the absence of C_{30} steranes in all of the samples.

Source rocks for these oils were probably shales deposited in an oxidising environment, as indicated by the high pristane/phytane (>3.0) and pristane/nC_{17} (>1.0) ratios. Biological marker distributions indicate that the oils were generated from source rocks having maturity of 0.7 to 1.0% VRe which is in agreement with the low odd-over-even predominance (CPI) values (1.0 -1.2) calculated for all of the samples.