Potential for application of trace element studies in petroleum geology in Malaysia

Ramly Khairuddin, Makmal Petronas & E.V. Gangadharam, Jabatan Geologi, Universiti Malaya

Trace elements present in crude oils could come from the source materials or acquired subsequently during migration of oil to reservoirs. Trace element abundance patterns of crude oils could be used with advantage for crude-to-crude correlations and crude-to-source rock correlations. Trace elements in formation waters can throw light on the pathways of oil migration. Finally, the oil-bearing rock formations could themselves be characterised by trace element studies to clarify under favourable conditions their environment of deposition.

Elsewhere in the world trace element studies have been used in petroleum geology, and a few case histories are described to illustrate the above applications.

For the first time in Malaysia, systematic trace element studies are being initiated on crude oils in the first instance. Results of preliminary experiments in the use of neutron activation analysis and inductively-coupled plasma spectrometry methodologies are described.

Specific areas of petroleum geology in Malaysia where trace element studies could be useful are discussed.

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