Paper Number: 533

UNLOCKING NEW PETROLEUM SYSTEM BASED ON OUTCROPS, PETROGRAPHIC DESCRIPSTION AND MEASURE SECTION IN NORTH SERAYU FRONTIER BASIN

Author, A.B.[1], Turnip, P.[2] and Nashir, M.[3] Rianda,F.p.
[1]Himpunan Mahasiswa Geologi.
[2]American Association of Petroleum Geologist

A detailed lithological facies mapping has been conducted in submarine fan North Serayu Basin of Pemalang Regency,Central Java. Analysis consisted of stratigraphic analysis of outcropped Miocene Rambatan and Halang Formations which comprise of detailed measured section, thin section and depositional environment determination. Stratigraphically, Rambatan Formation is a part of North Serayu Basin as one of best source rock as shale dominated which is deposited during Middle Miocene. In order to define source rock potency, field geological mapping could be one of best method continued by laboratory analyses as thin section description.

Based on measure section and physical characteristics of lithology such as grain size, sedimentary structure, and log geometry, Rambatan Formation is dominated by shale as a potential of source rock. This is also supported by the facies modelling that shows shale was deposited in the lower sub-marine fan. The fan facies characteristic closely described by Bouma sequence that has,Tb,Tc and Tde. Tb-Tc is middle fan and Tef is outer fan-Basin floor (Bouma 1962). Stratigraphically, Halang Formation was deposited over the Rambatan Formation which is dominated by sandstone as a potential of reservoir rock and deposited in middle sub-marine. Based on DEM SRTM and field data interpretation, there is a normal fault between Rambatan Formation and Halang Formation and a syncline in Halang Formation which is potensially as trap.

The objective of the study was to determine the petroleum system characteristics and describe in model to provide an overview of the field-outcrop perspective in relationship with source rock characteristic.