

Revealing the Natural Fracture Network of the Berai Carbonate, Kerendan Field Complex, Indonesia

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Abstract

The Kerendan Field Complex is a mid-sized gas field located onshore Central Kalimantan, Indonesia. The field produces from the Oligocene Berai carbonate reservoir, an interval recognized as naturally fractured since the early phase of the exploration of the field. The economic development of the gas resources present in the Berai carbonate is highly dependent on the characterization of the heterogeneity of porosity and permeability prevailing over the field. The presence of fractures introduces a high level of uncertainty in the characterization of this heterogeneity. A detailed characterization of the origin, distribution and properties of the fractures present in the Berai carbonate reservoir was then attempted using a set of recent digital borehole image data from four wells drilled over the period 2012-2014. The dataset included processed OBMI (Kerendan-6 and Kerendan-7), processed FMI-HD (Kerendan-8) and raw and processed OMRI (West Kerendan-1). To date no evidence of fracture contribution has been noted from production data suggesting this network to be inactive.