

SARI

Lapangan “Aruna” terletak di Cekungan Sumatra Tengah dan merupakan bagian dari blok operasi milik PT. Pertamina Hulu Rokan. Penelitian ini berfokus pada reservoir Formasi Menggala bagian atas. Tujuan penelitian ini adalah untuk mengetahui fasies dan lingkungan pengendapan, mengetahui sifat fisik reservoir, serta mengetahui hubungan antara fasies dengan sifat fisik batuan, Penelitian ini dilakukan pada 15 sumur dengan menggunakan data *well log*, data batuan inti, dan data SCAL. Berdasarkan hasil analisis, terdapat 4 fasies yang berkembang di daerah penelitian, yaitu: Fasies IS (*Interbedded Shale*), Fasies CS (*Coarse Sandstone to Shale*), Fasies SC (*Shale to Coarse Sandstone*), serta Fasies MV (*Medium to Very Coarse Sandstone*). Hasil analisis dan korelasi fasies menunjukkan bahwa keempat fasies yang teramati terendapkan pada *tidal mud flat*, *tidal sand flat*, *tidal sand bar*, dan *tidal channel* dengan lingkungan pengendapan *tide-dominated estuary* (Allen, 1993). Adapun, berdasarkan evaluasi nilai petrofisika pada Lapangan “Aruna” didapatkan hasil bahwa Fasies MV – *Tidal Channel* memiliki nilai rata-rata volume shale yang paling rendah diantara fasies lain yaitu sebesar 17,3%. Disamping itu, porositas, saturasi air, dan permeabilitas paling baik di antara seluruh fasies juga ditunjukkan oleh Fasies MV – *Tidal Channel* yang memiliki nilai porositas 20,7%, nilai SW sebesar 54,3% serta nilai permeabilitas sebesar 2001 mD.

Kata kunci: *Well Log*, Fasies, Petrofisika, Formasi Menggala

ABSTRACT

“Aruna” field is located in the Central Sumatra Basin and is part of the operating block owned by PT. Pertamina Hulu Rokan. This study focuses on the reservoir of the upper Menggala Formation. The purpose of this study was to determine the facies and depositional environment, determine the physical properties of the reservoir, and determine the relationship between the facies and the physical properties of the rock. This research was conducted on 15 wells using well log data, core data, and SCAL data. Based on the results of the analysis, 4 facies develop in the study area, namely: IS Facies (Interbedded Shale), CS Facies (Coarse Sandstone to Shale), SC Facies (Shale to Coarse Sandstone), and MV Facies (Medium to Very Coarse Sandstone). The results of facies analysis and correlation show that the four observed facies were deposited in tidal mud flats, tidal sand flats, tidal sand bars, and tidal channels with a tide-dominated estuary depositional environment (Allen, 1993). Meanwhile, based on the evaluation of petrophysical values in the “Aruna” Field, it was found that the MV – Tidal Channel Facies had the lowest average shale volume value among the other facies, namely 17.3%. Also, the best porosity, water saturation, and permeability among all facies is also shown by the MV – Tidal Channel Facies which has porosity value of 20.7%, SW value of 54.3% and permeability value of 2001 mD.

Keywords: *Well Log, Facies, Petrophysics, Menggala Formation*