ABSTRAK

Penelitian ini dilakukan pada 3 sumur yang terletak di Lapangan "SM", Formasi Baturaja, Cekungan Sumatra Selatan. Cekungan Sumatra Selatan merupakan salah satu cekungan yang dikenal sangat prospektif dan potensial di Indonesia. Formasi Baturaja memiliki potensi sebagai *reservoir rock* sekaligus *trap formation,* oleh sebab itu formasi ini dapat menjadi target yang sangat potensial untuk menjadi daerah produksi. Untuk mengambangkan lapangan ini menjadi lapangan produksi perlu dilakukan peninjauan produktivitas sumur yang direpresentasikan dengan karaktersitik reservoir pada suatu lapangan minyak dan gas bumi. Studi karakteristik reservoir dilakukan dengan pendekatan analisis petrofisika.

Metode penelitian yang digunakan dalam penelitian ini yakni dengan analisis kualitatif dan analisis kuantitatif terhadap 3 sumur dengan cara analisis data *wireline log* yang divalidasi dengan data *core, mudlog, well report,* dan petrografi. Analisis kualitatif dilakukan untuk mengetahui litofasies Formasi Baturaja, menentukan *marker* sikuen stratigrafi serta menginterpretasi zona fasies lingkungan pengendapannya. Analisis kuantitatif dilakukan untuk mengetahui nilai properti reservoir berupa *volume shale* (VSh), porositas, saturasi air (SW), permeabilitas (k), serta mengetahui zona *net pay* pada sumur Lapangan "SM".

Berdasarkan analisis kualitatif diketahui bahwa Formasi Baturaja memiliki beberapa variasi litofasies yaitu *vuggy wackestone-packstone, chalky wackestone-packstone, vuggy packstone, encrust algae packstone, red algae packstone, lithic packstone, interbebbed shale-wackestone, calcareous shale,* dan *conglomerate* dengan interpretasi zona fasies lingkungan pengendapan termasuk kedalam *reef flat.* Hasil perhitungan analisis kuantitatif menghasilkan nilai properti reservoir berupa *volume shale* sebesar 0,1%-42%, porositas sebesar 8%-39%, saturasi air sebesar 3%-63%, permeabilitas sebesar 0,08-793,22 mD dan *pay zone* sebesar 4,5-222 ft.

Kata Kunci: Formasi Baturaja, Cekungan Sumatra Selatan, Analisis fasies, Analisis petrofisika

ABSTRACT

This study was conducted on 3 wells located in the "SM" Field, Baturaja Formation, South Sumatra Basin. The South Sumatra Basin is one of the most prospective and potential basins in Indonesia. The Baturaja Formation has the potential as a reservoir rock as well as a trap formation, therefore this formation can be a very potential target to become a production area. To develop this field into a production field, it is necessary to review the well productivity represented by reservoir characteristics in an oil and gas field. The study of reservoir characteristics is carried out with a petrophysical analysis approach.

The research method used in this study is qualitative analysis and quantitative analysis of 3 wells by analyzing wireline log data validated with core, mudlog, well report, and petrographic data. Qualitative analysis was carried out to determine the lithofacies of the Baturaja Formation, determine the stratigraphic sequence marker and interpret the facies zone of the depositional environment. Quantitative analysis was conducted to determine the value of reservoir properties in the form of shale volume (VSh), porosity, water saturation (SW), permeability (k), and to determine the net pay zone in the "SM" Field well.

Based on qualitative analysis, it is known that the Baturaja Formation has several variations of lithofacies, namely vuggy wackestone-packstone, chalky wackestone-packstone, vuggy packstone, encrust algae packstone, red algae packstone, lithic packstone, interbebbed shale-wackestone, calcareous shale, and conglomerate with the interpretation of the depositional environment facies zone included in the reef flat. The results of quantitative analysis calculations produce reservoir property values in the form of shale volume 0.1%-42%, porosity 8%-39%, water saturation 3%-63%, permeability 0.08-793.22 mD and pay zone 4.5-222 ft.

Keyword: *Baturaja Formation, South Sumatra Basin, Facies analysis, Petrophysic analysis*