ABSTRAK

IMPLIKASI STRUKTUR PATAHAN
IMPLIKASI STRUKTUR PATAHAN TERHADAP KARAKTERISTIK LAPISAN BATUBARA DI CEKUNGAN KUTAI BERDASARKAN DATA GRAVITASI SATELIT DAN GEOFISIKA *WELL LOGGING*

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Studi endapan batubara di Kalimantan Timur tidak terlepas dari keberadaan beberapa cekungan dan formasi, di mana salah satu cekungan terpenting ialah Cekungan Kutai. Cekungan Kutai merupakan salah satu cekungan terbesar di Indonesia yang tinggi akan potensi batubara. Pada penelitian ini formasi yang diduga memiliki potensi terhadap batubara ialah Formasi Manumbar.

Penelitian ini dilakukan untuk melihat pengaruh struktur patahan yang bekerja di daerah penelitian terhadap lapisan batubara. Pendugaan struktur patahan didasarkan pada hasil analisis olahan data *gravity* satelit (*TOPEX*) dengan jumlah 342 titik berspasi 2000 meter antar titik. Sementara karakteristik lapisan batubara diidentifikasi berdasarkan data geofisika *well logging*.

Hasil analisis olahan *gravity* satelit berupa peta ABL Lokal, TDR, dan THD menunjukkan bahwa terdapat struktur patahan di sebelah barat dan utara lokasi titik bor. Sementara itu, hasil analisis olahan data *log* menunjukkan bahwa *coal bearing strata* daerah penelitian merujuk pada litologi batulempung dan batupasir. Hal ini bersesuaian dengan adanya pola aliran yang mengindikasikan daerah penelitian berada di sekitar endapan dari *channel-channel* subsekuen. Selain itu, terdapat 24 *seam* yang memiliki konektivitas antar sumur. Berdasarkan analisis persebaran *Vshale* dan densitas serta ketebalan *seam,* dapat diamati bahwa semakin ke arah barat kualitas batubara cenderung lebih baik. Sementara itu, bagian utara dan selatan cenderung lebih banyak masuk material pengotor.

Kata Kunci: Batubara, Patahan, Densitas, Volume *Shale* (*Vshale*)

ABSTRACT

IMPLICATION OF FAULT STRUCTURE TO COAL SEAMS CHARACTERISTICS IN KUTAI BASIN BASED ON GRAVITATION SATELLITE DATA AND GEOPHYSICAL WELL LOGGING DATA CHARACTERISTICS

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Study about coal deposits in East Kalimantan cannot be separated from the existence of several basins and formations, where one of the most important basins is the Kutai Basin. The Kutai Basin is one of the largest basins in Indonesia which has high coal potential. On this research, the formation that is alleged to have potential for coal is the Manumbar Formation.

This research was conducted to observe the faults impact to coal seams. Speculation of the faults structure is based on the results of gravity satellite (TOPEX) data processing analysis with a total of 342 points spaced 2000 meters between points. Meanwhile, the characteristics of coal seams are identified based on geophysical well logging.

Analysis results of satellite gravity maps in the form of Local ABL, TDR and THD show that there are fault structures at the west and north of the drill point location. Meanwhile, the results of the well logging analysis shows that coal bearing strata on the research area refers to mudstone and sandstone. This is correlated to the drainage pattern which indicates the research area is located around deposits from channel subsequence. Furthermore, there are 24 seams which has connectivity between well. Based on the Vshale, density and thickness seam distribution analysis, it can be observed that coal has the better quality on the west of well log area. Meanwhile, the northern and southern area tend to have more ash contains.

Keywords: *Seam, Fault, Density, Shale Volume (Vshale)*