

ABSTRAK

KARAKTERISTIK GEOMETRI DAN HETEROGENITAS LAPISAN BATUBARA BERBASIS RESPON *GAMMA RAY LOG* DAN *DENSITY LOG* DI ANTIKLIN PALARAN, KECAMATAN LOA JANAN, KABUPATEN KUTAI KARTANEGARA

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Lapisan batubara pada daerah Loa Janan, Kabupaten Kutai Kartanegara, Provinsi Kalimantan Timur memiliki karakteristik geometri lapisan batubara dan sifat heterogenitas lapisan batubara yang berbeda, hal tersebut dapat dipergunakan sebagai pedoman dalam penentuan lapisan layak tambang. Penelitian dilakukan berdasarkan data geofisika *well logging* dengan jenis log *gamma ray* dan log *densitas* dengan jumlah 18 titik pengukuran.

Analisis litologi batuan daerah penelitian ditentukan berdasarkan respon bentuk kurva defleksi. Berdasarkan hasil interpretasi litologi pada daerah penelitian terdiri dari litologi batupasir, batulanau, batulempung, dan batubara. Untuk mengetahui persebaran dan karakteristik lapisan batubara dilakukan pembuatan korelasi searah jurus (*On Strike*) dan searah dip (*Cross Strike*). Penentuan heterogenitas lapisan batubara dilakukan berdasarkan hasil perhitungan nilai *Vshale* dan nilai densitas batubara.

Hasil korelasi *well logging* diketahui pola kemenerusan lapisan batubara yang arahnya relatif Baratdaya-Timurlaut dengan kemiringan berkisar 20° . Analisis heterogenitas dilakukan secara vertikal (*roof, body, floor*) dan lateral (sesuai umur relatif/ *cross strike*). Batubara daerah penelitian memiliki beberapa seam dengan nilai *Vshale* terendah 0.87 % dan tertinggi sebesar 18 % dan nilai densitas terendah 1.16 gr/cc dan tertinggi sebesar 1.42 gr/cc.

Kata Kunci: well logging, Batubara, *Vshale*, dan densitas.

ABSTRACT

GEOMETRY CHARACTERISTICS AND HETEROGENITY OF COAL LAYERS BASED ON GAMMA RAY LOG AND DENSITY LOG RESPONSE IN PALARAN ANTICLIN, LOA JANAN DISTRICT, KUTAI KARTANEGARA REGENCY

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Coal seams in the Loa Janan area, Kutai Kartanegara Regency, East Kalimantan Province have different characteristics of coal seam geometry and heterogeneity, then it can be used as guidelines in determining mineworthy layers. The research is conducted based on well logging geophysical data with the type of gamma ray log and density log with a total of 18 measurement points.

The rock lithology analysis in the study area is determined based on the response of the deflection curve shape and it consist of sandstone, siltstone, claystone, and coal lithology. To determine the distribution and characteristics of the coal seam, correlations of some parameter are made in the direction of the move (On Strike) and the direction of the dip (Cross Strike). The determination of the heterogeneity of the coal seam is carried out based on the results of the calculation of the Vshale value and the coal density value.

The results of the well logging correlation show that the continuity pattern of the coal seam is relatively northeast-southwest with a northeast-southwest slope with a slope of 20° . Heterogeneous analysis was carried out vertically (roof, body, floor) and laterally (according to relative age/cross strike). Beside that coal in the research area has several seams with the lowest Vshale value of 0.87% and the highest 18% and the lowest density value of 1.16 gr/cc and the highest of 1.42 gr/cc.

Keywords: *well logging, coal, Vshale, and density*