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STUDI KUALITAS BATUBARA SERTA KORELASI DAN PENGARUH PROKSIMAT TERHADAP NILAI *HARDGROVE GRINDABILITY INDEX* (HGI) DAN NILAI KALORI PADA LAPANGAN BANKO BARAT PIT-X, TANJUNG ENIM, SUMATERA SELATAN

Cekungan Sumatera Selatan merupakan salah satu cekungan sedimen terbesar di Indonesia yang memiliki potensi batubara bernilai ekonomi tinggi, khususnya pada Formasi Muara Enim yang ditandai dengan lapisan batubara tebal dan sebaran yang luas. Kualitas batubara dalam formasi ini ditentukan melalui parameter analisis proksimat seperti kadar air, kadar abu, kadar zat terbang, dan kandungan karbon tetap, yang berpengaruh pada nilai kalori dan *Hardgrove Grindability Index* (HGI). Penelitian ini bertujuan untuk mengetahui kondisi geologi daerah penelitian, korelasi litologi antar sumur bor, kualitas dan peringkat batubara, serta hubungan antara parameter proksimat dengan nilai kalori dan HGI. Analisis dilakukan pada 11 sumur bor dan korelasi regresi linear sederhana. Hasil penelitian menunjukkan bahwa terdapat morfologi dataran antar perbukitan dan penggalian PIT Banko Barat, stratigrafi daerah terdiri dari lapisan batulempung, batupasir, batubara, dan batulanau dengan korelasi litologi yang relatif stabil, serta pada sekitar daerah penelitian terdapat lipatan sinklin dan antiklin dengan hasil penamaan *gently inclined*. Kualitas batubara rata-rata meliputi kadar air 25,64%, kadar abu 3,91%, kadar zat terbang 40,75%, kadar karbon tetap 42,85%, total sulfur 0,45%, nilai HGI 58,62, dan nilai kalori sebesar 6151,65 kal/g, dengan peringkat batubara berada pada kategori *High Volatile C bituminous coal* dan *subbituminous coal*. Korelasi parameter menunjukkan bahwa kadar air, kelembapan, dan kadar abu memiliki hubungan negatif terhadap nilai kalori, sedangkan kadar zat terbang dan karbon tetap berkorelasi positif. Untuk nilai HGI, kadar air, kelembapan, kadar karbon, dan nilai kalori menunjukkan korelasi positif, sementara kadar abu, zat terbang, dan total sulfur berkorelasi negatif.

Kata kunci: Cekungan Sumatera Selatan, Formasi Muara Enim, Geologi, HGI, Kualitas Batubara.

ABSTRACT

STUDY OF COAL QUALITY AND CORRELATION AND PROXIMATE INFLUENCE ON HARDGROVE GRINDABILITY INDEX (HGI) VALUE AND CALORIE VALUE AT BANKO WEST PIT-X FIELD, TANJUNG ENIM, SOUTH SUMATRA

The South Sumatra Basin is one of the largest sedimentary basins in Indonesia that has the potential for high economic value coal, especially in the Muara Enim Formation which is characterized by thick coal layers and wide distribution. The quality of coal in this formation is determined through proximate analysis parameters such as moisture content, ash content, fly content, and fixed carbon content, which affect calorific value and Hardgrove Grindability Index (HGI). This study aims to determine the geological condition of the study area, lithological correlation between boreholes, coal quality and rank, and the relationship between proximate parameters with calorific value and HGI. Analysis was conducted on 11 boreholes and simple linear regression correlation. The results show that there is a morphology of plains between hills and PIT excavations West Banko, the regional stratigraphy consists of layers of mudstone, sandstone, coal, and siltstone with relatively stable lithological correlations, and around the study area there are syncline and anticline folds with the results of naming gently inclined. Average coal quality includes moisture content of 25.64%, ash content of 3.91%, fly matter content of 40.75%, fixed carbon content of 42.85%, total sulfur of 0.45%, HGI value of 58.62, and calorific value of 6151.65 cal/g, with coal ranking in the High Volatile C bituminous coal and subbituminous coal categories. Parameter correlations show that moisture, moisture, and ash content have a negative relationship with calorific value, while fly ash and carbon content remain positively correlated. The hardgrove grindability index, moisture content, moisture, carbon content and calorific value showed positive correlations, while ash, fly ash and total sulphur were negatively correlated.

Keywords: South Sumatra Basin, Muara Enim Formation, Geology, HGI, Coal Quality.