

INTISARI

Formasi Warukin merupakan formasi yang terdapat pada Cekungan Barito terdapat batubara dengan kandungan abu dan sulfur yang rendah. Untuk mengetahui bagaimana kondisi *paleoenvironment* batubara sehingga memiliki kadar abu dan kandungan sulfur yang rendah, dilakukan kajian studi mikrofasies serta rekonstruksi *paleomire* melalui analisis kelimpahan maseral, fasies batubara, serta geokimia batubara. Metode yang dilakukan berupa analisis petrografi organik, analisis proksimat dan ultimat pada *seam* W222 dan W310 di daerah Murung Pudak yang diambil menggunakan metode *channel* dan *ply by ply*. Hasil pengamatan petrografi organik menunjukkan hasil kelimpahan *huminite* pada rentang 54,91 – 74,35%vol dengan rata-rata 62,56%, *liptinite* pada rentang 19,72 – 29,78 %vol dengan rata-rata 26,56%, dan *inertinite* pada rentang 4,94 – 18,11 %vol dengan rata-rata 9,98%. Data kadar abu berkisar 2 – 8% wt (adb). Data kadar sulfur berkisar 0,17 – 3,96% wt (adb).

Mikrofasies dibagi menjadi tiga bagian, yaitu bagian bawah didominasi oleh *detrohuminite-rich group* dan *telohuminite-liptinite-rich group*, bagian tengah didominasi oleh *detrohuminite-rich group*, dan bagian atas didominasi oleh *inertinite-rich-group*. *Paleomire* yang berkembang merupakan *ombrogenous mire* yang terbentuk pada *wet forest swamp* pada kondisi *limnic* tanpa adanya invasi dari air laut. *Ombrogenous mire* menyebabkan suplai sedimen yang masuk pada mire terbatas sehingga kadar abu pada batubara di daerah penelitian cenderung rendah. Tidak adanya invasi air laut membuat kadar sulfur pada batubara di daerah penelitian memiliki kadar yang rendah dikarenakan sulfur yang terkandung berasal dari aktivitas bakteri bukan berasal dari invasi air laut.

Kata kunci: Formasi Warukin, batubara, petrografi organik, geokimia, mikrofasies, *paleomire*.

ABSTRACT

Warukin Formation is found in the Barito Basin and contains coal with low ash and sulfur content. To understand the paleoenvironmental conditions of the coal that contribute to its low ash and sulfur levels, a study of microfacies and paleomire reconstruction was conducted through analysis of maceral abundance, coal facies, and coal geochemistry. The methods used included organic petrographic analysis, proximate and ultimate analysis on the W222 and W310 seams in the Murung Pudak area, which were sampled using channel and ply-by-ply methods. The results of the organic petrographic observations showed that huminite abundance ranged from 54.91% to 74.35% by volume, with an average of 62.56%; liptinite ranged from 19.72% to 29.78% by volume, with an average of 26.56%; and inertinite ranged from 4.94% to 18.11% by volume, with an average of 9.98%. The ash content data ranged from 2% to 8% (adb), while the sulfur content data ranged from 0.17% to 3.96% (adb).

Microfacies were divided into three sections: the lower section is dominated by a detrohuminite-rich group and a telohuminite-liptinite-rich group, the middle section is dominated by a detrohuminite-rich group, and the upper section is dominated by an inertinite-rich group. The developed paleomire is an ombrogenous mire that formed in a wet forest swamp under limnic conditions without any invasion of seawater. The ombrogenous mire led to a limited supply of sediments entering the mire, resulting in the relatively low ash content of the coal in the study area. The absence of seawater invasion also contributed to the low sulfur content in the coal, as the sulfur present is derived from bacterial activity rather than from seawater intrusion.

Keywords: *Warukin Formation, coal, organic petrography, geochemistry, microfacies, paleomire.*