ABSTRAK

ANALISIS KARAKTERISTIK PERSEBARAN IMPREGNASI DAN PENENTUAN ESTIMASI SUMBER DAYA ENDAPAN ASPAL ALAM MENGGUNAKAN METODE GEOLISTRIK RESISTIVITAS KONFIGURASI DIPOLE-DIPOLE PADA LAPANGAN "X" DESA SANDANGPANGAN KECAMATAN SAMPOLAWA KABUPATEN BUTON SELATAN SULAWESI TENGGARA

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Pulau Buton adalah salah satu daerah yang memiliki potensi endapan aspal alam terbesar di dunia dengan cadangan mencapai 670 juta ton. Proses pemanfaatan aspal buton saat ini belum maksimal dilakukan mulai dari eksplorasi sampai pengolahan. Oleh karena itu dilakukan penelitian ini sebagai tahap eksplorasi dengan menganalisis penyebaran karakteristik impregnasi dan estimasi sumber daya aspal alam di Daerah Sandangpangan, Sampolawa, Kabupaten Buton Selatan menggunakan metode geolistrik resistivitas konfigurasi dipole-dipole dan penyelidikan geologi permukaan. Penelitian dilakukan pada wilayah seluas 9,43 Ha. Secara geografis terletak antara 5º32'30"-5º32'30"BT dan 122º43'60"-122º45'0"LS. Pengukuran geolistrik dilakukan sebanyak 28 lintasan dengan panjang lintasan 470 meter, spasi antar lintasan 50 meter, spasi antar elektroda 10 meters, dan arah lintasan relatif barat-timur. Pemetaan geologi dilakukan pada 71 titik pengamatan (*sopsite*) dengan 5 sampel dilakukan pengujian kadar bitumen dan air.

Hasil analisis data resistivitas bawah permukaan menunjukan keberadaan impregnasi aspal alam di daerah penelitian mulai dari kedalaman 2,5-92,5 m di bawah permukaan, ketebalan hingga 80 m, dan respon resistivitas yang tinggi (lebih dari 1000 Ω), didasarkan pada respon resistivitas singkapan aspal yang terdapat di permukaan pada Lintasan LG-28-DD dan LG-26-DD. Impregnasi aspal terjadi pada kalkarenit Formasi Sampolakosa sebagain batuan yang terimpregnasi, secara fisik fresh dan hard, memiliki pola resistivitas melampar kemudian membaji dan berupa spot, kadar bitumen rata-rata sebesar 18,9%, dan kadar air rata-rata 2,04%. Penyebaran impregnasi aspal dominan pada bagian utara dengan arah kemenerusan di permukaan baratlaut-tenggara searah dengan indikasi struktur. Hasil perhitungan estimasi endapan aspal berdasarkan Model 3D Resistivitas didapatkan tonase sebesar 34.305.600 ton dan volume total sebesar 12.252.000 m3 dengan densitas aspal 2,8 gr/cc.

Kata kunci : aspal alam buton, impregnasi aspal, resistivitas, *dipole-dipole*

ABSTRACT

ANALYSIS OF CHARACTERISTICS DISTRIBUTION AND DETERMINATION OF NATURAL ASPHALT DEPOSIT IMPREGNATION BASED ON GEOELECTRIC RESISTIVITY METHOD CONFIGURATION DIPOLE-DIPOLE IN "X" FIELD SANDANGPANGAN SAMPOLAWA SOUTH BUTON SOUTHEAST SULAWESI

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Buton Island is one of the areas that has the potential of the largest natural asphalt deposits in the world with a reserve of 670 million tons. The current utilization of Buton asphalt hasn't been maximally carried out, from the exploration stage until processing stage. Therefore, this research was conducted as an exploration stage by analyze the distribution of impregnation character and estimation of natural asphalt resources in the Sandangpangan, Sampolawa, South Buton Regency using the dipole-dipole configuration of resistivity geoelectric method and surface geological investigations. The research was conducted in an area of 9,43 hectares. Geographically located between 5º32'30 " and 5º32'30" east longitude and 122º43'60 " and 122º45'0" south latitude. The geoelectric measurements consist of 28 lines of measurement, with the spacing among those line are 50 meters, the spacing among the electrode are 10 meters, and direction of the lines measurement east-west relatively. Geological mapping was carried out at 71 stopsites with 5 samples stopsite tested for bitumen content and water content.

The analysis result of subsurface resistivity data shows that natural asphalt in the research area ranging from a depth of 2.5 to 92.5 meters below the surface, a thickness of up to 80 meters, and has high resistivity response value more than 1000 Ωm, based on the resistivity response from surface asphalt outcrops at LG-28-DD and LG-26-DD lines. The characteristics of asphalt impregnation include calcarenite of the Sampolakosa Formation as impregnated rocks, physically fresh and resistance, has a resistivity pattern has sloping then gliding shapes and in the form of spots, the average bituminous content of 18.9%, and average water content of 2.04%. The distribution of impregnation is based on 2D Cross-section Correlation and Resistance Levels of Resistivity, asphalt is relatively dominant in the north with direction on the northwest-southeast surface following of structural indications direction. The results of the calculation of asphalt sludge estimation based on the 3D Resistivity Model obtained tonnage of 35.705.600 *tons and a total volume of 12,752,000 m^3 with asphalt density of 2,8 gr/cc.*

Keywords : *buton natural asphalt, asphlat impregnation, resistivity, dipole-dipole*.