Identifikasi Sebaran Pasir Silika Menggunakan Metode Geolistrik Resistivitas Konfigurasi Wenner Alpha dan Metode Ground Penetrating Radar di Seruyan, Kalimantan Tengah = Identification of the Distribution of Silica Sand Using the Wenner Alpha Configuration Resistivity Geoelectric Method and the Ground Penetrating Radar Method in Seruyan, Central Kalimantan

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Abstrak

Kalimantan Tengah merupakan salah satu daerah dengan potensi cadangan pasir silika terbesar di Indonesia. Pasir silika merupakan mineral bukan logam yang dimanfaatkan sebagai material bangunan. Oleh karena itu, potensi persebaran pasir silika di bawah permukaan diidentifikasi menggunakan survei geofisika. Dalam penelitian ini, metode Resistivitas dengan konfigurasi Wenner Alpha dan Ground Penetrating Radar dengan konfigurasi radar reflection profiling merupakan salah dua metode geofisika yang digunakan untuk mengetahui keadaan bawah permukaan. Metode Ground Penetrating Radar digunakan untuk mengkonfirmasi hasil pengolahan data metode resistivitas karena metode resistivitas dilakukan pengukuran di area dengan permukaan pasir silika sehingga menyulitkan injeksi arus ke bawah permukaan. Selain itu, data bor digunakan sebagai data sekunder untuk membantu dalam interpretasi hasil pengolahan data. Hasil pengolahan data adalah penampang 2D metode Resisitivitas yang berisi nilai resistivitas sebenarnya bawah permukaan dan penampang 2D radargram GPR, serta penampang 2D nilai permitivitas relatif GPR. Berdasarkan hasil tersebut, nilai resistivitas pasir silika sebesar > 136 m dan nilai permivitas relatif sebesar 16 - 26. Dari hasil pengolahan dan interpretasi kedua metode, ditemukan persebaran pasir silika pada kedalaman kurang dari 10 m dan lebih dari 30 m.

.....Central Kalimantan is one of the areas with the largest potential reserves of silica sand in Indonesia. Silica sand is a non-metallic mineral that is used as a building material. Therefore, the potential distribution of silica sand below the surface can be identified using geophysical surveys. In this research, the Resistivity method with a Wenner Alpha configuration and Ground Penetrating Radar with a reflection profiling radar configuration are two geophysical methods used to determine the condition of the subsurface. The Ground Penetrating Radar method was used to confirm the results of the resistivity method data processing because the resistivity method was measured in an area with a silica sand surface, making it difficult to inject current into the subsurface. In addition, drill data is used as secondary data to assist in the interpretation of data processing results. The result of data processing is a 2D cross section of the Resisitivity method which contains the actual resistivity value of the subsurface, 2D cross section of the GPR radargram, and 2D cross section of the GPR relative permittivity value. Based on these results, the resistivity value of silica sand is > 136 m and the relative permittivity value is 16 - 26. From the results of processing and interpretation of the two methods, it was found that the distribution of silica sand was at depths of less than 10 m and more than 30 m.