ABSTRAK

Pendugaan sebaran intrusi air laut melalui sungai di Desa Ujungmanik Kecamatan Kawunganten Kabupaten Cilacap telah dilakukan menggunakan metode geolistrik resistivitas konfigurasi *wenner*. Penelitian bertujuan untuk menentukan struktur batuan bawah permukaan berdasarkan nilai resistivitas, menganalisis sebaran intrusi air laut berdasarkan korelasi antar lintasan, dan menentukan nilai konduktivitas air tanah. Terdapat tiga tahapan dalam penelitian yaitu tahap persiapan, tahap pengambilan data, dan tahap pengolahan data. Tahap pengambilan data terdiri dari pengambilan sampel air tanah dan akuisisi data geolistrik. Nilai konduktivitas 15 titik sampel air tanah bervariasi antara 1363 - 4145 µS/cm sehingga dapat digolongkan ke dalam kelompok air tawar dan air agak payau dikarenakan pengambilan sampel pada musim hujan. Akuisisi data geolistrik dilakukan pada 4 lintasan yaitu Lintasan Wen1, Lintasan Wen2, Lintasan Wen3, dan Lintasan Wen4. Setiap lintasan memiliki bentangan sebesar 200 meter. Hasil pengolahan data geolistrik menunjukkan struktur batuan bawah permukaan yang terdiri dari pasir, lempung, lempung pasiran, dan pasir lempungan. Intrusi air laut yang ditunjukkan dengan lapisan pasir telah terjadi di semua lintasan dengan *range* nilai resistivitas sebesar 0,20 – 2,79 Ωm. Desa Ujungmanik terintrusi air laut secara merata pada posisi geografis 7º38'15.62"LS 108°57'20.89"BT hingga 7º39'22.86"LS 108º56'35.33"BT.

Kata kunci: intrusi air laut, metode geolistrik, Desa Ujungmanik, konduktivitas

ABSTRACT

The estimation of the distribution of the sea water intrusion through the rivers in Ujungmanik Village, Kawunganten District, Cilacap Regency has been carried out using the Wenner configuration resistivity geoelectric. Research aims to determine the structure of subsurface rocks based on the resistivity values, to analyze the distribution of the sea water intrusion based on the correlations of intertrajectories, and to determine the value of the conductivity of the groundwater. There were three stages named a preparation, a data collection, and a data processing in the research. The data collection phase consisted of groundwater sampling and geoelectric data acquisition. The conductivity value of groundwater samples at fifteen points sample points varies between 1363 - 4145 µS / cm so that they can be classified that the water was fresh and brackish due to the sampling done in the rainy season. The geoelectric data acquisition was carried out on four lines. They were Wen1 Line, Wen2 Line, Wen3 Line, and Wen4 Line. Each line had a range of 200 meters. The results of geoelectric data processing showed that the subsurface rock structure consisted of sand, clay, sandy loam, and sandy clay. The Seawater intrusion shown by the sand layer occurred in all trajectories which had a range of resistivity value of 0.20 - 2.79 Ωm. From this research it can be implied that the entire Ujungmanik area is evenly intruded by the sea water at the geographic position 7°38'15.62"LS 108°57'20.89"BT to 7°39'22.86"LS 108°56'35.33"BT.

Keywords: *seawater intrusion, geoelectric method, Ujungmanik Village, conductivity*