ABSTRAK

PENENTUAN PENYEBARAN AKUIFER AIR TANAH DENGAN METODE GEOLISTRIK SCHLUMBERGER DAERAH KABUPATEN BREBES, PROVINSI JAWA TENGAH

Oleh:
Ahmad Fauzan
115.080.051

Penelitian Pendugaan Penyebaran Akuifer Air Tanah dengan Metode Geolistrik *Schlumberger* daerah Kabupaten Brebes bertujuan mengidentifikasi kedalaman dan ketebalan akuifer (airtanah) berdasarkan penampang data nilai resistivitas *sounding* serta penyebaran akuifer (airtanah) berdasarkan pemodelan 3D resistivitas bawah permukaan.

Data penelitian merupakan data sekunder hasil proses Akusisi menggunakan metode geolistrik dengan konfigurasi *schlumberger*. Jumlah data 37 titik, spasi antar titik sekitar 2 km, luas area pengukuran 161,12 km^2. Data pengukuran berupa beda potensial *(*ΔV), arus (*I*), resistivitas (*Rho*), dan faktor geometri (*K*). Pengolahan data dilakukan dengan korelasi semua titik pengukuran menjadi 3D *Solid Model*.

Hasil interpretasi geolistrik berdasarkan penyebaran pola resistivitas geolistrik menunjukkan keberadaan suatu akuifer dengan nilai resistivitas sekitar 10-30 ohm.m yang diidentifikasi sebagai Akuifer Batupasir. Memiliki 2 akuifer dengan ketebalan Akuifer Dangkal 10-15 meter serta kedalaman mulai dari 5-10 meter dan Akuifer Dalam 65-100 meter serta kedalaman lebih dari 10 meter. Pola Distribusi akuifer (airtanah) berdasarkan data *isoresistivity solid model 3D* (kesamaan nilai resistivitas) untuk batupasir menunjukan pola kemenerusan yang bervariasi berdasarkan kedalaman. Penyebaran Akuifer Dangkal berupa pola setempat namun untuk Akuifer Dalam cenderung kebagian tenggara daerah penelitian. Terdapat pengaruh intrusi air laut pada kedalaman 15-40 meter dengan ketebalan sekitar 10-40 meter.

***Kata kunci** : geolistrik sounding, schlumberger, akuifer (air tanah), resistivitas*

ABSTRACT

FRESHWATER AQUIFER DISTRIBUTION'S DETERMINATION WITH SCHLUMBERGER GEOELECTRICAL METHOD IN BREBES DISTRICT, CENTRAL JAVA PROVINCE

Ahmad Fauzan
115.080.051

Research upon freshwater aquifer distribution in Brebes District had been carried in order to identify aquifer's thickness and depth based on sounding resistivity section and using three-dimensional subsurface resistivity modeling to determine its distribution.

Research data were secondary result from acquisition, utilizing schlumberger configuration with 37 nodes, with 2km node spacings, and 161.12 square kilometres of acquisition area. Measurement data were potential difference, current, resistivity, and geometry factor. Data processing were done using all-nodes corelation to create a three-dimensional solid model.

Geoelectrical interpretation based upon resistivity distributional pattern indicates a present of freshwater aquifer with resistivity value ranging from 10-30ohm.m, identified as Sandstone Aquifers. These aquifers were categorized into shallow and deep. The shallow ones are 5-10 meter deep with 10-15 meter thickness, whereas the latter were below 10 meter deep with 65-100 meter thickness. Distributional pattern for these aquifer based on three dimensional isoresistivity solid model for sandstone indicated various continuity pattern towards their depth. Shallow aquifer distributions were local, but the deep ones are southeast oriented. There were saltwater intrusion in 15-40 meters depth with thickness from 10-40 meters.

keywords: *geoelectric sounding schlumberger, aquifer (groundwater), resistivity*