

SARI

Sistem akuifer air tanah di Cekungan Yogyakarta-Sleman menurut MacDonald & Partner (1984) berupa lapisan akuifer yang dipisahkan oleh lapisan tuff. Hendrayana dan Putra (2004) mengkorelasi data sumur bor dan menyatakan bahwa cekungan air tanah Yogyakarta-Sleman tersusun oleh lapisan pasir dengan perselingan tuff namun tidak menerus. Penelitian lebih detail diperlukan untuk mengetahui kondisi lokal sistem akuifer di cekungan air tanah Yogyakarta-Sleman di Kabupaten Sleman Bagian Timur yang memiliki potensi cadangan tinggi guna menganalisis geometri dan konfigurasi sistem akuifer air tanah.

Metode Geolistrik Resistivitas konfigurasi Wenner-Schlumberger bentangan 360 m kedalaman 75 m. setiap lintasan menggambarkan satuan hidrostratigrafi. Model 3D konseptual model sistem akuifer air tanah digunakan untuk menganalisis geometri dan konfigurasinya. Geometri akuifer air tanah di Kabupaten Sleman Bagian Timur secara horizontal, sisi utara batas antara akuifer dan non-akuifer dapat dibedakan secara jelas berupa batuan resistivitas rendah 20-50 ohm.m (akuifer minor), 51-140 ohm.m (akuifer utama) dengan batuan resistivitas tinggi > 140 ohm.m (akuifug/ non-akuifer). Berdasarkan pola aliran muka air tanah sisi timur dibatasi oleh Sungai Gendol, barat Sungai Boyong dan selatan Sungai Opak. Di bagian bawah akuifer hasil Model Konseptual 3D sistem akuifer air tanah menunjukkan kemenerusan keluar daerah penelitian. Secara vertikal terlihat batas antara akuifer dan non-akuifer, namun batas bawah menerus di bawah jangkauan pengukuran. Berdasarkan data Geofisika Geolistrik Resistivitas, konfigurasi sistem akuifer air tanah di Kabupaten Sleman Bagian Timur, tersusun oleh satu akuifer diselingi oleh lapisan non-akuifer yang tidak menerus.

Keterbatasan Metode Geolistrik Resistivitas Wenner-Schlumberger adalah jangkauan kedalaman yang relatif dangkal, ini mengindikasikan dan memberikan rekomendasi untuk dilakukan studi lanjut.

Kata kunci: Geolistrik Resistivitas Wenner-Schlumberger, Satuan Hidrostratigrafi, Sleman-Timur.

ABSTRACT

The groundwater aquifer system in the Yogyakarta-Sleman Basin according to MacDonald & Partner (1984) is a layer of aquifer separated by a tuff layer. Hendrayana and Putra (2004) correlated borehole data and stated that the Yogyakarta-Sleman groundwater basin was composed of sand layers with tuff intervals but not continuous. More detailed research is needed to determine the local conditions of aquifer systems in the Yogyakarta-Sleman groundwater basin in Eastern Sleman Regency which have high reserve potential to analyze the geometry and configuration of groundwater aquifer systems.

Geoelectric Method The resistivity of the Wenner-Schlumberger configuration stretches 360 m to 75 m depth. Each path describes a hydrostratigraphic unit. The conceptual 3D model of the groundwater aquifer system model is used to analyze geometry and its configuration. Geometry of groundwater aquifers in the Eastern Part of Sleman Regency horizontally, the north side of the boundary between aquifers and non-aquifers can be distinguished clearly in the form of low resistivity rocks of 20-50 ohm.m (minor aquifers), 51-140 ohm.m (main aquifer) with high resistivity rocks > 140 ohm.m (aquifug/ non-aquifer). Based on the pattern of groundwater flow the east side is limited by the Gendol River, west of the Boyong River and south of the Opak River. At the bottom of the aquifers the results of the 3D Conceptual Model of groundwater aquifer systems show the continuity of exiting the research area. Vertically there is a boundary between aquifer and non-aquifer, but the lower limit is constantly below the measurement range. Based on Geophysical Geoelectric Resistivity data, the configuration of the groundwater aquifer system in Eastern Sleman Regency, composed of one aquifer interspersed by non-aquiferous layers that are not continuous.

Limitations of the Wenner-Schlumberger Resistivity Geoelectric Method is a relatively shallow depth range, this indicates and provides recommendations for further studies.

Keywords: *Geoelectric Resistivity of Wenner-Schlumberger, Hydrostratigraphic Unit, Eastern Sleman*