

Monitoring the seawater intrusional into coastal-aquifer using geo-electrical sounding: a case study of the northern coastal area of Central Java, Indonesia

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Abstrak

This study aims to investigate whether there is seawater intrusion into the coastal-aquifer of the northern coast of Central Java and to study the seawater intrusion movement along the corresponding coastal area, particularly from the district of Brebes to Kendal. Geo-electrical sounding technique was applied by producing cross-section of resistivity value which were perpendicular to the eleven locations at the same spot. Resistivity shown in the cross section is the resistivity of the rock composition and the water in the aquifer. In this case, saline water has resistivity less than 1 ohm meter. Result shows that in 1989, among the eleven measured locations, there was only one location indicated interface between fresh water and saline water. This was at the cross section number 5 obtained in Pemalang. In 1996, there were 6 locations indicated the occurrence of interface. Connate saline water was detected at every cross section with various depths.