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GROUNDWATER QUALITY ASSESSMENT OF A COASTAL AQUIFER USING GEOELECTRICAL TECHNIQUES

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ABSTRACT

Geoelectrical measurements using the Vertical Electrical Sounding (VES) method are well suited to the investigation of alluvial aquifers with large resistivity contacts. They have also been commonly used to estimate groundwater quality. VES was conducted in a coastal aquifer lying south of Chennai city, Madras, India, using a Schlumberger configuration with 80 locations in a rectangular grid pattern and a maximum AB/2 separation of 33 m. The results of data analysis indicate the occurrence of a fresh water ridge along the central part of the coastal aquifer. The eastern and western margins of the aquifer were found to have groundwater of poor quality. Sea water intrusion has occurred at some locations along the east coast with the interface located 200 - 450 m from the coast. Poor water quality along the western margin is due to the influence of the Buckingham canal.

Reference: Gnanasundar, D. and L. Elango; Groundwater Quality Assessment of a Coastal Aquifer Using Geoelectrical Techniques, Journal of Environmental Hydrology, Vol. 7, Paper 2, January 1999.

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