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GROUNDWATER QUALITY AND HYDROGEOLOGICAL CHARACTERISTICS OF MALACCA STATE IN MALAYSIA

Abstract

Groundwater quality and aquifer productivity of Malacca catchment in Peninsular Malaysia are presented in this article. Pumping test data were collected from 210 shallow and 17 deep boreholes to get well inventory information. Data analysis confirmed that the aquifers consisting of schist, sand, limestone and volcanic rocks were the most productive aquifers for groundwater in Malacca state. GIS-based aquifer productivity map was generated based on bedrock and discharge capacity of the aquifers. Aquifer productivity map is classified into three classes, namely high, moderate and low based on discharge capacity. Groundwater potential of the study area is 35, 57 and 8% of low, moderate and high class respectively. Fifty two shallow and 14 deep aquifer groundwater samples were analyzed for water quality. In some cases, groundwater quality analysis indicated that the turbidity, total dissolved solids, iron, chloride and cadmium concentrations exceeded the limit of drinking water quality standards.

Key words: aquifer productivity, groundwater, Malacca catchment, pumping test, water quality