

A study of groundwater hydrology in the Lower Kelantan
River Basin with environmental isotopes

Daud Mohamad
Unit Tenaga Nuklear, Jabatan Perdana Menteri, Kuala Lumpur

A study of groundwater hydrology with environmental isotope of the Lower Kelantan Basin is presented. The hydrological problems of major interest here are to study the origin and mechanism of recharge, inter-relation among the aquifers and relation of river water with the wells located near the Kelantan River. The results show that the stable isotopes content of the groundwater in the area vary within a narrow range while tritium data confirm that water from the lower aquifer zone comprises of old water component and most samples from the upper aquifer zone are young water. Carbon-14 investigation was carried out from a few selected deep wells and their ages were found to be in the range of about 2,000 to 11,000 years. The isotopic data demonstrates that the first aquifer is replenished by local recharge through precipitation while the lower aquifer zone seems to be recharged by other source of groundwater originating from the upper aquifer zone. As a whole, the aquifers apparently are inter-connected and regionally they may be considered to represent a single system.
