

Study on water quality of unconfined and confined aquifer in Selangor: aeration method

ABSTRACT

The quality of groundwater depends on quality of water recharging the aquifer and the hydrologic and biogeochemical processes in it. In order to treat specific water properties and heavy metals present in groundwater, aeration and filtration process is applied. The objectives of this study are i) to investigate the groundwater properties collected from unconfined and confined aquifer, and ii) to analyze the groundwater properties varied by aeration period in a small tanks. The removal efficiency for turbidity, iron and manganese fall in the range of 25% to 30%, 9% to 66% and 50% to 90% for all samples, respectively. The dissolved oxygen content did influenced the average value of studied parameters, especially for pH value of confined samples, within 3 hours aeration, the value increase from 4.88 to 7.28, which is fulfil the requirement of Malaysian standard. It can be concluded that for all parameters observed, there were changes in values either increased or decreased throughout the aeration and filtration process for both studied aquifers.

Keyword: Aquifer; Confined; Heavy metals; Unconfined; Water quality