

Quality assessment of groundwater from Avenorfeme, Akatsi district, Ghana**B V Samlafo¹, L H Bobobee¹, E Quarshie², L A Sarsah³ and E A Kaka²**¹University of Education, Ghana²National Nuclear Research Institute, Ghana³Radiological and Medical Sciences Research Institute, Ghana

A holistic assessment of the quality of groundwater from the shallow unconfined aquifers of the Avenorfeme and surrounding villages in the Akatsi South District in the Volta Region of Ghana has been conducted. A groundwater classification scheme has been developed for groundwater in the area using a robust water quality index (WQI) modified for the case of the study area. For calculating the WQI, pH, sodium, potassium, calcium, magnesium, bicarbonate, chloride, nitrate, sulfate, total dissolved solids, and fluorides have been considered. On the basis of the WQI so computed, groundwater fell within the excellent, good, poor and unsuitable for drinking categories. This study finds that the salinity of groundwater in the area is largely attributed to mineral weathering leading to evolution of predominantly intermediate to high salinity NaCl water types. On account of salinity hazard, most of the waters are not suitable for irrigation in the area. Based on total hardness, the groundwater in the area is permanently hard.

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