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Hydrochemical Analysis of Groundwater In The Lower Pra Basin of Ghana

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ABSTRACT

Investigating into the quality of groundwater in the lower Pra basin using physico-chemical parameters have been carried out. Samples were collected from thirty one (31) water points. All major ions were determined using standard methods. The results show that approximately 97% of the water sampled has TDS values less than 1000 mg/l. Chemical parameters are influenced primarily by silicate weathering, ion exchange processes and sea aerosol spray. Sodium ion (Na⁺) concentration is generally high compared to other cations and bicarbonate (HCO₃⁻) is the most abundant anion. Approximately 90% of the samples have iron concentrations greater than the W.H.O. limit for drinking water. Aluminium showed relatively higher concentration than other trace metals. The maximum and minimum concentrations recorded for cadmium Cd are 0.005 mg/l and 0.013 mg/l respectively. Concentrations of lead (Pb) zinc (Zn) were below detection limit. The groundwater in the basin is generally Na-Cl in character. Minor water types such as Ca-Mg-HCO₃, Na-Mg-Ca-HCO₃ and Na-Cl-SO₄ were also delineated.

KEYWORDS

Lower Pra Basin, Ghana, Groundwater, Hydrochemistry

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