

Physicochemical Analysis of Ground Water in Zaria, Kaduna state, Nigeria

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Abstract : Some physicochemical characteristics and heavy metal concentrations of water samples collected from ten boreholes in Samaru, Zaria, Kaduna state, Nigeria were analysed in order to assess the drinking water quality. Physicochemical parameters were determined using classical methods while the heavy metals were determined using Atomic Absorption Spectrometry. Results of the analysis obtained were as follows: Temperature 29 - 310C, pH 5.74 - 6.19, Electrical conductivity 3.21 - 7.54 μ s, DO 0.51 - 1.00 mg/L, BOD 0.0001 - 0.006 mg/L, COD 160 - 260 mg/L, TDS 2.08 - 4.55 mg/L, Total Hardness 97.44 - 401.36 mg/L CaCO₃, and Chloride 0.97 - 59.12 mg/L. Concentrations of heavy metals were in the range; Zinc 0.000 - 0.7568 mg/L, Lead 0.000 - 0.070 mg/L and Cadmium 0.000 - 0.009 mg/L. The implications of these findings are discussed.

Keywords : ground water, water quality, heavy metals, Atomic Absorption Spectrometry (AAS)

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