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Original Research Article

Assessment of Selected Physico-Chemical Properties and Metals in Qeera Stream Water, Bakkee-Jamaa, Nekemte, Ethiopia

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ABSTRACT

In this paper, *Qeera* wastewater containing stream, found in *Bakkee-Jamaa* district of *Nekemte* town, was assessed for selected metals and physico-chemical properties. The metals were determined by flame atomic absorption spectrophotometry (FAAS). Additional water samples collected from *Dangi* spring water, which is found about 10 km far away from the town, and *Chalalaqi* waste water containing stream were also assessed for reference. Analysis of concentration of Pb, Cd, Cr, Ca, and Ni metals were carried out using FAAS. For metal analysis good linearity were obtained with coefficient of determination (R^2) 0.998 or better. The LOD for the metals were in the range of 0.003 to 0.018 mg L⁻¹ and LOQ, 0.010 to 0.06 mg L⁻¹. Recovery studies ranged from 92 % to 104 % for the metals. The study shows that Ca, Cd and Ni are quantified in all the three water bodies. Overall, the level of the metals studied is higher in the urban area streams than that of *Dangi* spring in the rural area. The average concentrations (in mg/L) of Ca, Cd and Ni were found to be 9.56., 0.22 and 0.38, respectively. When compared with international guide lines for the quality of irrigation water, Cd and Ni are above permissible levels and show significant pollution of the water. The data obtained from the study of selected physico-chemical properties (EC, TDS, pH, TSS and Cl⁻) of the water samples were found to be within the recommended level except TSS.

Keywords: Selected Metals, Physico-chemical properties, *Qeera* stream water, Contaminants.