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## **Spatial Distribution of Soil Properties and Heavy Metals Content around the Chini Lake Watershed**

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This study was carried out to determine the soil properties and heavy metals content around the Chini Lake watershed, situated in the southeastern region of Pahang, Malaysia. The soil properties such as particle size distribution, texture, organic matter content (OM), density, porosity, pH, cation exchange capacity (CEC), electrical conductivity (EC) and the presence of selected heavy metals such as Pb, Zn, Cu, Co, Ni, Cr and Cd were analyzed using the standard methods. The analyses showed that sand was dominant in the four soil series. The Lating series had the lowest sand content ranging from 2.02% to 3.48% both in the top soil and subsoil horizons. The highest percentage (46.49) of silt was recorded in the Kedah series and the lowest (17.71%) in the Kuala Brang series. There was higher clay content in the subsoil than in the surface soil for all the soils studied. All the soil series contained low organic matter, ranging from 1.10% to 9.34%. Soil physical properties showed higher bulk density values in the disturbed soil horizons than in the undisturbed forest soils. All the soils studied had low pH and low electrical conductivity. The CEC of all the soil series was low with values of less than 13.34 meq/100g soil. The results showed that areas affected by anthropogenic activities (oil palm estates, rubber plantations and cultivated areas) in the Chini Lake watershed contained higher concentrations of heavy metals than forested or uncultivated areas. The concentrations of heavy metals recorded in the study area were considered as potentially non-toxic.

**Keywords:** Soil properties, soil profile, soil series, heavy metals, Chini Lake