

POSTER 2 (PS2)

PHYSICO-CHEMICAL CHARACTERISTICS AND GEOCHEMICAL COMPOSITION OF SOIL FROM PELEPAH KANAN EX-MINE, KOTA TINGGI, JOHOR

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ABSTRACT

A study on physico-chemical characteristics and geochemical composition of soil from ex-mines in Lombong Pelepah Kanan, Kota Tinggi Johor was carried out. The ex-mine is known to produce tin and iron until the end 2001 when their operation ceased. A number of 15 topsoil (0 - 20 cm) samples were collected east way direction using 'Dutch Auger'. Sampling area represented five different kinds of land use that were forest area (S1), open area (S2), Pond edge (S3), sand tailing (S4) and river sediment (S5). Three soil samples were collected to represent every type of land use. The soil samples were determined for their physico-chemical characteristics and geochemical compositions. Major element compositions of soils were dominated by SiO₂ followed by Fe₂O₃, and Al₂O₃. TiO₂ and MnO content were less than 4.11% whereas K₂ O and P₂O₅ content were less than 1%. The average concentration for heavy metal were 45-288 µg/g for Ba, 105-1066 µg/g for Zr, 0.3-17.7 µg/g for Sr, 0-143.3 µg/g for Rb, 31.3-107.3 µg/g for Pb, 149.3-723 µg/g for As, 23.3-319.3 µg/g for Zn, 15-586.3 µg/g for Cu, 5-15.3 µg/g for Ni, 7-143.7 µg/g for

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Co, 24.7-66 $\mu\text{g/g}$ for Cr and 52.7-113 $\mu\text{g/g}$ for V. The organic matter content ranged from 1.63 to 2.41%. True density of some soil sample was high, indicating the presence of high density mineral. The pH of the study area ranged from 3.81 to 5.20, thus acidic with cation exchange capacity ranged from low to high concentration. The electrical conductivity value ranged from 2.19 to 2.38 mS/cm.