

CONCENTRATION OF HEAVY METALS FROM SUNGAI WEH

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ABSTRACT

CONCENTRATION OF HEAVY METALS FROM SUNGAI WEH

This study aims to determine the heavy metal concentration in water sample from Sungai Weh (locally known as *Lubuk Jet* recreational area). About 15 samples were collected from five sampling points (each point in triplicates) and analyzed using inductively coupled plasma optical emission spectrometry (ICP-OES). Average concentration of heavy metals (Pb, Mn and Fe) was determined. Fe (range 0.27-0.30mg/L) showed the highest average concentration followed by Pb (range 0-0.19mg/L) and Mn(range 0.01-0.02mg/L). Concentration of Pb was the only that exceeded the acceptable limit stated by World Health Organization (WHO). Health risk assessment for these heavy metals was carried out for dermal contact and oral ingestion exposure pathways. The results show that the value for Pb, Mn and Fe in this study was below the non-carcinogenic and carcinogenic limits suggested by United State Environment Protection Agency (USEPA). Regular monitoring and heavy metal assessment should be taken in order to maintain the quality of Sungai Weh. Overall, Sungai Weh is safe to be used for domestic usage by nearby population.