

## **Hydrogeochemical and water quality status of main rivers in Kota Kinabalu, Sabah**

### **ABSTRACT**

The hydrogeochemical and water quality of three main rivers in Kota Kinabalu, was studied based on its physico-chemical characteristic. Nine sampling locations from three main rivers namely Menggatal River, Inanam River and Likas River that run through the urban area of Kota Kinabalu, Sabah has been selected for this study. Water and sediment samples were collected from the sampling location for the physico-chemical analysis. Soil samples showed a decreasing pattern of pH value for each river going from upper stream to downstream ranging from 5.50 to 4.49. Moisture content and organic content ranged from 30.38 to 15.47 % and 0.35 and 4.40 % respectively. Range of data obtained on water samples are as followed pH (7.89 – 6.20), conductivity (408.2 – 47.9 mS/cm), dissolved oxygen (8.37 – 2.07 mg/l), temperature (33.7 – 23.8 °C), salinity (1.10 – 0.02 ppt), turbidity (435.30 – 22.37 NTU). NO<sub>3</sub> are below detection level at two sampling locations whilst the highest is 16.3 mg/l. Highest PO<sub>3</sub> - is 1.04 mg/l and lowest is 0.24 mg/l. Maximum SO<sub>4</sub> reading is at 28 mg/l whereas the lowest is none. Biochemical oxygen demand ranged from 4.10 to 0.66 mg/l while chemical oxygen demand ranged from 21.7 to less than 0.7 mg/l. Total suspended solid at highest is 230 mg/l while lowest at 0 mg/l. Biological analysis ranged from 20,925 to 117 and 20,475 to 44 count per 100 ml for total coliform and fecal coliform respectively. Based on the obtained data, one sampling location classified into Class 1 whilst three sampling locations classified into Class IV based on National Water Quality Standards for Malaysia (NWSQM).