

**DETERMINATION OF ALUMINIUM IN ACID MINE DRAINAGE AND
RIVER WATER IN RANAU, SABAH**

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ABSTRACT

Colorimetric analysis of Al in water according to the Eriochrome Cyanine R method has been studied. Absorbance measurement was carried out using a UV-VIS spectrophotometer. The absorbance reading can be obtained at $\lambda_{\max} = 535\text{nm}$ after a reaction time of 5 minutes. The relationship between absorbance and concentration obeyed the Beer-Lambert law at concentration range 0-1.0 $\mu\text{g/mL}$ but showed a negative deviation at concentrations above 1.0 $\mu\text{g/mL}$. The presence of phosphate and ferric ions in solution produced a negative and positive interference, respectively, on the absorbance measurement. Analysis of river water and AMD samples showed Al concentrations in the range 0.3853 - 0.8241 $\mu\text{g/mL}$ (average: $0.55 \pm 0.01 \mu\text{g/mL}$) and 117.74 - 181.95 $\mu\text{g/mL}$ (average: $138.16 \pm 1.56 \mu\text{g/mL}$), respectively.

