

# **GENERAL GEOLOGY AND GEOCHEMISTRY IN KAMPUNG TARAWAS, RANAU**

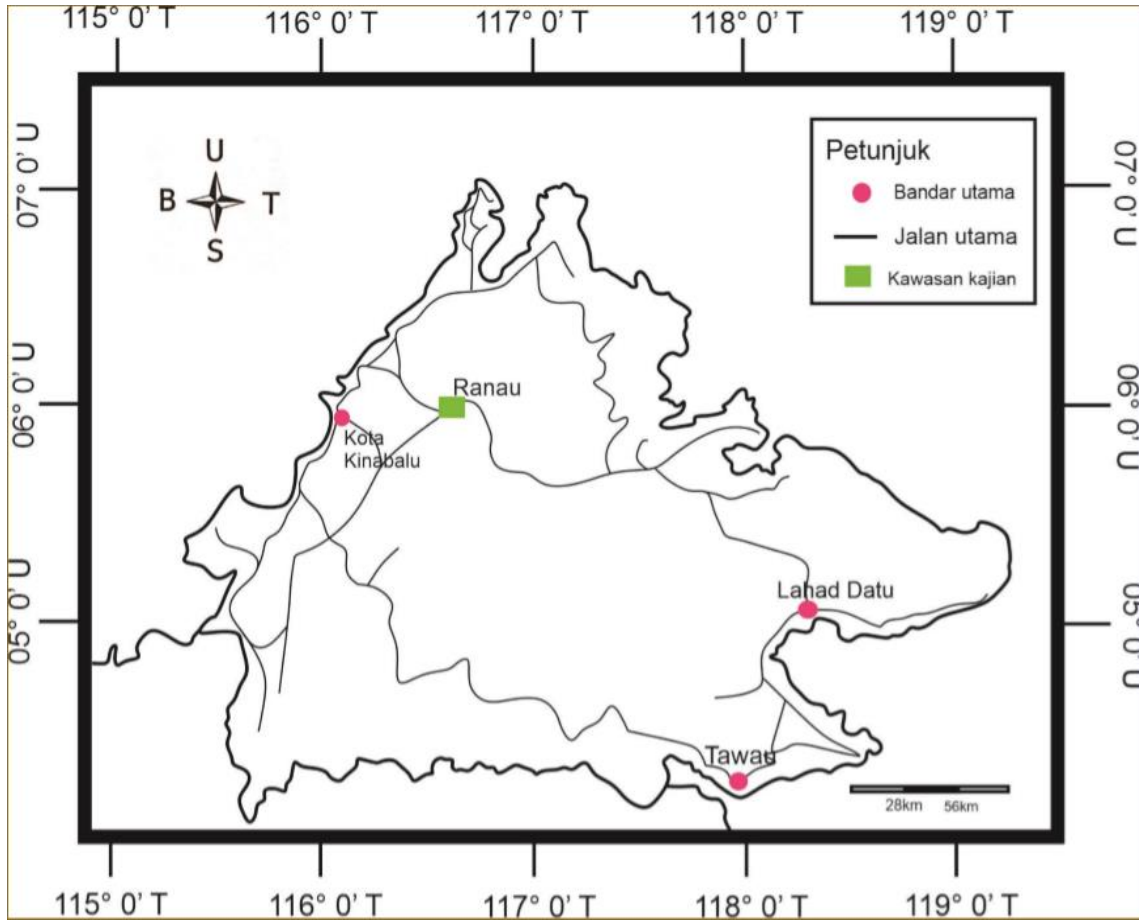
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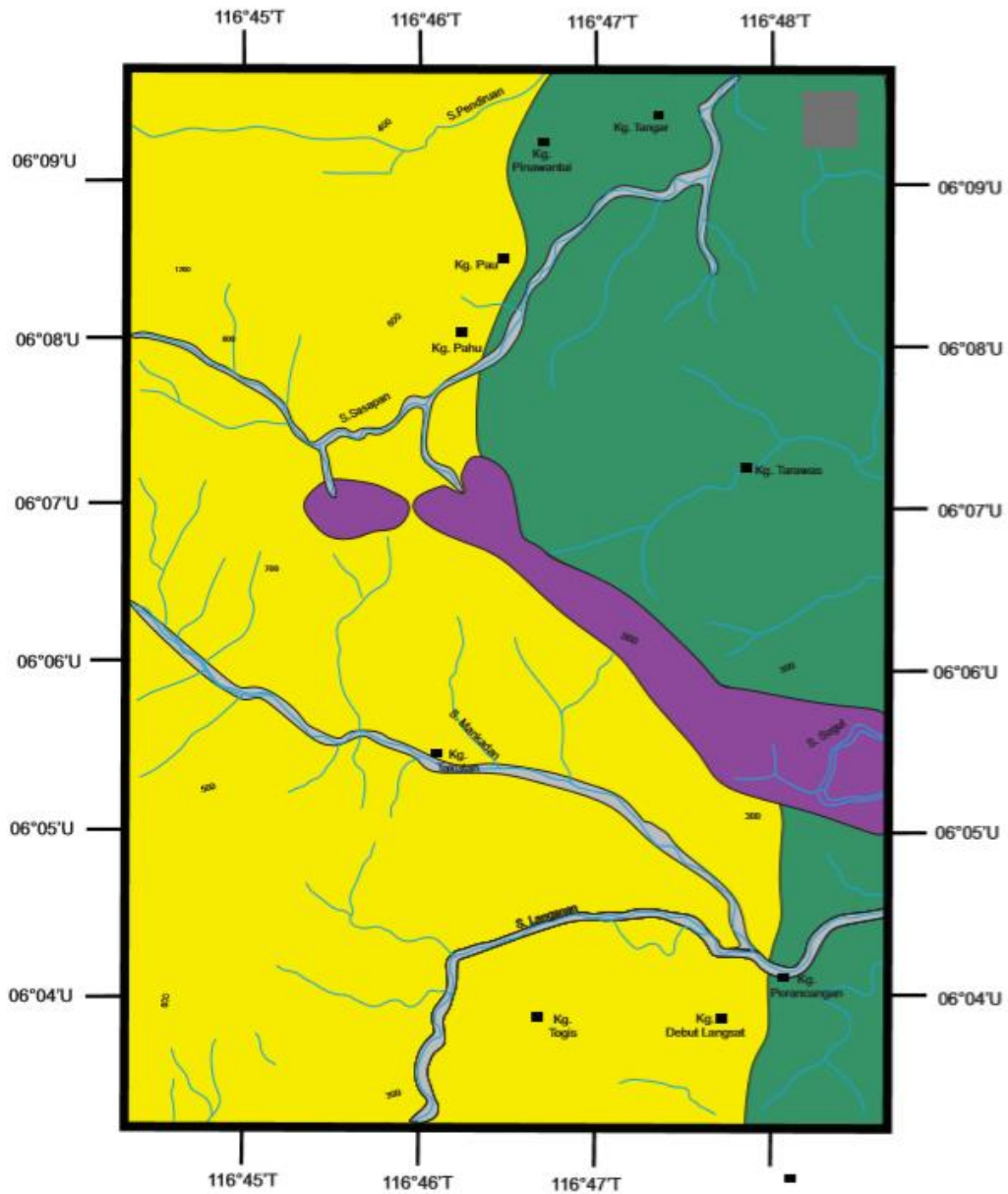
## **Abstract**

The study area is located around Kg. Tarawas, Ranau, Sabah which is bounded by latitude 06 04 'N to 06 ° 09' N while its longitude covers 116 ° 45 'N to 116 ° 48 E. The oldest rocks in the study area are ultramafic rocks consisting of peridotite rocks from to Early Tertiary followed by the Trusmadi Formation which aged Paleocene to Middle Eocene. The Crocker Formation consists of massive sandstone shale and units aged from Late Eocene to Early Miocene, followed by intermediate igneous Intrusion consisting of granodiorite rocks aged from Late Miocene to Pliocene. Next, the Pinousuk gravel consists of deposits of granite rocks aged Late Pleistocene and Quaternary alluvial deposits aged Holocene. The study area has two deformation trends in the direction of the anomaly, namely Northeast-- Southwest and Northwest-- Southeast. There were 30 soil samples, and 5 water samples taken from the study area for geochemical analysis. The geochemical analysis was carried out on all samples in the analysis of moisture content in the soil, organic matter content in the soil, pH analysis, grain size distribution analysis, and ICP-OES analysis. The results of the analysis showed that most of the samples taken were slightly acidic with an average pH of 6.42. In addition, the samples were also analyzed in determining the concentration of heavy metals. Heavy metal concentrations of copper (Cu) range 5-821 mg/kg, Cobalt (Co) range 1-356 mg/kg, iron (Fe) range 6204-54519 mg/kg, manganese (Mn) range 3-8117 mg/kg, nickel (Ni) in the range of 1-3199 mg/kg, zinc (Zn) in the range of 12-78 mg/kg and lead (Pb) in the range of 1-27 mg/kg. The physicochemical properties of the soil including soil pH value and clay percentage were analyzed to see the factors that influence the concentration of heavy metals in the soil. The concentration of the metal elements Cu, Ni, Mn, and Fe in the soil depends on the adsorption mechanism of these metals through the interaction of the percentage of clay and the pH value of the soil. Zn metal is influenced by the origin of the parent material of the rock while Pb metal usually depends on the percentage of organic matter in the soil.

### Map of the study area in Ranau Sabah



## Geological map of the Study area



**LEGENDS**

	SETTLEMENT		CONTOUR
	PAVED ROAD		DRAINAGE
	UNPAVED ROAD		

**GEOLOGICAL LEGENDS**

	ULTRABASE
	CROCKER FORMATION
	TRUSMADI FORMATION
	ALLUVIUM DEPOSITION

## Outcrops of ultrabasic rock in Kampung Tarawas Ranau

