

## ABSTRACT

**RATNA HUSAIN.** *Geochemistry of Clay Minerals and Its Implication on Landslide* (supervised by **A. M. Imran, Ulva Ria Irfan, and Tri Harianto**).

The study aims to investigate the types of clay minerals based on the geochemistry properties of residual soil, originated from volcanic breccias, lime stones, and siliciclastic sandstones, determine the availability of clay minerals based on geochemical analysis method, and describe the relationships among the clay mineral, its plasticity, and soil consistency which might affect landslide.

The method used in the study descriptive exploratory carried out in a field survey including rock exposing data. The soil sample was taken with manual drill and test pit. Residual soil of volcanic breccia was collected from Tompolemolemo area in Barru Regency. Residual soil sample of clay-lime stone was collected from Gattareng area in Soppeng Regency, and residual soil of sandstone was gathered from Mallawa district of Maros Regency. Laboratory analysis was conducted by means of petrography analysis, Atterberg Test, XRD test, XRF test, and EDX-SEM.

Geochemical analysis indicates that the types of clay minerals are always found and present in volcanic residual soil, of clay-limestone, of siliciclastic sandstone and consisting of Illit, Kaolinite and Vermiculite. The type of clay mineral formed will depend on the mineral composition of the bedrock. The presence of Plagioclase, Pyroksin, Calcite, and Quartz to form clay minerals makes up the residual soil. Illit and Kaolinite minerals can cause high plasticity of soil and Kaolinite and chlorite mineral in the residual soil may result in a decrease level of slope stability.

Keywords: clay mineral, volcanic breccia, limestone, siliciclastic.

