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Geological, Geomechanical and Geochemical Analysis on Claystone of the Sebamban Syncline

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Abstract

This study was conducted to determine the characteristics of claystone at the Sebamban Syncline by carrying out geology–geomechanics and geochemistry approach. The aim of this is to provide the latest information on characteristics of claystone at the Sebamban Syncline. Results of the study showed that the provenance of Warukin claystone was from recycled orogen. This was corroborated by the geochemical data which stated that the claystone was composed by clay-sized quartz minerals. Clay-sized quartz minerals indicate that there has been a long process of transport and weathering of the quartz minerals that have high resistance, until they become clay-sized. The other geochemical data result is the absence of minerals from volcanic rocks that appear

at the beginning of the Bowen series, which have fragile property. Mg is the fragile element that was not found and the mineral is an element binding in montmorillonite, so the presence of the montmorillonite in claystone of the Sebamban Syncline was also not found. Geomechanical data result shows that claystone had strength of around 100 kPa with internal friction angle of about 14° and cohesion of about 29 kPa.

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Contributions

Dr SS handled the concept, design, acquisition,
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Ethics declarations

Conflict of interest

The author declares no competing interests.

Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Code availability

None.

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