

**GEOLOGY AND STRUCTURAL ANALYSIS OF KARANGLANGU
AREA, KEDUNGJATI SUBDISTRICT, GROBOGAN,
KECAMATAN KEDUNGJATI, KABUPATEN GROBOGAN,
CENTRAL JAVA, INDONESIA**

ABSTRACT

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Research location lies on Kedungjati subdistrict, Grobogan, Central Java Province. Astronomically at 459000mE – 464000mE and 9201000mN – 9206000mN with 1 : 20,000 scale and 25 km² of area wide. The research main purpose is to determine the regional geology condition and geological structures that had been evolved through times in those area.

Based on geomorphology aspects, the research location is divided into two (2) origin forms and four (4) land forms which are Denudation Form : Inter-hill Plain and Eroded Hills; Fluvial Form : Alluvial Plain and Stream Channel. The drainage patterns known are sub-dendritic and sub-parallel.

There are three (3) stratigraphy units identified on research location (oldest-youngest) : Middle-Late Miocene Kerek Sandstone unit (N11-N16), Late Miocene-Early Oligocene Banyak Sandstone unit (N17-N19) and also the Recent Alluvial Deposit unit. The depositional environment of those rocks covering from middle to lower submarine fan. The Kerek Sandstone was deposited at Lower Bathyal (2000 ft- 4166 ft subsea) and Banyak Sandstone was deposited at Mid-Neritic to Lower Bathyal (667 ft- 6000 ft subsea).

The tectonic features of research area consists of joints, folds, and faults. The identified folds (Anticline and Syncline) are Panimbo; Repaking; Karanglangu; Kalinongko; Kentengsari; and Tegalrejo. The identified faults are Panimbo Thrust fault; Ngrekesan Thrust Fault; Pendem Strike-slip Fault; Karanglangu Strike-slip Fault; Bancang Strike-slip Fault; and Tegalrejo Strike-slip Fault.

The anticlines and synclines were developed at foreland zone that created particular thrust fault configuration named *Fold Thrust Belt* that resulted as manifestation of N-S tectonic compression force at those area. The main force (σ_1) has NW-SE to N-S direction that approximately aligned with tectonic transport of the age of area's structural forming.

There are some good geologically potentials founded at the research area such as rocks mining at the river bank and oil seepage but also there is a negative one like land or soil failure.