

ABSTRAK

Secara administratif penelitian terletak di daerah Tegalombo, Kecamatan Tegalombo, Kabupaten Pacitan, Provinsi Jawa Timur. Secara geografis berada dalam zona $8^{\circ} 3' 37,9''$ LS - $8^{\circ} 5' 15,5''$ LS dan $111^{\circ} 15' 47,5''$ BT - $111^{\circ} 17' 58,3''$ BT atau dalam zona UTM 49S: N 529000 mE – N 533000 mE dan S 9106000 mE – S 9109000 mE, dengan luas daerah penelitian adalah 12 km^2 .

Geomorfologi daerah penelitian dibagi menjadi tiga yaitu: Satuan Pegunungan Vulkanik (V1) yang mendominasi di daerah telitian, Satuan Lembah Vulkanik (V2) dengan kemiringan lereng miring-curam, dan Satuan Lembah Struktural (S1) dengan kelurusan relatif timurlaut-baratdaya. Stratigrafi daerah telitian terdiri dari 6 satuan dari tua ke muda yaitu: Satuan Andesit Lava Mandalika berumur Oligosen Akhir - Miosen Awal, Satuan Breksi Polimik Mandalika berumur Miosen Awal, Satuan Intrusi Dasit berumur Miosen Tengah, Satuan Intrusi Andesit Hornblende dan Intrusi Andesit Piroksen berumur Miosen Tengah-Akhir, dan Satuan Endapan Alluvial berumur Kwartar.

Struktur geologi yang terdapat di daerah telitian berupa sesar, kekar dan urat kuarsa. Sesar yang dijumpai di daerah telitian berupa sesar-sesar mendatar kanan dengan arah relatif baratlaut-tenggara (Sesar Kemuning, Sesar Tegalombo, Sesar Tumpang, Sesar Mering) dan sesar mendatar kiri dengan arah relatif timurlaut-baratdaya (Sesar Grindulu). Terdapat dua pola umum kekar di daerah telitian, pola pertama dengan arah umum NW-SE mempunyai tegasan utama $\sigma_1 = 6^{\circ}$, N345°E, dan pola yang kedua dengan arah umum NE-SW mempunyai tegasan utama $\sigma_1 = 23^{\circ}$, N189°E. Kekar pola NW-SE terdiri dari tiga arah kekar yaitu: kekar-kekar kompresi dengan arah N120°E-N130°E (NW-SE) dan N190°E-N200°E (NE-SW), serta kekar-kekar ekstensi dengan arah N160°E-N170°E (NNW-SSE). Kekar pola NE-SW terdiri dari tiga arah kekar yaitu: kekar-kekar kompresi dengan arah N220°E-N230°E (NE-SW) dan N330°E-N340°E (NW-SE), serta kekar-kekar ekstensi dengan arah N5°E-N15°E (NNE-SSW).

Pembentukan urat-urat kuarsa di daerah penelitian terjadi dalam dua tahap, yaitu: (1) Tahap I: pembentukan urat-urat kuarsa I (kuarsa±pirit±klorit±ilit) jenis tekan berarah N120°E-N130°E dan urat-urat kuarsa II (kuarsa±pirit±ilit±kaolinit) jenis tarik berarah N160°E-N170°E pada kala Miosen Tengah yang berhubungan dengan dasit; (2) Tahap II: pembentukan urat-urat kuarsa III (kuarsa±pirit±ilit±smektit±kaolinit) jenis tekan berarah N220°E-N230°E dan urat-urat kuarsa IV (kuarsa±pirit±ilit±klorit±smektit) jenis tarik berarah N185°E-N195°E pada kala Miosen Akhir yang berhubungan dengan andesit hornblende.

ABSTRACT

Administratively the research area is located in Tegalombo, Pacitan district, East Java province. Geographically located within zones: south latitude $8^{\circ} 3' 37.9''$ - $8^{\circ} 5' 15.5''$ and east longitude $111^{\circ} 15' 47.5''$ - $111^{\circ} 17' 58.3''$ or within UTM zone 49S: N 529000 mE - N 533000 mE and S 9106000 mE - S 9109000 mE, with broad of research area is 12 km^2 .

Geomorphology of the research area is divided into three: Volcanic Mountain Unit (V1) which dominates in research area, Volcanic Valley Unit (V2) with steep incline slope, and Structural Valley Unit (S1) with linement northeast-southwest relative. Stratigraphy of the research area consists of 6 units from old to young, namely: Andesite Lava Mandalika Unit of Late Oligocene - Early Miocene, Polymic Breccia Mandalika Unit of Early Miocene, Dacite Intrusion Unit of Middle Miocene, Andesite Hornblende Intrusion and Andesite Pyroxene Intrusion of Middle-Late Miocene, and Quaternary Alluvial Deposits.

The geology structures found in the research area are faults, fractures and quartz veins. The fault encountered in the research area is the right-sided fault with the northwesat-southeast direction (Kemuning Faut, Tegalombo Fault, Tumpang Fault, Mering Fault) and left-sided fault with the northeast-southwest direction (Grindulu Fault). There are two general patterns of fractures in the research area, the first pattern with the direction of NW-SE has the main constraint $\sigma_1 = 6^{\circ}$, N345°E, and the second pattern with the direction NE-SW has the main constraint $\sigma_1 = 23^{\circ}$, N189°E. The fractures NW-SE pattern consists of three directions: shear fractures with the direction of N120°E-N130°E (NW-SE) and N190°E-N200°E (NE-SW), as well as the gash fractures of the N160°E-N170°E (NNW-SSE). The fractures of the NE-SW pattern consists of three directions: shear fractures with the direction of N220°E-N230°E (NE-SW) and N330°E-N340°E (NW-SE), as well as the gash fractures of the N5°E-N15°E (NNE-SSW).

Quartz veins genesis in the research area are occur in two stages: (1) Stage I: the formation of compressional quartz vein I (quartz±pyrite±chlorite±illite) with direct are about N120°E-N130°E and tensional quartz vein II (quartz±pyrite±illite±kaolinite) with direct are N160°E-N170°E of Middle Miocene and associated with dacite; (2) Stage II: the formation of compressional quartz vein III (quartz±pyrite±ilit±smectite±kaolinite) with direct are about N220°E-N230°E and tensional quartz vein IV (quartz±pyrite±illite±chlorite-smectite) with direct are N185°E-N195°E of Late Miocene and associated with andesite hornblende.