

**PERHITUNGAN TEMPERATUR BAWAH PERMUKAAN MANIFESTASI
MATA AIR PANAS BUMI DAERAH GIRITIRTA KECAMATAN
PEJAWARAN KABUPATEN BANJARNEGARA PROVINSI JAWA
TENGAH**

SARI

Fuad Ferry F

Daerah penelitian secara geografis berada pada koordinat $7^{\circ}.13''.21''$ - $7^{\circ}.14''.50,9''$ LS hingga koordinat $109^{\circ}.47''.5,9''$ - $109^{\circ}49''.11''$ BT. Sedangkan secara administratif terletak di Desa Giritirta Kecamatan Pejawaran, Kabupaten Banjarnegara. Secara geomorfologi daerah penelitian dibagi menjadi empat satuan yaitu satuan perbukitan aliran Lava Andesit Giritirta, Satuan perbukitan Breksi Andesit Giritirta, Satuan lembah struktural Panusuapan. Satuan perbukitan aliran Lava Panusuapan. Secara stratigrafi daerah penelitian terbagi menjadi 3 satuan yaitu satuan Batupasir berumur Pliosen (N18-N19), satuan Lava Andesit berumur Plistosen awal dan satuan Breksi Andesit berumur Plistosen tengah. Adanya proses tektonik di daerah penelitian menyebabkan terjadinya sesar geser kiri naik Panusuapan dan sesar geser kiri turun Giritirta yang diperkirakan terjadi kala Kuartar setelah semua satuan batuan terendapkan. Manifestasi panasbumi yang muncul berupa 2 mata air panas. Kedua mata air panas yang di analisis tergabung dalam satu reservoir dan mempunyai tipe air Dilute Chloride Bicarbonate. Mata air panas Giritirta merupakan outflow dari sistem panasbumi Giritirta dengan temperatur reservoir sekitar $152-156^{\circ}\text{C}$ berdasarkan geothermometer silika. Sistem panasbumi giritirta termasuk kedalam sistem panasbumi bertemperatur sedang.

Kata kunci : geokimia, mata air panas, Giritirta, Pejawaran.

**(CALCULATION OF SUBSURFACE TEMPERATURE MANIFESTATIONS
OF HOT SPRINGS GIRITIRTA AREA, PEJAWARAN SUBDISTRICT,
BANJARNEGARA REGENCY, CENTRAL JAVA)**

ABSTRACT

Research area was held on Banjarnegara area Coordinates at latitude $7^{\circ}.13''.21''$ - $7^{\circ}.14''.50,9''$ and longitude $109^{\circ}.47''.5,9''$ - $109^{\circ}49''.11''$ belong to Banjarnegara regency. Based on field observation, the geomorphology research area was divided into four units, namely Giritirta Lava Andesite Field, Giritirta Breccia Hills, Panusupan Structural Valley, and Panusupan Lava Field. Based on lithostratigraphy, research area was divided into three units, there are Sandstone unit on Pliosen, Andesit Lava Flow Unit, and Andesite Breccia Unit on Plistosen. The structural geology is reverse left slip fault Panusupan and normal left slip fault Giritirta on Quartery. The geothermal manifestations on the surface such as 2 hot springs. All of the two hot springs has Dilute Chloride Bicarbonat type and incorporated in the same reservoir. The hot springs thought Giritirta are outflow of Giritirta geothermal systems. Temperature of geothermal reservoir Giritirta area has about 152 - 156 °C by Silicca geotermometer (Giggenbach, 1988). Giritirta geothermal systems area classified as middle-temperature geothermal systems associated with volcanomagmatic activity.

Key : Geochemistry, Hot springs, Giritirta, Pejawaran