

## HYDROTHERMAL ALTERATION STUDY AND VOLCANIC ROCK PETROLOGY OF ÇANAKKALE-TUZLA GEOTHERMAL AREA

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**ABSTRACT.**— Hydrothermal alteration zones have been investigated by x-ray diffraction techniques and geochemical analysis. In studied area; alunite, kaolinite, montmorillonite, illite, and silica zones have been recognized. These hydrothermal alteration zones indicate that there are geothermal fluids which have a temperature of 150-225°C in the reservoir. The tectonic structure of studied area is developed by NW-SE and NE-SW directional forces. Geothermal fluids coming from the diagonal cracks formed as a result of faults having a strike of E-W and formed as a result of these forces have formed the necessary environment for hydrothermal alteration. Volcanic rocks where hydrothermal zones are observed in the studied area are of Lower-Middle Miocene age and are represented by latite, andesite, dacite, rhyolite type lavas and tuff and ignimbrites. With petrochemical studies it has been concluded that volcanites are an inner continental volcanism having calc-alkaline with high potassium and schoshonitic properties and are shelf characteristic.