SARI

Manifestasi di permukaan biasanya dapat diasosiasikan dengan aktivitas sistem panas bumi. Aktivitas ini umumnya berkaitan dengan pembentukan mineral alterasi hidrotermal. Penelitian bertujuan untuk mengetahui kondisi geologi dan zonasi alterasi permukaan yang terbentuk di daerah penelitian. Penelitian terletak di Desa Alamendah dan sekitarnya, Kecamatan Rancabali, Kabupaten Bandung, Jawa Barat. Metode yang digunakan dalam penelitian ini meliputi analisis kondisi geologi meliputi analisis stratigrafi, geomorfologi, struktur dan sejarah serta analisis alterasi hidrotermal melalui petrografi dan *X-Ray Diffraction* (XRD). Hasilnya menunjukkan bahwa geomorfologi daerah penelitian terbagi menjadi 5 yaitu Satuan Kawah Gunungapi (V1), Satuan Kerucut Gunungapi (V2), Satuan Lereng Gunungapi (V3), Satuan Dataran & Kaki Lereng Fluvial Gunung Api Atas (V8), dan Satuan Dataran & Kaki Lereng Fluvial Gunung Api Bawah (V9) dengan pola aliran radial dan tipe genetik insekuen. Stratigrafi daerah penelitian berdasarkan satuan stratigrafi gunung api dari tua ke muda terdiri atas Satuan Breksi Andesit Pancur, Satuan Lava Andesit Tikukur, Satuan Breksi Andesit Ciwidey, Satuan Breksi Andesit 1 Patuha, Satuan Lava Andesit Patuha, Satuan Lava Andesit Cimanggu, Satuan Breksi Andesit Kawah Putih dan Satuan Breksi Tuff Kawah Putih. Struktur geologi daerah penelitian diperkirakan terdapat sesar mendatar sinistral patuha dan ciwidey dengan searah menerus dengan manifestasi. Hasil studi alterasi hidrotermal dipermukaan mendapatkan tiga zona alterasi yang terbentuk yaitu Zona Alunit ± Kaolinit ± Silika dengan kisaran suhu 100°C-160°C, Zona Kaolinit + Montmorillonit + Kuarsa kisaran suhu 180°C-200°C, dan Zona Klorit ± Illit ± Kuarsa dengan kisaran suhu 220°C-310°C yang ketiganya berkembang sepanjang jalur indikasi struktur yang ada pada daerah penelitian.

Kata Kunci: Alterasi Hidrotermal, *X-Ray Diffraction (XRD)*, Panas Bumi Patuha

ABSTRACT

Manifestations on the surface can usually be associated with geothermal system activity. This activity is generally related to the formation of hydrothermal alteration minerals. Research aims to determine the geological conditions and zoning of surface alteration formed in the study area. The study is located in Alamendah Village and its surroundings, Rancabali District, Bandung Regency, West Java. The methods used in this study include analysis of geological conditions including stratigraphic, geomorphological, structure and geologic historical analysis as well as hydrothermal alteration analysis through petrography and x-ray diffraction (XRD). The results show that the geomorphology of the study area are divided into 5 unit namely Volcanic Crater Unit (V1), Volcanic Cone Unit (V2), Volcanic Slope Unit (V3), Upper Volcano Fluvial Plain & Slope Unit (V8), and Lower Volcano Fluvial Plain & Slope Unit Volcano (V9) with radial flow patterns and insecuent genetic types. Stratigraphy of the study area based on the unit of volcafi volcano from old to young consisting of the Pancur Andesite Breccia Unit, Tikukur Andesite Lava Unit, Ciwidey Andesite Breccia Unit, Patuha Andesite Breccia 1 Unit, Patuha Andesite Lava Unit, Cimanggu Andesite Lava Unit, Kawah Putih Andesite Breccia Unit and Kawah Putih Tuff Breccia Unit. The geological structure of the study area is estimated as a sinistral fault located Sinistral Patuha and Ciwidey with a continuous direction with manifestations. The results of the hydrothermal alteration study on the surface obtained three alteration zones formed, namely the Alunite ± Kaolinite ± Silica Zone with a temperature range of 100 ° C-160 ° C, the Kaolinite + Montmorillonite + Quartz Zone with a temperature range of 180 ° C-200 ° C, and the Chlorite ± Illite ± Quartz Zone with a temperature range of 220 ° C-310 ° C, all three of which developed along the lines of indications of existing structures in the study area.

KEYWORD: Hydrothermal Alteration, X-Ray Diffraction (XRD), Patuha Geothermal