Altered Alkaline Pyroclastics Related Lree Enrichment At Derekoy Region, Isparta, Sw Turkey

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Investigation carried out for the potential in-situ enrichments of REE on peneplain surfaces characterized by exogenic residual formations over Derekoy Region. These formations are observed as highly altered alkaline tuffs. Source of the tuffs is Golcuk volcano and it is the most significant product of Afyon-Isparta potassic-ultrapotassic volcanic province. It is well known Volcano charged with the post collisional activity, in Isparta Apex southwestern of Turkey. Partial melting of oceanic crust and subcontinental lithospheric mantle resulted LREE enrichment in Golcuk volcanics. These volcanic rocks are mainly trachyandesites, augite-trachytes, porphyry trachytes and tephriphonolite dikes which are formed in several eruptive cycles. Pyroclastics from the last eruptions can be encountered in various locations inside the Isparta apex. The pyroclastics in study area described as mafic crystal metatuffs which predominantly consist of calcic-plagioclase with clinopyroxene, K-feldspar, and quartz set in a hyalo-microcrystalline tuffaceous matrix which mainly include microcrystalline aggregates of kaolinized and sericitized feldspar, biotite, chlorite, quartz, and dusty iron oxide. Results indicated high values for the LREE elements; with an average of La; 290 ppm, Ce; 470 ppm, Nd; 240 ppm, Sc; 44 ppm and Th; 85 ppm. It is suggested that the LREE's and Th were originated from hydrated bastnasite (lanthanite) and calciobetafite minerals.

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