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Petrology And Geochemistry Data Of Miocene Volcanism Of Paramillos De Uspallata, Argentina

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The Paramillos de Uspallata mining distric presents the Miocene magmatism calc-alkaline with stocks, sills, dykes, andelacitic porphyrys and monzodioritic rocks. This mining district is located in the south argentine Precordillera, on the north-west of Mendoza city: 32˚ 30'LS and 69˚ 05' LW, at 3500 m of altitude.

The volcanic rocks are medium grained and porphyritic with zoned phenocrysts of plagioclase altered to sericite. Quartz is present as both veinlets and in the groundmass. Mafic minerals comprise relicts of biotite, hornblende, all largely altered to chlorite and sericite. The geochemistry data of Paramillos de Uspallata magmatism shows SiO_2 >56 % with high Al_2O_3contents; low MnO and Y values (<19ppm); correspondingly high Sr (>400 ppm) and Ba with low HREE, representing adakitic-type magmatism and they are related with porphyry coppers and epithermal ore deposit situated in this region. These rocks show average background values Au (46 ppb) and Cu (250 ppm).

The volcanism has high Sr/Y and La/Yb (> 50 and 20 respectively) similar behaviour to adakites and the geochemical data suggest that the magmatic source the Andean Cordillera changed at 16-18 Ma from garnet-poor to garnet-rich. This is coincident with the shallowing of the subduction zone and thickening of the crust.