

METALLOGENY, MICROTHERMOMETRY AND PB, SR, ND ISOTOPES OF VEIN-TYPE DEPOSITS OF CENTRAL ARGENTINIAN PATAGONIA

1DEJONGHE, L., 1DARRAS, B., 2HUGHES, G., 3MUCHEZ, P., 1SCOATES, J. and 1WEIS, D. 1University of Brussels, Belgium; 2DGMG Chubut, Argentina; 3University of Leuven, Belgium.

This contribution aims to compare ore deposits of central Argentinian Patagonia with those of the neighbouring regions in order to establish their source potential and their genesis mode. Nine polymetallic (Au, Ag, Pb, Zn, Cu) + barite and two fluorite ore deposits were investigated. Most of them are veins hosted in Jurassic volcanic rocks of basaltic, andesitic and dacitic compositions. Rare earth (REE) and high-field strength (HFSE) elements together with radiogenic isotopic compositions indicate a primary mantle origin for the host lavas. Three groups of ore deposits can be defined on the basis of their $^{206}\text{Pb}/^{204}\text{Pb}$ ratios. Pb isotopic compositions decrease going inland. The comparison with ore deposits from Peru and Chile shows that all ore deposits of central Argentinian Patagonian have distinctly less radiogenic compositions. Whole rocks Pb isotopic compositions are all more radiometric than those of the sulfides and indicate a mantle source for the mineralisations. Altogether, the trend in Pb isotopic compositions indicates a minor continental contribution increasing towards the continent, as also reflected by the Sr-Nd isotope systematics of the host lavas. The homogenization temperatures of the fluid inclusions fall within the range of epithermal to mesothermal systems (most Th values vary between 99 to 343°C). The salinity of the ambient fluids are low to moderate (between 0 and 10.4 eq. wt.% NaCl). The ore deposits of central Argentinina Patagonia belong to the low sulfidation type and could represent the very remote ore bodies associated to porphyry coppers which exist in Chile.