



Geological setting of the chipindo mine: a preliminary analysis

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Abstract

As a contribution to the metallogenic model for the Chipindo mineral deposit, the preliminary characterization of the geology of the area is presented. The open-pit mine is located in Huíla, Angola, and currently explores primary gold. It is included in the South Sheet D-33/J of Caconda from the Geological Map of Angola at 1:250 000 scale.

Geologically, the mineral deposit is part of the “Coarse-grain porphyroid leucogranites” unit that is, essentially, composed by leucocratic granites, with potassium feldspar phenocrysts of idiomorphic habit and poikilitic texture.

The exploration targets mineralised quartz veins. For this work, and as part of a PhD thesis of Kumoleha A., a total of 49 rock and mineral samples were collected in the mining area for the lithological and mineralogical characterization of the deposit. 21 samples were collected in the mining area, including the mineralized structures, and host rocks. The field description encompasses i) Quartz associated with leucogranites; ii) Mineralized quartz veins; iii) Pegmatitic veins; iv) Strongly fractured quartz; v) Quartz veins with en-echelon structures; vi) Weakly mineralized quartz; vii) Highly altered and deformed volcanic tuffs; viii) Volcanic rocks, with copper sulphides (mainly bornite); ix) Altered dolerite rock. To characterise the regional geological setting, 20 rock samples were collected in the following geological units: a) Acid metavulcanites; b) Granites to biotitic-amphibolic, porphyroid granodiorites; c) Gabbros, diorites and quartz-diorites, variably foliated, metamorphosed and/or metasomatized; d) Coarse-grained porphyroid leucogranites. Eight samples of mine waste were collected from the floatation tanks for geochemical analysis and study of tailings, including the potential environmental impact.

The sampling and sample description already carried out allows the preliminary characterization of this gold deposit.

Future investigation will include mineralogical, geochemical, petrographic and metallographic studies that will certainly increase our understanding of the processes that formed this mineral deposit.

Keywords: Gold, Sampling, rock, waste.