INTERPRETED PIMA-II SWIR MINERALOGY

PLATE No. 2496.1

Pierina Mine 5: lithology | Epithermal acid sulphate | South American Epithermals

Sample	Mineral1	Mineral2	Mineral3	Mineral4	Possible Mineral1	Possible Mineral2	Dominant Illite/muscovite composition
001r	smectite-illite	kaolinite			+/-carbonate		muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)
002r	smectite	chlorite					
003l1	calcite						
003l2	Mg-clay	carbonate			+/-chlorite		
005r	calcite						
006r	water	montmorillonite					
007l1	water				+/-smectite		
007l2	water				+/-smectite		
008r	water				+/-smectite		
009r	montmorillonite	kaolinite					
010r	dickite						
012r	noise						
013r	smectite-illite	carbonate	chlorite		+/-kaolinite		muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)
014r	smectite-illite	carbonate					muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)
016r	smectite-illite?						muscovitic (i.e. potassic or of "normal" muscovite or illite compositions)
017r	noise						
018r	smectite?	carbonate?					
020r	smectite?						

Samples on Lithotheque plates number left to right, commencing at top left. Samples are numbered 001-020. The letter after the number refers to the type pf measurement made: r = representative; v = vein; vs = vein selvage; m = matrix; c = clast; l = layer; p = phenocryst (if large). Not all plates contain 20 samples; not all samples have been measured; some samples have multiple measurements. THIS PAGE IS DESIGNED TO BE PRINTED.

Summary of Pierina Lithotheque Plates 2494.1, 2494.2, 2495.1, 2495.2, 2496.1

The alteration at Pierina is characterised by alunite (K-alunite), pyrophyllite, dickite (+/or kaolinite) and illite/muscovite. Chlorite, carbonate and smectite are identified in the regionally propylitised samples. As often observed in epithermal systems, the illite appears to be mostly Al-rich (which is often due to a paragonitic, Na-rich, composition) although more than two phases of illite are observed in many samples (one of paragonitic composition and another of more muscovitic compositions). The illite also displays variations in crystallinity, and appears to be more smectitic in the outer alteration zones. Baryte associated with the late hypogene oxidation displays a spectrum characterised by deep water absorptions, which are largely non-diagnostic. However, the main water absorption feature near 1900 nm has a minimum near 1930 nm, which is unusual for most minerals and may be characteristic of the baryte phase at Pierina.

Please note that the summary is based on a relatively small number of samples which are not spatially attributed. Conclusions drawn are, therefore, indicative rather than definitive of the spectral and mineralogical characteristics of this deposits.

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