

INTERPRETED PIMA-II SWIR MINERALOGY

PLATE No. 2495.1

Pierina Mine 3: alteration

Epithermal acid sulphate

South American Epithermals

Sample	Mineral1	Mineral2	Mineral3	Mineral4	Possible Mineral1	Possible Mineral2	Dominant Illite/muscovite composition
001r1	water				+/-diaspore		
001r2	water				+/-diaspore		
002r	water	?					
003r	water	kaolinite					
004r	water	dickite			+/-kaolinite		
005r	water	dickite			+/-kaolinite	+/-illite	
006r	K-alunite	pyrophyllite					
007r	K-alunite	pyrophyllite					
008r	K-alunite	pyrophyllite					
009r	K-alunite	pyrophyllite					
010r1	K-alunite						
010r2	K-alunite	pyrophyllite					
011r	K-alunite	pyrophyllite					
012r1	K-alunite						
012r2	K-alunite						
013r	K-alunite						
014r1	K-alunite	pyrophyllite					
014r2	K-alunite						
016r1	K-alunite						
016r2	K-alunite	pyrophyllite					
017r1	K-alunite	pyrophyllite					
017r2	K-alunite	pyrophyllite					

Samples on Lithothèque plates number left to right, commencing at top left. Samples are numbered 001-020. The letter after the number refers to the type of 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 Lithothèque 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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