

Table S1. Corresponding elemental composition in figure 1.

EDS area	Mineral	Elemental composition (Normalized percentage, wt.%)
MAS 1	Turquoise	51.61% O, 23.34% Al, 17.70% P, 6.87% Cu, 0.43% Fe
MAS 2	Variscite	56.15% O, 22.18% P, 19.66% Al, 1.67% F, 0.34% Fe
AK 3	Barite	43.58% Ba, 20.17% O, 14.07% S, 7.02% P, 6.74% Al, 4.46% Fe, 1.87% Cu, 1.14% Ca
AK 4	Turquoise	31.40% O, 23.67% P, 23.56% Al, 13.12% Cu, 8.25% Fe
MAS 5	Turquoise	52.44% O, 23.10% Al, 17.49% P, 6.27% Cu, 0.70% Fe
MAS 6	Variscite	58.32% O, 22.52% P, 19.16% Al
MAS 7	Kaolinite	54.4% O, 23.62% Al, 21.98% Si
SMR 8	Turquoise	55.45% O, 21.80% Al, 15.43% P, 6.81% Cu, 0.51% Fe
SMR 9	Turquoise	52.49% O, 22.50% Al, 16.35% P, 8.13% Cu, 0.53% Fe
ZS 10	Turquoise	48.13% O, 22.06% Al, 18.43% P, 8.39% Cu, 1.16% Fe
ZS 11	Turquoise	30.86% O, 16.72% Al, 13.97% P, 7.53% Cu, 3.30% Fe
WM 12	Turquoise	45.84% O, 24.43% Al, 19.30% P, 8.65% Cu, 1.79% Fe
WM 13	Turquoise	48.85% O, 24.14% Al, 18.57% P, 7.17% Cu, 1.26% Fe
WM 14	Pyrite	50.15% S, 49.85% Fe