

ESM A4 - Lohmeier S, Lehmann B, Hodgkin A, Pašava J, Ackermann L, Šebek O, Andronikov A, Schneider A - Copper and molybdenum isotope signatures along a vertical section through the Valeriano epithermal-porphyry Cu-Au system, El Indio-Maricunga belt, northern Chile

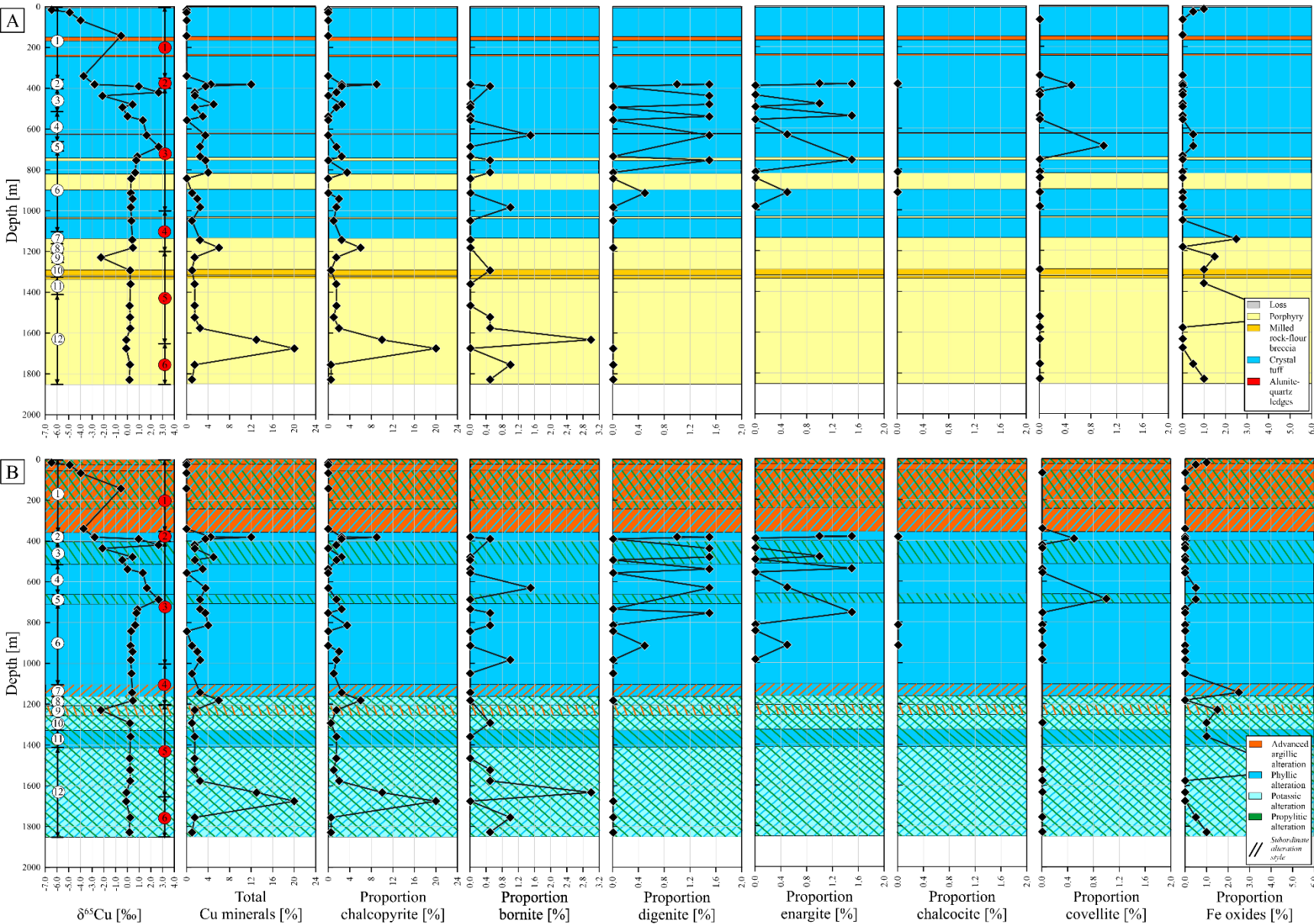


Fig. A4-1. A Vertical profiles showing the percentage of opaque minerals present (based on microscopy) and $\delta^{65}\text{Cu}$ over the full drill depths of 1,878 m of drillhole VALD-D13-14 (our data). ‘Fe oxides’ stands for mag+hem. **A:** Lithological column. **B:** Alteration column. Main alteration type determines the color of the respective field, while the subordinate alteration type(s) is (are) shown by hatching. **A, B:** Numbers in white circles represent the respective alteration mineral assemblage in the zone. Numbers in red circles represent the respective ore mineral assemblage in the zone. Alteration mineral assemblages: (1) cm-ser/ms-tur-ep; (2) cm-ser/ms; (3) cm-ser-chl; (4) cm-ser; (5) cm-ser-chl; (6) cm-ser/ms; (7) cm-ser-tur; (8) cm-kfs-bt-ser/ms-chl; (9) cm-kfs-bt-ser-chl-ep-tur; (10) cm-kfs-bt-chl-cb; (11) cm-ser/ms-chl-cb; (12) cm-kfs-bt-ser/ms-chl-cb. Opaque mineral assemblages: (1) py-mag-hem $\pm$ ccp $\pm$ cv $\pm$ mol; (2) py-ccp-dg-eng-bn-mol $\pm$ cct $\pm$ cv $\pm$ mag-hem; (3) py-ccp-bn-dg-eng $\pm$ cct $\pm$ cv $\pm$ mag-hem $\pm$ mol $\pm$ tnt $\pm$ po $\pm$ Au; (4) py-ccp-mag-hem $\pm$ bn $\pm$ dg $\pm$ mol $\pm$ sp; (5) ccp-mag-bn $\pm$ py $\pm$ cv; (6) ccp-bn-mag-hem-dg $\pm$ py $\pm$ cv $\pm$ sp $\pm$ gn $\pm$ tnt. Abbreviations: Au = native gold; bn = bornite; bt = biotite; cb = carbonate minerals; chl = chlorite; cm = clay minerals; ccp = chalcopryrite; cct = chalcocite; cv = covellite; dg = digenite; eng = enargite; ep = epidote; gn = galena; hem = hematite; mag = magnetite; kfs = K-feldspar; ms = muscovite; mol = molybdenite; po = pyrrhotite; py = pyrite; ser = sericite; sp = sphalerite; tnt = tennantite; tur = tourmaline.

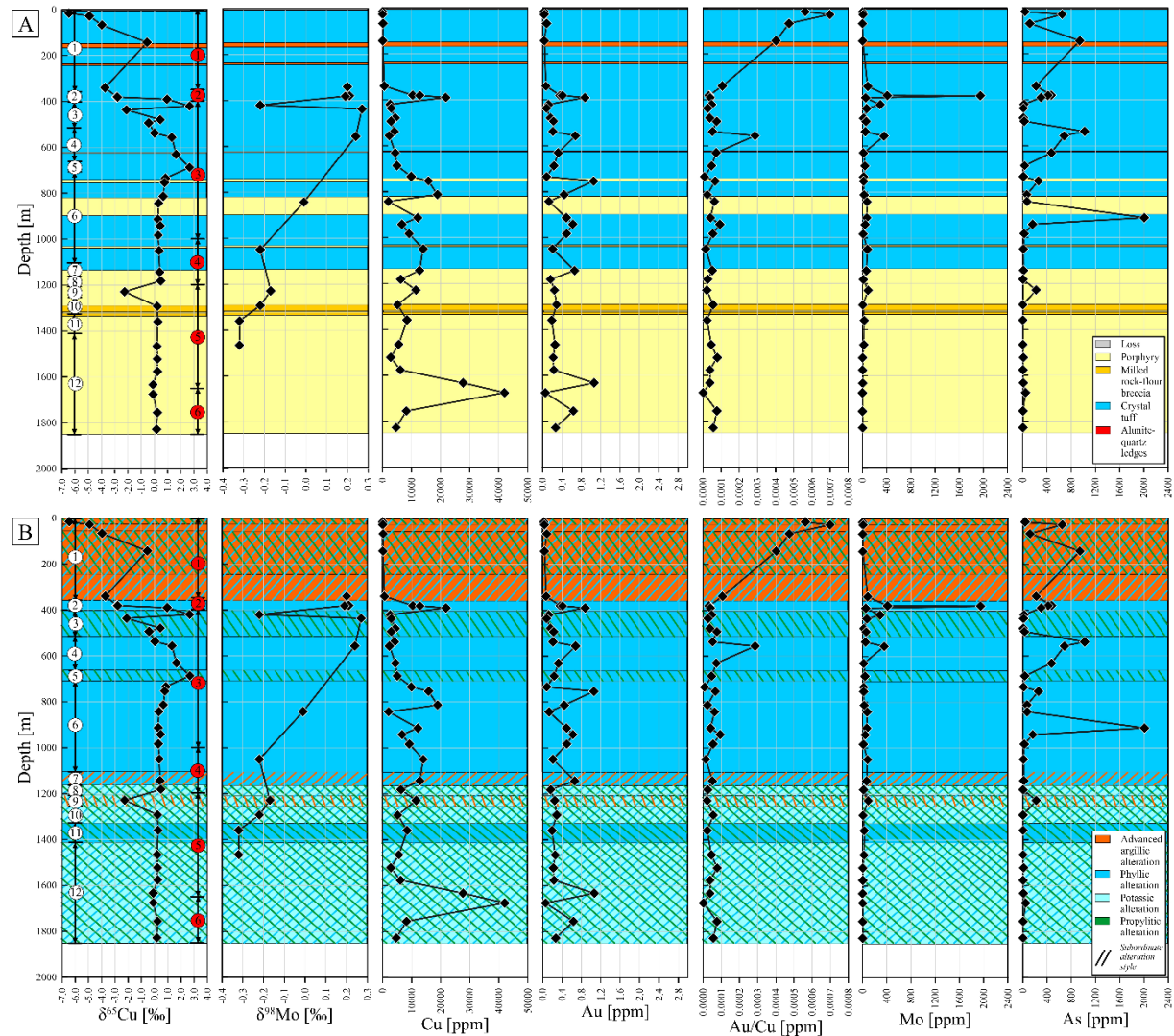


Fig. A4-2. Vertical profiles showing the Cu, Au, Au:Cu, Mo, and As content distributions as well as the $\delta^{65}\text{Cu}$ and the $\delta^{98}\text{Mo}$ distributions over the full drill depth of 1,878 m of drillhole VALD-D13-14 (our data). **A:** Lithological column. **B:** Alteration column. Main alteration type determines the color of the respective field, while the subordinate alteration type(s) is (are) shown by hatching. **A, B:** Numbers in white circles represent the respective alteration mineral assemblage in the zone. Numbers in red circles represent the respective ore mineral assemblage in the zone. Details are provided in figure caption to **Fig. A4-1**.

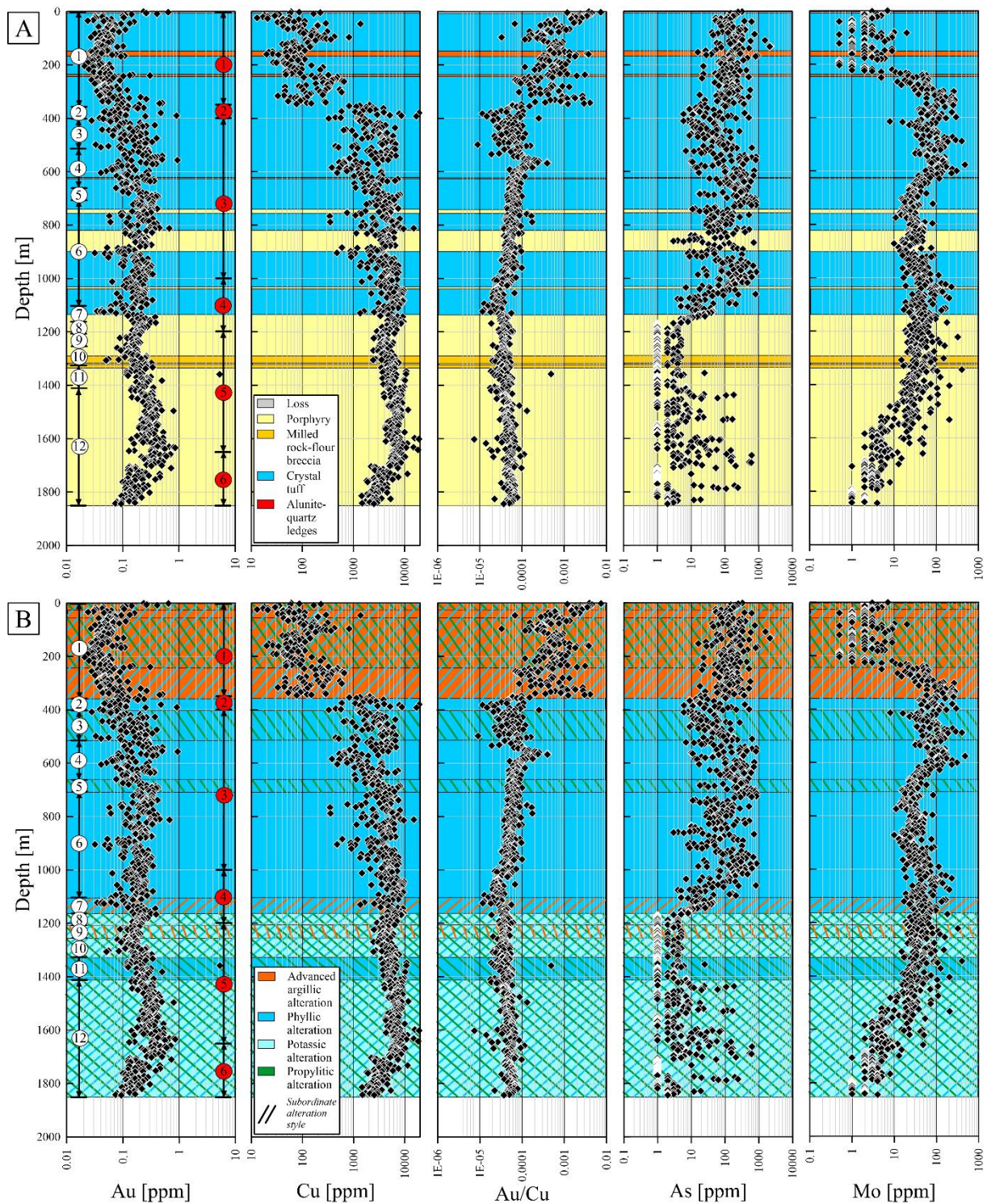


Fig. A4-3. A Vertical profiles showing the Au, Cu, Au:Cu, As and Mo content distributions over the full drill depth of 1,878 m of drillhole VALD-D13-14 (ATEX data). **A:** Lithological column. **B:** Alteration column. Main alteration type determines the color of the respective field, while the subordinate alteration type(s) is (are) shown by hatching. **A, B:** Numbers in white circles represent the respective alteration mineral assemblage in the zone. Numbers in red circles represent the respective ore mineral assemblage in the zone. Details are provided in figure caption to **Fig. A4-1**.

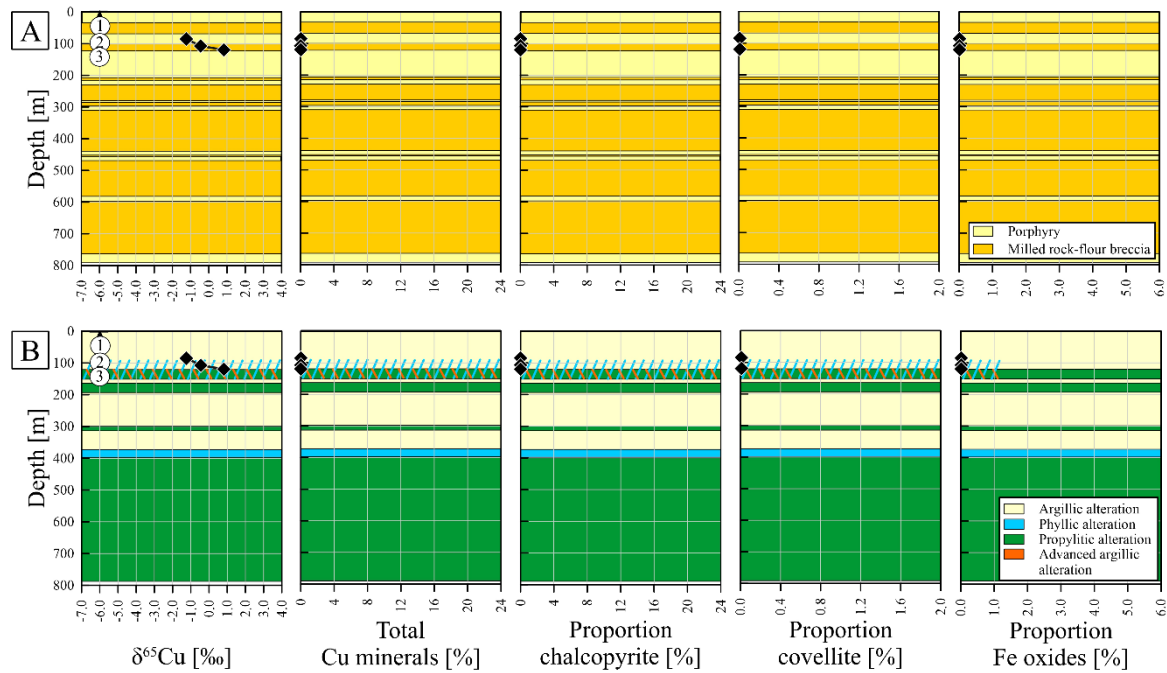


Fig. A4-4. A: Vertical profiles showing the percentage of opaque minerals present (based on microscopy) and $\delta^{65}\text{Cu}$ over the first ~120 m drill depths of drill hole VALD-D12-10 (our data). ‘Fe oxides’ stands for mag+hem. **A:** Lithological column. **B:** Alteration column. Main alteration type determines the color of the respective field, while the subordinate alteration type(s) is (are) shown by hatching. **A, B:** We only logged the upper 120 m of the 791 m long drill core in detail. Numbers in white circles represent the respective alteration mineral assemblage in the zone. Alteration mineral assemblages: (1) cm; (2) cm-ser; (3) cm-chl-tur. There is only one opaque mineral assemblage py-mag $\pm$ ccp $\pm$ cv $\pm$ po present in the upper 120 m. Abbreviations: chl = chlorite; cm = clay minerals; ccp = chalcopyrite; cv = covellite; mag = magnetite; po = pyrrhotite; py = pyrite; tur = tourmaline.