

Te-Se-Au-Ag-Bi-rich polymetallic vein mineralisation south of Glava, SW Sweden

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Vein-hosted, often Au and/or Ag-enriched poly-metallic deposits formed in conjunction with the c. 1 Ga Sveconorwegian orogeny comprise a comparatively widespread mineralisation type in SW Sweden and SE Norway (cf. Alm & Sundblad 1994; Alm 2000).

The presently studied mineralisation occurs *in situ* c. 0.7 kilometers south to southwest of the Glava (Yttre Rud) mine field in Värmland. Minor exploration work here in the 1980s yielded high Au and Ag contents (Lundegårdh 1995). Recent sampling and study of the vein ore assemblages revealed its significantly Au-Ag-Te-Se-Bi-enriched nature. Bornite and chalcocite are the dominating sulphides. Native gold ("electrum") is relatively common in the studied sections. Wittichenite (Cu_3BiS_3) is the major Bi host, whereas Bi-Te minerals, particularly tellurobismuthite (Bi_2Te_3), are also widespread. Hessonite (Ag_2Te), consisting of twinned, sub-hedral crystals, is quite abundant. Rarely, petzite (Ag_3AuTe_2) is observed, occurring as a reaction rim between native gold and hessonite. Selenides are dominated by a Cu-bearing clausthalite [(Pb,Cu)Se]; Se is also hosted by abundant, Se-Cu-bearing galena [(Pb,Cu)(S,Se)], as small inclusions in Cu sulphides. The occurrence of the Bi-Te-Se-rich minerals is interpreted to mainly represent formation through unmixing during cooling of a high-T Cu sulphide phase. The vein is overprinted by late oxidation, attested by both secondary Cu minerals and oxidized Te phases [close to xocomecatlite, $\text{Cu}_3\text{TeO}_4(\text{OH})_4$], replacing primary tellurides.

References:

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