

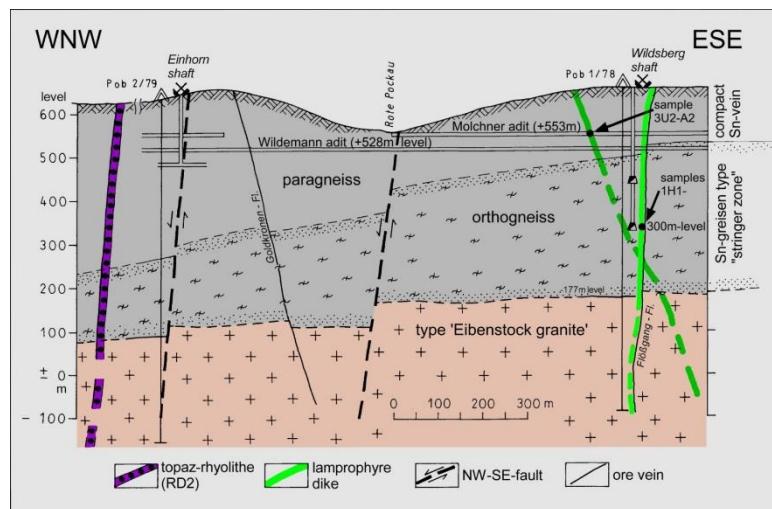
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Metallogeny of the Sn-polymetallic / Ag ore fields of Pobershau and Rittersberg (Marienberg district), central Erzgebirge, Germany

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In the eastern part of the Marienberg district between c. 1480 and the second half of the 19th century, intensive mining took place for Ag, Sn, and Cu and, to lesser degree, for Fe, As, Zn, Bi, Co, and barite. Exploration for Sn-W and Ag was carried out near Pobershau in the old Sn and Ag mining field "Zinnerne Flasche" from 1937-1940 with a 300 m deep shaft c. 150-200 m below the old mining sites [1]. In 1978/79 the postulated E-W striking ridge of the "Pobershau granite" was confirmed by two drillholes which intersected Li-Rb-Cs-F-Sn-enriched, post-kinematic syeno- and monzogranites intruded into gneisses (Fig. 1). Two, late-Variscan, Sn-polymetallic mineralization stages are hosted by para- and orthogneisses with W-As-Sn and Sn-Li-F mineral associations [1, 3].



The W-As-Sn stringers (mm-cm scale) are controlled by steeply-dipping, WSW-ENE striking stringer zones with a thickness of up to 6 m. They show similar metallogenetic characteristics to the Sn-W-As-Mo stringer zones in the Ehrenfriedersdorf district / central Erzgebirge [3, 4]. The Sn-Li-F mineralization is controlled by steeply-dipping, ENE-WSW striking veins and greisen zones which are associated with sub-parallel microgranites/topaz-

rhyolites and NW-SE lamprophyric dikes (Fig. 1).

Figure 1: Cross section of the Pobershau Sn-Cu-Ag district. Pob 1/78, Pob 2/79 = Exploration core drillings [2, 3, modified].

The ENE-WSW cassiterite-quartz-topaz-fluorite veins of up to 0.5 m thickness (with paragneiss-hosted greisen zones up to 5 m) were the object of c. 500 years Sn mining; rich cassiterite ore shoots in veins (several wt.% Sn) and vein-controlled paragneiss-greisen zones (up to 1.8 wt.% Sn) have been described [1, 3]. Stringer-type, Sn-Li-F-bearing orthogneiss-greisen mineralization (mm-cm), hosted by gneisses of the "Reitzenhain-Katharinaberg red gneiss structure", are controlled by ENE-WSW zones with a thickness of up to 43 m ("Schießwecken zone") in the 300 m level of the Wildberg shaft (Fig. 1, samples 1H1-). The average Sn content is 0.12 wt.% (n = 44); maximum contents are 2.4 wt.% Sn, 0.9 wt.% W, 0.12 wt.% Li and 2.7 wt.% F. These stringer-type greisen zones are interpreted as pathways for Sn-W-Li-F-enriched fluids, which precipitated ore minerals in compact mineral veins in the hanging wall paragneiss unit (Fig. 1). The younger, polymetallic Ag(-Au)-Sn-In-base metal veins of "Grüne Tanne"

(Rittersberg) and the “Blühend Glück” mine (Hinterer Grund/Pobershau-East) surrounding the Pobershau ore field are characterized by In-enriched sphalerite mineralization (3000 - 5640 ppm In, n=3) [3].

References:

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