Geochemical Atlas – Erzgebirge and Vogtland

Silver in stream sediments

Silver (Ag) in stream sediments shows a slightly right skewed log distribution, with a maximum of 55 mg/kg and a minimum below the detection limit of 0.005 mg/kg. The arithmetic average is 0.35 mg/kg versus a median of 0.10 mg/kg. The area of highest contents (Ag > 2.5 mg/kg) coincides with the central Freiberg mining district. The Ag > 1 mg/kg zone surrounds the district following the extension of hydrothermal veins historically mined for Ag. Similar concentrations occur in the districts of Annaberg-Buchholz and Marienberg-Wolkenstein of the central Erzgebirge. Lower concentrations of Ag > 0.4 mg/kg cover a large WNW-ESE elongated area crossing the Freiberg mining district and extending eastward up to the Sn occurrence of Sadisdorf. Similar concentrations mark the northwestern Tharandt Volcanic Complex and an area between the Ehrenfriedersdorf mining district and Zschopau. The latter, a zone extending 6 km NNE-SSW, coincides with slightly Sn-bearing Cambro-Ordovician metapelites that crop out with NW dip along flat ridges in the strike of the anomaly. These crests include areas with several collapsed shafts and other remnants of historical mining activity. To the SW, the Sn and W districts of Lauter-Elterlein, Aue-Bärengrund and the BiCoNi deposits of Schneeberg show elevated Ag, as well as some spots along the Gera-Jachymov fault zone. In contrast, the westernmost Erzgebirge and the Vogtland region are dominated by lower Ag concentrations, visible in the granites of Eibenstock, Kirchberg, Bergen and most of the surrounding lower Phanerozoic metasediments. The only important area with Ag > 0.4 mg/kg in this part is the Gottesberg Sn-greisen deposit.

Project partners:

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AVRUPA MINERALS

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Innovative Technologien für Ressourceneffizienz
Forschung zur Bereitstellung wirtschaftsstrategischer Rohstoffe

Scale: 1 : 400,000

0 5 10 20 Kilometres

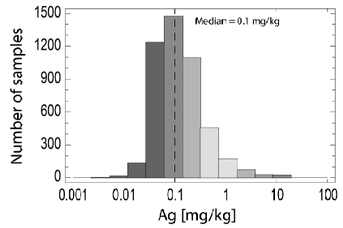
N

Localities
River
Major fault
Border D / CZ

Silver [mg / kg]

- < 0.040
- 0.040 - 0.063
- 0.063 - 0.10
- 0.10 - 0.16
- 0.16 - 0.25
- 0.25 - 0.40
- 0.40 - 0.63
- 0.63 - 1,0
- 1,0 - 1.6
- 1.6 - 2.5
- > 2.5

Analysed fraction: < 0.18 mm
Analysed by: ALS Minerals
Analytical method: ME-MS41 (Ultra Trace Aqua Regia ICP-MS)



Number of samples: 4732
Min: < 0.005 mg/kg
Max: 55.4 mg/kg
Arithmetic Mean: 0.3 mg/kg
Geometric Mean: 0.1 mg/kg
Median: 0.1 mg/kg

Important Mineral Occurrences

- W, ± Mo
- Sn, ± W, ± Cu, ± F, ± Li, ± Rb, ± Bi
- Sn, ± Zn, ± W, ± F, ± Cu, ± In, ± Au
- Ag, Pb, Zn, ± Cu, ± Sn, ± In
- Sb, Ag, ± Au, ± Pb, ± Zn, ± Mo
- Bi, Co, Ni, U, ± Ag
- Cu, ± Co, ± Au, ± Sb
- Barite, Fluorite

Main Geological Units

- Cretaceous and Tertiary rocks
- Permo-Carboniferous sediments
- Upper Carboniferous igneous rocks
- Devonian sediments and volcanics
- Ordovician metapelites, metacarbonates and gneisses
- Ordovician to Silurian pelites and psammites
- Cambrian to Ordovician metasediments
- Neoproterozoic and Lower Paleozoic gneisses

1 – Altenberg-Teplice-Caldera (incl. 1a - Schellerhau granite), 2 – Bergen Pluton 3 – Eibenstock Pluton, 4 – Eichigt Pluton (concealed), 5 – Fichtelgebirge Pluton, 6 – Flöha Fault Zone, 7 – Frankenberg Crystalline Complex, 8 – Markersbach Pluton, 9 – Gera-Jachymov Fault Zone, 10 – Kirchberg Pluton, 11 – Niederbobritzsch Pluton, 12 – Tharandt Volcanic Complex, 13 – Lößnitz-Zwönitz Syncline

a1 - Freiberg north district, a2 - Felsite zone, a3 - Langenstriegis, a4 - Oberschöna, a5 - Freiberg central district & Brand-E., a6 - Muldenhütten, a7 - Halsbrücke, b - Mohorn, c - Edle Krone - Klingenberg, d - Dippoldiswalde, e - Schlottwitz, f - Berggießhübel, g - Sadisdorf, h - Frauenstein, i1 - Altenberg, i2 - Zinnwald-Cinovec, i3 - Moldava, i4 - Rehefeld, j1 - Grünberg, j2 - Augustusburg, j3 - Zschopau k1 - Lengefeld, k2 - Marienberg - Wolkenstein, k3 - Pobershau, l1 - Seiffen, l2 - St. Katharinaberg, m1 - Geyer, m2 - Hormersdorf, m3 - Thum, m4 - Ehrenfriedersdorf, m5 - Annaberg-B., n1 - Lauter-Elterlein, n2 - Westerzgebirge complex deposit, n3 - Niederschlag-Bärenstein, o1 - Aue-Bärengrund, o2 - Bad Schlema-Alberoda, o3 - Schneeberg, p - Neumark (U), q - Pechtelsgrün, r1 - Sn Deposits of the Eibenstock Granite, r2 - Gottesberg-Mühlleiten, s - Johanngeorgenstadt, t - Brunndöbra & Schneckenstein, u - Klingenthal-Kraslice, v1 - Zobes, v2 - Bergen, w - Tirpersdorf, x - Oelsnitz, y - Schönbrunn, z - Wiedersberg

Berlin
Saxony
Project Area

Project: Prediction of Strategic High Technology Metals in the Erzgebirge (WISTAMERZ)

- Silver in stream sediments -

FKZ: 033R133A

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