Geochemical Atlas – Erzgebirge and Vogtland

Tungsten in stream sediments

Among all examined elements, Tungsten (W) shows the widest range between the absolute maximum (1280 mg/kg) and minimum values (less than 0.03 mg/kg), and between arithmetic average (4.2 mg/kg) and median (0.7 mg/kg). The log distribution is right skewed with a group of values around 10 mg/kg forming a small bulge in the histogram. The highest concentrations of the whole study area (W > 25 mg/kg) only occur in an approx. 4 x 4 km large area in the Sn-greisen district of Altenberg-Cinnovec. Six stream sediment samples from this area exceed 100 mg/kg W. Concentrations of W > 10 mg/kg occur in major parts of the Eibenstock granite (including the greisen deposit of Gottesberg), in the Kirchberg granite (including the W deposit of Pechtelsgrün), in the gneiss cupola of Schwarzenberg and in the Geyer-Ehrenfriedersdorf Sn district. Areas with W > 4 mg/kg are located east of Schneeberg including the wolframite vein deposit of Zschorlau and in the Augustusburg-Grünberg mineral occurrence north of Zschopau. The centre of the latter area is formed by an escarpment of haematitic, brecciated and silicified rocks with tungsten bearing amorphous fracture fillings. It is surrounded by a 12 km SW-NE extending zone with W > 1.6 mg/kg. Similar concentrations occur in the western Erzgebirge in and around the Bergen pluton and in the eastern Erzgebirge in a corridor of 40 km length between Freiberg and Altenberg, in the Markersbach granite and at the border area between Altenberg and the Seiffen district. Minimum concentrations of W < 0.25 mg/kg accompany phyllites of the northern Erzgebirge rim west of Zschopau, the central Erzgebirge northeast of Marienberg and Cambro-Ordovician metapelites southwest of the Eibenstock granite.

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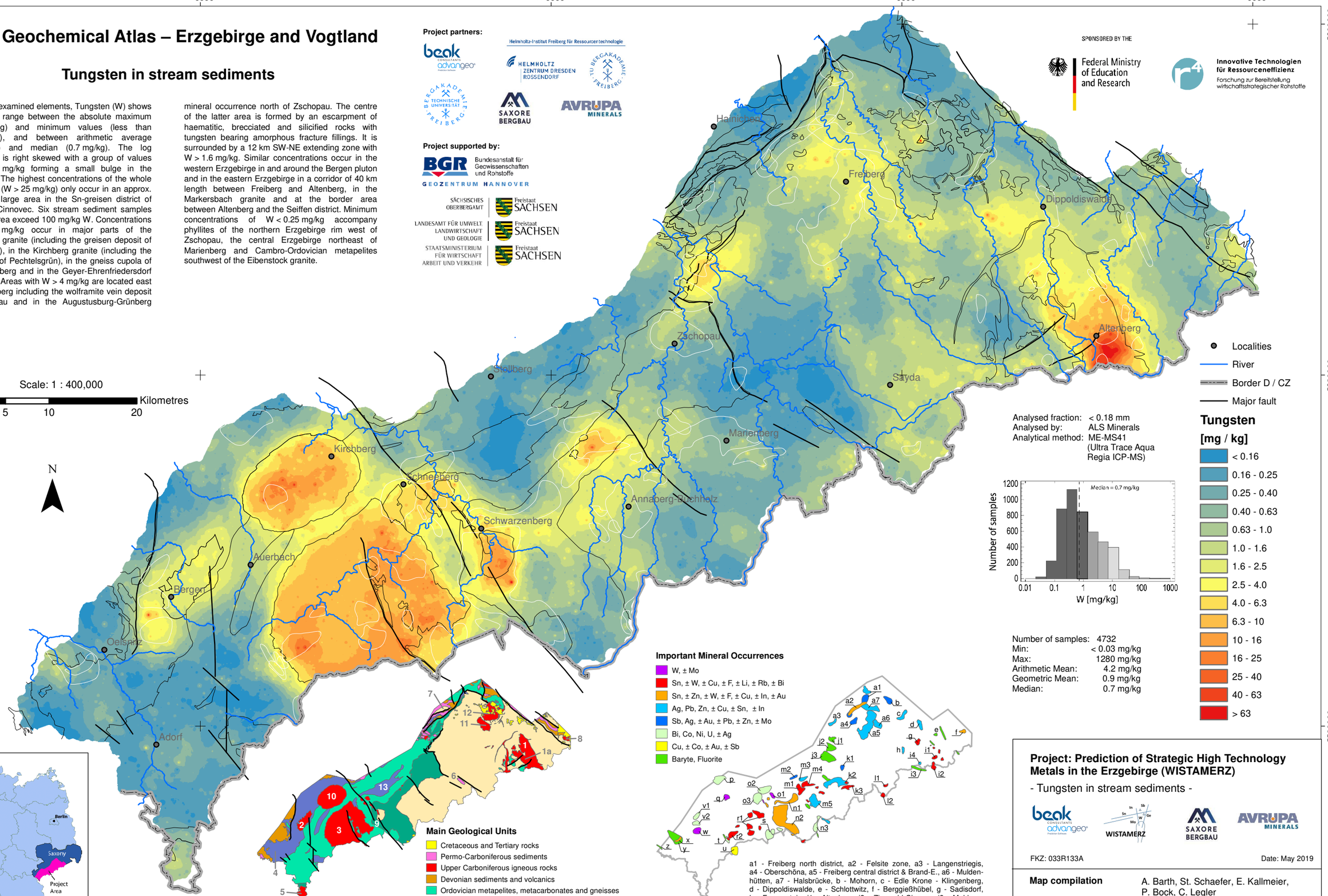

1 – Altenberg-Teplice-Caldera (incl. 1a - Schellerhau granite), 2 – Bergen Pluton 3 – Eibenstock Pluton, 4 – Eichigt Pluton (concealed), 5 – Fichtelgebirge Pluton, 6 – Flöha Fault Zone, 7 – Frankenberg Crystalline Complex, 8 – Markersbach Pluton, 9 – Gera-Jachymov Fault Zone, 10 – Kirchberg Pluton, 11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

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

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