Geochemical Atlas – Erzgebirge and Vogtland

Zinc in stream sediments

The distribution of Zinc (Zn) is log normal with a tendency to left skew. The arithmetic average is 181 mg/kg, the median is 144 mg/kg, the maximum value 7400 mg/kg and the minimum 5 mg/kg. With the exception of a few areas with strongly increased contents and significantly lower contents, Zn in the stream sediments is for the most part uniformly diffusely distributed in the value range from 100 to 250 mg/kg. Granitoids show a negative correlation to Zn. Known stratiform and vein mineralisations show an increase in proximity, potentially reinforced by historical mining activity. Among areas with high Zinc concentrations, the Freiberg mining area has the strongest Zn aureole (Zn > 630 mg/kg), which extends as a 5 km long area directly SE of Freiberg. Zones of Zn > 250 mg/kg surrounding the latter areas extend across the Freiberg mining district to the northern edge of the study area. Similar Zn concentrations indicate a continuation of this zone from Freiberg to Sadisdorf in the east, where Bi, Cu, Mo and other metals are enriched also. Further zones of similar. Zn levels appear in the eastern Erzgebirge including the occurrence of Frauenstein and the area around the carbonate hosted stratiform Pb-Zn deposit of Rehefeld. In the central Erzgebirge also areas of Zn levels Zn > 250 mg/kg appear near the mining districts of Annaberg-Buchholz, Marienberg and Geyer-Ehrenfriedersdorf. The latter Zn anomaly is not restricted to the Ehrenfriedersdorf Sn mining district but also includes the stratiform Zn occurrence of Thum-Jahnsbach further north, which was formerly a Zn target. Additionally, the Westerzgebirge Complex deposit, hosting predominantly stratiform skarn mineralisation, is accompanied by an approx. 22 km NW-SE striking area of elevated Zn. Lowest Zn contents across the study area (Zn < 40 mg/kg) occur in the Eibenstock and Fichtelgebirge granite massifs.

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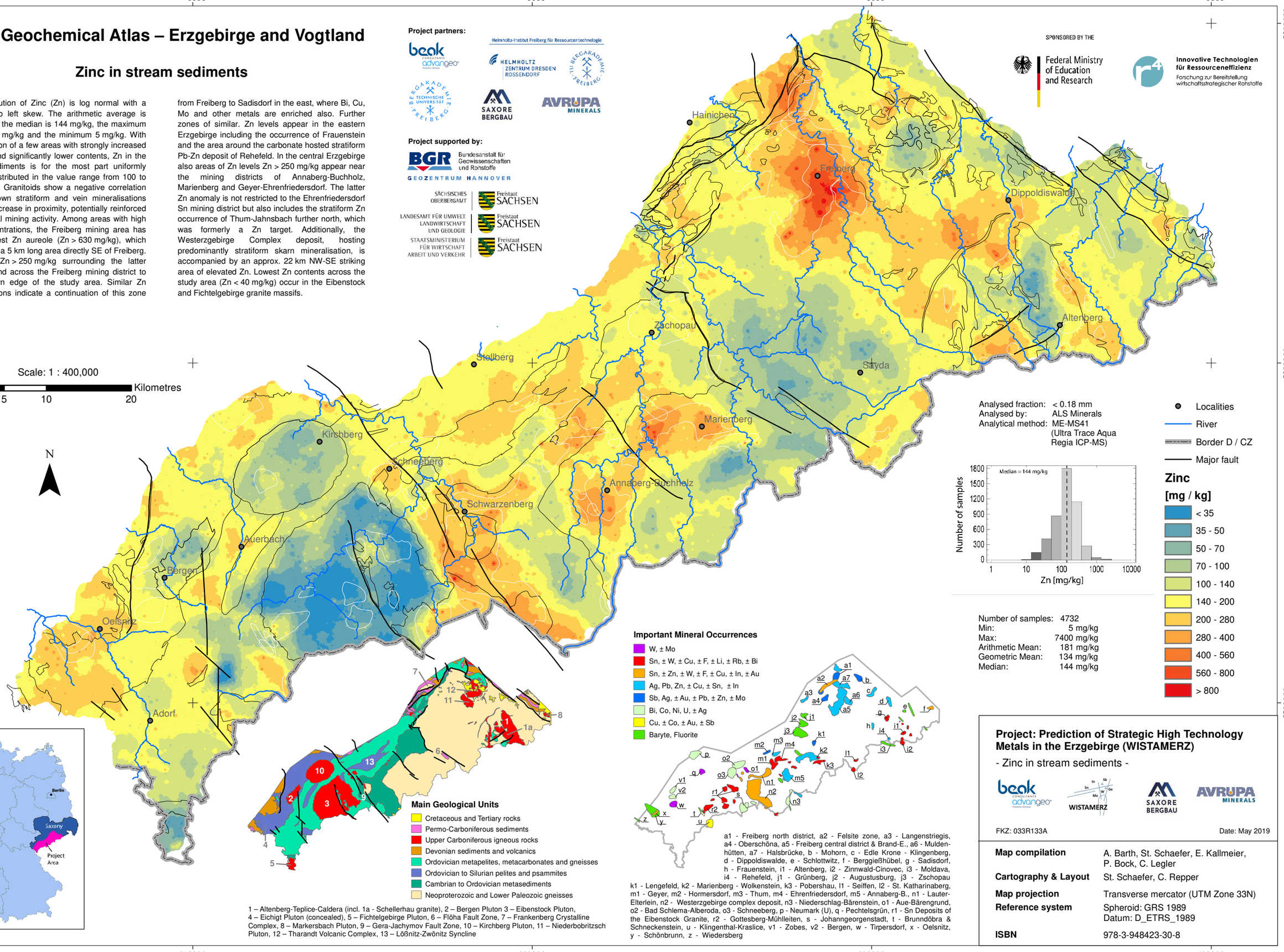

1 – Altenberg-Teplice-Caldera (incl. 1a - Schellerhau granite), 2 – Bergen Pluton 3 – Eibenstock Pluton, 4 – Eichigt Pluton (concealed), 5 – Fichtelgebirge Pluton, 6 – Flöha Fault Zone, 7 – Frankenberg Crystalline Complex, 8 – Markersbach Pluton, 9 – Gera-Jachymov Fault Zone, 10 – Kirchberg Pluton, 11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

- Zinc in stream sediments -

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