Geochemical Atlas – Erzgebirge and Vogtland

Cobalt in stream sediments

The distribution of Cobalt (Co) is almost log normal with a slight left skew, an arithmetic average of 19.6 mg/kg and a median of 14.2 mg/kg. The highest concentration is 546 mg/kg, the lowest 0.3 mg/kg. Co is predominantly enriched in Ordovician, Silurian and Devonian sedimentary and metasedimentary rocks, whereas samples from acid magmatites and Neoproterozoic metamorphites contain less than half as much Co on average. Areas with Co > 40 mg/kg coincide with the Johanngeorgenstadt and Schneeberg mining districts, with the baryte deposit of Brunndöbra, and with areas along the western border of the study area. The latter includes Devonian rock units approx. 10 km SW of Oelsnitz and 12 km W of Pechtelsgrün, the Neumark U deposit, and Cambrian to Silurian metasediments at the NW-contact of the Kirchberg granite. Similar Co concentrations appear in mica schists SW of the Schwarzenberg gneiss cupola and in southern parts of the Westerzgebirge complex deposit. A spot of elevated Co at the Niederschlag-Bärenstein BiCoNi deposit is possibly related to dumps of uranium mining waste in the catchment areas of W-E draining streams. Furthermore, two areas of approx. 4 km width showing elevated Co occur NNW of Freiberg and at the Mohorn-Grund Pb/Zn/Ag deposit. Areas with Co > 25 mg/kg accompany almost the complete northern rim of the study area including the Augustusburg/ Grünberg fluorite-baryte deposits and large parts of the Silurian Lößnitz-Zwönitz syncline. Also, Neoproterozoic gneisses NW of Freiberg exhibit similar concentrations. Minimum contents of Co < 2 mg/kg are related to the granitoid intrusions of Eibenstock and Kirchberg.

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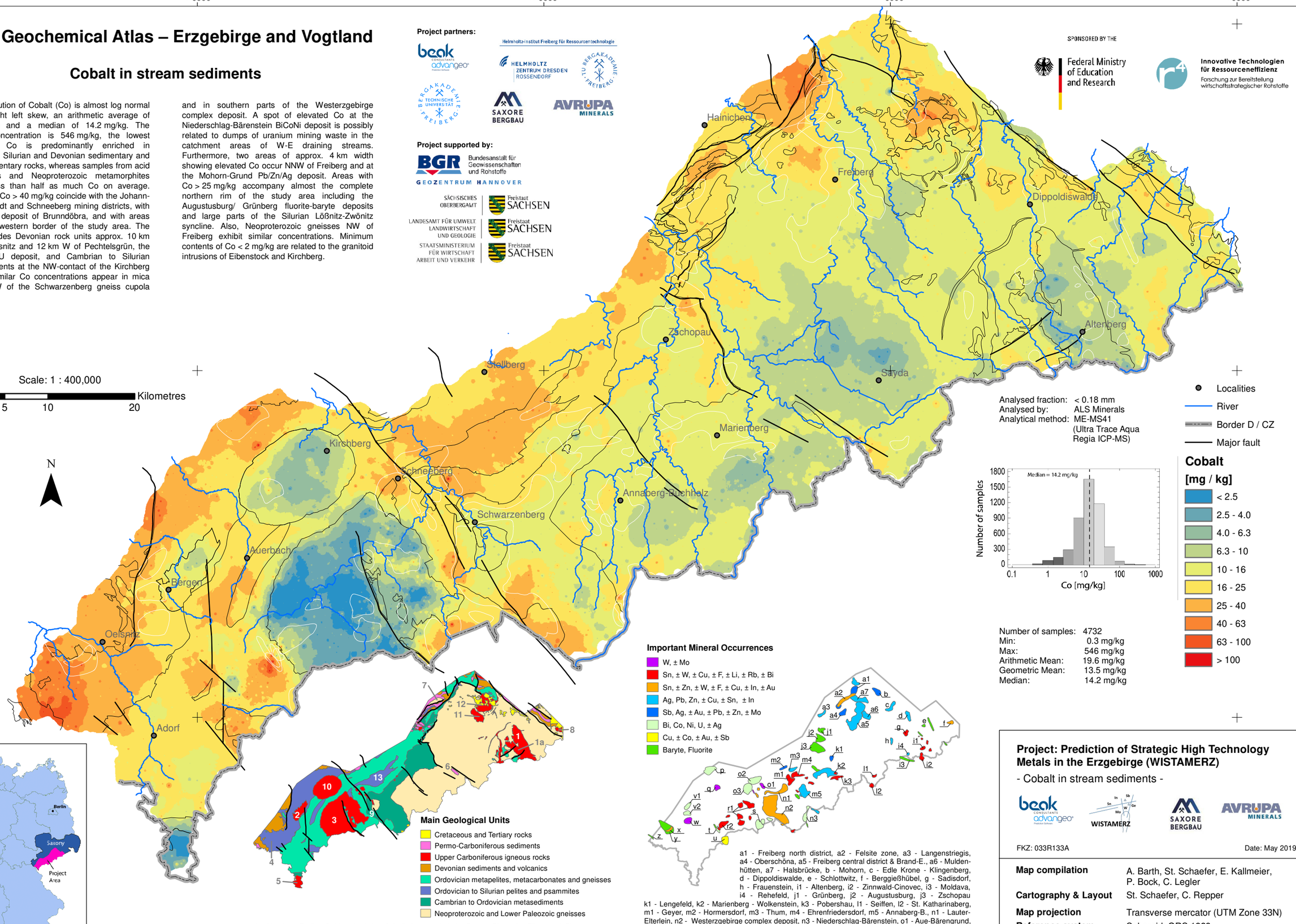

1 – Altenberg-Teplice-Caldera (incl. 1a - Schellerhau granite), 2 – Bergen Pluton 3 – Eibenstock Pluton, 4 – Eichigt Pluton (concealed), 5 – Fichtelgebirge Pluton, 6 – Flöha Fault Zone, 7 – Frankenberg Crystalline Complex, 8 – Markersbach Pluton, 9 – Gera-Jachymov Fault Zone, 10 – Kirchberg Pluton, 11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

- Cobalt in stream sediments -

beak consultants / advangeo — WISTAMERZ — SAXORE BERGBAU — AVRUPA MINERALS

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