Geochemical Atlas – Erzgebirge and Vogtland

Nickel in stream sediments

Nickel (Ni) shows a left skewed log distribution with an absolute maximum of 757 mg/kg and a minimum of 0.7 mg/kg. The arithmetic average is 38 mg/kg, the median 29 mg/kg. Elevated Ni levels are characteristic for Ordovician to Carboniferous sedimentary, metasedimentary, and metavolcanic rocks in the Vogtland area and the northwestern rim of the study area. In comparison, results from granitoid areas show about four times lower concentrations, the remaining rock types ranging in-between. Maximum grades occur in a 2 km wide elliptical area of Ni > 250 mg/kg in mafic and ultramafic rocks 10 km ENE of Hainichen. An alignment of areas with Ni > 100 mg/kg marks the western edge of the study area between the fluorite deposit of Wiedersberg in the SW and the Neumark U deposit in the NE. It coincides with synclines of Devonian sediments and volcanic rocks. These areas are connected by a continuous zone with Ni levels > 60 mg/kg. Similar concentrations occur discontinuously in Ordovician to Silurian metapelites of the Lößnitz-Zwönitz Syncline, in phyllites along the NE-adjacent Northern Erzgebirge rim and in Cambro-Ordovician metapelites northwest of the Klingenthal-Kraslice Cu deposit. In the eastern Erzgebirge slightly elevated Ni is present in Devonian argillaceous shales and metabasites NW of the Markersbach granite as well as in Ordovician metasediments and Permo-Carboniferous sediments north of the Tharandt Volcanic Complex. Minimum levels with Ni < 2.5 mg/kg are related to the granites of Eibenstock and Kirchberg, to the rock units of the Altenberg-Teplice Caldera and to Neoproterozoic gneisses of the eastern Erzgebirge.

Project partners:

beak consultants / advangeo

Helmholtz-Institut Freiberg für Ressourcentechnologie
HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

TU BERGAKADEMIE FREIBERG

TECHNISCHE UNIVERSITÄT BERGAKADEMIE FREIBERG

SAXORE BERGBAU

AVRUPA MINERALS

Project supported by:

BGR Bundesanstalt für Geowissenschaften und Rohstoffe
GEOZENTRUM HANNOVER

SÄCHSISCHES OBERBERGAMT – Freistaat SACHSEN

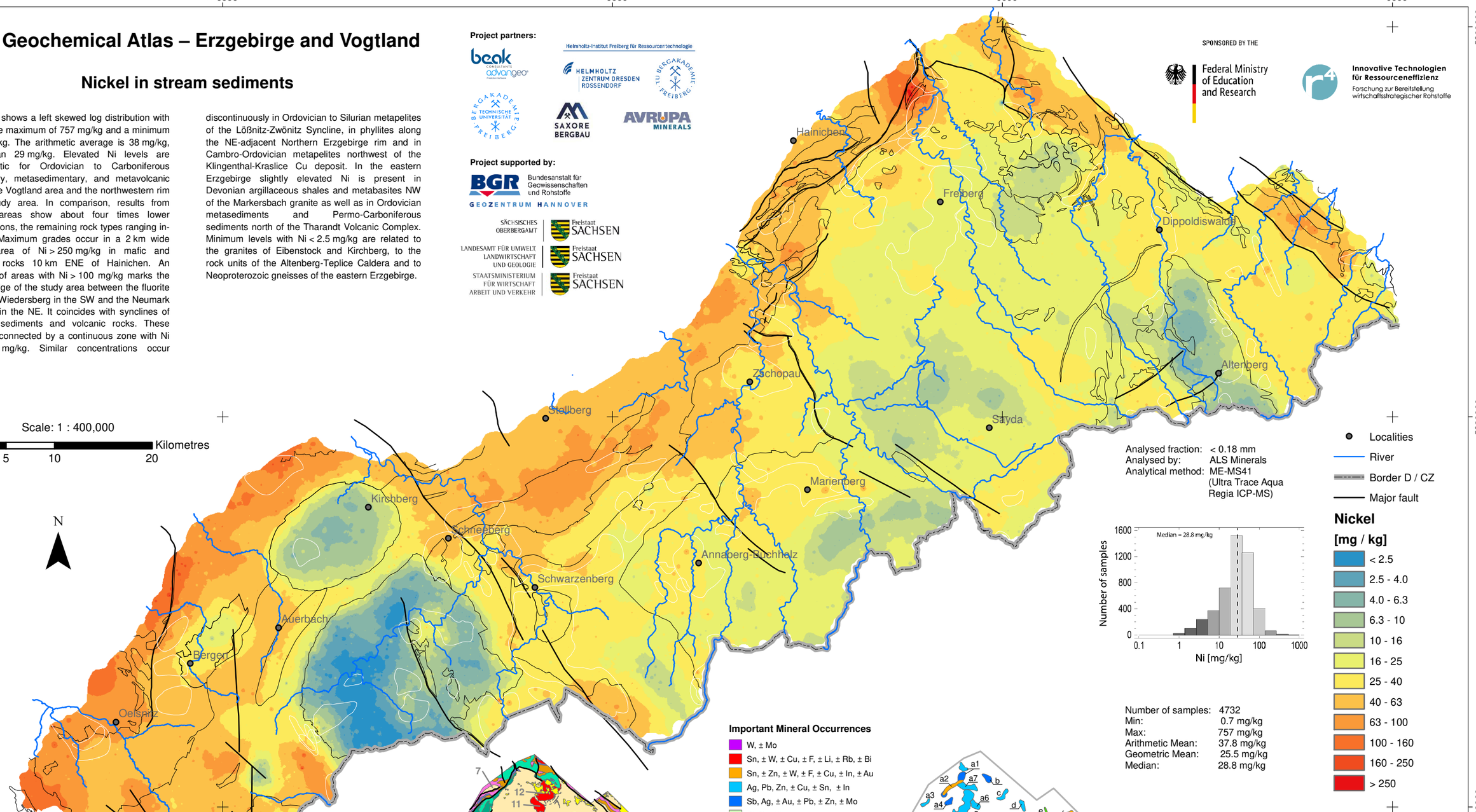
LANDESAMT FÜR UMWELT, LANDWIRTSCHAFT UND GEOLOGIE – Freistaat SACHSEN

STAATSMINISTERIUM FÜR WIRTSCHAFT, ARBEIT UND VERKEHR – Freistaat SACHSEN

SPONSORED BY THE

Federal Ministry of Education and Research

Innovative Technologien für Ressourceneffizienz
Forschung zur Bereitstellung wirtschaftsstrategischer Rohstoffe



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)

- Nickel in stream sediments -

FKZ: 033R133A

Date: May 2019

Map compilation	A. Barth, St. Schaefer, E. Kallmeier, P. Bock, C. Legler
Cartography & Layout	St. Schaefer, C. Repper
Map projection	Transverse mercator (UTM Zone 33N)
Reference system	Spheroid: GRS 1989 Datum: D_ETRS_1989
ISBN	978-3-948423-20-9