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Distribution of heavy metals in waters and stream sediments

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[1] At the time of digital provision, the authors mentioned are no longer active in the BGR for reasons of age. The digital processing was carried out by U. Rauch, Bundesanstalt für Geowissenschaften und Rohstoffe, Dienstbereich Berlin, Wilhelmstraße 25-30, D-13593 Berlin, Email: uwe.rauch@bgr.de, geochemischeatlanten@bgr.de.

[2] The addresses were updated to the status of the year 2022.

2.3.2.3 Cobalt in stream sediments

The cobalt concentrations range between 5 ppm (detection limit) and 1400 ppm. The median (50 percentile) is 9 ppm.

High cobalt (and Ni) concentrations occur in silica-poor igneous rocks, whereas granite, gneiss and sandstone show conspicuously low values. The distribution of cobalt in stream sediments, as with that of nickel, reflects the distribution of silica-poor igneous rocks.

High cobalt values were encountered in stream sediments in the area of the basalts in the Vogelsberg, Westerwald and the Rhön. Some of the high cobalt values in the Frankenwald and the Fichtelgebirge areas may also be due to silica-poor igneous rocks.

In the Schiefergebirge[1], particularly in large parts of the Sauerland, Hunsrück, and Taunus areas, elevated cobalt concentrations occur in stream sediments and in many cases are connected with the diabases and mineralized rocks in these regions.

The former cobalt mining district near Bieber, Spessart, is characterized by high cobalt values.

The regional cobalt concentrations on the northern margins of the Swabian Alb and the Alps largely coincide with those of nickel.

Cobalt is one of the essential trace elements for maintaining the health of higher animals and man. There are large areas in which cobalt deficiency of the soil causes widespread disease in animals. More attention should be paid to the problem of cobalt deficits in the soil due to natural transport processes than to the dangers of cobalt contamination.

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[1] Rhenish Schiefergebirge