

SUMMARY

Radioactivity is an important part of the environment. In the years 2014 – 2015 a survey on medicinal radioactive springs was carried out in the Tanvald granite body. During extensive radiohydrogeochemical exploration in the surrounding area of Schindler spring, the outcrop of U – mineralization has been found at a new construction site in the Kokonín fault. It is possible to find “hot” pieces of uranium ore fragments in the quaternary cover in this place. The occurrence of the hydrothermal (vein) type of uranium in the Krkonoše – Jizera is new as it hasn't been mentioned in literatures before.

After an agreement with the owners, detailed radiometric survey proceeded in the surrounding area of two affected houses by using gamma spectrometry and emanometry at the dense net. There is a wider area between two houses with activities of ^{222}Rn over 1 MBq/m^3 and on the ore outcrop was measured 3.3 MBq/m^3 . A quaternary solifluction flow with an increased radioactivity creeps down under the House 1. The highest uranium contents reached up to 291 ppm eU (= $3 \text{ 595 Bq/kg } ^{226}\text{Ra}$) on the uranium ore lens outcrop. The average of gamma dose rate is 85,6 nGy/h with maximum 261 nGy/h on the outcrop.

A further radiometric survey through the entire Kokonín fault line was carried out in an area of roughly $0.25 \times 1 \text{ km}^2$ by gamma spectrometry. Contents of radioactive elements such as K, U and Th, and gamma dose rate were measured. The results were processed in the form of isoline maps. Besides of two known lenses of uranium mineralization in a small area of affected houses, another the third lens was found approximately 120 m from the contact with granite. It is covered by quaternary cover, but the radiometric signal is still significant. This place should be excluded from further construction.

The results of this work also should be reflected in the new land – use plan of city Jablonec n. Nisou.

Key words: geophysics, gammaspectrometry, emanometry, uranium, radon, Tanvald granite, Krkonoše – Jizera crystalline, Kokonín