

Hydrothermal Gangue Complex in Granitoids of Krivoy Rog Basin on the Data of Superdeep Boring.

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On the basis of materials received at boring Krivoy Rog super-deep well the petrographical, mineralogical and petrochemical information about gangue filling of thin cracks is received. The data are important for the estimation of permeability of granitoid terrains and fluids migration through them at low-temperature hydrothermal processes.

Three basic types of veinlets, which fill gapings in granitoids, are distinguished. They differ by structure and age: 1st type is veinlets of quartz, ancient, thickness from 0,1mm up to 1-1,5mm, less often 5-20mm. Veinlets frequently are deformed and displaced, combined by grey quartz of various shades. 2nd type is ankerite veinlets, healed, frequently twisted. Thickness is 0,1-0,5 up to 1mm, less often up to 3mm. Sericit, chlorite, pyrrhite and pyrrhotine are in around-veinlets changes with the thickness 0,1-0,3mm. Isotopic age of around-veinlets metasomatics 1800 - 1300 mln. years. 3rd type is calcite veinlets. They are younger, up to modern, formation. Thin veinlets are frequently not healed, intersect ankerite and quartz veinlets.

Formation of gangue complex in granitoids is connected with low-temperature hydrothermal process (150-350°C) with the infiltration of abyssal fluids under conditions of temperature and hydrostatic pressure decreasing, partial pressure CO₂, pH changing. Quartz, ankerite and calcite veinlets are graduated from high till low temperature respectively. The modern veinlets are partially filled with calcite and hydro-micas. Opened and half-opened zones of rock fracture are especially important for the problem of landfill of the radioactive wastes.