

## HYDROTHERMAL MIGRATION OF PGE.

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Two types of PGE hydrothermal mineralization are considered on an example of the Sukhoy Log gold black-hosted deposit (with platinum mineralization) and new comparative data on platinum occurrences in felsites - Waterberg (Bushveld complex) and Chudnoe (Sub-Polar Ural). The first one can be characterized as sulfide-rich type (in reduced environments enriched by organic matter). The Pt mineralization is formed during some stages. The earliest stage corresponds to deposition of native elements (native platinum, Pt-Fe-Cu alloys and native Fe, Cr, W, Ti.). In the later stages arsenides (sperrylite) and sulfides (cooperite) in association with pyrite precipitate under conditions of growing sulfur activity. Similar sequence of deposition is peculiar to gold's compounds. Native modes or alloys absolutely dominate in poor-sulfide type. Platinum- and palladium-bearing gold and also Au-, Cu- and Pd-bearing platinum are established in Waterberg and Chudnoe. Intermetallic compounds with antimony, bismuth are common. A wide range of the P-T-X parameters variation in the ore-forming fluid from Sukhoy Log is established: temperature - 385-130°C, pressure - 2490-170 bar, salinity - up to 11,4 wt.% NaCl<sub>eq</sub>. Two main types of fluid inclusions are present in the samples from Waterberg: low-salted (0.4-2.4 wt.% NaCl<sub>eq</sub>) high-temperature (315-370°C) primary inclusions and secondary inclusions characterized by high salinity (up to 21.1 wt.% NaCl<sub>eq</sub>) and lower temperature. According to paragenetic relations between PGM and coexisted minerals, a major factor of PGM deposition is the change of redox potential. We supposed, that the most importance have the disproportion reactions such as  $2PtCl_2 = Pt^0 + PtCl_4$ .