

On problem of the formation of primary sources of the Kuranakh type

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Gold from the Kuranakh deposit (Central Aldan ore region) varies from thin-dispersed to fine in size (0.05 to 0.1 mm). The larger gold fractions are represented by flat and lumpy shapes. Besides, brittle Au aggregates from 0.04 to 20 mm in size occur. The fineness of the Kuranakh gold ranges from 800 to 900‰ admixture elements are established to be Hg, Se, Te, Pb, Fe, Mn, Cr, Sn, Cl. Ores contain sulfides, tellurides, selenides and arsenides, as well as phosphates and silicates with rare-earth elements. Geochemical profile of ores is characterized by a number of admixture elements but first of all as a mercury-selenide-telluride one which is reflected in gold admixtures [1]. Placer gold from the Urinsky anticlinorium as well as gold from the Kuranakh ore deposit is represented both by flat and lumpy shapes, and brittle aggregates with a thin spongy structure consisting of small gold particles (up to 0.01 mm) intergrown with iron hydroxides. Gold particles vary from dust-like to 0.25 mm and more in size, fineness – from 600 to 900‰ Hg content – from 0.12 to 6.2%. Spongy gold ranges from 664 to 727‰ in fineness, containing up to 2.34% Hg. Internal structure of gold is characterized by coarse, poorly zonal and interblock particles, monograins. Gold contains microinclusions of quartz, calcite, pyrite, arsenopyrite, tellurides, selenides, and rare-earth phosphates, similar to the complex of minerals of the Kuranakh deposit.

In addition to the revealed mineralogical-geochemical features of placer gold from the Urinsky anticlinorium common with Kuranakh gold, some resemblance of geological development between these areas is observed. According to [2], deposits of the Kuranakh ore field were formed in the place of continental rift structure of Central Aldan, where repeated TMA took place along fracture systems initiated in the Archean. The activity was followed by metasomatism and rock crushing, manifestations of Proterozoic and Mesozoic magmatism, giving rise to the formation of gold ore deposits of Central Aldan. According to E.E. Milanovsky's data [3] the Urinsky anticlinorium is located in the zone of old Vilyui paleorift. As a result of repeated TMA on this territory, basic and acid magmatism was manifested, thrust-faults were intensively developed forming zones of brecciation, silicification and ferruginization, as well as metasomatism (skarn formation, amphibolization, serpentinization). All this creates prerequisites for the formation of gold ore sources of the Kuranakh type.

Thus, the revealed similarity of mineralogical-geochemical features of placer gold from the Urinsky anticlinorium and gold from the Kuranakh ore deposit and the resemblance between their geological development allow us to forecast the Kuranakh-type gold ore source in the Urinsky anticlinorium.

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3. Milanovsky E.E. Rifting in the Earth's history (rifting on the old platforms). M.: Nedra. 1983.