Gold Deportment in Processing Products from Lichkvas-Tey Polymetallic Deposit (Armenia)

I.A.AGAPOV[1*], I.S.ANISIMOV[1], A.V.NEPOCHATOVA[1], A.M.SAGITOVA[1,2],

[1]Polymetall JSC 2 Pr. Nar. Opolcheniya, St-Petersburg, 198216 Russia

[1]Saint-Petersburg State University 7/9 Universitetskaya nab., St-Petersburg, 199034 Russia

Lichkvas gold deposit is located in the visinity of Kapan town and the same name processing plant. The deposit is a polymetallic gold bearing mesothermal massive sulfide and vein type deposit. Polymetallic mineralization ocurs in quartz-carbonate and massive marcasite/pyrite veins and less common mineralized beresitization halos as chalcopyrite, tennantite, spalerite and galena. Minor Bi mineralization as native Bi, Bi-Pb sulfolalts and tellurides are present together with sporadic Au and Ag tellurides in ore. The ores treated on flotation processing plant extracting Cu, Zn concentrates and generating pyrite tailings/concentrate. Gold is extracted mainly with Cu concentrate.

Gold deportment in feed distributes as follows: 12-15% to visible gold in association with quartz and pyrite/marcasite, 55-60% with arsenopyrite and 23-25% with pyrite/marcasite and the rest with other sulfides and poor sulfide binaries with quartz.

Gold deportment in pyrite tails revealed that the significant part of gold associated with sulfides was present in cooloidal size particles and could be liberated with extrafine grinding followed by cyanide extraction.

Factor and cluster analysis of large gechemical data sgowed presence of the following geochemical-mineral assosiations:

Correlation of gold with the named assosiations can predict gold distribution by minerals and consiquently processing behaviour.

.