

COMBINED ENRICHMENT OF MINERALS OF THE NORTH-WEST AREA OF KIZILOLMASOY MINING AREA

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Аннотация:

Впервые разработана комбинированная технология обогащения золотосодержащей руды участка Северо-Западный Кызылалмасайского рудного поля. В результате комбинированного обогащения суммарное извлечение золота составило 93,72% и серебра 91,59%.

Ключевые слова: золото, серебро, , извлечение, измельчение, гравитация.

Annotatsiya:

Ilk marotaba Qizilolmasoy ma'danli maydonining Shimoli-G'arbiy hududi ma'danlarini qayta ishlashning kombinatsiyalashgan boyitish texnologiyasi ishlab chiqildi. Kombinatsiyalashgan boyitishda, boyitmada jami ajralib chiqish: oltin-93,72% va kumush -91,59% ni tashkil qildi.

Kalit so'zlar: oltin, kumush, ajralish, yanchish, gravitatsiya..

Abstract:

For the first time, a combined beneficiation technology was developed for the processing of minerals of the North-Western region of the Kizilolmasoy mining field. In combined beneficiation, the total separation in beneficiation was: gold-93.72% and silver-91.59%.

Key words: gold, silver, separation, destruction, gravity.

The study of the material composition of the minerals of the North-Western region of the Kizyolmasoy mining area, the description of the minerals that make up it, the studied literature and the previous experiments in the mines that correspond to the



studied mineral in terms of material composition, gravity and flotation beneficiation methods were considered the main ones.

Grinding of ore - Solid: Liquid: Balls, 1:1.5:11 was carried out in a laboratory mill type "MSHL-14K".

Gravity enrichment was performed in a Knelson MD3 centrifugal concentrator.

Flotation of ore samples, volume of chambers 3.0; 1.0; and 0.5l was carried out in laboratory floatation machines of "FM-1", "FM-2", "FL-237" brands. Before flotation, the ore was crushed in a 40 ml laboratory mill in sizes of 1 kg each (several - according to the requirements of the experiment).

The results of the experiments were evaluated according to the data of the chemical analysis of gold and silver carried out using an atomic absorption spectrometer of the "Perkin-Elmir" company.

The quality of gold gravity enrichment was evaluated by TU-Uz-65-001-94-003 technical conditions. According to it, the amount of gold in beneficiation should not be less than 50 g/t, and harmful briquettes should not exceed the following amount: As-0.7%; Sb-0.3% and Al₂O₃-10%

Gold flotation was evaluated according to technical conditions TU-Uz-65-001-94-006, according to which gold in enrichment should not be less than 20g/t, and the amount of harmful briquettes should not exceed the following amounts: As-2%; Sb-0.3% and Al₂O₃-10%.

During gravity enrichment of the minerals of the North-Western region of Kizilolmasoy mining area, the separation of gold by gravity volume was 47.16%, and the separation of silver by gravity volume was 41.58%.

Experiments with the flotation scheme shown in Figure 1 were carried out in order to improve the flotation properties of useful components, increase the separation of original metals, improve the quality of beneficiation and reduce the amount of useful components in the waste.

For conducting experiments, a technological system including crushing of 85% of ore to a size of -0.074 mm, basic flotation, screening and cleaning processes was used as a basis (Fig. 1).

In flotation enrichment, potassium butyl xanthate in soda medium was used as a collector, T-92 reagents as apolar and effervescent reagents were used.



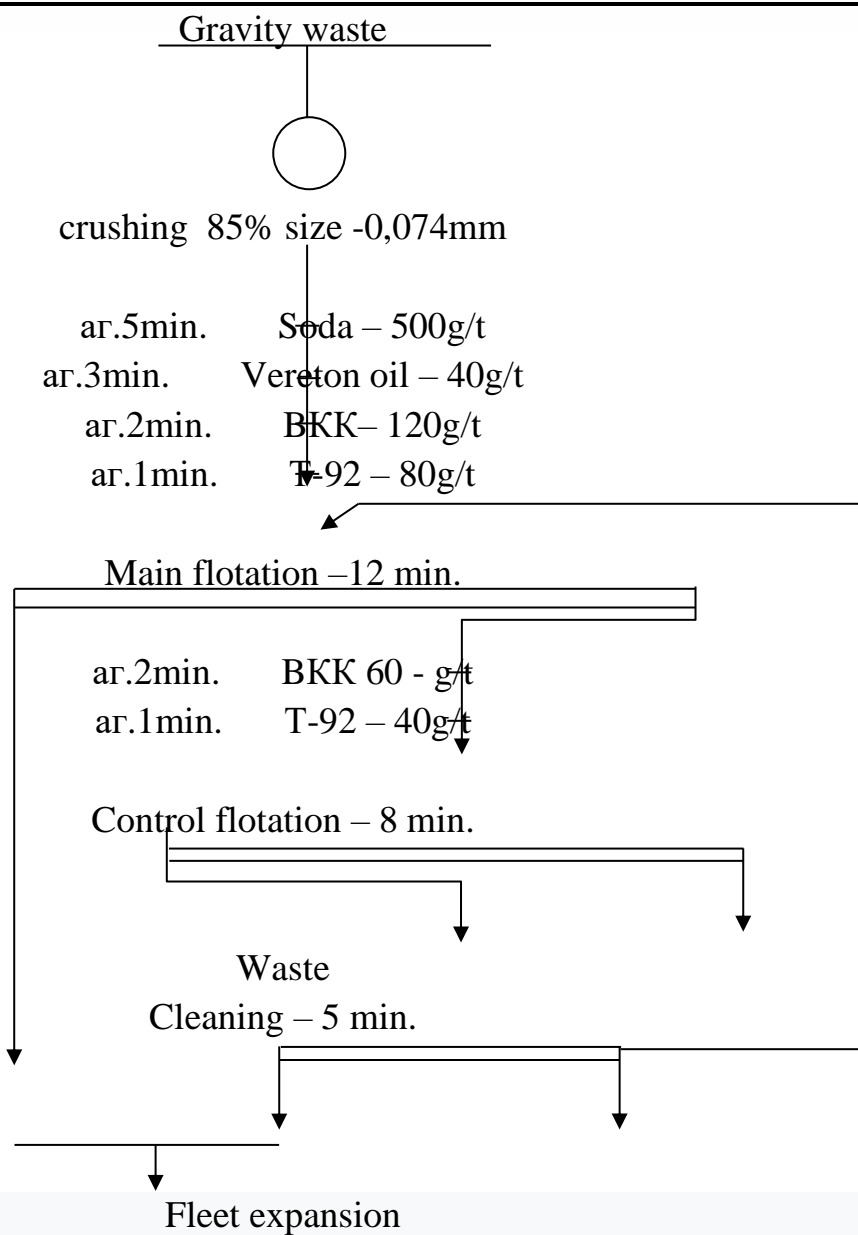


Figure 1. Gravity waste flotation system based on a continuous process
As a result of the gravity waste flotation system based on the continuous process, the separation of gold per float volume was 84.41%, and the separation of silver per float volume was 78.04%.

When we beneficiated the minerals of the North-West region of Kizyolmasoy mining area using a combined scheme, the separation of gold and silver was 93.72% and 91.59%, respectively.

In conclusion, it can be said that by enriching the minerals of the North-Western

region of the Kizilolmasoy mineral field in a combined way, we can extract useful components at high rates. These indicators will certainly contribute to the development of our industries in the future.

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