

Goeconomical estimation of Tomtor Nb-TR deposit.

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The Tomtor deposit (Yakutia) is unique on stocks and resources Nb_2O_5 (73.636 mil. t.) and TR_2O_3 (153.766 mil. t.), their concentration in a new type of ores (reputed crust of weathering). The goeconomical estimation of object is rather inconvenient because of distance, complexities of technology, peculiarities of mineral-raw base and world market of rare elements.

The technology of extraction provides autoclavic alkaline opening of initial ore with subsequent sulphatic decomposition of the rest part and extzaction of a solution with reception in commodity production individual oxides of rare elements: Nb, Sc, Y, Ce, La, Pr, Nd, Sm, Eu, Ti.

For the basic variant of estimation an valuation of the proceeds of commodity production in hard currency is accepted. The basic problem of an estimation is given by instability and significant variations of the prices on TR_2O_3 , the difference minimum and ceiling prices changes in some times. Total cost of annual commodity production changes from 17.42 till 53.99 mil. \$.

Oxide prices, accepted in accounts (\$/kg): Ce - 10, La - 12, Pr - 7, Y - 20, Nd - 24, Sm - 25, Eu - 200, Sc - 600 correspond or below global minimum. The accounts are carried out on improvement by an open-pite 12700 t. dampe ore (10000 t. dry ore) with delivery and processing in Krasnoyarsk. The small depth of disposition of a layer in the block (about 15 m) and capacity of ore (about 12 m) cause an opportunity of improvement by an open-pite.

Term of improvement of a site reconnoitered for prime improvement makes more than 100 years at repurchasion of fixed capital of the enterprise in 4-6 years. The significant improvement of economic parameters (in 1.2 - 1.5 time) is possible with improvement of quality of ore.