

New exploration results of the Elkon uranium district deposits and prospects for their development

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The Elkon Uranium District (EUD) is located in the Republic of Sakha (Yakutia) and is of strategic importance for the Russian uranium industry. It comprises more than 40% of the entire Russian uranium mineral resource and 4% of the world's uranium resources.

Drilling and underground mining completed in 1961-1986 amounted to over 600,000 m and 52,500 m, respectively. The performed activities resulted in the discovery of the Yuzhnaya Zone and the Severnoe deposits. The Yuzhnaya Zone uranium resources (Measured + Indicated + Inferred) amounted to 257,8 kt (grade 0,146%). Uranium mineralisation contains 141 t of gold, 1784 t of silver and 41,5 kt of molybdenum. The Severnoe Inferred resources have been estimated at 58.6 kt (grade 0,149%).

During the period of 2007-2011 over 100,000 m of drilling and associated activities was completed within the Yuzhnaya Zone and Severnoe deposits along with optimisation of ore mining and processing methods, and geological and economic revaluation of the deposits.

The key results of the exploration activities are as follows:

- ☒ an increase in Measured uranium resources by more than 50 kt;
- ☒ new data in the geological structure, material composition and technological properties of ore, hydrogeological and geotechnical conditions of mining;
- ☒ the mineralised bodies received estimates of gold, silver and molybdenum resources; Inferred vanadium resource estimate produced for the first time (113 kt, 0.05% grade);
- ☒ there are areas revealed in the Severnoe oxidation zone suitable for gold open pit mining and heap leaching. Gold and silver Inferred resources have been estimated at 19 t (grade 1.09 g/t) and 125 t (grade 7.08 g/t). Detailed exploration activities and geological and economic evaluation resulted in definition of the principal directions for improving economic efficiency of development:
- ☒ increase in the mineral resource of the projected mine through detailed exploration of the Severnoe flanks;
- ☒ high-priority involvement of relatively high grade uranium mineralisation; open mining of gold from oxidised ore, which will make it possible to reduce the time required for the mine to achieve maximum production rate and reduce the specific costs for the mine construction;
- ☒ increase in production rate due to the application of advanced mining methods;
- ☒ mineralogical and metallurgical mapping to define oxidised ore which can be processed by atmospheric leaching;
- ☒ application of X-ray radiometric separation;
- ☒ increase in the associated components recovery degree.

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