

Ore minerals

The country's mineral resources base includes deposits of precious, non-ferrous and rare metals, non-ore minerals, fuel and power resources, fresh underground and thermal and mineral water.



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Gold

The **State Register** of Reserves of the Kyrgyz Republic has the following explored reserves of 42 gold and complex deposits as of 01 January 2013: ore – 166.4 millions of tonnes, gold – 616.4 tonnes.

Characteristics of deposits indicated in the State Register are given below:

Kumtor deposit. Under development by Kumtor Gold Company since 1996. Initial reserves in the contour of a new open pit are 109.1 million tonnes of ore and 396.1 tonnes of gold. 78 million tonnes of ore and 304.8 tonnes of gold were depleted from 1996 to 2012.

Pit reserves remaining for development as of 01 January 2013 amount to 28.8 million tonnes of ore and 91.3 tonnes of gold.

Sarytor area of Kumtor deposit. Explored reserves amount to 1995.6 thousand tonnes of ore and 8.5 tonnes of gold with the average grade of 4.26 g/t.

Makmal deposit. Under development since 1986. Explored reserves amount to 1.0 million tonnes of ore and 7.6 tonnes of gold with the average grade of 7.59g/t. Mining of pit reserves was completed in 2003. Mining of underground reserves with simultaneous processing of stockpiled, out of balance ore commenced in 2003. In order to extend the mine life, timely exploration of the Vostochnyi Flang (eastern flank) and Dioritovyi (dioritic) areas is required, as well as pre-exploration of inferred resources at deep levels of the deposit amounting in total to 3.5 million tonnes of ore and 22.6 tonnes of gold is necessary.

Jerui deposit. Explored reserves amount to 11.5 million tonnes of ore and 80.9 tonnes of gold with the average grade of 7.03 g/t.

Taldybulak Levoberejnyi deposit. Explored reserves amount to 13.34 million tonnes of ore and 77.7 tonnes of gold with the average grade of 5.82 g/t.

Chaarat deposit. Explored reserves amount to 23 million tonnes of ore and 76.7 tonnes of gold with the average grade of 3.33 g/t.

Tulkubash area of the Chaarat deposit. Explored reserves amount to 2.4 million tonnes of ore and 5.6 tonnes of gold with the average grade of 2.35 g/t.

Terek-Terekkan ore field:

- **Terekkan deposit.** Explored reserves amount to 580.6 thousand tonnes of ore and 4,684.5 kg of gold with the average grade of 8.07 g/t.
- **Perevalnoye deposit.** Explored reserves amount to 619 thousand tonnes of ore and 6,097 kg of gold with the average grade of 9.8 g/t.
- **Interstratal ore body of the Terek deposit.** Explored reserves amount to 61.4 thousand tonnes of ore and 1,477.4 kg of gold with the average grade of 24.1 g/t.
- **Yuzhnyi area of the Terek deposit.** Explored reserves amount to 332 thousand tonnes of ore and 233 kg of gold with the average grade of 0.7 g/t.
- **Yuzhnyi area of the Terek deposit.** Under development. Remaining reserves amount to 102.4 thousand tonnes of ore and 604.3 kg of gold with the average grade of 5.9 g/t.
- **Ishtamberdy deposit.** Under development. Remaining reserves amount to 2,485 thousand tonnes of ore and 19,401 kg of gold with the average grade of 7.8 g/t.
- **Vostochnyi area of the Ishtamberdy deposit.** Explored reserves amount to 521.8 thousand tonnes of ore and 6,544 kg of gold with the average grade of 12.54 g/t.
- **Solton-Sary deposit.** Includes two adjoining areas: AltynTOR and Buchuk. Exploration and mining were carried out in the **AltynTOR area**. Remaining explored reserves amount to 639.4 thousand tonnes of ore and 2,303.6 kg of gold with the average grade of 3.6 g/t.

Prospect evaluation survey was carried out in the **Buchuk area**. According to the results, geological reserves amount to 3,571.8 thousand tonnes of ore and 12.05 tonnes of gold with the average grade of 3.37 g/t.

Kuru-Tegerek deposit. Explored reserves amount to 36.5 million tonnes of ore, 39.2 tonnes of gold and 354.6 thousand tonnes of copper with the average grade of 1.075 g/t and 0.97%.

Jamgyr deposit. Under development. Remaining explored reserves indicated in the State Register amount to 31.7 thousand tonnes of ore and 613.4 kg of gold with the average grade of 19.35 g/t. The estimated geological reserves of the deposit amount to 411 thousand tonnes of ore and 4.8 tonnes of gold.

Unkurtash deposit. Explored reserves amount to 15.2 million tonnes of ore and 38.06 tonnes of gold with the average grade of 2.5 g/t.

Karatube deposit. Explored reserves amount to 1.8 million tonnes of ore and 4.85 tonnes of gold with the average grade of 2.73 g/t.

Shambesai deposit. Explored reserves amount to 1.3 million tonnes of ore and 6.25 tonnes of gold with the average grade of 4.78 g/t.

Kuranjailoo deposit. Explored reserves amount to 125.9 thousand tonnes of ore and 1,992.9 kg of gold with the average grade of 15.8 g/t.

Nasonovskoye deposit. Explored reserves amount to 751 thousand tonnes of ore, 5,612 kg of gold and 4.6 thousand tonnes of copper with the average grade of 7.5 g/t and 0.6%.

Bozymchak deposit. Under development. Remaining explored reserves of the Central area amount to 14,555.6 thousand tonnes of ore, 23,788.5 kg of gold and 145.8 thousand tonnes of copper with the average grade of 1.64 g/t and 1%.

Togolok deposit. Explored reserves amount to 8,124 thousand tonnes of ore and 17,367.7 kg of gold with the average grade of 2.1 g/t.

Tokhtazan deposit. Explored reserves amount to 3,515 thousand tonnes of ore and 7,581 kg of gold with the average grade of 2.16 g/t. The estimated reserves and inferred resources of the deposit amount to 27.3 tonnes of gold.

Dolpran deposit. Explored reserves amount to 224 thousand tonnes of ore and 1,281 kg of gold with the average grade of 5.72 g/t.

Mironovskoye deposit. represents a complex copper-bismuth and gold deposit. Explored ore reserves amount to 1,564.5 thousand tonnes, gold - 2,660.5 kg, bismuth - 1,843.96 tonnes, silver - 75.1 tonnes, copper - 23,509.8 tonnes, plumbum - 8,268.3 tonnes with the average grade of 1.7 g/t, 0.12%, 48 g/t, 1.5% and 0.53% respectively.

Andash deposit. Explored reserves amount to 17.6 million tonnes of ore and 19.6 tonnes of gold with the average grade of 1.11 g/t.

Terek (Karkala) deposit. Explored reserves amount to 463.8 thousand tonnes of ore and 2,773.7 kg of gold with the average grade of 5.98 g/t.

Kich-Sandyk deposit. Explored reserves amount to 623.6 thousand tonnes of ore and 1,848.4 kg of gold with the average grade of 2.96 g/t.

Karakazyk deposit. Under development. Remaining reserves amount to 27.9 thousand tonnes of ore and 342.3 kg of gold with the average grade of 12.3 g/t.

Kumbel deposit, Zapadnyi area. Explored reserves amount to 260 thousand tonnes of ore and 1,285 kg of gold with the average grade of 4.95 g/t.

Karator deposit, Ozyornyi area. Explored reserves amount to 3,339.0 thousand tonnes and 5,370.5 kg of gold with the average grade of 1.6 g/t.

Chalkuiruk-Akjlga deposit. Geological reserves amount to 175 thousand tonnes of ore and 2.3 tonnes of gold with the average grade of 13.4 g/t.

Chapchama deposit. Geological reserves amount to 109 thousand tonnes of ore and 979 kg of gold with the average grade of 9.0 g/t. Reserves are recorded in the State Register as off-balance reserves.

Chonkymyzdykty deposit. Explored reserves amount to 164.5 thousand tonnes of ore and 663.1 kg of gold with the average grade of 4.03 g/t.

Karabulak deposit. Geological reserves amount to 1.4 million tonnes of ore and 2.55 tonnes of gold with the average grade of 1.78 g/t.

Altyn-Jylga deposit. Explored reserves amount to 1,073.0 thousand tonnes of ore and 7.14 tonnes of gold with the average grade of 6.65 g/t.

In addition, 141 kg of gold as an associated component are registered in Abshyr, antimony deposit.

Except the explored deposits specified in the State Register, there are dozens of gold occurrences mainly examined at the stage of prospecting works. Their prospectivity is defined by the calculated P1 category inferred resources. Prospect evaluation survey was carried out in some areas and C2 category geological reserves and P1 category inferred resources were calculated.

Availability of C2 category reserves and P1 category inferred resources indicates the prospectivity and necessity of further exploration.

Current economic evaluation of practicability of exploration and development of ore occurrences listed below was not carried out. Their commercial value can be determined upon exploration and fulfilment of current economic evaluation. Currently exploration is in progress in all areas.

Shiraldjin. Geological reserves amount to 1.1 million tonnes of ore and 5.1 tonnes of gold with the average grade of 4.7 g/t. P1 category inferred resources: ore - 2.1 million tonnes, gold - 9.9 tonnes, average grade - 4.7 g/t.

Nichkesu. Geological reserves amount to 315 thousand tonnes of ore and 2.2 tonnes of gold with the average grade of 7.0 g/t.

Chakush. Inferred resources amount to 1.0 million tonnes of ore and 6.0 tonnes of gold with the average grade of 5.8 g/t.

Turpaktushty. Geological reserves amount to 172 thousand tonnes of ore and 729 kg of gold with the average grade of 4.2 g/t. Inferred resources: ore - 400 thousand tonnes, gold - 1.6 tonnes, average grade - 4.0 g/t.

Akjol. Geological reserves amount to 122 thousand tonnes of ore and 645 kg of gold with the average grade of 5.3 g/t. Inferred resources: ore - 227 thousand tonnes, gold - 590 tonnes, average grade - 2.6 g/t.

Kurpsai. Inferred resources amount to 1.5 million tonnes of ore and 4.9 tonnes of gold with the average grade of 3.3 g/t.

Komator. Geological reserves amount to 299 thousand tonnes of ore and 2,971 kg of gold with the average grade of 9.9 g/t.

Jangart. Geological reserves amount to 500 thousand tonnes of ore and 4.0 tonnes of gold with the average grade of 8.1 g/t. Spektr LLC was issued a license for geological survey in 2003. Exploration is in progress.

Aktash. Geological reserves amount to 2.8 million tonnes of ore and 8.7 tonnes of gold with the average grade of 3.1 g/t.

Chonur. Inferred resources amount to 370 thousand tonnes of ore and 5.0 tonnes of gold with the average grade of 13.5 g/t.

Taldybulak. Inferred resources amount to 16.2 million tonnes of ore and 29.0 tonnes of gold with the average grade of 1.8 g/t.

Turuk. Geological reserves amount to 470 thousand tonnes of ore and 1.8 tonnes of gold with the average grade of 3.9 g/t.

Aksur. Geological reserves amount to 290 thousand tonnes of ore and 1.2 tonnes of gold with the average grade of 4.1 g/t.

Levoberezhnoye. Geological reserves amount to 85 thousand tonnes of ore and 1.1 tonnes of gold with the average grade of 13.0 g/t.

Savoyardy. Inferred resources amount to 1.2 million tonnes of ore and 8.1 tonnes of gold with the average grade of 6.5 g/t.

Aprelskoye. Geological reserves amount to 2,139.7 thousand tonnes of ore and 3,122.9 kg of gold with the average grade of 1.42 g/t.

Pervenets. Geological reserves amount to 4.7 thousand tonnes of ore and 94.1 kg of gold with the average grade of 20.12 g/t.

Malatash. Geological reserves amount to 117 thousand tonnes of ore and 634.5 kg of gold with the average grade of 5.42 g/t. Inferred resources amount to 1,210.2 thousand tonnes of ore and 7,866.5 tonnes of gold with the average grade of 6.5 g/t.

Tuyuk. Inferred resources amount to 650 thousand tonnes of ore and 4.2 tonnes of gold with the average grade of 5.25 g/t.

Non-ferrous and rare metals

Kyrgyzstan has a large explored raw materials base of tin, tungsten, antimony, hydrargyrum, beryllium and rare-earth elements. Development of non-ferrous industry in the country is slow due to decrease in demand and regular price reduction at the market. In recent years, production of antimony and hydrargyrum has considerably decreased, mining of rare-earth elements has stopped.

Tin, tungsten



Trudovoye deposit. Consists of 4 adjoining areas: Tsentralnyi, Lesistyi, Tashkoro and Ryzhyi. Their explored reserves amount to 23.1 million tonnes of ore, 126.1 thousand tonnes of tin, 87.7 thousand tonnes of tungsten trioxide and 572.3 thousand tonnes of fluorspar. Average content of tin in ore is 0.55%, tungsten trioxide – 0.38%, fluorspar – 12.29%.

Uchkoshkon deposit. It is located in 60km from the Trudovoye deposit and was explored as a reserve site of Saryjaz mining and processing complex. Explored reserves amount to 11.5 million tonnes of ore and 60.6 thousand tonnes of tin. Average grade of tin in ore is 0.53%.

Sarybulak deposit. The deposit was examined at the stage of prospecting and evaluation. The reserves were not specified in the State Register. Explored reserves and inferred resources amount to 2.1 million tonnes of ore and 17.2 thousand tonnes of tin. Average grade of tin in ore is 0.82%. Deposit ores are complex and refractory. In addition to tin, reserves and inferred resources of associated metals were calculated: antimony – 2.2 thousand tonnes, plumbum – 55.4 thousand tonnes, zinc – 50.9 thousand tonnes, copper – 5.3 thousand tonnes, silver– 37.8 tonnes.

Kensu tungsten deposit. It is located in 50km from the Trudovoye deposit. Explored reserves amount to 5.8 million tonnes of ore and 29.5 tonnes of tungsten trioxide with the average content of 0.51%.

Antimony

Explored antimony reserves in 7 antimonite and complex hydrargyric-antimonite-fluorite deposits specified in the State Register amount to 15.5 million tonnes of ore and 264 thousand tonnes of antimony. However the quality of ores is low as compared to deposits under development in the world. In recent years, antimony mining has not been carried out. Raw material is delivered from Russia, Kazakhstan and Tajikistan for production of antimony regulus and antimonides at the metallurgical plant of the Kadamjai enterprise.

Kadamjai deposit. Explored reserves amount to 3.0 million tonnes of ore and 77.6 thousand tonnes of antimony with the average content of 2.6%. Ore mining at the deposit decreased from 108 thousand tonnes in 1997 to 42 thousand tonnes in 2000 and almost stopped in recent years.

Terek deposit. Sulphide ore reserves for adit mining were completed. Sulphide ore reserves for adit mining and oxide ore reserves amount to 601.1 thousand tonnes of ore and 22.8 thousand tonnes of antimony with the average content of 3.8%.

Kassan deposit. It is located in 10km from the Terek-Sai deposit. Explored reserves amount to 1,123 thousand tonnes of ore and 39.1 thousand tonnes of antimony with the average content of 3.48%. Arsenic is harmful impurity in ore. Arsenic-containing concentrate technology is not developed enough.

Abshyr deposit. Explored reserves amount to 71 thousand tonnes of ore and 1,824 tonnes of antimony with the average antimony content of 2.57%.

Severnyi Aktash deposit. Explored reserves amount to 3.3 million tonnes of ore, 16.8 tonnes of antimony and 655 thousand tonnes of fluor spar with the average grade of 0.5 and 20.1%.

Hydrargyrum

Khaidarkan deposit. Explored reserves amount to 7.1 million tonnes of ore, 10.5 tonnes of hydrargyrum, 60.3 thousand tonnes of antimony and 614 thousand tonnes of fluor spar with the average grade of 0.15, 1.46 and 15.2%.

Novoye deposit. Under development by Khaidarkan hydrargyric enterprise. Explored reserves amount to 3.5 million tonnes of ore, 5.5 tonnes of hydrargyrum, 48.7 thousand tonnes of antimony and 488 thousand tonnes of fluor spar with the average grade of 0.15, 1.4 and 13.7%.

Chonkoi deposit. The deposit was developed using a shaft method. Yearly output was 110-120 thousand tonnes of ore that was processed at the metallurgic plant of the mine. Hydrargyrum production was 165-170 tonnes per year. Uluu-Too deposit and mine were put on care and maintenance under PESAK programme in 1995. The remaining explored reserves: ore - 8,265 thousand tonnes, hydrargyrum- 22,698 tonnes, average content - 0.275%.

Chauvai deposit. The deposit was developed by Khaidarkan hydrargyric enterprise until 1994. It was put on care and maintenance under PESAK programme in 1995. Remaining reserves explored amount to 313 thousand tonnes of ore and 875 thousand tonnes of hydrargyrum with the average content of 0.28%.

Kalesai beryllium deposit. The deposit was explored in detail and prepared for development. Explored reserves amount to ore- 9,245 thousand tonnes, beryllium oxide – 11.7 thousand tonnes, average content– 0.127%.

Rare earth elements deposit Kutessai II. The deposit was developed by the Kyrgyz Mining-and-Metallurgical Plant until 1992. It was put on care and maintenance under PESAK programme in 1995. Remaining reserves explored amount to 20.4 million tonnes of ore and 52.1 thousand tonnes of rare earth elements with the average content of 0.26%, including 11.2 million tonnes of ore and 34,329 tonnes of rare earth elements with the average content of 0.29% in the contour of the designed pit.

Uranium.

Up until recently uranium mining in Kyrgyzstan was carried out at several deposits (Kajisai, Mailisai, Kavak and Tuiauiun). At present, all of them are closed.

Perspectives of uranium industry development can be connected with development of the explored ore deposits of the Saryjaz river and Kyzyl-Ompul uranium-thorianite placers. The Saryjaz deposit reserves amount to 8,222 tonnes (average uranium content is 0.022%), Kyzyl-Ompul placers reserves amount to 3,125 tonnes of uranium with the average content of 0.032%.

Serafimovskoye deposit has perspectives of study of infiltration-type uranium raw material in neogene limestone clay.

<http://www.geoportal-kg.org/index.php/geology/mineral-resources/ore-deposits>