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THE DISCOVERY OF THE MURUNTOV GOLD DEMISE - A FUNDAMENTAL BASE IN THE STUDY OF THE HISTORY OF THE GEOLOGY OF UZBEKISTAN

(ANALYSIS BASED ON ARCHIVE DOCUMENTS 1929-2024)

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in Uzbekistan during 1929–2024 and the discovery, development, and economic significance of the Muruntov gold deposit are analyzed based on archival documents.

Uzbekistan is one of the world's leading countries in terms of reserves of gold, silver, copper, uranium, lead, zinc, tungsten, natural gas and other minerals. According to geological studies , almost all elements of the Mendeleev periodic system have been found in this territory. The Kyzylkum desert is famous all over the world for its richness in underground minerals, and the Muruntov deposit located there is recognized as the largest gold deposit in the world .

The discovery of the Muruntov deposit is considered by the international geological community to be the greatest discovery of precious metals in the last century. Exploration for gold deposits in Kyzylkum began in the 1930s and 1940s.

In particular, in 1931, A.F. Sosedko, in 1936–1938, S.A. Kushnar, in 1937–1938, M.P. Petrov, V.A. Zakharevich, A.F. Sosedko, P.I. Myastkovsky, and in 1940, M.P. Petrov were engaged in continuous research. In the 1950s, the scientific views of geologists on the existence of gold deposits in Uzbekistan were fully confirmed. This was based on I.Khamrabayev's research work entitled "Processes of magmatism and postmagmatism in Western Uzbekistan"281. As a result of I.Khamrabayev's research, the pregenesis of gold and manganese, that is, their co-occurrence in deposits, was scientifically substantiated. On this basis, in 1954–1956, it was discovered that there were two types of gold deposits in the western part of Uzbekistan: one in which gold occurs with manganese pyrite (the mineral arsenopyrite), and the other in which it occurs very rarely in quartz veins. In 1958, based on the dependence of gold on manganese, anomalous areas rich in manganese were identified near Muruntov.

In the same year, after research conducted at one of the anomalies with a high concentration of manganese, the Muruntov ore field, this ore field was assessed as very promising. As a result of detailed exploration work carried out in this ore field in 1959–1962, the main area of the deposit was determined and the size of the gold-rich sections was determined to be very large. I. Hamrabayev is the scientist who discovered the location of the Muruntov gold deposit The scientist's research has led to the discovery of gold mines "Tomdibulok" and "Chormitan". It also became the basis for the discovery of mines.

These studies continued in subsequent years, and in 1958, as a result of metallometric mapping conducted in the Muruntov area by geophysicists Yu.N. Mordvintsev and PV Khramyshkin, the analyses obtained from ore samples were scientifically confirmed. As a result, in 1958, the world-famous Muruntov gold deposit was discovered in Kyzylkum.

The "Muruntov" deposit is not only the largest deposit in the Central Kyzylkum, but also in the world, located 180 km. north of Navoi, 40 km. east of Zarafshan, at the southern foot of

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Tomditov. Due to the abundance of gold reserves and convenient technological conditions for ore extraction, the deposit is also called the "Rare Jewel of the World", "Miracle of the Century" (XX century).

By Resolution No. 440/176 of the USSR Council of Ministers of May 25, 1964, and Order No. 0153/27s of the Ministry of Medium Machine-Building and the Ministry of Ferrous and Nonferrous Metallurgy of June 4, the development of the Muruntov deposit began286, which was included in the Navoi Mining and Metallurgical Combine.

The Muruntov deposit has been extensively studied by specialists. In particular, the total volume of gold in the mine, which is expected to be deep and ultra-deep, and conduct research based on scientific approaches for future projects went. From 1965 to 1969, the mine was prepared for industrial production. A high-voltage power line and the first stage of a water pipeline from the Amudarya River were laid in the area. Ore mining and processing complexes were put into operation, and open-pit mining began. The project for the development of the mine was approved by the Minister of Medium Machine-Building Ye.P. Slavsky on September 28, 1964. According to it, the task was to gradually increase mining from the mine (to 15-20 tons of gold per year), to begin construction and installation work at the mine from 1965, to ensure the operation of the mine at full capacity from 1969, and to build a gold processing plant.

The Muruntov deposit differs from other deposits in the specificity of the product. In most cases, the gold particles in the deposits are small (grains with a size of 1-2 mm). In the Muruntov deposit, 50-60% of the gold particles in the ore are 0.01-0.02 mm. Therefore, it was not mined before, since it was difficult to separate fine gold from the rock.

In 1964, work began on the organization of a network for the extraction and processing of gold-containing ores at the Muruntov gold mine. By the resolution of the Central Committee of the CPSU and the USSR Government No. 737303 dated August 29, 1964 “On the development of the Muruntov gold mine”, the Ministry of Medium Machine-Building was entrusted with the development of the mine, the construction of a hydrometallurgical plant with a capacity of 5 million tons of ore per year, a 40 km. railway, 220 km. water pipelines from the Amudarya, and the construction of a town for miners. The resolution of the USSR Council of Ministers dated May 25, 1964 No. 440-176 on the development of the mine was also adopted.

In 1965, the first phase of construction work was completed at the Muruntov mine. 50 kilometers of water pipelines were laid to the mine, a 220-watt electricity transmission line from the Kyzylkuduk station to the settlement, and units were created to carry out construction work. The Ministry of Medium Machine-Building approved measures for the industrial development of the mine and the construction of the city of Zarafshan. The Central Mining Department was established in 1964 by the NKMK to carry out the development of the mine.

Design work is being carried out by the Svetmetproekt Institute of the USSR Ministry of Nonferrous Metallurgy for the development of the Muruntov deposit. As of January 1, 1966, 19.44 million rubles were spent on geological exploration work.

Despite the climatic nature of Kyzylkum, construction work began, and in 1965-1966, the base was first formed for the construction of the "Muruntov" mining complex. In particular, a 70 km. power line to the Zarafshon settlement, a 56 km. railway to the mine, and a 65 km. temporary water pipeline from Tomdi to Zarafshon were brought.

It is worth mentioning here that the first sample of gold from the Muruntov deposit, obtained in laboratory conditions, was sent as a gift to the XXIII Congress of the CPSU, which began its work on March 29, 1966. The Muruntov gold sample (the first gold obtained in the laboratory - XR) was prepared in the form of a box (casket) in the Central Research Laboratory of the combine. The words "Muruntov's first gold - to the XXIII Congress of the CPSU" and "Lenin" were inscribed on it. This gold box was delivered to Z. Zarapetyan, a delegate to the congress. At this congress, when the Chairman of the USSR Council of Ministers A. Kosygin told the First Secretary of the CPSU Central Committee L. Brezhnev that Canada had agreed to sell grain to the USSR, A. Kosygin turned to Zarapetyan and said, "Do you see why we need

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gold? We buy grain, so we need to build a gold-mining plant as soon as possible." From this it can be seen that the Soviet state used gold in international trade and the profits from it were spent on its own needs.

The development of the Muruntov deposit was carried out in three stages. On March 1, 1967, the first mass blasting was carried out at the Muruntov deposit. In the early years, 10-12-ton KrAZ-222 dump trucks and D-271 bulldozers were used to transport ore from the deposit, and 8-10 million tons of ore were extracted per year. In the 1970s, 27- and 40-ton BelAZs were introduced to the deposit, As a result of the import of EKG-8I excavators, 3.4 million tons of ore mass will be removed annually. was mined. As a result of the work carried out, in 1971, the "Muruntov" mine was 5 million tons of ore were mined per year. This was twice as much as the previous year.

The gold reserves of the Muruntov deposit were at that time one of the largest not only in the USSR, but also among the world's gold deposits. In 1965, the Muruntov deposit was the largest deposit in the Union in terms of gold reserves, with 777 tons of gold reserves. There were also 138 tons at the Netalkinsky deposit in the Magadan region, 283 tons at the Zodskoy deposit in Armenia, 131 tons at the Taseevsky deposit in the Chita region, 138 tons at the Kuranakha deposit in the Aldansky gold region of the Yakut ASSR, and 143 tons at the Bakirchik deposit in the Semipalatinsk region of Kazakhstan. It was planned to extract 20 tons of gold in 1970 by commissioning the first stage of a hydrometallurgical plant for the extraction and processing of gold from the Muruntov deposit. Later, by launching the second stage of the plant, it was supposed to produce 35-40 tons of gold per year, which would be 50% of the total gold produced in the USSR.

For this, it became necessary to build a plant for processing gold-containing ores extracted from the “Muruntov” deposit. In 1967, the construction of the 2nd hydrometallurgical plant began based on the project of academician B.N. Laskori. The construction and commissioning of the plant were mainly carried out in accordance with other Personnel from the republics were recruited. In 1967, PV Dyatlov, who became its first director, L.S. Simin, an energy engineer, and Yu.I. Terekhov, a mechanic, came to work at the plant.

In 1968, 15 graduates from the Tomsk Polytechnic Institute and 74 laboratory technicians and equipment technicians from the Solikamsk Vocational and Technical School in the Perm Region were hired. The first stage of the plant was commissioned in 1969. On July 21, 1969, a historic event took place - for the first time, 11 kilograms 820 grams of pure gold was extracted from the Muruntov gold mine301. On July 25 of the same year, the ceremonial opening of the second hydrometallurgical plant took place.

It will be attended by the head of Uzbekistan Sh.R.Rashidov and the Minister of Medium Machine-Building of the USSR Ye.P.Slavsky, as well as representatives of party and state bodies. At the ceremony, Ye.P.Slavsky presented the first gold ingot to Sharof Rashidov The first gold bars were marked with the three-letter word "ZAR". Gold bars are delivered directly to the State Treasury (Goskhran) in Moscow. 303. Thus, the Soviet government's mass deportation from the territory of Uzbekistan The policy of transporting gold began.

The plant has a full design output of 5 million tons of gold since 1970. ore processing began304. In order to extract more gold, the Soviet government commissioned a second phase of the plant in 1974, increasing its capacity to process gold-bearing ores to 10 million tons per year. As a result of reconstruction work carried out in the 1980s, the plant's production capacity reached almost 20 million tons. Kyzylkum Desert It has become a major gold production center in Uzbekistan. Navoi Mining and Metallurgical Combine is one of the world's largest gold producers. entered the top ten. Since 1971, the plant began producing pure gold of 999.9 purity. The high-quality gold produced at Hydrometallurgical Plant No. 2 has also been recognized abroad.

It is known that during the USSR, gold of high quality, that is, 999.9 proof, was obtained only from two factories - the 2nd Hydrometallurgical Plant in Novosibirsk and Zarafshan, Russia.

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According to LG Anashkin, a veteran of the plant, in 1972 the Japanese government purchased 200 kilograms of gold from the USSR to make commemorative medals for the emperor's birthday. The Japanese bought The gold obtained is analyzed in a laboratory in Switzerland. Analyses shows that the gold is not of 999.9 purity. When the Japanese expressed their dissatisfaction with this, the organization that supplied the gold from the USSR was forced to pay the Japanese a fine for the poor quality gold. This gold was produced at a factory in Novosibirsk. The Soviet government sent Japan the next gold deposits from Uzbekistan, namely from 999.9 purity gold mined at the Muruntov deposit and produced at the 2nd Hydrometallurgical Plant. This Evidence that Uzbek gold meets international standard requirements gives.

It should be noted that 999.9 proof, that is, “pure gold”, is a generalized concept, which is considered to be highly reliable and the highest level of manufacturer responsibility. This is the most modern technologies and equipment, as well as skilled workers in the industry, by electrolysis of 999.9 proof gold deposits (a set of electrochemical oxidation-reduction processes occurring on electrodes immersed in the electrolyte when an electric current is passed). On October 2, 1972, the second stage of the 2nd hydrometallurgical plant was launched, and in May 1975, the third stage. In September 1979 A finished product workshop, namely a gold refining workshop, was established at the factory. At Hydrometallurgical Plant No. 2, along with gold, since 1972 The technology for extracting silver was introduced in 1930, palladium in 1980, and tungsten in 1981. was lowered.

After the start of work at the Muruntov deposit, in order to expand its raw material base and increase mineral reserves, it became necessary to conduct additional exploration work in the wings and parts of the deposit with the help of the combine. In accordance with the geological plan drawn up in 1972, mineral resources were discovered. In conclusion, the discovery of the Muruntov deposit was truly a miracle of the century. The colonial policy pursued during the Soviet years did not allow for the extraction of gold and the use of the profits from it for the needs of the local population. The existence of gold deposits was discovered by the Uzbek scientist I. Hamrabayev and presented conclusions on its chemical composition. Although the Soviet state pursued a policy of neglecting the local population in the factory and mining sectors, mainly attracting workers and employees of Russian-speaking nationalities in the metallurgical sector, the theory of the pregenesis of gold and manganese, that is, their co-occurrence in mines, testified to the potential and knowledge experience of the Uzbek scientist.

The construction of hydrometallurgical plants for processing ores from the gold mine was its first stage, while the construction of a new city for workers working at the mine, the city of Zarafshan, played an important role in the social life of the mine workers. The launch of new industrial enterprises led to a rapid increase in the population in the regions, but the fact that the enterprises mainly employed people of Russian-speaking nationalities did not reduce unemployment, and there were problems such as social inequality. In the 60s, the mine produced products at an average level, and in the 70s, gold mining and processing doubled. In subsequent years, in particular, in the late 70s and 80s, the development of enterprises and factories engaged in gold mining and ore processing was observed. This The situation led to an increase in the number of mines and the commissioning of the 2nd hydrometallurgical plant. came. The prospects for the extraction and processing of mineral raw materials in the Republic of Uzbekistan, the development of precious, non-ferrous and ferrous metals, uranium and coal production, as well as the improvement of an attractive investment environment for foreign investors and the launch of significant investment projects are increasing541. In particular, since 2017, new pages, a period of renewal and growth have begun in the annals of Uzbekistan , which has also led to gradual changes in the mining and metallurgy sector. In particular, the Strategy of Actions on Five Priority Areas of Development of the Republic of Uzbekistan for 2017–2021542 and the Development Strategy of New Uzbekistan for 2022–2026543 have launched a new stage of development in the life of our country and people544. If we consider the practical

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implementation of this policy at the scale of the combines, we will be able to analyze the most important results achieved in 2017-2024.

NKMK is the largest industrial association in the mining and metallurgical sector in Uzbekistan. Over the past seven years, the combine has commissioned Hydrometallurgical Plant No. 5, with a capacity of processing 5 million tons of ore per year, Hydrometallurgical Plant No. 7, with an annual capacity of processing 16 million tons of technogenic waste , the second stage of Hydrometallurgical Plant No. 2, with a capacity of processing 12 million tons of ore per year, and Hydrometallurgical Plant No. 6, with a capacity of processing 4 million tons of ore per year based on the Pistali deposit in Nurota district.

Uzbekistan dated January 3, 2017, the State Enterprise “Navoi Mining and Metallurgical Combine” and “Almalyk Mining and Metallurgy “Muruntov” were recognized as the largest deposits with gold reserves in the world, with an estimated resource of more than 4.5 thousand tons582. In 2021, Uzbekistan ranked 9th in gold production583. In 2022, Navoi Mining and Metallurgical Combine ranked 4th in the list of the Top 10 largest gold producing companies in the world. According to it , 2 million 830 thousand ounces of gold were produced in 2022.

of the President of the Republic of Uzbekistan No. PQ-99 dated January 24, 2022 " On measures to create an effective system for the development of production and expansion of industrial cooperation in the republic" , as well as in order to expand the production of import-substituting products in 2022, the plant plans to produce localized products worth 537.6 billion soums under a total of 167 projects, including 366.9 billion soums under 114 new and expanded projects.

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