

ECOLOGICAL CONDITIONS OF LANDSCAPES SURROUNDING MURUNTOV GOLD MINE

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Abstract: This article provides detailed information about the geographical features of the Muruntov gold mine and the ecological conditions of the surrounding landscapes.

Keywords: gold mine, Muruntov, landscape, environmental safety, man-made waste, geopolitical transformation, landscape, industry, seismic activity, ecology, reclamation.

MURUNTOV OLTIN KONI ATROFI LANDSHAFTLARINING EKOLOGIK HOLATI

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Annotatsiya: Ushbu maqolada Muruntov oltin konining geografik xususiyatlari hamda atrof landshaftlarining ekologik holati to'g'risida batafsil ma'lumot berilgan.

Kalit so'zlar: oltin koni, Muruntov, landshaft, ekologik xavfsizlik, texnogen chiqindilar, geosiyosiy transformatsiya, landshaft, sanoat, seysmik faollik, ekologiya, rekultivatsiya.

ЭКОЛОГИЧЕСКОЕ СОСТОЯНИЕ ЛАНДШАФТОВ ВОКРУГ МУРУНТАУСКОГО ЗОЛОТОРОГО МЕСТОРОЖДЕНИЯ

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Аннотация: В данной статье представлена подробная информация о географических особенностях золотого месторождения Мурунтау и экологическом состоянии окружающих ландшафтов.

Ключевые слова: золотое месторождение, Мурунтау, ландшафт, экологическая безопасность, техногенные отходы, геополитическая трансформация, ландшафт, промышленность, сейсмическая активность, экология, рекультивация.

With the support of our state and the efforts of geologists, a unique mineral and raw material base has been created in the country, which has become the basis for the development of the economy of the Republic of Uzbekistan. It is planned to expand prospecting and geological exploration in Uzbekistan starting from 2015 by studying 40 new promising areas that will ensure the growth of gold reserves. The world famous Muruntov gold quartz deposit is the largest deposit on the Eurasian continent. The Muruntov quarry is a huge facility, where about 80 percent of Uzbekistan's gold is mined[3].

The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated August 25, 2022 "On measures to establish environmental requirements and environmental protection standards in the mining and metallurgical industry based on international standards" also plays an important role in the implementation of work in this area.

Extraction of minerals, especially gold, from the earth's crust is of great importance for the economy of any country. However, this process poses a great threat to landscapes and the environment. The negative consequences of landscape changes, as well as the degree of soil and vegetation changes in the Zarafshan region, one of the largest deposits in Central Asia, including the Muruntov gold deposit in Uzbekistan, and its surroundings, were ecologically analyzed. The

ecological criterion is also important in determining the dynamic condition of landscapes. Because their most rapidly changing and most affected component is biota. Therefore, the results of landscape ecological research are very important in developing scientific foundations for measures to protect nature and rationally use natural resources[3].

Muruntov gold deposit is a deposit in the Muruntov ore field region of the Central Kyzylkum. It is located 180 km north of Navoi, 40 km east of Zarafshan, at the southern foot of Tomditov. The scale of ore reserves, the convenience of technological conditions for ore extraction, the high quality of the produced products and other characteristics make it one of the most unique deposits in the world. The presence of gold ores in Central Asia, in particular in the Central Kyzylkum and Nurota mountains, has been known since the 6th-5th centuries BC. The first special research work on the search for gold deposits in the country was carried out by I.V. Mushketov, G.D. Romanovsky, G.D. Obruchyev and others. The possibility of gold deposits in the Central Kyzylkum was predicted by geologists A.Ye. Fersman and D.I. Shcherbakov based on geological studies in the 30s of the 20th century. In the 1930s, several quartz and quartz-feldspar veins with gold particles were discovered in the southern foothills of Tomditov, and in 1934 a zone of gold mineralization was identified near the village of Besapan. After that, extensive gold prospecting and exploration work was carried out in the areas of Besapan, Oltintov, Takhtatov, and in the siliceous shales on the southern slopes of Tomditov. [6]

As a result of mining, the soil layer is destroyed, its productivity decreases, and chemical pollution occurs. As a result, the habitats of wild animals in the flora and fauna around the mine are reduced, and some species may disappear. In particular, it can be seen that the productivity of fruit orchards and crops has decreased. During the mining process in the quarries, various types of dust and gases, radioactive substances are released into the atmosphere. These, in turn, are raised into the atmosphere by winds or the active movement of large quarry

vehicles, negatively affecting the respiratory system, and can even spread to surrounding agricultural areas and damage crops. As a result of the diversion or pollution of part of the water from mountain streams for the needs of the Muruntov gold mine, the population faces a shortage of drinking water. In particular, air and water pollution around the mine causes an increase in various diseases among the local population, especially respiratory and digestive system diseases. Water resources in the mine are mainly brought through canals built into the Amu Darya. Gold minerals are not found alone, but may also contain other particulate elements, and during the process of extracting and purifying gold from them, they also affect the composition of the water and turn into wastewater. Such water is unsuitable for use in the economy and is not allowed to be absorbed into groundwater. Therefore, it is sent to special landfills for storing wastewater. In such special hydro-landfills, wastewater is filtered, part of the surface water is removed, processed and directed to the mining industry. The remaining water is evaporated under the influence of sunlight, and harmful substances are collected from below. In 2020, 977 hectares of land were reclaimed, and in 2021, 307.9 hectares of land were reclaimed. In total, about 37 thousand hectares of land were reclaimed during the operation of the combine [7].

Before the mining industry began, these lands had desert-like soils (gypsum, sandy saline loam, and sandy loam). Reclamation (restoration) processes are also being carried out to prevent the landscapes of the soils around the mines from becoming too difficult. [2]

In conclusion, today, that is, in the era of scientific and technological development, the impact on nature and its resources is increasing. The scope of maximum land use, development of new lands, exploration and exploitation of underground resources, and the use of water, soil, plant, and animal resources is expanding. It can be concluded that only a society that can plan its development for the long term and use natural resources for its own purposes can use nature rationally.

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