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Research Article

GEOLOGICAL AND STRUCTURAL POSITIONS OF ORE FIELDS AND DEPOSITS OF AUMINZATAU-BELTAU ORE REGION

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ABSTRACT
Work carried out to examine geologic-structural position gold mine location of Auminzatau-Beltades present in the Central of Kizilkumesm district. All deposits are located on the basis of structural positions formed by northeastern, northwestern, sub-altitudinal fault systems and their combinations. The research results are recommended to be used as criteria for prospecting for gold ore occurrences.

Keyword: *Useful fossil the golden, region, golden, structural position, textbook, arrangement mountain the gold.*

INTRODUCTİON

The problem of studying the positions of endogenous ore fields and deposits arose in the 80s of the last century. This period is characterized by great success in studying the geological and structural conditions for the location of hydrothermal deposits in the Tien Shan. The huge geological material obtained in the course of the study made it possible to establish a wide range of signs and factors of mineralization control, which is the basis for determining the positions and taxonomy of ore fields and deposits. The question of geological and structural positions, in essence, is the systematics of ore fields and deposits according to the peculiarities of their location in geological space, taking into account in the natural environment, structural-tectonic elements and magmatic formations, etc.

Ore deposits are characterized by different groups of signs: direct and indirect signs due to “before”, “during” and “after” the process of ore formation. This is reflected in numerous groupings of ore objects, but differing in the principle of their grouping. Thus, the first grouping (Korolev, 1983) was based on the types of tectonic deformation of the host rocks. In most classifications (Korolev and Umarkhodzhaev, 1977), (Volfson and Yakovlev, 1975), the main attention is paid to the ranking of ore objects by types of structures: folded, discontinuous, contact, combined, where they are based on structural-tectonic factors controlling the formation of the ore field and deposit.

The question of the geological and structural positions of ore fields and deposits arose at the end of the twentieth century, when the limit of surface and near-surface deposits was exhausted and there was a need to search and explore the flanks, deep horizons of known and developed deposits.

The first works devoted to the study of the geological and structural positions of ore fields and deposits in Central Asia belong to Korolev (1983), and Akbarov (1975, 2006), where the positions of ore objects in Central Asia were determined taking into account the following features:

1. Host rocks. The structural and morphological features of the position depend on the composition and structure of the rocks, their physical and mechanical properties of the rocks.

2. Belonging to structural floors. The Paleozoic floor of Central Asia is composed of: the Lower Paleozoic layer – shales and terrigenous rocks, in the Middle Paleozoic layer-carbonate and carbonate-terrigenous rocks; the Upper Paleozoic layer-volcanogenic and terrigenous rocks. The Mesozoic stage

consists of terrigenous and carbonate-terrigenous formations. The Pre-Paleozoic structural floor includes: metamorphosed terrigenous, carbonate rocks, acidic intrusive complexes.

3. Belonging to folded structures. The majority of ore fields and deposits are confined to folded structures, in their apical parts, to zones of longitudinal faults, to areas of conjugation of longitudinal and transverse discontinuous structures that complicated the structural and tectonic structure of the fold.

4. Belonging to discontinuous structures. Ore fields and deposits are formed in single faults, in areas of their bending, in zones of conjugation and intersection of faults, in structural feathering of faults, in blocks between paired faults, in zones of complication of folded structures by longitudinal and transverse faults.

5. Attitude to intrusive formations. Hydrothermal ore fields and deposits are usually confined to the contact and exocontact zones. Intrusive structures are formed inside intrusives under the influence of discontinuous structures; they are formed in a superintrusive space; at some distance from the intrusive with the participation of faults.

Based on these principles, Akbarov (2006) determined the structural positions of lead-zinc deposits in Central Asia, according to their geological and structural affiliation, i.e. the main attention is paid to the position in the geological and structural types of ore fields of deposits - these are in folded, discontinuous, contact and combined types.

However, further study of the geological and structural conditions of the formation and placement of mineralization shows that in the processes of formation of ore objects, in the vast majority of cases, folded and discontinuous structures play a role, especially discontinuous ones, which determine the positions of objects in the geological space.The issue of studying the structural positions of gold ore objects in Western Uzbekistan, in particular, the Auminzatau-Beltau ore region, has not been given sufficient attention to date (Turapov, 1990).

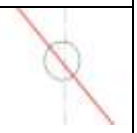
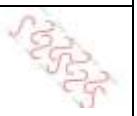
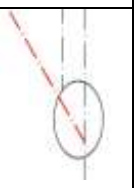
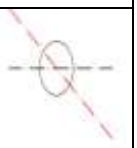
To date, there are a number of works of Dulabova (2010); Zhonibekov (2017) etc., where the geological and structural positions of the gold deposits of Western Uzbekistan, in particular the Auminzatau-Beltau ore field, are reflected in a very brief form. These works differ both in the methodology of studying the geological and structural conditions of mineralization placement, and in the results of research, despite the fact that when determining positions, the main attention was paid to folded-discontinuous structures. The solution of this problem will make it possible to conduct prospecting and exploration work more effectively in the narrow geological space of promising structural positions and research.

The methodology of the study. This work is based on the methodology of Korolev and Shekhtman (1965). for studying the geological and structural conditions of the placement of endogenous ore fields and deposits. The main attention is paid to the method of studying discontinuous structures. By the method of analogies, the structural positions of ore objects are determined with an assessment of their prospects for identifying ore mineralization.

The results of the study. To study the geological and structural conditions of formation and placement, gold deposits and ore occurrences of the Auminzatau-Beltau ore district were subjected. Special attention is paid to the discontinuous structures that controlled the formation and spatial placement (position) of ore objects. The role of ore-bearing rocks in these gold-ore manifestations is played by terrigenous formations of the Besapan (Rokhot) formation of the Lower Paleozoic. In relation to folded structures, almost all the gold-ore manifestations of the region are confined to the wings of anticlinal structures, which are complicated by large north-western, north-eastern and sublatitudinal faults. The zones of their interfaces and intersections with transverse deep faults were the most favorable for the circulation of fluid hydrothermal solutions and the formation of gold-ore objects.

The analysis of the structural conditions of the formation of gold ore manifestations of Beltau showed a wide range of structural elements that control the process of ore deposition. All manifestations of gold were formed in seven structural positions, which are associated with the zones of the north-eastern, north-

Table 1: Taxonomy of the gold deposits of the central kyzylkum region (the atlas of ore fields and the deposit of western Uzbekistan were used in the compilation

№	Name of the object	Useful components. Main and secondary	Ore formation affiliation	Mineral type of ores	Morphology of the manifestation of mineralization	Geological and structural position of the object	
1	2	3	4	5	6	7	
1	High-voltage	Silver (gold, tellurium)	Gold-silver-ore	Silver-sulfasol	Mineralized zones, zones of development of quartz veins, cross-shaped, crescent-shaped and lenticular ore bodies	Junctions of the north-northeast and sublatitudinal faults in the terrigenous rocks of the Besapan Formation (R_3?)	
2	Daugyztau	Gold	Pyrite-arsenopyrite-gold-ore	Gold-arseno-pyrite-pyrite	Mineralized zones, ore bodies in the form of lenticular, ribbon-like and steeply falling deposits	Zones of crumpling and ruptures of the north-north-eastern direction within the development area of the Besapan formation (R_3?)	
3	Muruntau	Gold (silver, tungsten)	Rare metal-gold ore	Gold-(arsenopyrite-pyrite), scheelite	Ore deposits in the form of backstage-arranged subplastic stockwork and secant core veins.	Junctions of sublatitudinal and northeastern faults within the development of terrigenous rocks of the Besapan (R3?) and Taskazgan formations (R3?)	
4	Amantay tau	Gold	Pyrite-arsenopyrite-gold ore	Gold-arsenopyrite pyrite	Mineralized zones with vein-like and lenticular steeply falling ore bodies	Intersections of north-eastern and submeridional faults within the development of terrigenous strata of the Besapan Formation (R_3?)	

western faults with areas of their curvature, conjugation and intersection. Zones of sub-parallel faults, as well as wedge-shaped structures formed due to intersections and conjugations of the submeridional and north-eastern faults, were also a favorable structural position for the manifestation of gold mineralization.The structural positions listed above control all manifestations of Beltau gold. A wide range of structural elements that controlled the formation of deposits and ore occurrences of Beltau gold suggests that the ore process took place during the tectonic activity of the ore region, in an unstable

geodynamic environment, by the activity of discontinuous structures. Their activity led to the formation of slightly open fault faces, slightly open nodes of their interfaces and intersections. All these processes in combination with the geological environment (terrigenous formation) have created certain conditions favorable for the manifestation of gold mineralization in these positions.

DISCUSSION

The geological structure of the Central Kyzylkums involves a variety of rock formations characterized by different lithological compositions, which, combined with both regional and local tectonic elements and magmatism products, have caused a variety of geological and structural types of ore fields and deposits of gold and other metals and their positions in the geological space. The study of the formation patterns, the determination of mineralization control factors and their geological and structural typing allowed (Akbarov *et al.*, 2011), to conclude that the position of an ore object is a decisive search criterion.

The position of an object in a specific geological structure is one of the leading search criteria that allows by analogy to identify a specific area of promising fields for the detection of ore mineralization. The morphological features of the structural structures allow us to predict the morphology and spatial distribution of endogenous mineralization. Taking this into account, we can confidently identify the structural positions of gold-ore manifestations of the studied territory, recommend their use as criteria for prospecting in the Central Kyzylkums. An increase in the efficiency of search operations can also be achieved by combining the positions of the object, both in relation to folded and discontinuous violations. The position of gold mineralization in folded structures throughout the region is determined by the proximity to the wings of anticlinal structures, which in many cases have been preserved fragmentally. This fact reduces the search area by a lot, which will be reflected in the results of search operations.

Conclusions

The conducted studies show that all the manifestations of gold in the region have a clearly defined structural position. Morphological features of ore bodies and their spatial placement in relation to geological formations allow us to conclude that the structural factor – the structural position plays a dominant role in the placement of mineralization, and the geological environment, its lithological composition. Physico-mechanical properties are the main reasons for the laying and development of discontinuous structures, the structural positions formed by them.

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