

CHAPTER 3 CONCLUSIONS AND RECOMMENDATIONS

3-1 Conclusions

The Phase III survey helped further clarify the geology, ore deposit and mineralization in the No.3 Ore Body and the surrounding area, permitting a rough estimation of the No.3 Ore Body ore reserves and extraction of promising exploration targets in the surrounding districts. Besides, studies on the geochemical anomaly distribution data and mineralization led to the expectation of possible occurrence of a blind deposit, which was extracted as an exploration target. These achievements suggest a possibility of development if the deposits' ore reserves in the central district -- Nos. 3 and 5 Ore Bodies and Southern Deposit -- are made certain by detailed exploration.

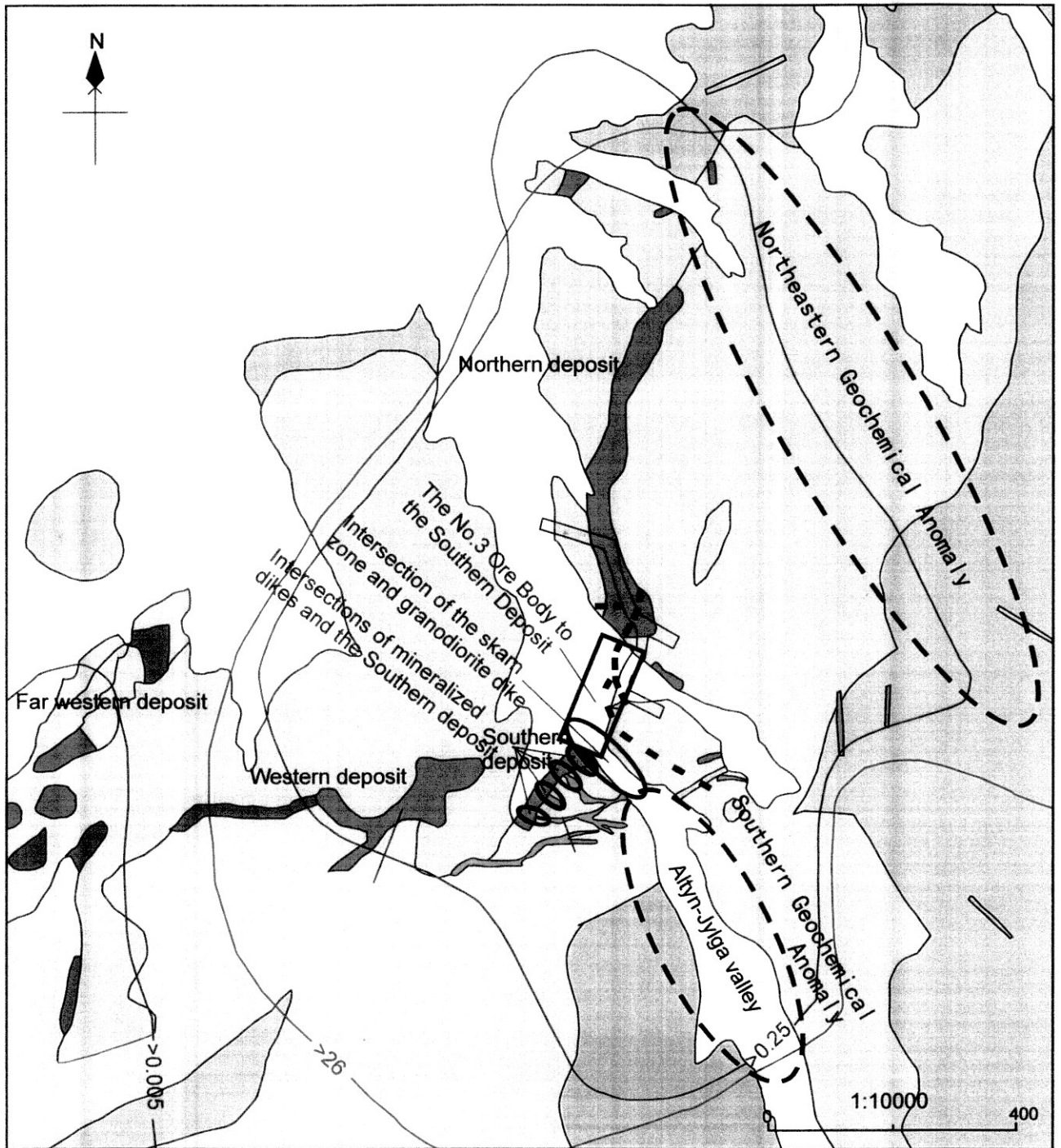
(1) Geology, ore deposits and mineralization

- The skarn zone continues in belt, some 10 m wide, expanding and contracting, on the boundaries between the Altyn-Jylga intrusive rock body and limestone. The skarn zone strikes NNE-SSW and dips 70% eastward and has a simple plate-like shape.
- In the Nos. 3 and 5 Ore Bodies and Southern Deposit, mineralization mainly of gold and copper is observed centering around the skarn zone and partially in some dikes. Extensive mineralization is observed in skarn zone. Mineralization in dikes is seen accompanying skarnization along the boundaries with wall rocks and joint planes.
- Gold mineralization in the No.3 Ore Body is observable, controlled by the skarn zone and fractures (dikes and faults) striking NW-SE which traverse the skarn zone. Bonanzas are formed at the intersections.

(2) Ore reserves

- An ore body was newly found by the tunnel survey on the south hanging side of the No.3 Ore Body. The drilling survey ascertained the northern extension of the No.3 Ore Body on the 1850 m level and the continuity downward. The potential gold contents of the Nos. 3 and 5 Ore Bodies and Southern Deposit add up to 36.5t, as compared with 29.3t in Phase II.
 - Potential gold content of 5.0 t on the south hanging side of the No.3 Ore Body
 - Potential gold content of 2.2 t in the northern extension of the No.3 Ore Body

- Degree of certainty of ore reserves between the 1850 m and the 1710 m levels was raised from P1 to C2.
- (3) Promising exploration targets
- The three promising exploration targets were extracted from the Nos. 3 and 5 Ore Bodies and Southern Deposit by inferring continuity of these ore bodies and place of occurrence of bonanzas:
 - The area between the No.3 Ore Body and Southern Deposit, which are presumably continued.
 - The intersections of the dikes on the hanging side of Southern Deposit where bonanzas possibly occur.
 - The intersections of the skarn zone with granodiorite porphyry dike and zone along the dike (possible occurrence of bonanzas near the Altyn-Jylga valley)
 - Based on the knowledge on the place of occurrence of ore bodies as acquired through the surveys, the south districts where new ore bodies possibly occur were extracted from the geochemical anomaly zones, and the northeast district was also assumed to be promising.
 - South district: Ore bodies accompanying fractures and dikes.
 - Northeast district: Hydrothermal vein-type deposit along fractures and dikes.
- (4) Possibility of development
- In the light of the Phase III survey findings and the existing information (JICA, 1999: the Final Report of Master Plan Study on Promotion of Mining Industry in the Kyrgyz Republic), the following items may be picked out as favorable factors for justifying the development of the central deposit district:
 - The ore bodies are simple plate-like shapes and have steep inclination, while the bonanzas are recognizable by the naked eyes (favorable factors for the mining operation).
 - Ore reserve of the No.3 Ore Body is known.
 - Gold and copper are recoverable by a combination of table shaking and flotation.
 - In addition to the No.3 Ore Body, some promising exploration targets have been extracted.
 - Supply of mining engineers, facilities, and materials and maintenance of the facilities will be available from the nearby kombinats at Khaydarkan (Hg) and Kadamjai (Sb).



LEGEND

- | | | | |
|--|-------------------------------|----------------------------|-------------------------------|
| Exploration target | Au geochemical anomaly (g/t) | Granodiorite | 1850 level tunnel (phase II) |
| Exploration target for geochemical anomaly | Sb geochemical anomaly (ppm) | Limestone | 1930 level tunnel (phase III) |
| Ore body | Au grade of rock sample (g/t) | Slate | |
| Barren skarn | | Chert | |
| Skarnized dike | | Lamprophyre dike | |
| | | Granodiorite porphyry dike | |

Fig. I-3-1 Exploration Targets in Altyn-Jylga Ore Field

- The site is accessible by roads that accommodate large transportation vehicles, and connected with regional electric power line, while water supply is available at the site.

3-2 Recommendations for the future

It is recommended for the efficient development of the Altyn-Jylga Ore Field that exploration of nearby ore bodies should be conducted to grasp the potential of the whole subject ore field while designing a plan centered the No.3 Ore Body development so that the feasibility of the overall development may be studied. To implement the recommendations, the following studies and exploratory surveys must be considered:

(1) Drafting a overall development plan

- Requirements for development of the No.3 Ore Body.
 - Detailed exploration for improving the precision of ore reserves to be counted in estimation.
 - Studies on systems for development of bonanzas.
 - Beneficiation testing at a preliminary level of ores by grades and types, to study separability and processes.
 - Introduction of techniques for efficient small-scale mining and management.
 - Conceptual studies on economic viability, based on the above considerations.
- Confirmation of the sizes and continuity of the No.5 Ore Body and Southern Deposit in an effort to increase ore reserves, and improvement of the precision of ore reserves counted in estimation. Acquisition of bonanzas is of particular importance.
 - Confirmation of the continuity between Southern Deposit and the No.3 Ore Body.
 - Acquisition of bonanzas in Southern Deposit and in the neighborhood of the Altyn-Jylga valley.
- Exploration to confirm the potential existence of blind ore deposits and areas of mineralization in the geochemical anomaly zones, and develop a plan to feature dynamic development as expansion of development area and extension of mine life.
 - Topographical survey of the south and west districts, whose topographic data are lacking.