

Part III CONCLUSION AND PROPOSAL

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Chapter 1 Conclusion

Since this fiscal year was the first year of the survey, we divided the survey area into two parts, i.e. the eastern and western parts. Analysis of existing data, analysis of remote sensing satellite image and ground truth were conducted on the eastern part.

Existing data were analyzed mainly at Geological Information Center, Mineral Resources Authority of Mongolia. Data on mineral occurrences, existing geological data, and SAR images of JERS-1 prepared for this survey were integrated and examined for selection of promising mineral occurrences.

In the satellite image analysis, we used SAR data of JERS-1 to divide geological units and analyze geological structures including lineaments. From the results of the analysis, the following features of lineaments were clarified: in the central part, distinctive lineament with good continuity in the E-W direction was dominant: in the northern part with low extraction density, short lineaments in the NW-SE and E-W trends were observed: in the southern part, lineaments in the NW-SE and N-S directions were dominant, and extraction density was high especially in the southeastern part. Lineaments in the NW-SE direction observed in the survey area were concentrated in the southeastern to the northwestern parts, and they diagonally intersected the E-W lineaments in the central part. Further, circular structures were extracted at five sites.

Through comparison of results of lineament analysis with distribution of known mineral occurrences, the central to southeastern parts of the survey area were extracted for a regional survey area. The eastern part of the survey area where the NW-SE lineaments were dominant, and the southeastern part of the survey area with characteristics of circular structures were noted were extracted to be surveyed.

13 districts and 80 mineral occurrences were selected for the ground truth in considering results of the existing data analysis, satellite image analysis and accessibility, and field survey was conducted on each of the areas. The results of our survey on the individual occurrences were summarized and classified into the items of “typical latitude and longitude”, “topography and vegetation”, “access”, “preceding survey”, “geology and geological structure”, “mineral showing and alteration”, “laboratory test” and “evaluation.” Evaluation was made concerning the possibility of ore/mineral deposit occurrence and the room for further exploration.

As the result, silicification and whitened alteration were identified at Tsagaan chuluut, Megein gol and Danbatseren mineral occurrences in Erdenet district. Since pyrophyllite and andalusite were detected, existence of advanced argillic alteration was suggested as a characteristic alteration in the upper part of the porphyry system. Consequently, the above mineral occurrences were extracted as those having high priority for exploration.

Weak silicification and whitened argillized alterations were identified in Mt. Zain gobaav mineral

occurrence of Bulgan district. Since pyrophyllite occurred there, it was found that high temperature acidic hydrothermal activities extended there. Further, since copper showing was observed in the occurrence, porphyry type deposit may exist. Therefore, the occurrence was extracted as having a high priority for exploration. Moreover, in Tsookher mert mineral occurrence, copper and lead showings were noted in quartz veins, and an assay value of 6.29 g/t Au was obtained and there maybe mineralization at the edge of zonal distribution of porphyry system. Also existence of porphyry type deposit may be expected in its vicinity. Therefore, the occurrence was extracted as an area of high priority for exploration.

In Oyuut Khonkhor mineral occurrence in Bulgan SW district, although no anomaly was observed in geochemical analysis, silicification and acidic alteration were noted accompanying hydrothermal breccia. Therefore, a possibility was confirmed for existence of porphyry type deposit and epithermal gold deposits of high sulfidation type.

In Bulgan West district, although the scale and extent of alteration zone was unknown, silicification, acidic and limonitized alterations occurred in Burged Khyr and Undrakh mineral occurrences. Therefore, both of them were extracted as promising mineral occurrences for existence of porphyry deposits.

In Ulziit ovoo mineral occurrence in Zaamar district, a previous survey revealed existence of ore shoot at depth. Since skarn was observed in the drilling core which may be related to porphyry type deposit, evaluation is recommended through geophysical exploration and drillings.

At 20a and 20d sites in Khokhoo district, mineral showings of copper, lead and silver were identified in granodiorite. Since mineralization is expected to occur near the contact with granodiorite, they were extracted as promising sites.

According to the results of the survey during this fiscal year, out of 17 promising mineral occurrences, 8 mineral occurrences were located in Erdenet district and 3 mineral occurrences in Bulgan district and 3 mineral occurrences in Bulgan West district. Since most of the promising mineral occurrences extracted were concentrated in the three districts, it may be concluded that these districts have high potential for existence of porphyry copper deposits. Our survey revealed that the types of assumed mineralization were porphyry copper deposit, epithermal gold deposit of high sulfidation type and skarn deposit.

Chapter 2 Proposal for Phase II Survey

Survey of the second fiscal year is to be conducted on the western part of the survey area. Although there may be less existing exploration data of the western part than that of the eastern part, there is a tendency that known mineral occurrences are scattered in the western part. As conducted during this fiscal year, we will also extract promising sites at next fiscal year paying attention to distribution of granitic rocks and lineaments, as well as manifestation of the surface mineralization and petrological characteristics clarified around the Erdenet deposit.

We should also consider to conduct the survey on vein type gold deposits associated with plutonic rocks including the Tavt and other deposits in the northeastern part of the survey area which was not surveyed this fiscal year, in order to grasp characteristics of mineralization and make evaluation on them.

In Erdenet, Bulgan and Bulgan West districts where promising mineral occurrences are intensively located, we will visit there again and do the survey on promising sites. In addition, it is recommended that the survey is conducted for extent and characteristics on alteration zones of mineral occurrences which were found to be promising this fiscal year.

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