# PART III CONCLUSION AND RECOMMENDATION

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## CHAPTER 1 CONCLUSION

### 1.1 Shuten Mineralized Area

Regarding the Shuten mineralized area, as discussed in the previous chapter, the survey has been conducted not only as to a variety of aspects but also to a considerably farreaching extent. However, slightly mineralized zones of gold and copper were observed by geological survey, geochemical survey, drillings etc. in this area, thuogh it is believed to not expansive and small scale. On the other hand, the results of analysis on the core samples taken from check drillings were conducted at most promising areas such as the alteration zones of potassic feldspar and sericite, indicated the gold content was below the detection limit of value wholly, and no presence of gold occurrences in the underground were confirmed by drilling.

Based on the above mentioned judgment on the strength, scale, characteristics etc. of gold mineralization in the Shuten area, it could be said the area has no high potentiality of gold occurrences, and is not appropriate as a target area to prospect a gold deposit in future. It is considered that there is the possibility that the clayish mineral resources such as the alunite, which were mentioned in the comprehensive report of general mineral resources survey of 1982.

### 1.2 Existing Gold Deposits and Gold Showings

Concerning the existing gold showings in the west Altan Tal area, lying west of Long. 103° E, most of them come within the category of gold bearing quartz vein. However, these veins are considered to be small and narrow in general. The result of the groundtruth covering the 15 areas picked out as the survey targets indicates that the scales and grades of gold showings are generally small and lower than those stated in the existing data, so that the facts obtained through the surveys are not so promising as expected in the beginning before survey.

Hatan Suudal area is an area where the survey was conducted most systematically of all other surveys and better result was obtained, but it would not be consider that this area deserves further prospecting as one of major targets in future judging from its property of mineralized zone, scales and locational advantages and consider that the priority of prospecting should be given to the neighboring areas of Bayanhongor because of their locational advantages and greater distribution of existing gold bearing ore showings.

Besides, there are many localities of placer gold showings in the above mentioned Bayanhongor areas. The Altan Tal project, however, was conducted mainly except placer gold, and so had not obtained any detailed information as far as the placer gold was concerned. Thus, it is believed that the prospecting of the placer gold is left as the subject of the future study.

### 1.3 Satellite Image Anomaly

Regarding the color anomaly zones, obtained by satellite images analysis during the First phase survey, it was detected 19 zones indicating the presence of mineralized areas out of 21 observed zones, and was confirmed superficial indications of the gold mineralization in 4 zones out of those 19 zones.

In picking out the anomaly zones as the objects of the Second phase survey, it had

been used most of experiences in First phase survey. As a result, it were able to detect 90% or more of hydrothermal alteration zones from among the intermediate to acidic volcanic rocks, and it was reconfirmed that the analysis of the satellite images was an extremely useful means for detecting the altered and mineralized areas efficiently and in a short period of time, especially in the initial stage of survey covering an extremely wide area.

From now on, it should be consider to conduct the follow-up surveys covering a wide area indicative of the presence of hydrothermal altered and mineralized zones containing the gold is necessary in order to more definitely detect the localities of such gold bearing mineralized zones and it is also necessary to make further effort for the discovery of new gold deposits in this type.

### 1.4 Synthetic Commentary

Groundtruth of the First phase survey in the east Altan Tal area, lying east side of Long. 103° E, was conducted mainly at the areas whose were interpreted as anomaly zones by satellite images thoroughly at 45 areas selected out of 47 anomaly zones. However, existing ore deposit and ore showings were exempted from groundtruth programme except the Shuten and the Ih-shanghai mineralized areas where were type localities of color index for the satellite image interpretation.

In the shuten mineralized area, gold content of 4.16 g/t and 9.78 g/t were acquired at two spots of quartz vein through the groundtruth conducted in the First phase survey. However, no other promising zones indicating possible gold mineralization were hardly found in the rest of the anomaly area interpreted by satellite images.

Based on the above results, two main target were set for the Second phase survey in 1995: that is (a) to collect and analyze in detail existing data for the Shuten mineralized area to confirm the potentiality of gold occurrences, and (b) to conduct groundtruth at existing promising gold deposits and gold showings and areas whose were interpreted as anomaly by satellite images in the west Altan Tal area, lying west of Long. 103° E.

The results of survey of this Second phase survey are summarized as follows:

(1) The Shuten area is not a promising target to prospect as a gold bearing mineralized area. it is able to conclude that continued explorations in the Shuten area will show only a small possibility of finding a promising gold deposit. it may say rather that the Shuten area has a high potential of alunite and other clay mineral resources, as it was already stated in the 1982 on the Report of General Mineral Resources Survey.

(2) Concerning existing gold deposits and gold showings, future exploration may lead to findings of new gold bearing mineralized area like Hatan Suudal, where a some 10 g/t of gold content was found and has an estimated amount of tens of thousands tons of ore reserve. For the time being, however, the main exploration target should be focused on the surrounding areas of Bayanhongor, because these areas have many gold deposits and gold showings, besides relatively good site conditions.

(3) It have realized that satellite image analysis was a very effective means at work procedure in the initial stage to pick up the altered and mineralized zones efficiently within a short period of very broad areas. A follow-up survey to which was found a clue should be carried to identify epithermal gold mineralization and to clarify its existing conditions for altered and mineralized

zones spreading into wide areas. This will probably lead to findings of new gold deposits of this type in the Altan Tal area.

# CHAPTER 2 RECOMMENDATION TO THE FUTURE EXPLORATION

As the recommendation to the future exploration for mineral resources, especially for the gold bearing ore deposits, it would like to make the following proposals, based on the results during the First phase and the Second phase surveys.

(1) For the principal areas, in IA-68 area (promisings area: what is called "Bayanhongor-South") indicating the showings of the presence of the gold bearing porphyry copper type mineralization, and the surrounding both gold metallogenic zones such as Bayanhongor and Khungui-Baidrag (refer to Fig. 10: the northwestern part of these metallogenic zones is out of the area to be surveyed) where are including above mentioned IA-68 area, the systematic geological survey acommpanying trenching, geochemical survey, physical survey, drilling etc. should be conducted for discovering new gold deposits.

(2) For the IA-52 and IA-51 areas (promising area: as it called "Noyon-East") situated in the east of Noyon in Umnugovi Aimag and IA-65 area (promising area: what you call "Gurbantes-West") situated in the west of Gurubantes in same Aimag, where both areas are detected through the satellite image analysis and confirmed the presence of wide range of hydrothermal alteration and gold mineralization by groundtruth, the systematic geological survey accompanying trenching, geochemical survey etc. should be conducted in order to definitely detect the localities of the gold mineralization.

(3) In the central to northern part of the Altan Tal area, where covers the Bayanlig-Bayangovi metallogenic zone besides above mentioned two metallogenic zones, there are many distribution of placer gold deposits and placer gold showings. Therefore, the information concerning those placer gold deposits and its showings should be collected in details so that it will be able to pick up some promising areas and to conduct the onsite check survey for them.

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