

1-4 Survey results

In the B block, the semidetailed soil geochemical survey carried out during the Phase II was able to identify new soil anomalies. These anomalies were further investigated by means of a hand auger survey and some scout diamond drilling. The results of these surveys are described as follows:

1-4-1 Soil Geochemical Survey

(1) Background

A semidetailed soil geochemical survey recommended in Phase I was carried out within the B block area in a large area delineated by concentrations of gold anomalies in soil above 25 ppb, as shown in Fig.II-1-1.

Based on the results of this soil geochemical survey, a hand auger survey and a scout drilling survey were carried out during the Phase II within newly identified soil geochemical anomaly areas.

(2) Survey areas and Amounts

The survey area of the semidetailed soil geochemical survey is presented in Fig. II-1-1. The total of soil samples collected in the Block B during this geochemical survey was 1.840 samples.

(3) Results from statistical data treatment

The locations of the soil samples are shown in the Fig. II-1-8 and the chemical analysis results on the Appendix 16. Statistical analysis of the data was based not only on the analytical results from this soil geochemical survey but also on the data from Phase I. The results obtained from the statistical data treatment are shown on Appendix 17.

The five elements of Ag, Sb, Bi, Cd and W indicated values less than the detection limit in almost all samples.

Correlation coefficients were calculated in order to clarify the relation among elements. The elements that showed high correlation coefficient (more than 0.500) are as follows:

Cu-V, Pb-Zn, Pb-Fe, Pb-V, Zn-Mn, Fe-V

None of the analyzed elements showed high correlation coefficient with Au, though Cu shows a low correlation coefficient (0.164) with Au.

(4) Single element analysis

Based on the results of statistical data treatment (Appendix 17), the threshold values were determined using histogram analysis, EDA methods and cumulative frequencies.

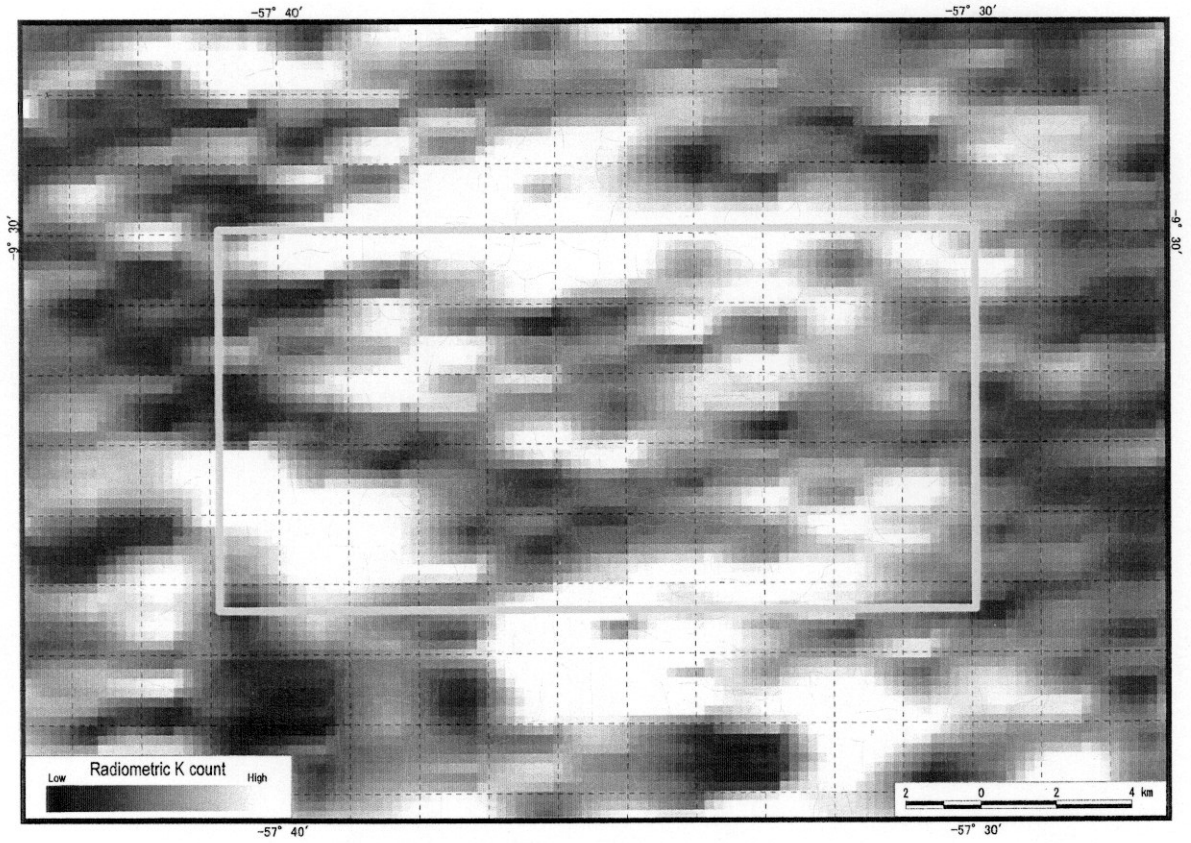


Fig. II-1-6 Radiometric potassium count in Block B South

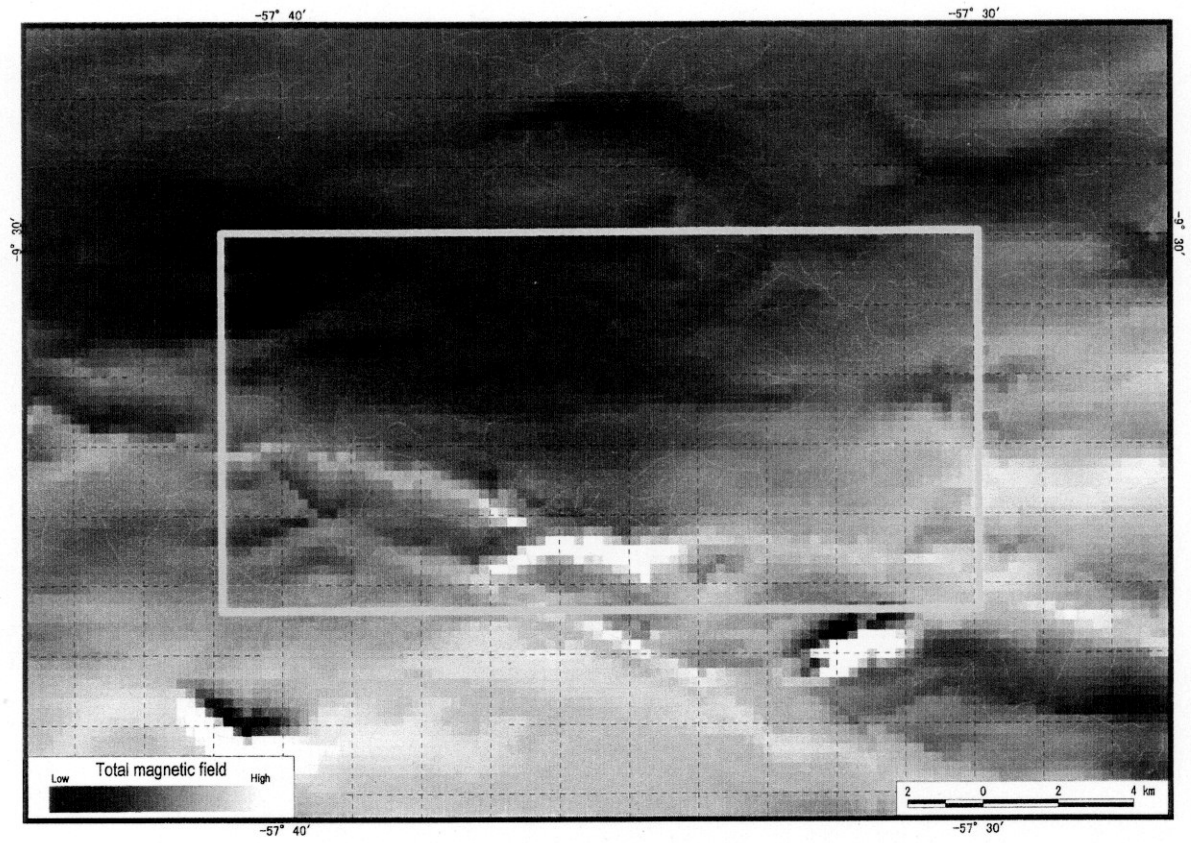
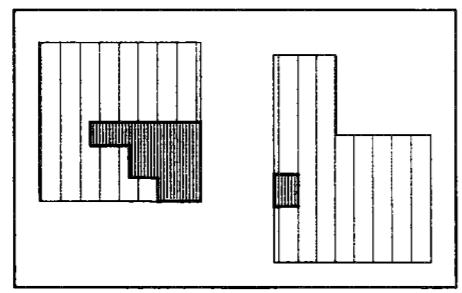
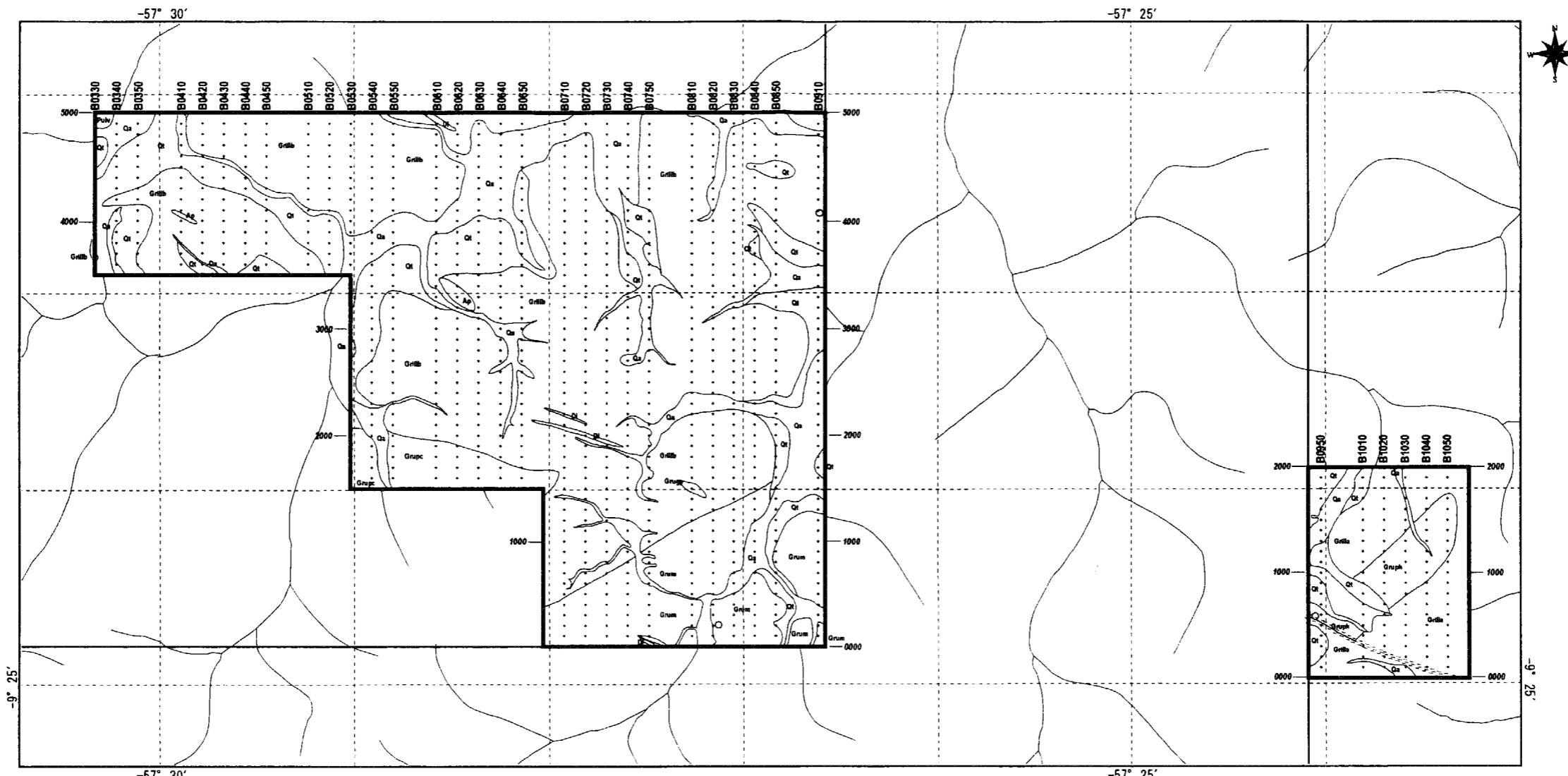


Fig. II-1-7 Total geomagnetic field in Block B South



Location of Phase II survey area



LEGEND

- Sampling Point
 - Line name
 - Sampling point
 - Sample number
- Claim boundary
 - Phase II survey area
 - River
- Geology**

 - Grilla Geological boundary and Geological unit
 - Shear zone
 - Primary garimpo

Fig. II-1-8 Location map of soil samples in Block B

The threshold values for each element are as follows:

Au: 25 ppb	Ag: 0.2ppm	Cu: 30ppm	Pb: 60ppm
Zn: 62.1ppm	Fe: 4%	As: 25ppm	Sb: 2ppm
Hg: 200ppb	Bi: 18ppm	Cd: none	Co: 7.9ppm
Ni: 18ppm	V: 90ppm	Mn: 800ppm	Mo: 12ppm
K: 1.65%	W: 10ppm		

Anomalous maps for each element were elaborated by using the threshold values on Appendix 18. In the Fig II-1-9 that indicates the soil gold anomaly map, the gold anomaly in soil (threshold value of 25ppb) shows a NW-SE trend that coincides with the direction of the regional shearing.

To further interpret the soil gold anomalies, they were separated into three large gold anomaly zones, i.e., Northwest zone, Southeast zone and Northeast zone.

The Northwest gold anomaly zone presents a gold anomaly area with an approximate size of 1.8Km x 0.8Km. The Southeast gold anomaly zone with an area of 2Km x 0.6km. The Northeast gold anomaly zone is distributed within a half circle of about 800m in diameter.

The northwest and southeast gold anomaly zones show the same NW-SE trend and they can be interpreted as parts of the same shearing zone. In the Northeast gold anomaly, the anomaly of gold is related to the Jacare garimpo, however its garimpo tailing and the anomaly area delineated from computer analysis were interpreted as too large.

An overlapping map with anomaly of Au+Cu+Pb+Zn+Mo+W is shown in Fig. II-1-10. From the overlapping anomalies map it was inferred the following considerations:

- a) In the Northwest gold anomaly zone, the anomaly of gold is isolated from others elements. The only anomaly related to gold is lead, and it is distributed outside of the gold anomaly.
- b) In the Southeast gold anomaly zone, the gold anomaly is overlapped by the anomalies of Cu and Pb.
- c) In the Northeast gold anomaly zone, the anomaly of lead is distributed outside of the gold anomaly.

(5) Multi element analysis

A multi element analysis was conducted by using factor analysis method and its results are shown in Appendix 17.

The following relationship among the elements were extracted by using the factor analysis of the data obtained during the soil geochemical survey of Phase II:

- Factor 1: Fe-Bi-V
- Factor 2: Cu-Mo-W
- Factor 3: Zn-Fe-Mn-Pb

Factor 4: Hg-K or Au-Bi

Factor 5: As-Pb-Zn-Au

Factor 6: Ni-Cu-Pb-Zn-Au

Results of factor analysis from combined data of Phase II and parts of Phase I are as follow:

Factor 1 : Pb-Zn-Fe

Factor 2 : As-Fe-Cu

Factor 3 : Hg

Factor 4 : Ag or Fe-Cu

Factor 5 : Au-Cu

Among these factors analysis results, three factors (Factors 1, 2 and 5) were selected and a distribution map of factor score was prepared by allocating three different colors for each factor (Fig II-2-11). These three factors are represented by the following colors:

Factor 1: blue Factor 2: yellow Factor 5: red

The distribution tendency of these factors can be summarized as follows:

Factor 1: It is distributed in the central south part and all the north part of the survey area.

Factor 2: It is distribution in the central part and southeast side of the survey area.

Factor 5: It is distributed in an elongated pattern, from the central part to the southeast side of the survey area.

(6) Discussion

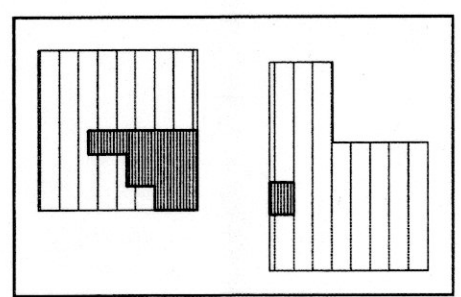
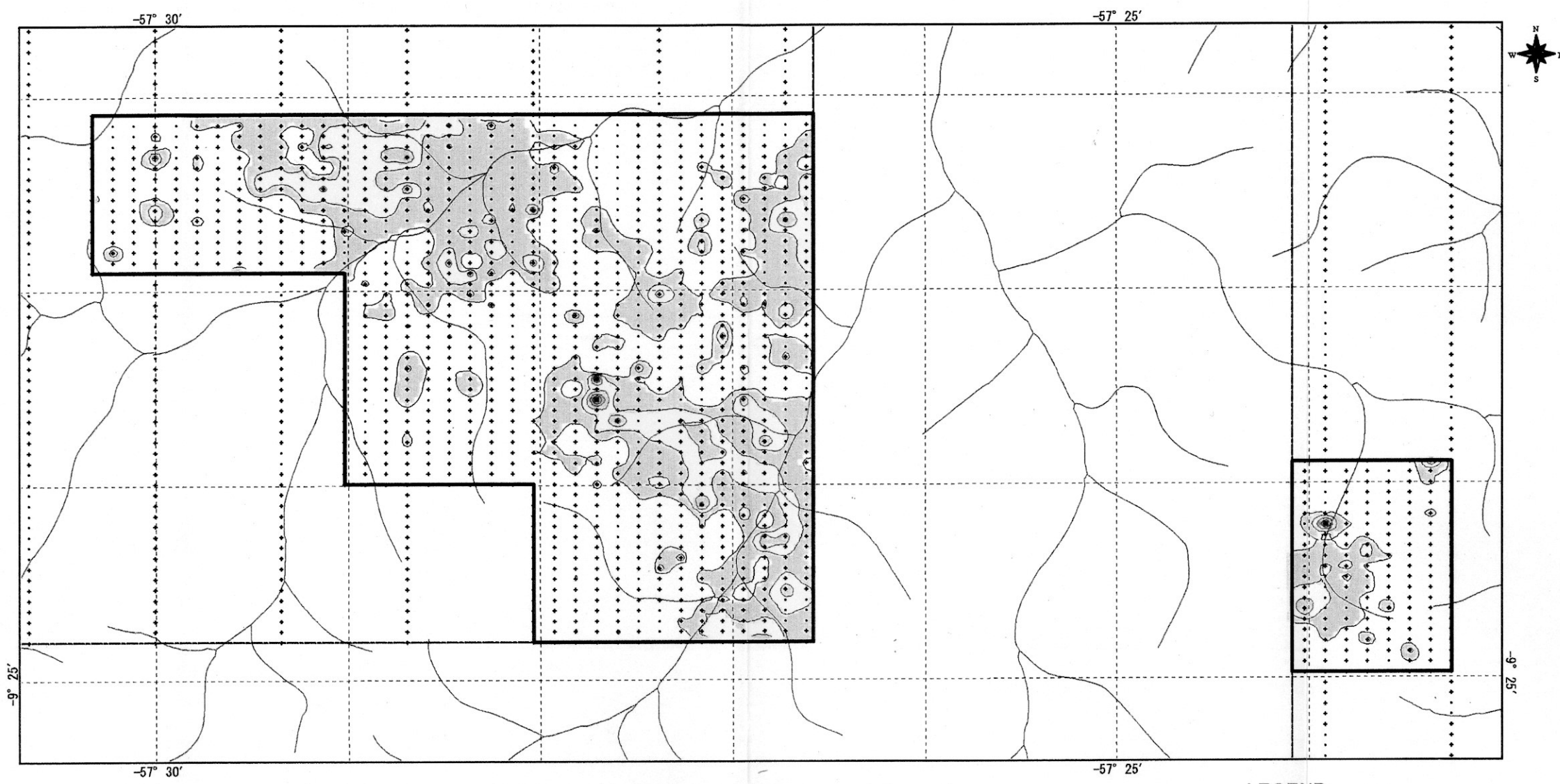
The soil geochemical survey showed a NW-SE trend for the gold soil anomaly. A compiled map is shown on the Fig II-1-12. The single element analysis showed the existence of three large gold anomaly zones inside this trend, namely, Northwest zone, Southeast zone and Northeast zone, suggesting that they are strongly controlled by a widely sheared structure oriented NW-SE.

In the northwest gold anomaly zone, the anomaly of gold is isolated from others elements, while the lead anomaly is distributed outside of the gold anomaly. In the southeast gold anomaly zone, the gold anomaly is overlapped by the anomalies of Cu and Pb and at northeast gold anomaly zone, the anomaly of lead is distributed outside of the gold anomaly.

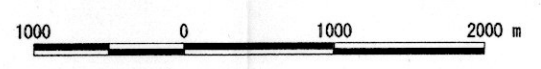
The multi element analysis indicated a weak relation between Au and Cu, while the factor analysis indicated the following metal signature:

The Factor 1 shows the existence of a relation between Pb-Zn-Fe, reflecting the possibility of a more distal gold mineralization from the intrusive center.

The Factor 2 shows the relation between As-Fe-Cu, while the Factor 5 indicates the relation between Au-Cu. These associations of arsenium and copper and gold and copper reflect the possibility of gold



Location of Phase II survey area



LEGEND

Au(ppb)

- 10 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 -

Claim boundary

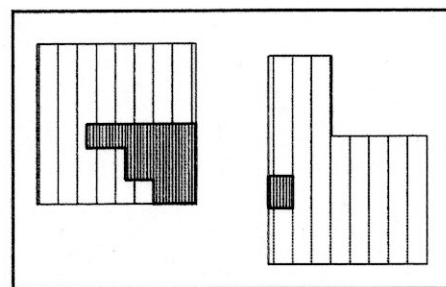
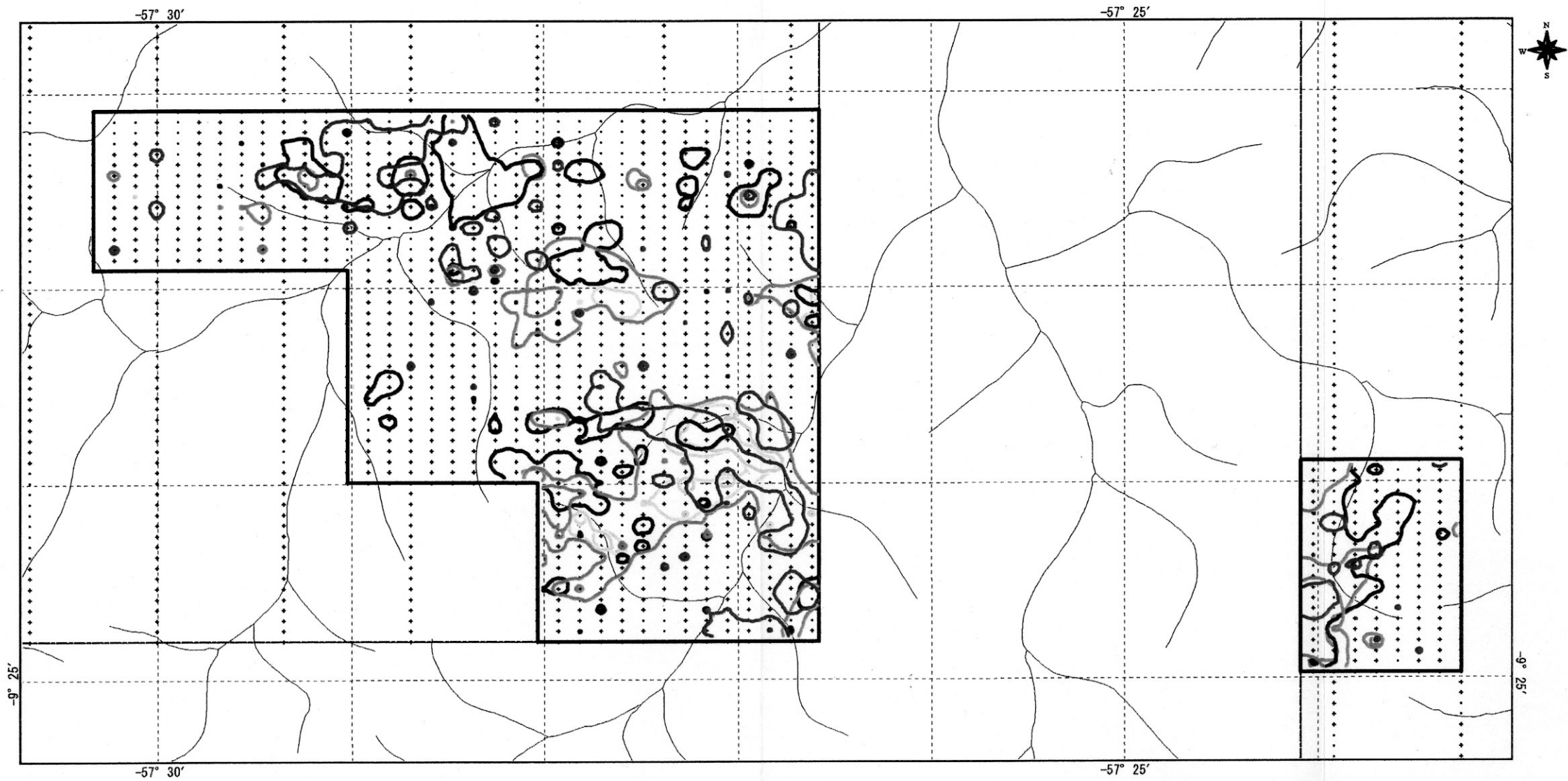
Phase II survey area

River

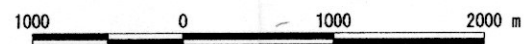
Sampling Point

- Sample point used to analysis
- alluvium zone

Fig. II-1-9 Distribution map of Au soil anomalies in Block B



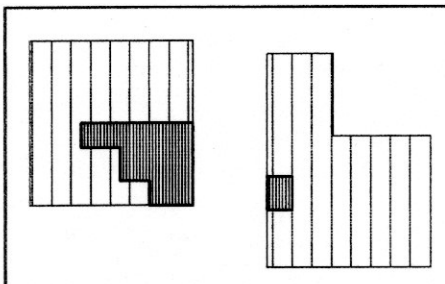
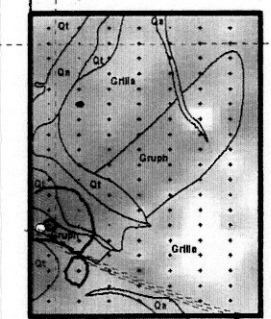
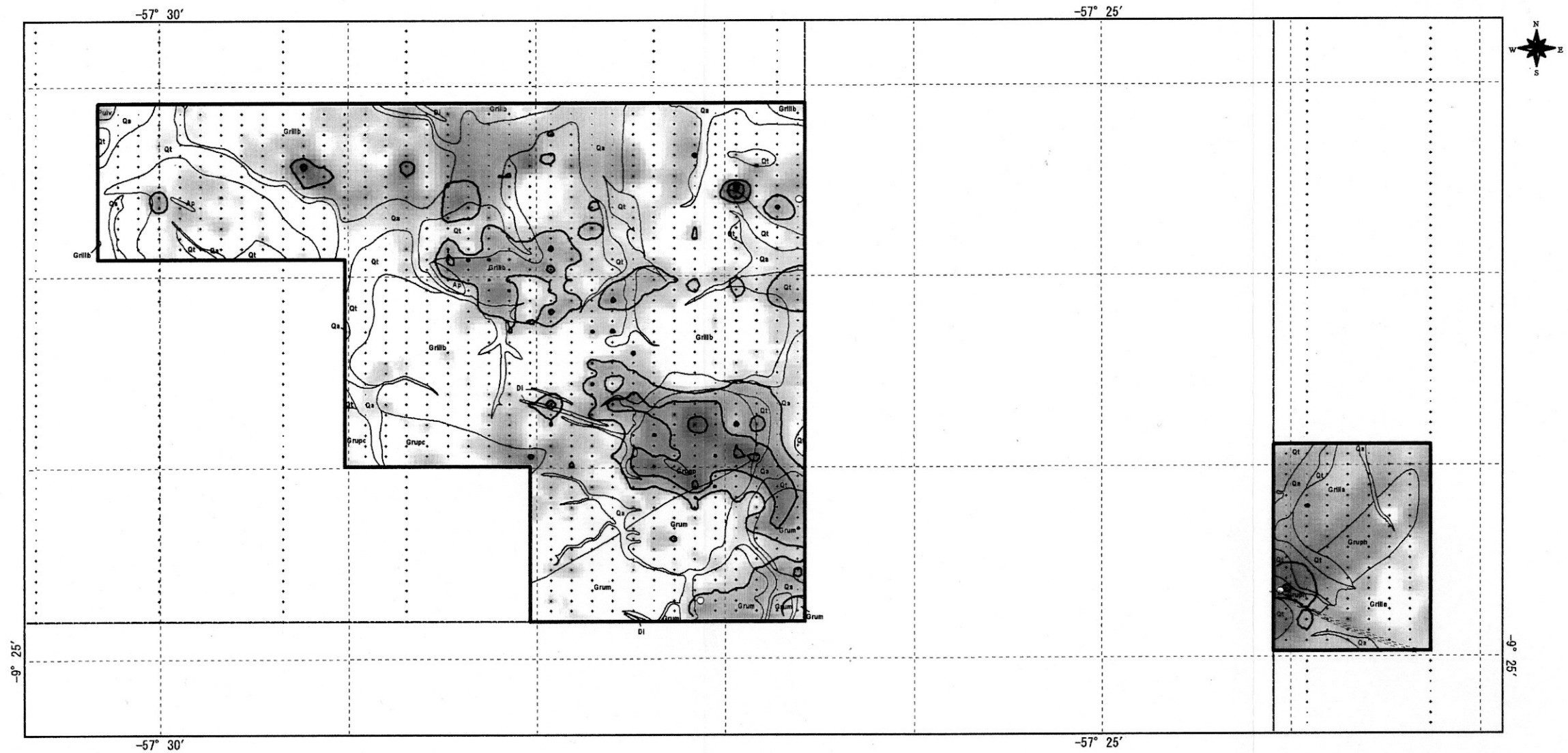
Location of Phase II survey area



LEGEND

- | | | | |
|----------------------------|----------------------|----------------|-------------------------------|
| Geochemical anomalous zone | | Sampling Point | |
| | Au \geq 25.0 ppb | | Sample point used to analysis |
| | Cu \geq 30.0 ppm | | alluvium zone |
| | Pb \geq 60.0 ppm | | Claim boundary |
| | Zn \geq 62.135 ppm | | Phase II survey area |
| | Mo \geq 12.02 ppm | | River |
| | W \geq 10.0 ppm | | |

Fig. II-1-10 Distribution map of soil anomalies in Block B



Location of Phase II survey area



LEGEND

Factor Score

- Factor 1 Score (Zn,Pb,(Fe))
 - Low
 - High
- Factor 2 Score (As, Fe, Cu)
 - Low
 - High
- Factor 5 Score (Au, Cu)
 - Low
 - High
- Factor 5 Score isoline(interval = 0.5)

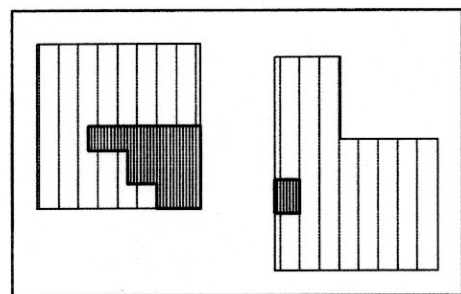
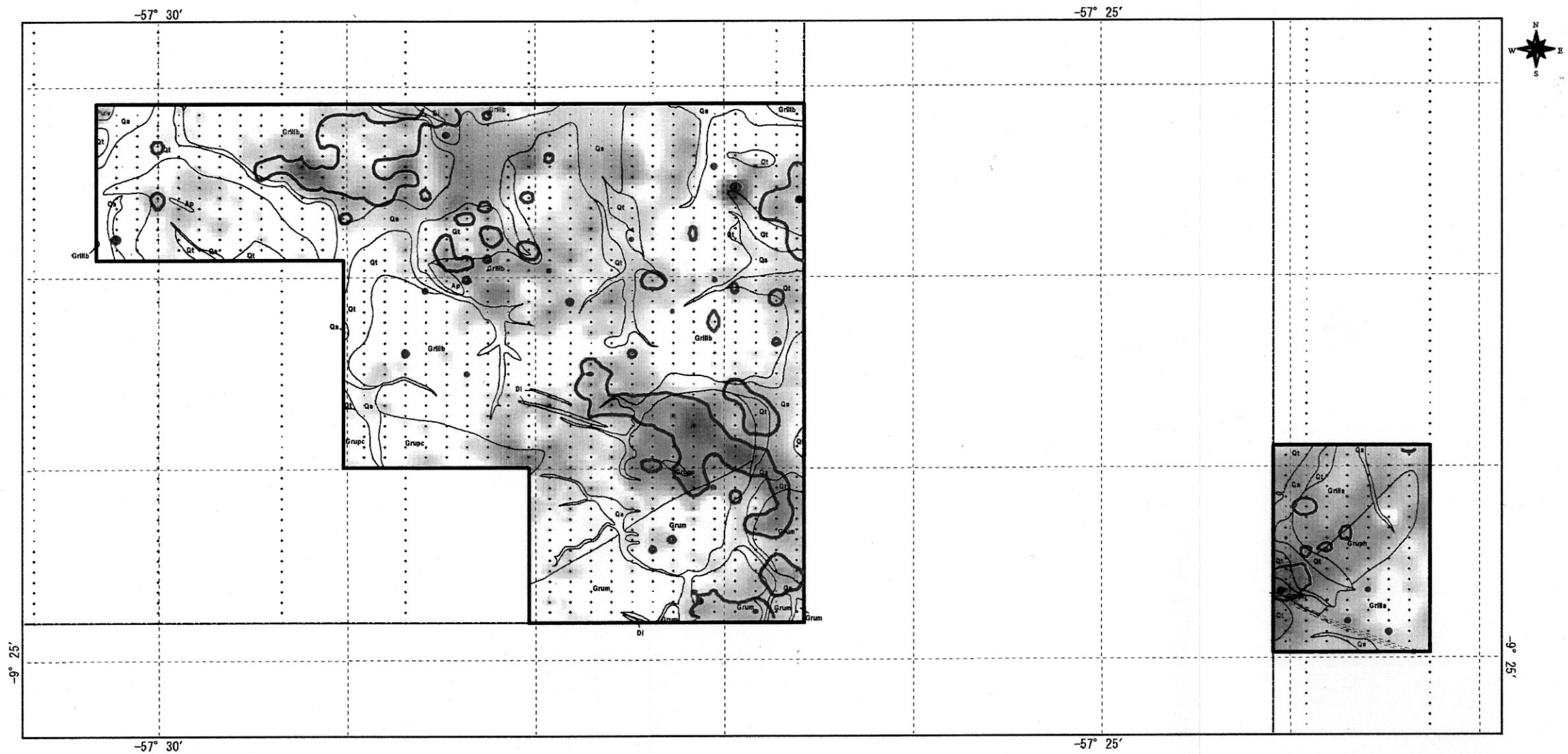
Sampling Point

- sample point used to analysis
- alluvium zone

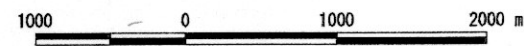
Geology

- Grills Geological boundary and Geological unit
- Shear zone
- Primary garimpo
- Claim boundary
- Phase II survey area
- River

Fig. II-1-11 Distribution map of Factor scores in Block B



Location of Phase II survey area



LEGEND

- Geochemical anomalous zone
 - Au ≥ 25.0 ppb
- Sampling Point
 - sample point used to analysis
 - alluvium zone
- Factor Score
 - Factor 1 Score (Zn,Pb,(Fe))
 - Factor 2 Score (As,Fe,Cu)
 - Factor 5 Score (Au,Cu)
- Geology
 - Grnls Geological boundary and Geological unit
 - Shear zone
 - Primary garimpo
- Claim boundary
- Phase II survey area
- River

Fig. II-1-12 Compiled map of geology and soil geochemical anomalies in Block B