

at a depth of about 100 to 150m, and showing rather high resistivity values towards NE of the area as shown in the plan map at the 150m level of the Fig. II-5-9.

## 5-6 Daris Area

### 5-6-1 Loop location

According to the results of the TDIP method, interesting IP anomalies were detected also close to the gossan (station No. 10 Line 0) and its surroundings. On this basis and to clarify in more detail the nature of these anomalies, the TEM survey method was carried out over these anomalies by using one loop located as indicated in Fig. II-5-2. For this loop, the TEM data were collected within a 400 X 400 grid. Prior to the surveying, BRGM drilled 7 boreholes with a drilling depth of less than 100m within the survey area.

### 5-6-2 Results

The resistivity structure seen in this area, from the surface to the depths, is mainly made of the following layers (Figs. II-5-10 and II-5-11): medium resistivity (few tens to 100  $\Omega$ -m), low resistivity (from about 10 to several tens  $\Omega$ -m), high resistivity (above 100  $\Omega$ -m), however, in some zones, like the central part of the lines 100E and 050E only two layers: high and low can be seen, in others such as the north part of the lines 150W to 300W, medium-high-(low-medium) and high 4 resistivity structure layers can be seen.

The first layer is very thin (less than 20m) and is seen distributed over all the area, reflecting the existence of Quaternary deposits or above groundwater. The second layer has a maximum depth of several tens meters, outcropping in the east part of the area and becomes gradually deeper towards SE (Fig. II-5-12(1)). In the NW part of the area, the second layer is not seen, but instead a high resistivity layer is distributed for which a boundary which separates with the low resistivity layer can be seen (Fig. II-5-12(1) level 50m) extended along NE-SW direction.

In the third layer high resistivity is distributed in all the area other than the north western part, and its depth is relatively shallow (about 50m) and becomes deeper to the northwest (Fig. II-5-12(2)).

The third layer with low resistivity that is detected in the northwestern part of the area shows a maximum thickness of about 100m starting at a depth of about 100m to 150m and getting deeper to the west (lines 250N to 150N of Fig. II-5-11).



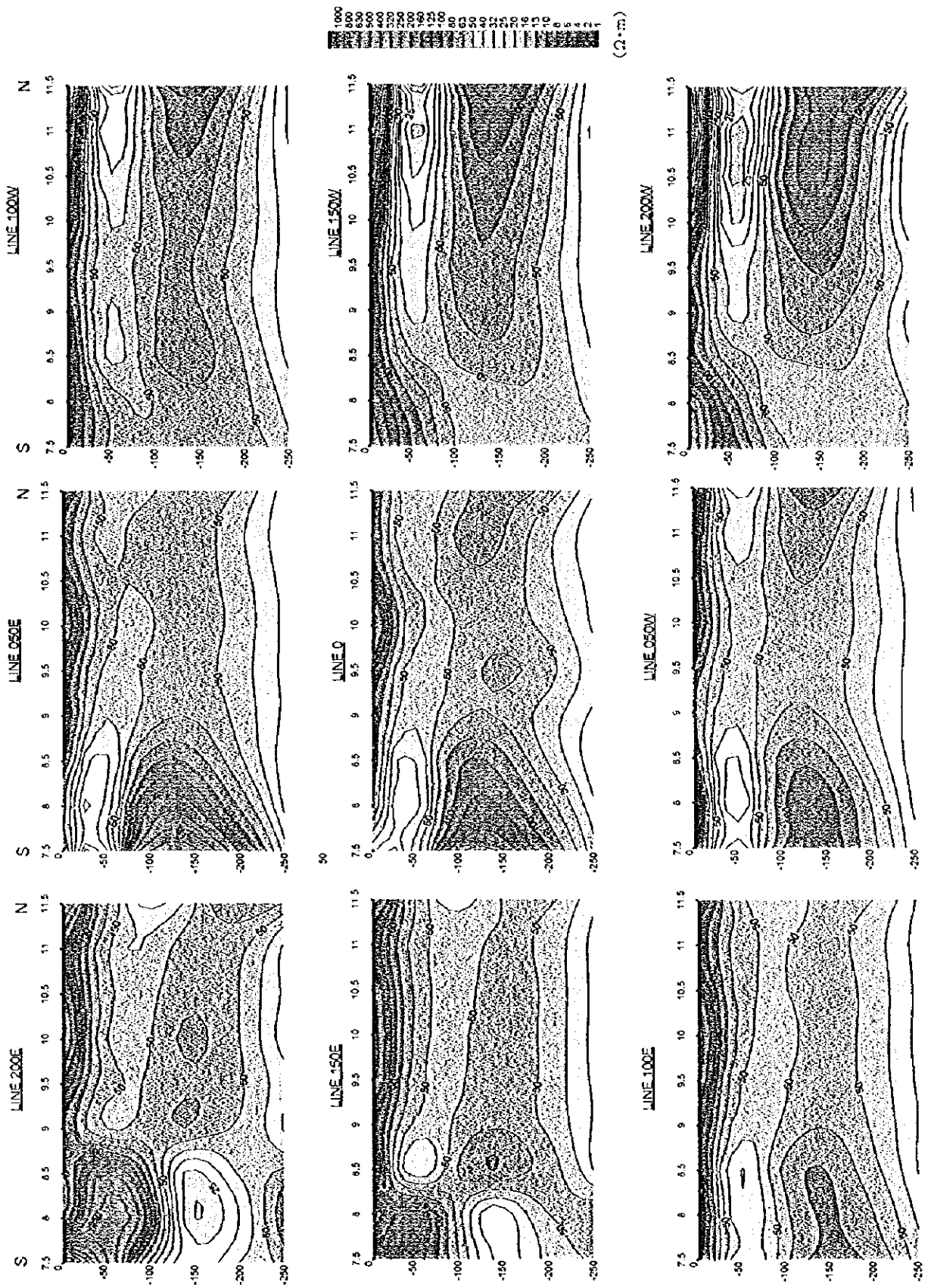


Fig.II-5-6 Resistivity sections in Ghuzayn Gossan north area



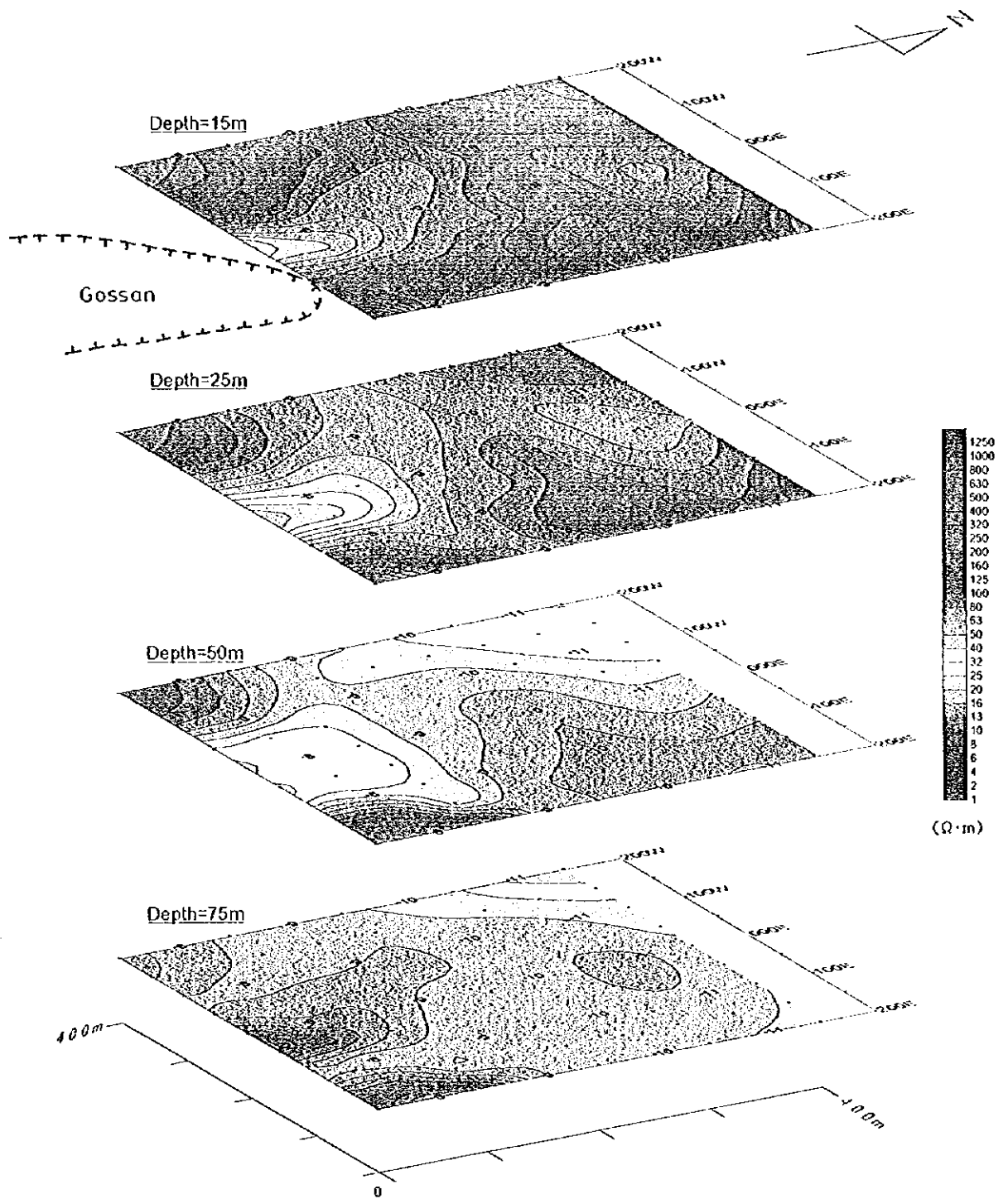


Fig II-5-7(1) Resistivity plan maps in Ghuzayn Gossan north area



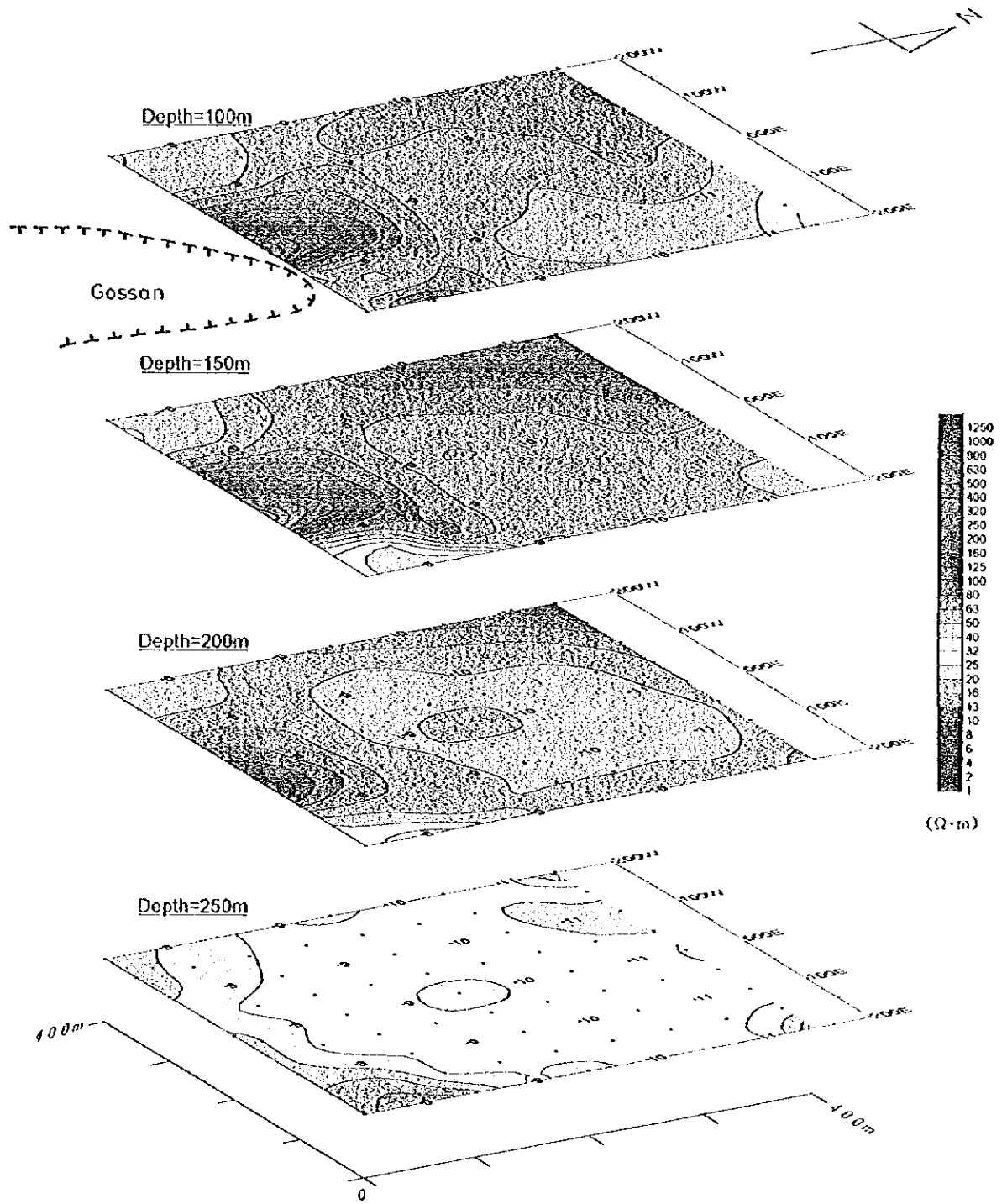


Fig II-5-7(2) Resistivity plan maps in Ghuzayn Gossan north area





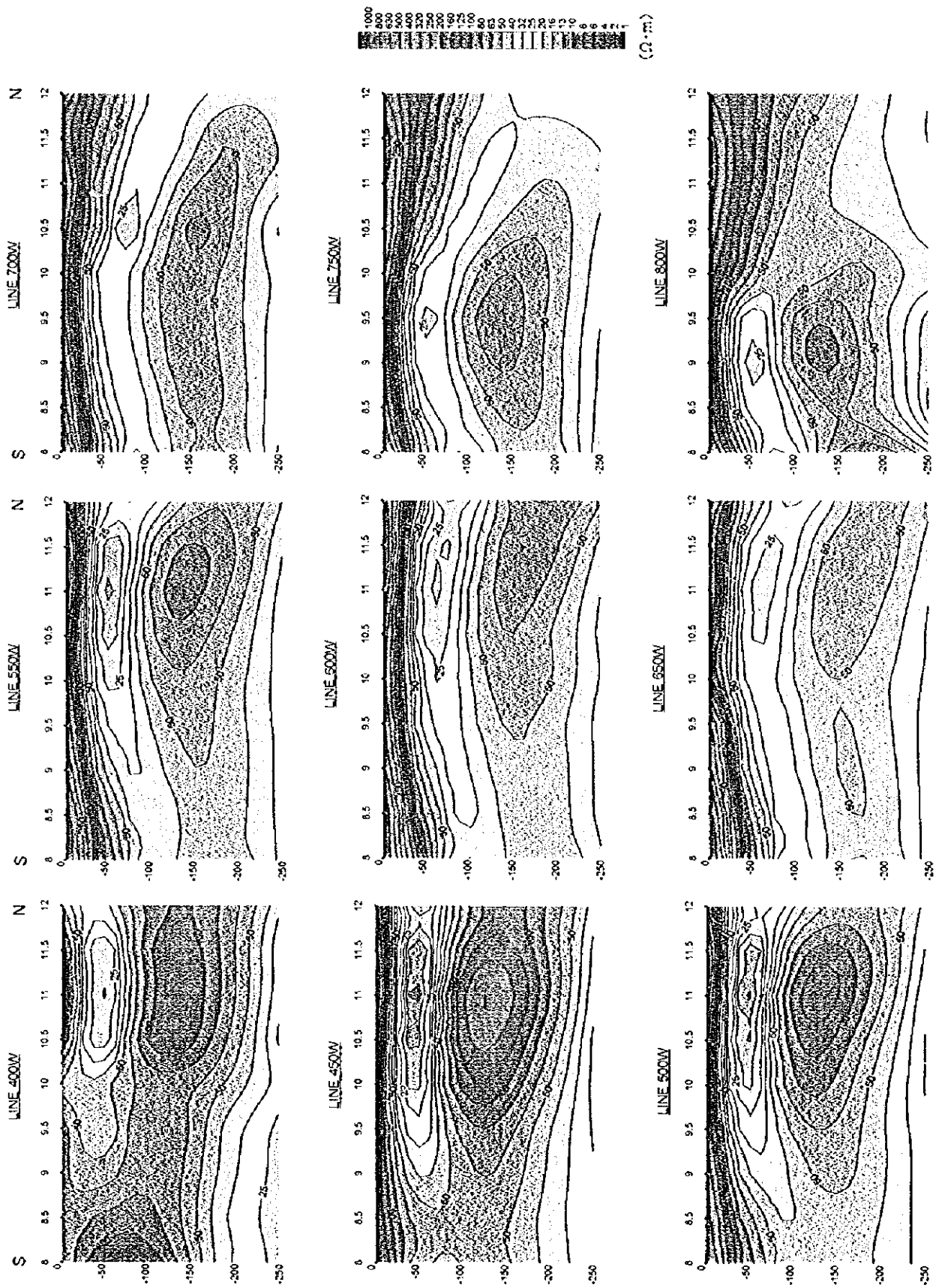


Fig.II-5-8 Resistivity sections in Ghuzayn Gossan west area



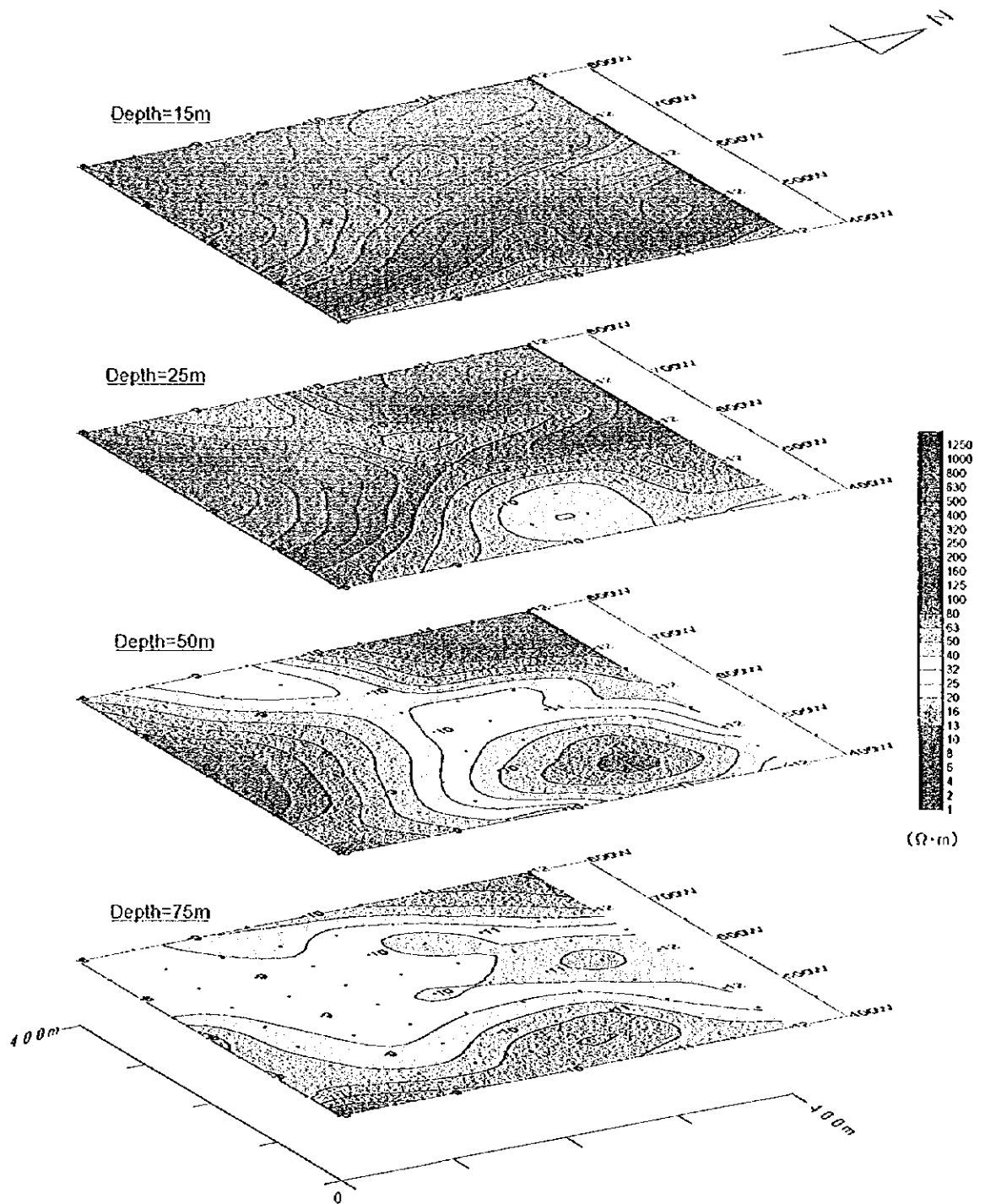


Fig II-5-9(I) Resistivity plan maps in Ghuzayn Gossan west area



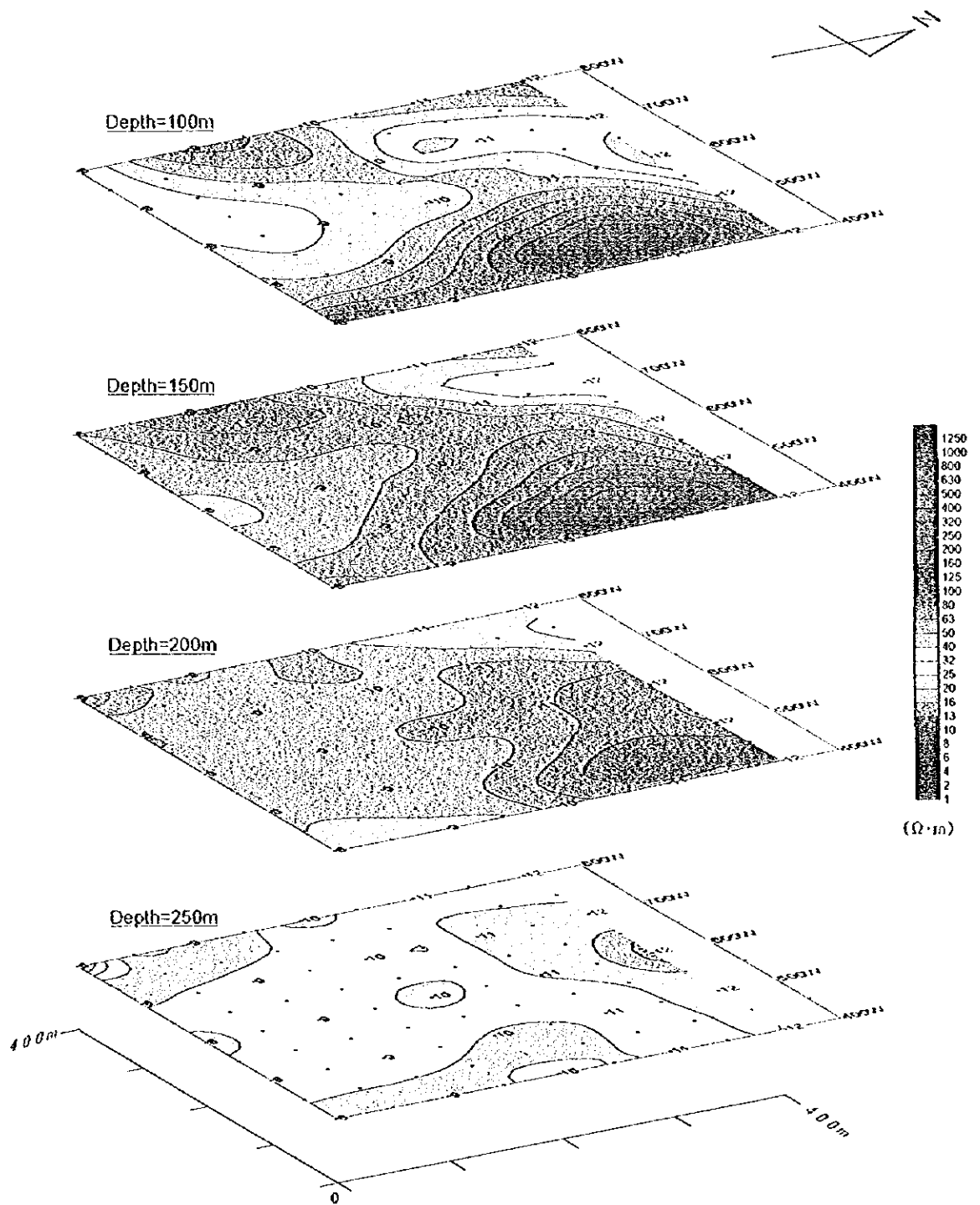


Fig. II-5-9(2) Resistivity plan maps in Ghuzayn Gossan west area



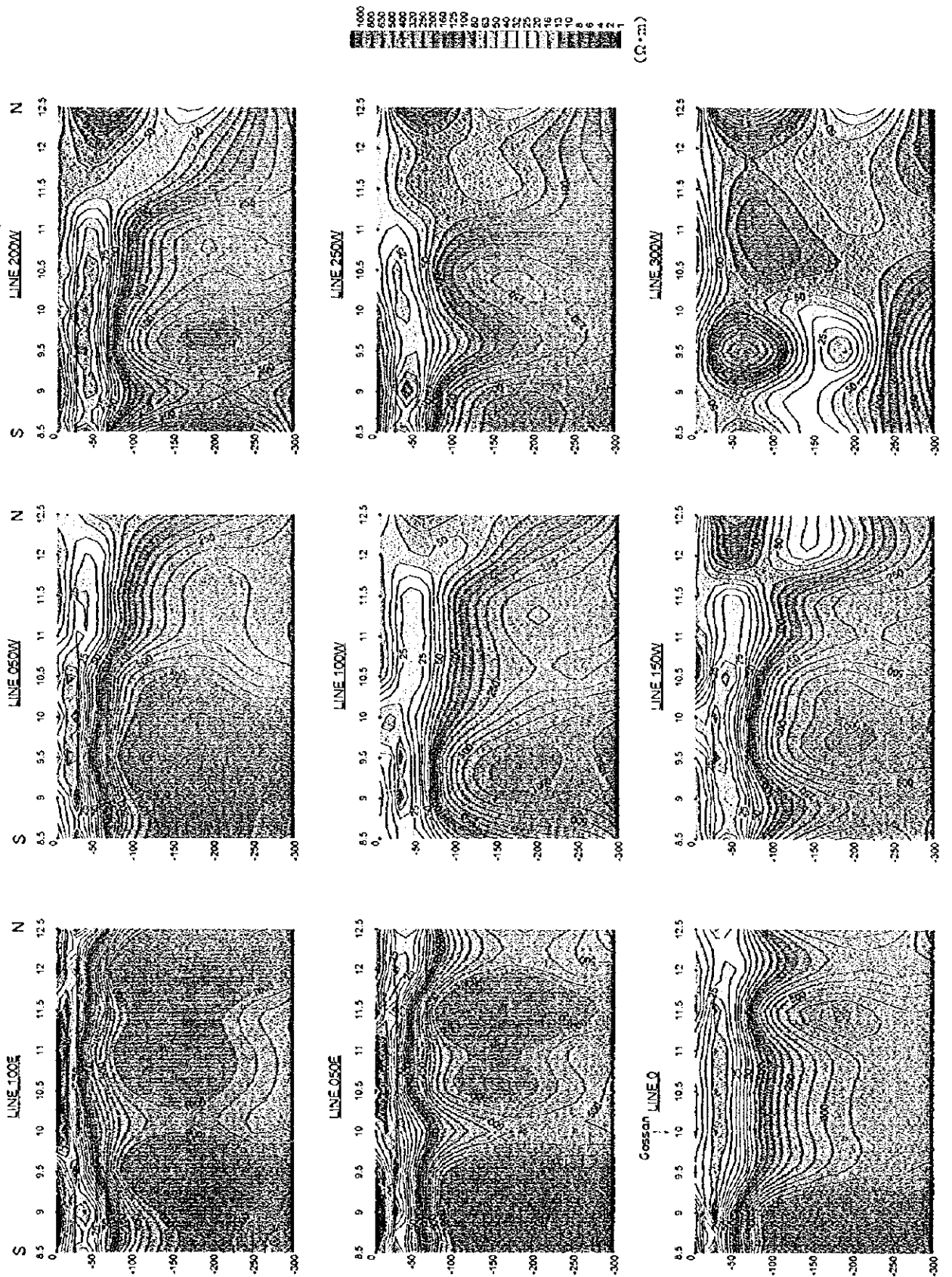


Fig.II-5-10 Resistivity sections in Daris area





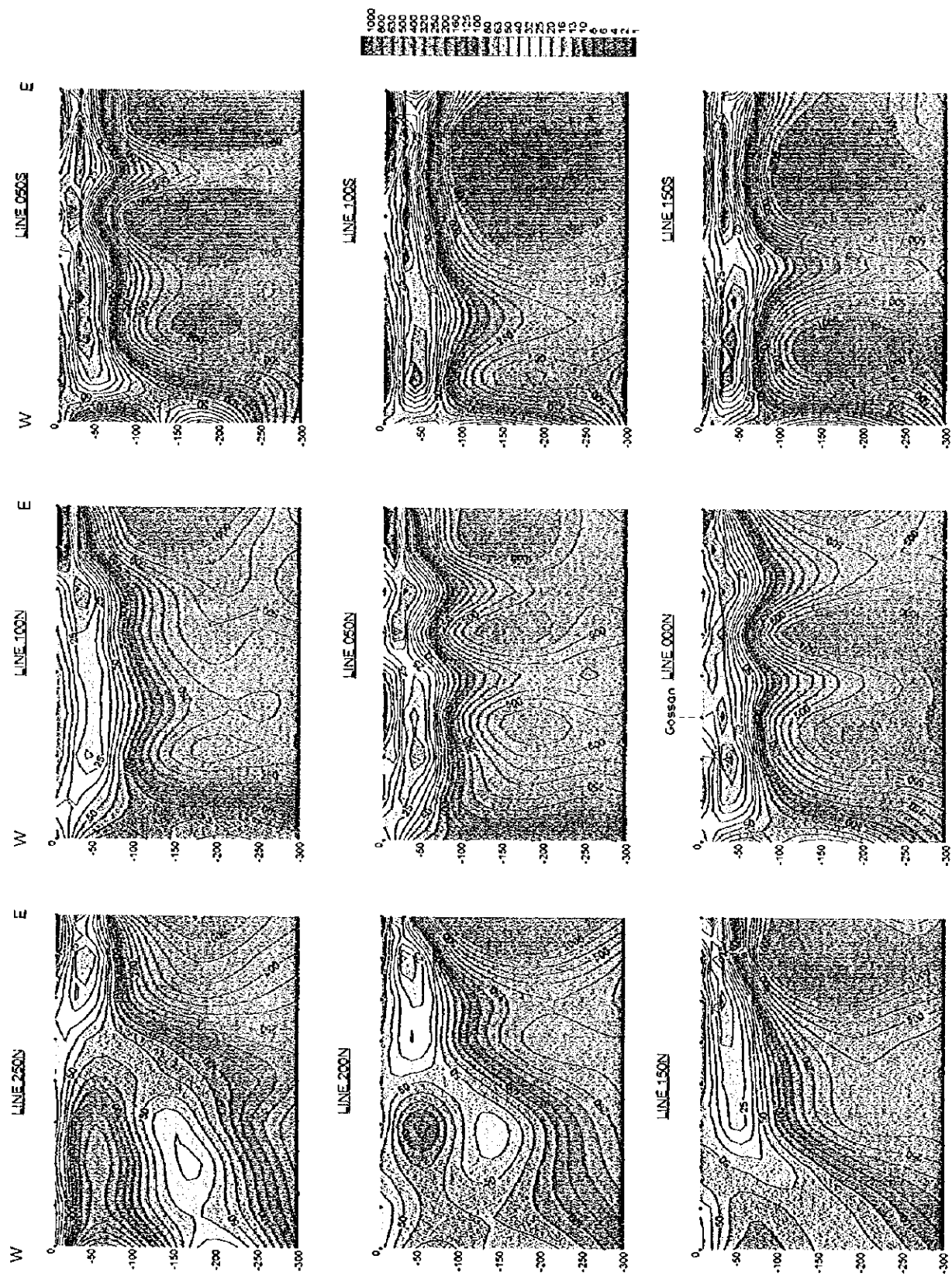


Fig. II-5-11 Resistivity sections in Daris area



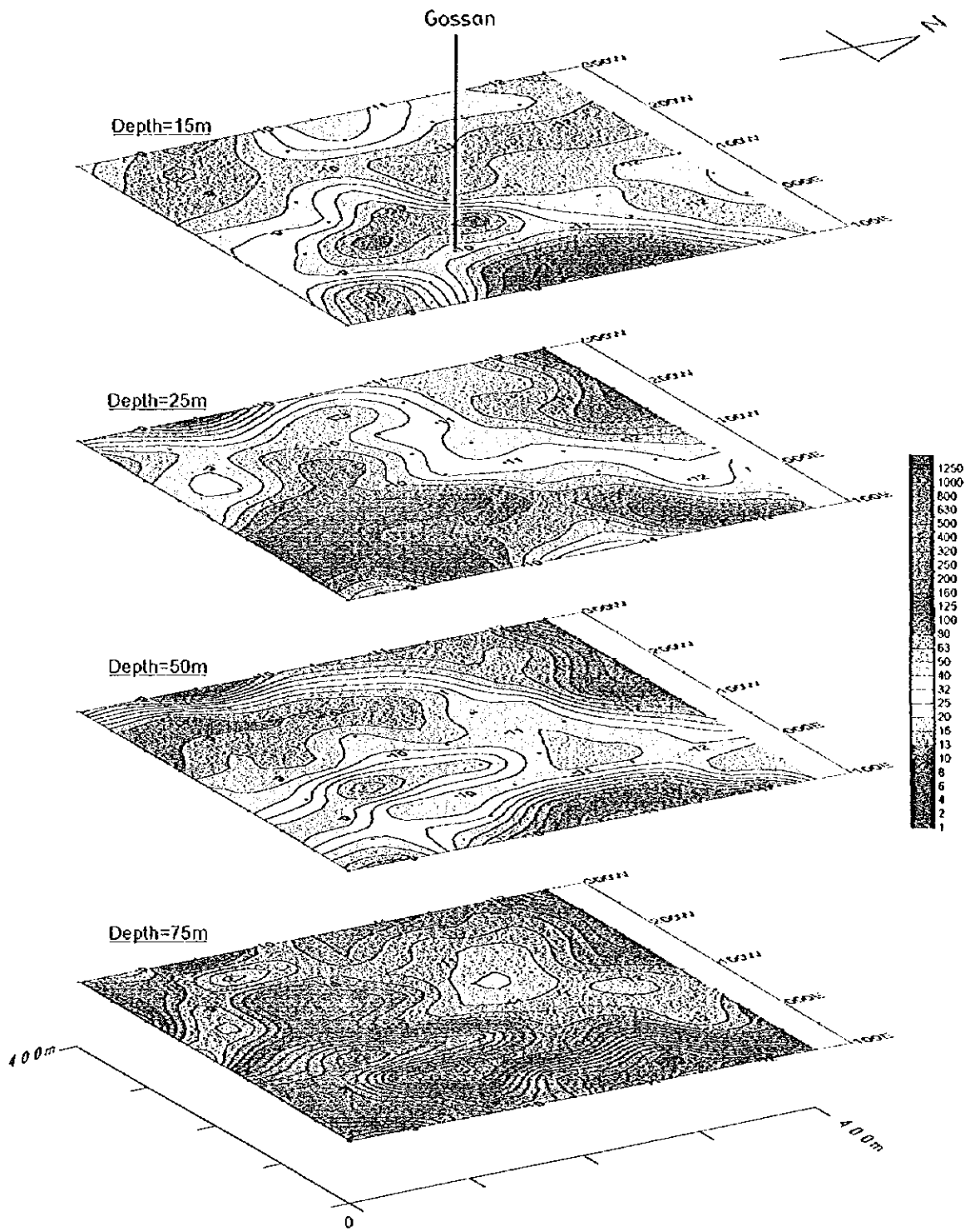


Fig II-5-12(1) Resistivity plan maps in Daris area



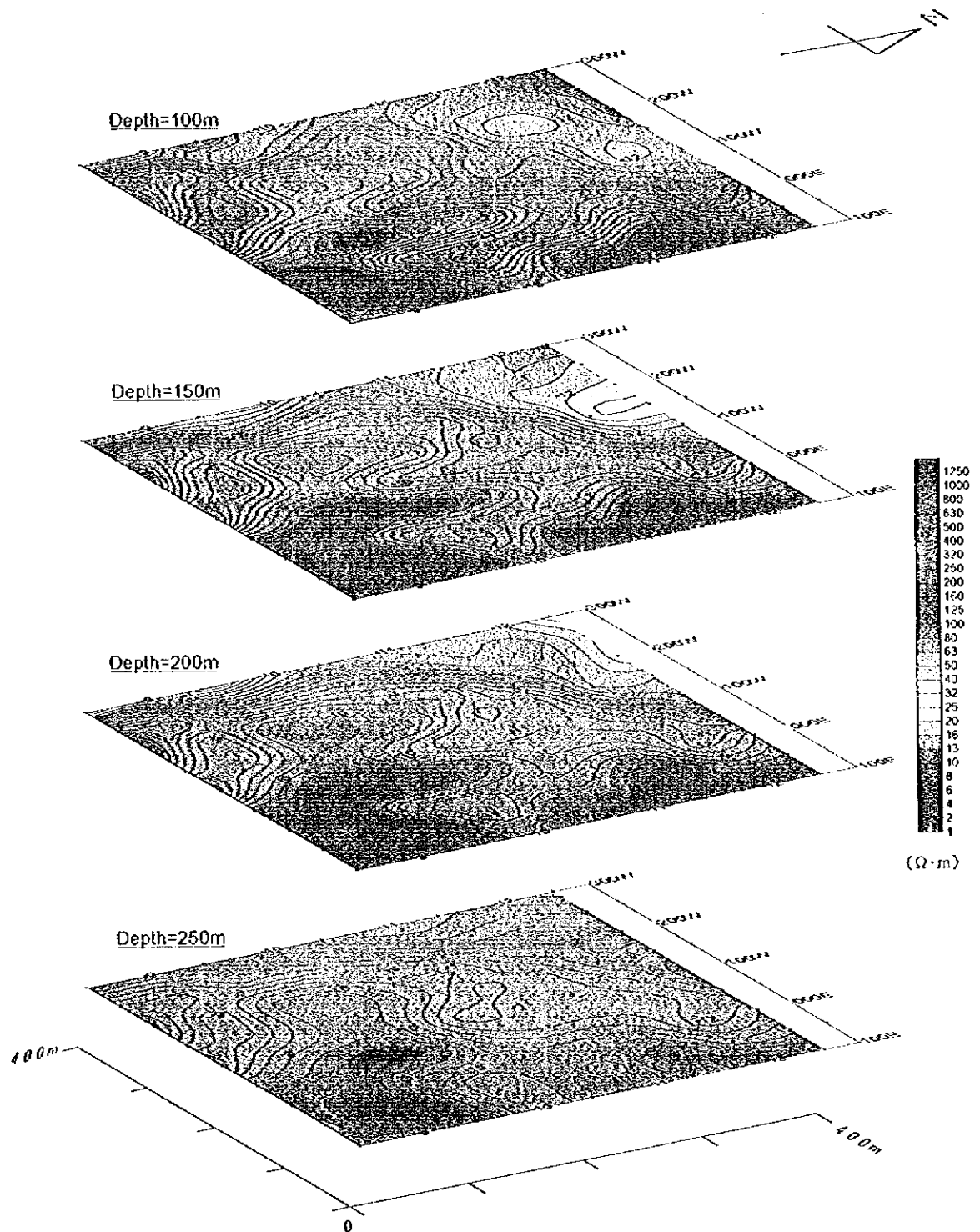


Fig.II-5-12(2) Resistivity plan maps in Daris area



**PART III CONCLUSIONS AND RECOMMENDATIONS**





## CHAPTER 1 CONCLUSIONS

The survey results are summarized as follows:

- (1) Since the massive sulphide deposits occurs along a contact between the Lower extrusive rocks 1 and 2 of the Lower volcanic rocks, the contact was traced throughout the areas. However, the sheeted-dyke complex was overlain directly by the Middle volcanic rocks without the Lower extrusive rocks 1 and 2 in the Area C and consequently the Area C shows a low potential for the deposits.
- (2) According to the results of the geological survey and among the five prospect areas, Ghuzayn Gossan, Daris 3A5 and Daris areas are considered to be high potential areas for copper deposits, however, Buwayrik and Daris West areas shows no favorable geologic features.
- (3) In Ghuzayn area, several copper bearing quartz veins with some length were found in the east and a gossanized basalt lava of the Lower extrusive rocks 1 was observed in the west.
- (4) Gossans were newly found in Doqal, Fardah, Sanah, north of Ghuzayn village and Qulayyah. The samples in Doqal and Fardah show contents of gold and silver. The gossan in Qulayyah is accompanied with a quartz vein emplaced in the sheeted-dyke complex.
- (5) As a result of the IP survey in five selected areas, the following conclusions were obtained:
  - In Ghuzayn Gossan area, two IP promising anomalies were detected in the north and west of the area.
  - In Daris area, a distinctive IP anomaly was detected around the gossan.
  - In Daris 3A5 area, a relatively high chargeable zone was found trending to the west from the gossan.
- (6) As a result of the TEM survey carried in three selected locations, the following conclusions can be mentioned:
  - In Ghuzayn Gossan north, a shallow TEM anomaly (about 40m in depth) was detected at the north edge of the gossan and trending northwest toward deep portions. Also a deep TEM anomaly (about 150 in depth) was detected at the northeast of the gossan.
  - In Ghuzayn Gossan west, the TEM anomalies were detected at the shallow part (about 50m in depth) in the northeast, at a relatively deep part (about 80m in depth) in the southeast and at a deep part (about 100m in depth) in the northwest of the survey area.
  - In Daris area, a shallow (about 20m in depth) TEM anomalies was detected at a zone trending to the northeast from the gossan. A shallow anomaly (about 40m in depth) was detected at a zone trending to the northwest from the west of the gossan. Another deep anomaly (about 150 to 200m in depth) was detected in the northwest of the area.

## CHAPTER 2 RECOMMENDATIONS

Semi-detailed, geophysical and drilling surveys mentioned below in the areas shown in Fig.I-5-1 are recommended for Phase II project.

### **(1) Semi-detailed survey**

It is recommended to carry out a semi-detailed survey to acquire detailed informations on the mineralization in Doqal, Fardah, Sanah and north of Ghuzayn village where gossans were newly found in Phase I.

### **(2) Geophysical survey**

IP and TEM geophysical surveys are recommended around gossans found in the Doqal, Fardah, Sanah and north of Ghuzayn village in order to assess the potential of massive sulphide deposits. It is also recommended to conduct TEM survey in the northern part of Daris area where the wide IP anomaly was detected in Phase I.

### **(3) Drilling survey**

In order to check ore bodies, it is recommended to conduct drilling surveys of 150m to 300m in depth around the TEM anomalies detected in the north and west of Ghuzayn main gossan (refer to Fig.I-5-2), the north and northwest of gossan in Daris (refer to Fig.I-5-3), the east and west of Daris prospect area (refer to Fig.I-5-4) and about the IP anomalies detected in the Daris 3A5. Additionally, it is also necessary to carry out drillings on the promising anomalies likely to be detected by geophysical surveys of Phase II.

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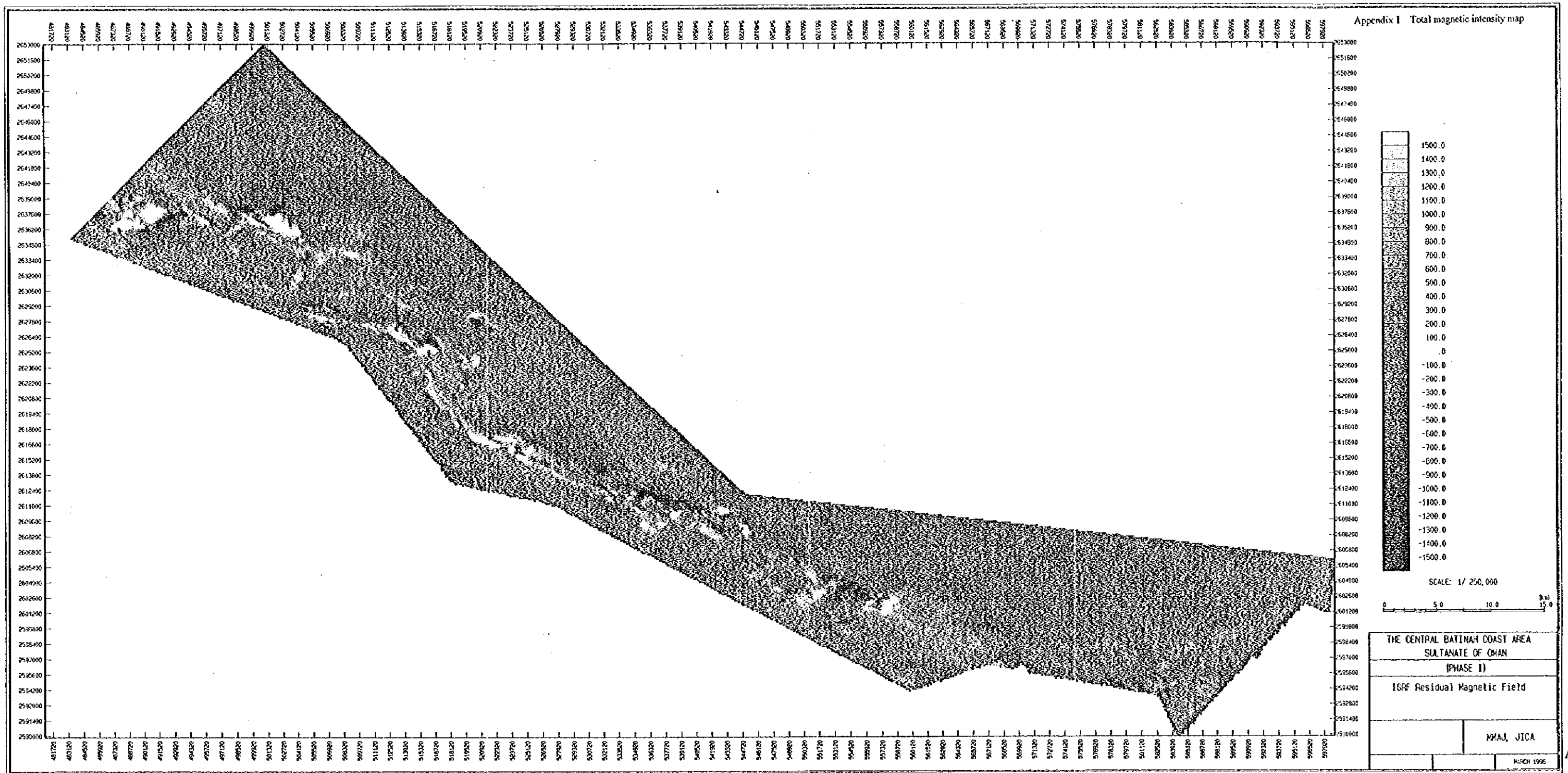




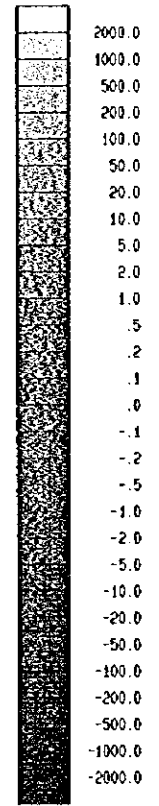
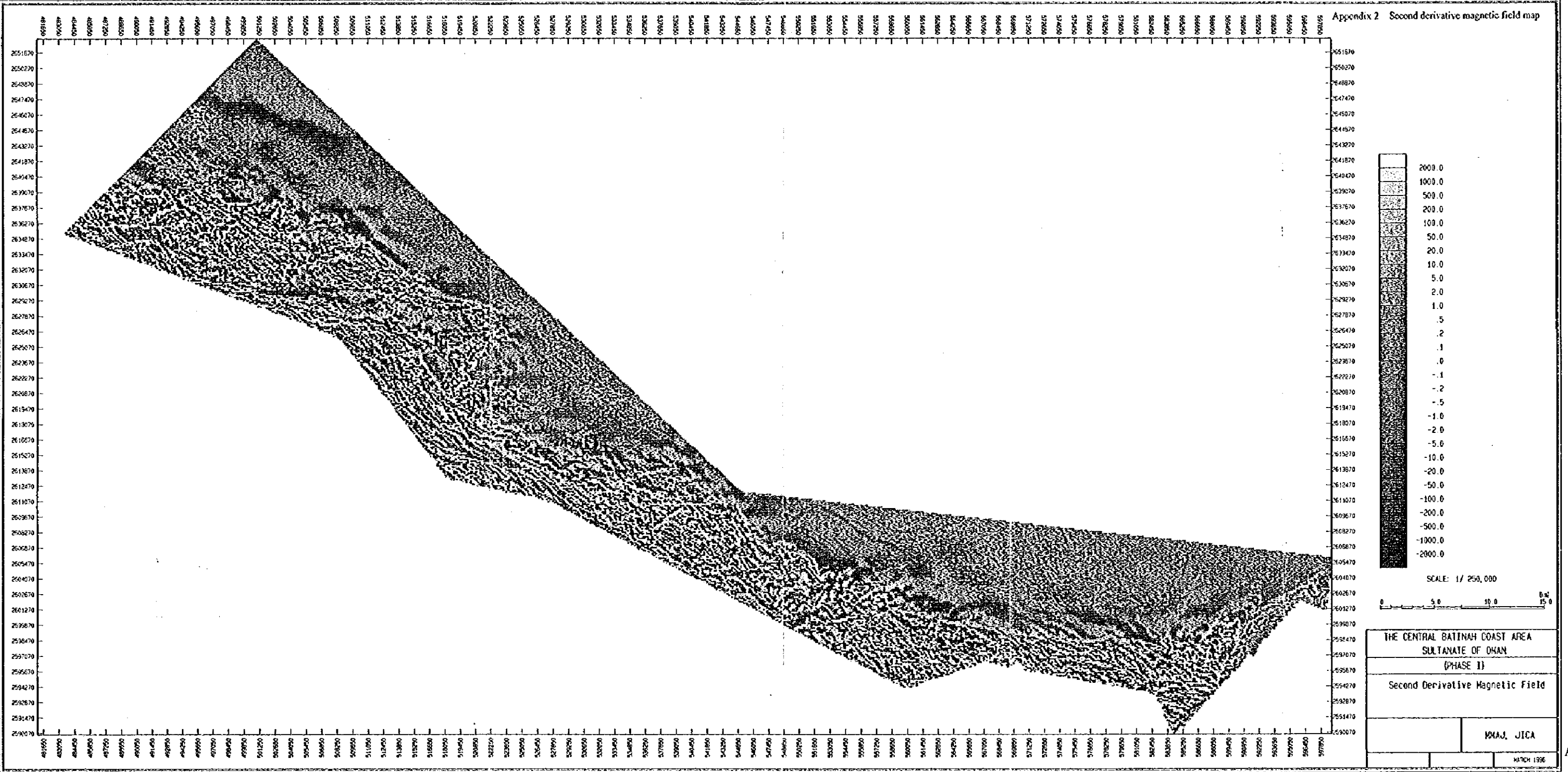
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Appendix I Total magnetic intensity map



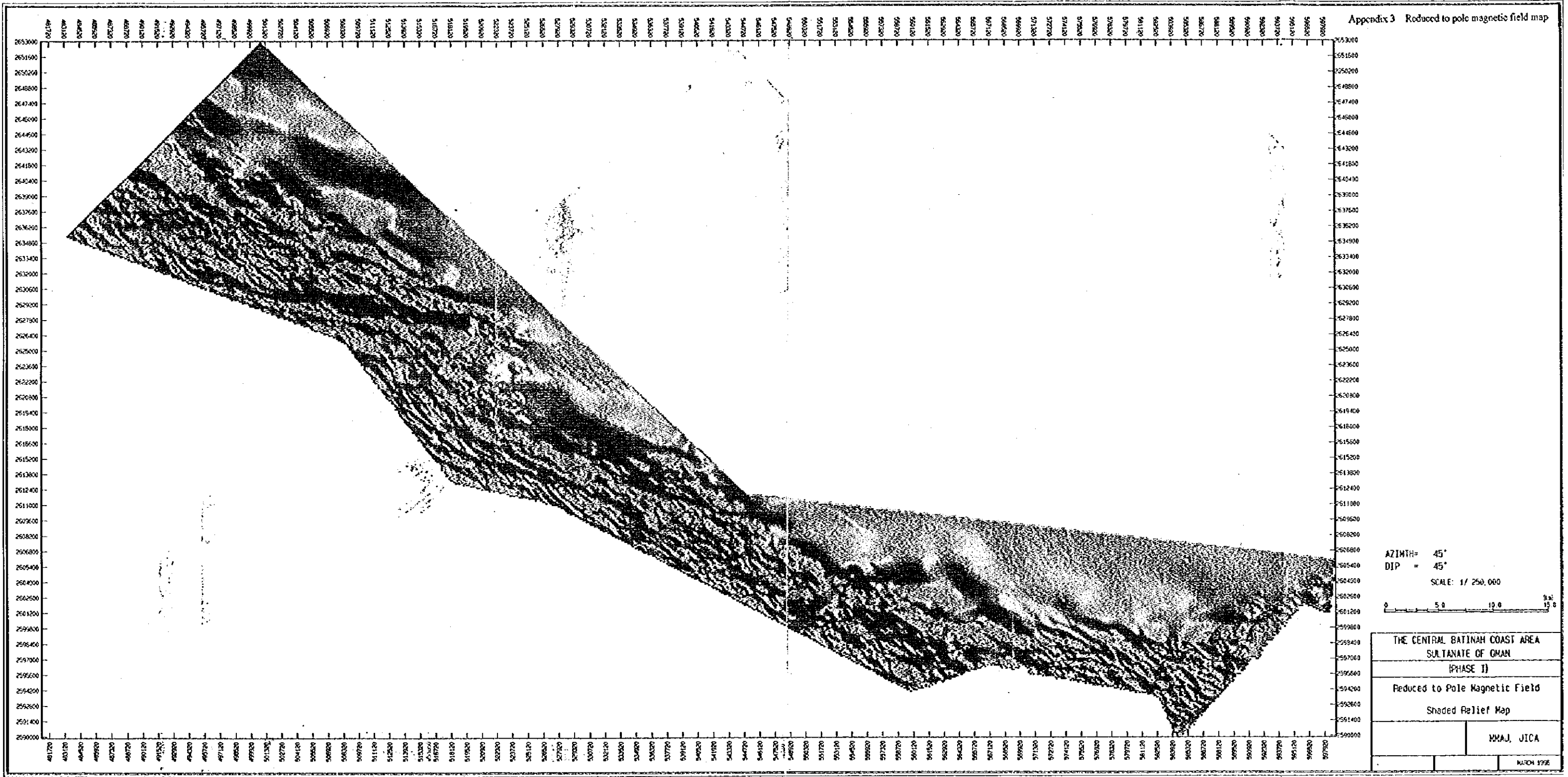
Appendix 2 Second derivative magnetic field map



SCALE: 1/ 250,000  
 0 5.0 10.0 15.0  
 Km

THE CENTRAL BATINAH COAST AREA  
 SULTANATE OF OMAN  
 (PHASE II)  
 Second Derivative Magnetic Field  
 MNAJ, JICA  
 MARCH 1996

Appendix 3 Reduced to pole magnetic field map



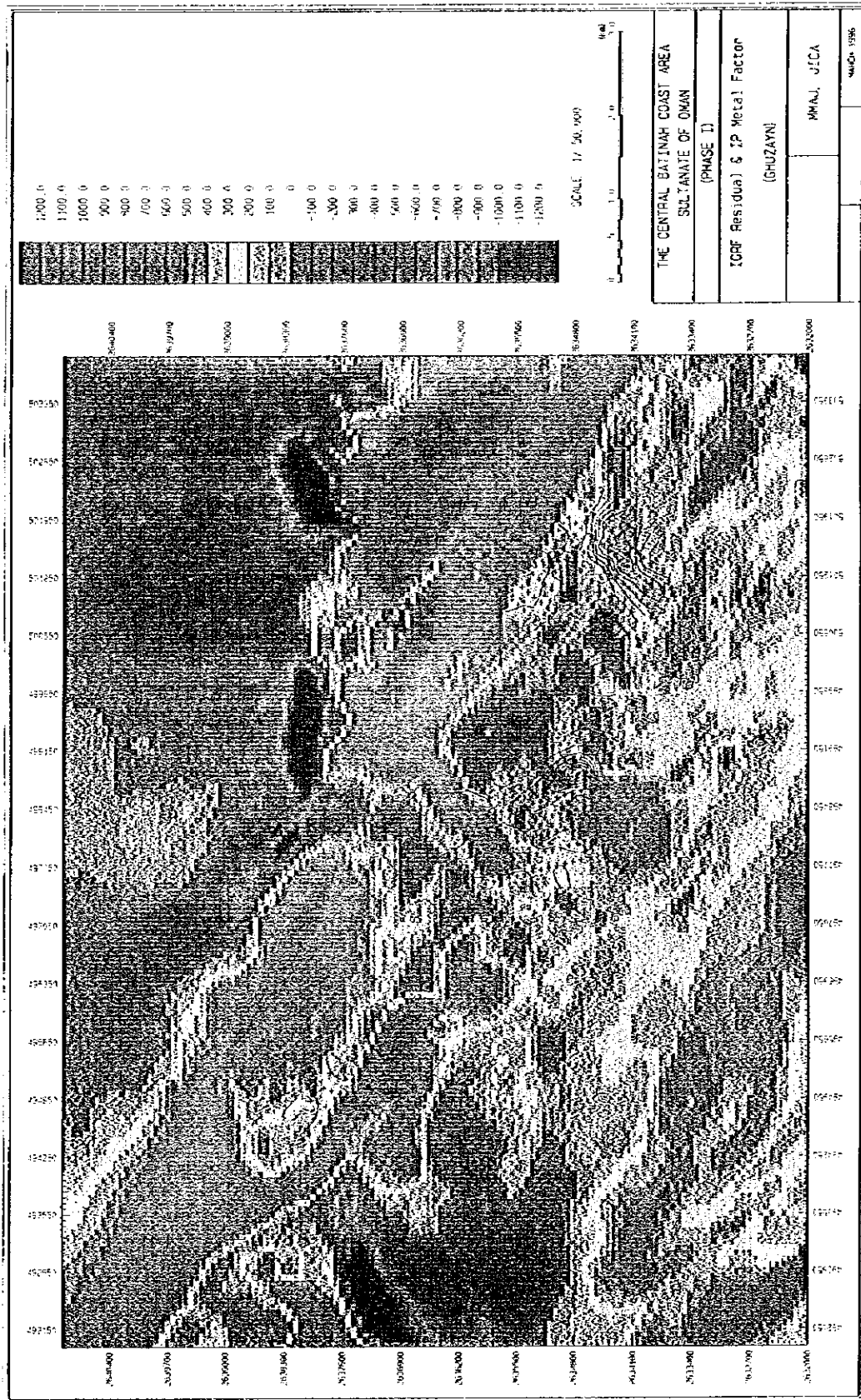
AZIMUTH = 45°  
 DIP = 45°  
 SCALE: 1/ 250,000

THE CENTRAL BATINAH COAST AREA  
 SULTANATE OF OMAN  
 (PHASE I)  
 Reduced to Pole Magnetic Field  
 Shaded Relief Map

WMAJ, JICA  
 MARCH 1996

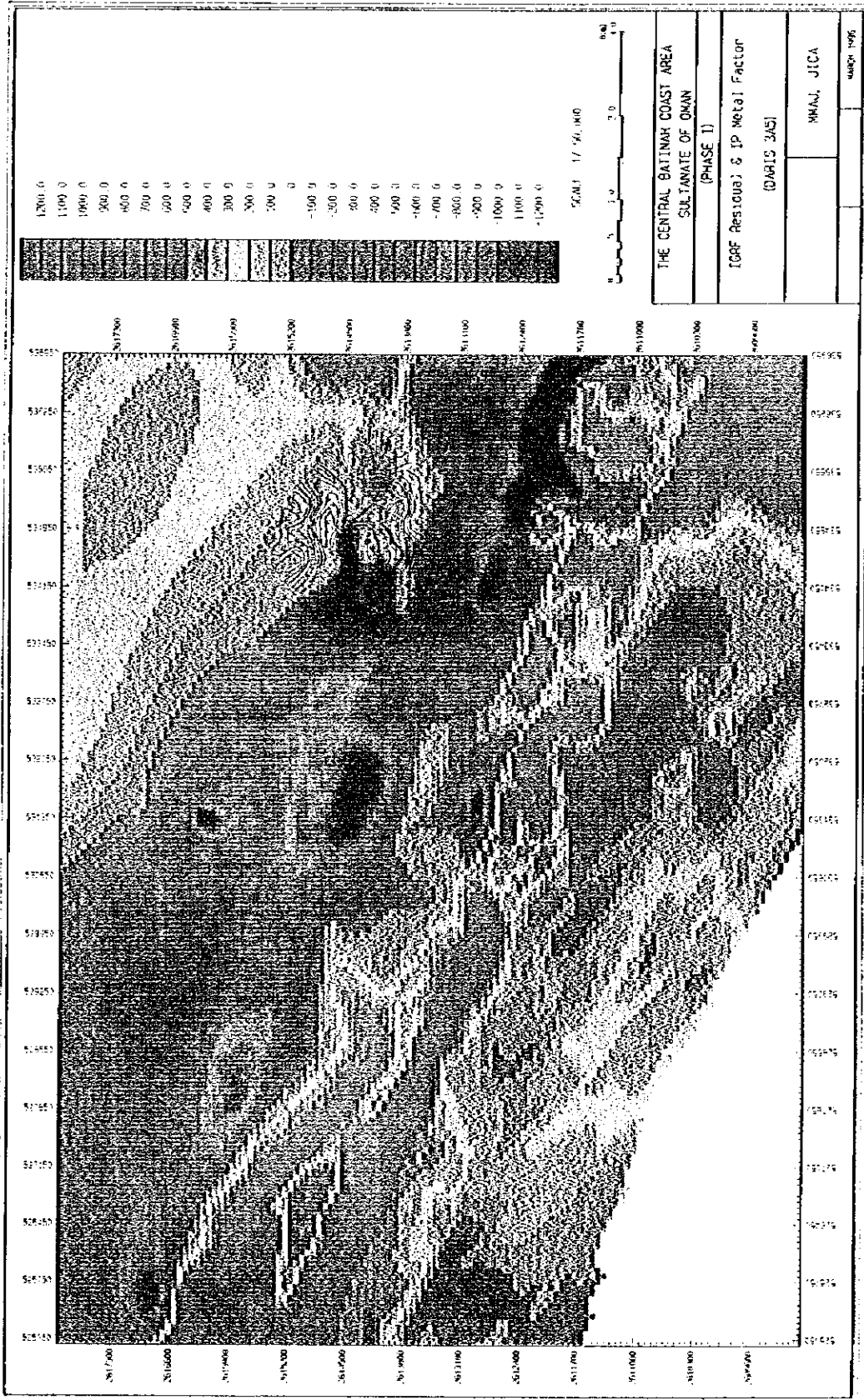






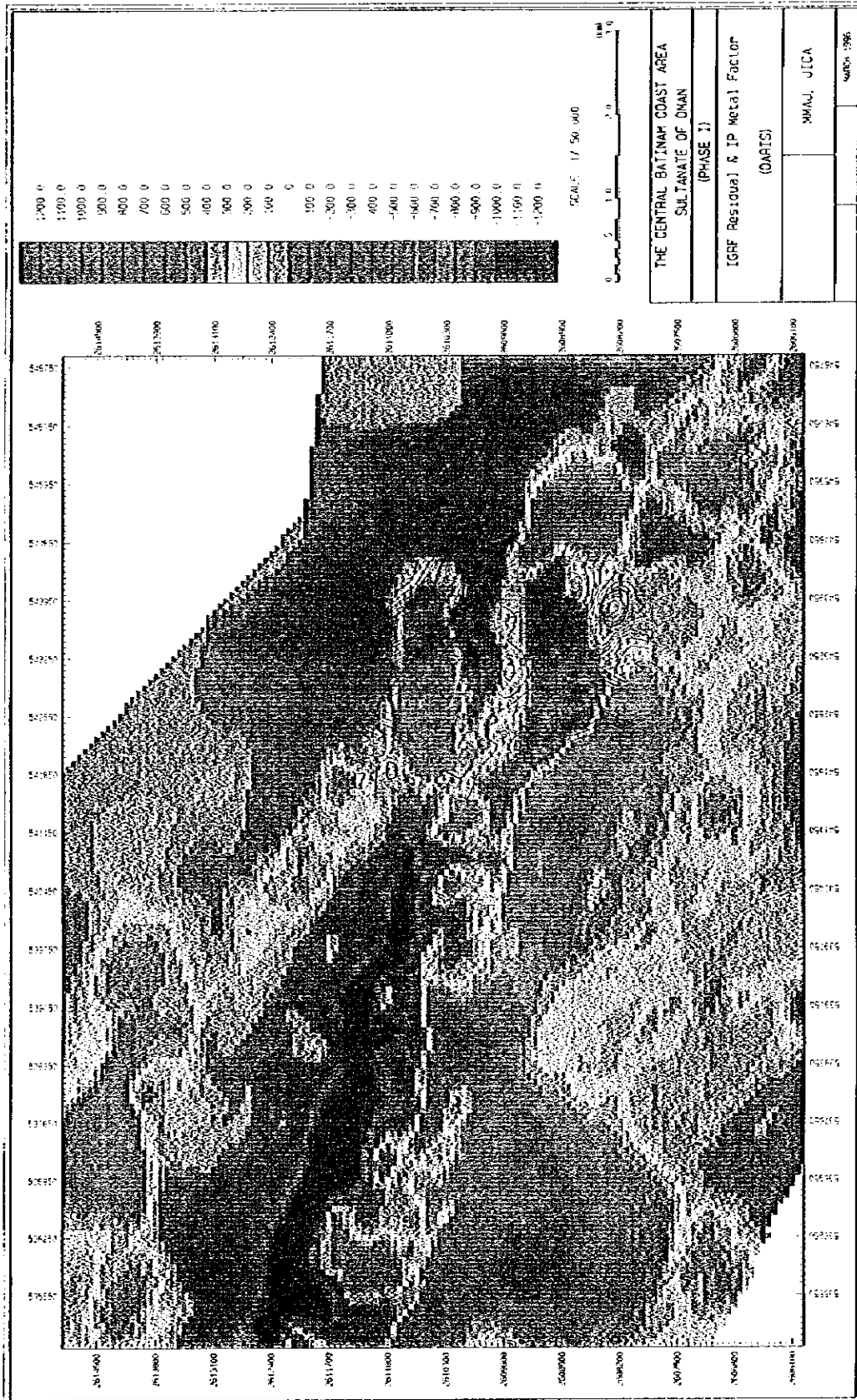
Appendix 4 Composite map of IP metal factor and reduced to pole magnetic field data of Ghuzayn area





Appendix 5 Composite map of IP metal factor and reduced to pole magnetic field data of Daris 3A5 area





Appendix 6 Composite map of IP metal factor and reduced to pole magnetic field data of Daris area

