Loop 6 (Fig. II-6-9)

A continuation of the NW-SE trending detected in Loop 5 is also seen here. Within this loop, a high TEM response seems to take place at intermediate channels (channels 8 to 14) to the south of 1200N with its highest response along the line 3400W. Low TEM responses detected in the north part of the loop are indicative of high resistivity distribution.

Loop 7 (Fig. II-6-10)

Placed to the west of Loop 3, this loop presents a continuous electrical structure but showing high TEM responses in the central-south part of the loop. The intermediate channels (11 to 17) show stronger responses.

6-6 Further Considerations

In order to discover massive sulphide ore, TEM survey was conducted in Rakah Gold Mine area, Quron Al Akhbab area and Hayl as Safil area.

In Rakah Gold Mine area, small-scale TEM anomaly was detected at the deep part, and drilling survey was conducted within this TEM anomaly. Though mineralized zone was intersected, massive sulphide was not detected.

In Quron Al Akhbab area, remarkable high TEM responses were detected at the shallow part. Drilling survey was conducted within this TEM anomaly zone, and promissing stockwork was intersected at the deep part. According to the results of geophysical and drilling survey, it can be concluded that the low resistivity zone is limited to a shallow part, no remarkable mineralization was intersected at the low resistivity zone and the place where high chargeability was detected and the place where stockwork was intersected agrees quite well. As a result, we can understand that stockwork shows high chargeability and medium to high resistivity values in this area(see Fig. II -6-11).

In Hayl as Safil area, 5 loops were set up around the existing ore bodies. Fig. II-6-12 shows compiled geophysical map in Hayl as Safil area and Fig. II-6-13 shows TEM resistivity section together with previous drilling results. Al Ashgar, Bishara and Al Jadeed ore bodies mainly composed of massive sulphide ore are clearly detected as low resistivity and high chargeability zones by the TDIP survey and as high TEM response zones. Hayl as Safil ore body mainly composed of stockwork ore shows high chargeability, high resistivity and generally low TEM response. High TEM response is detected at the station 3700W, 1700N. Massive sulphide ore was intersected by previous drilling survey at this TEM anomaly. As seen in Fig. II-6-13, the place where massive sulphide and brecciated ore were intersected corresponds to low resistivity zone, and the place where stockwork ore were intersected corresponds to high resistivity zone.

Other interesting geophysical anomalies are detected on the north side of the Hayl as Safil ore with high chargeability of 15mV/V or more. As seen in Fig. II-6-13, low resistivity is distributed in the deep part from station 15 to the north.

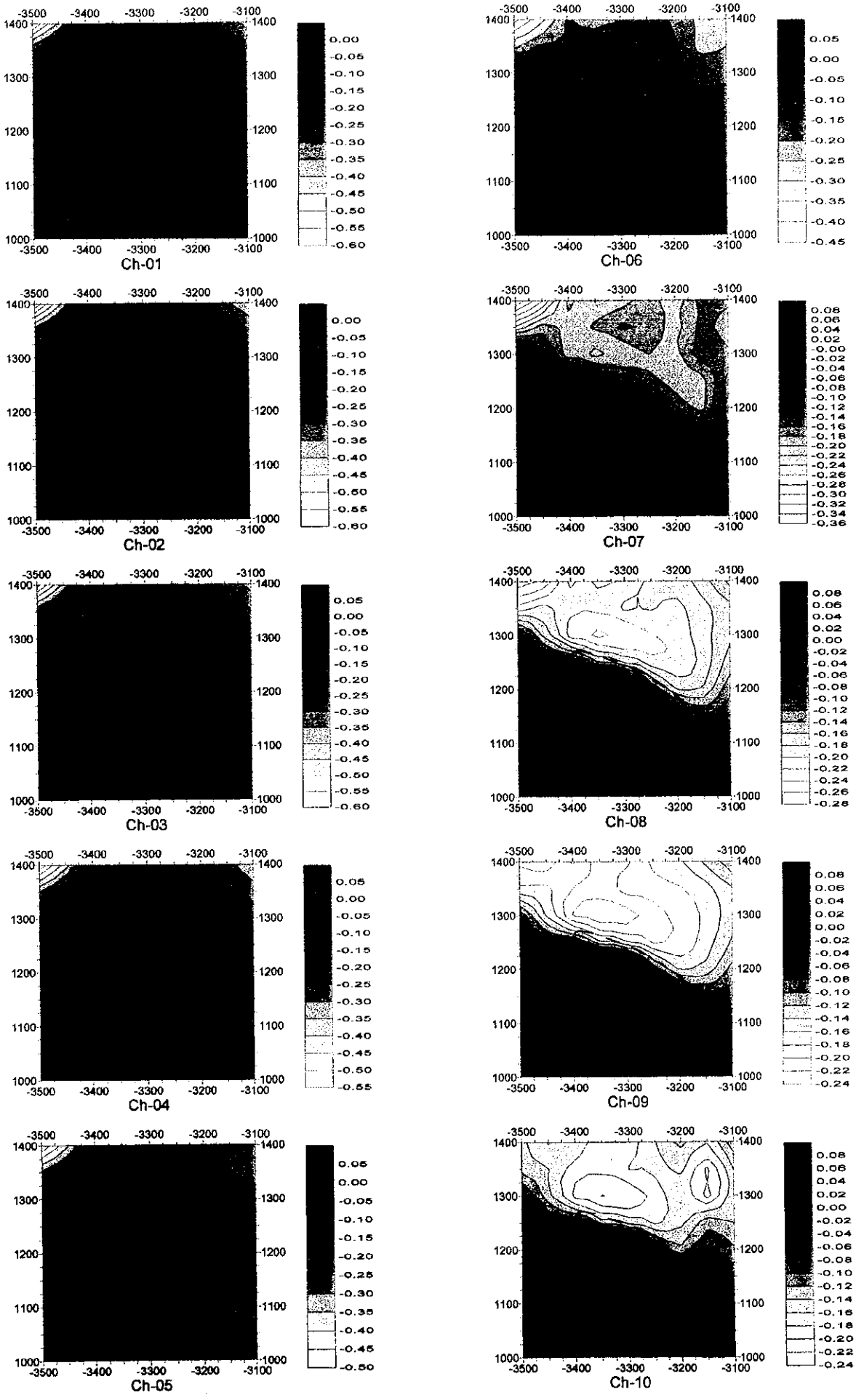


Fig. Ⅱ-6-9(1) TEM response maps of Loop6 (Ch1-Ch10)

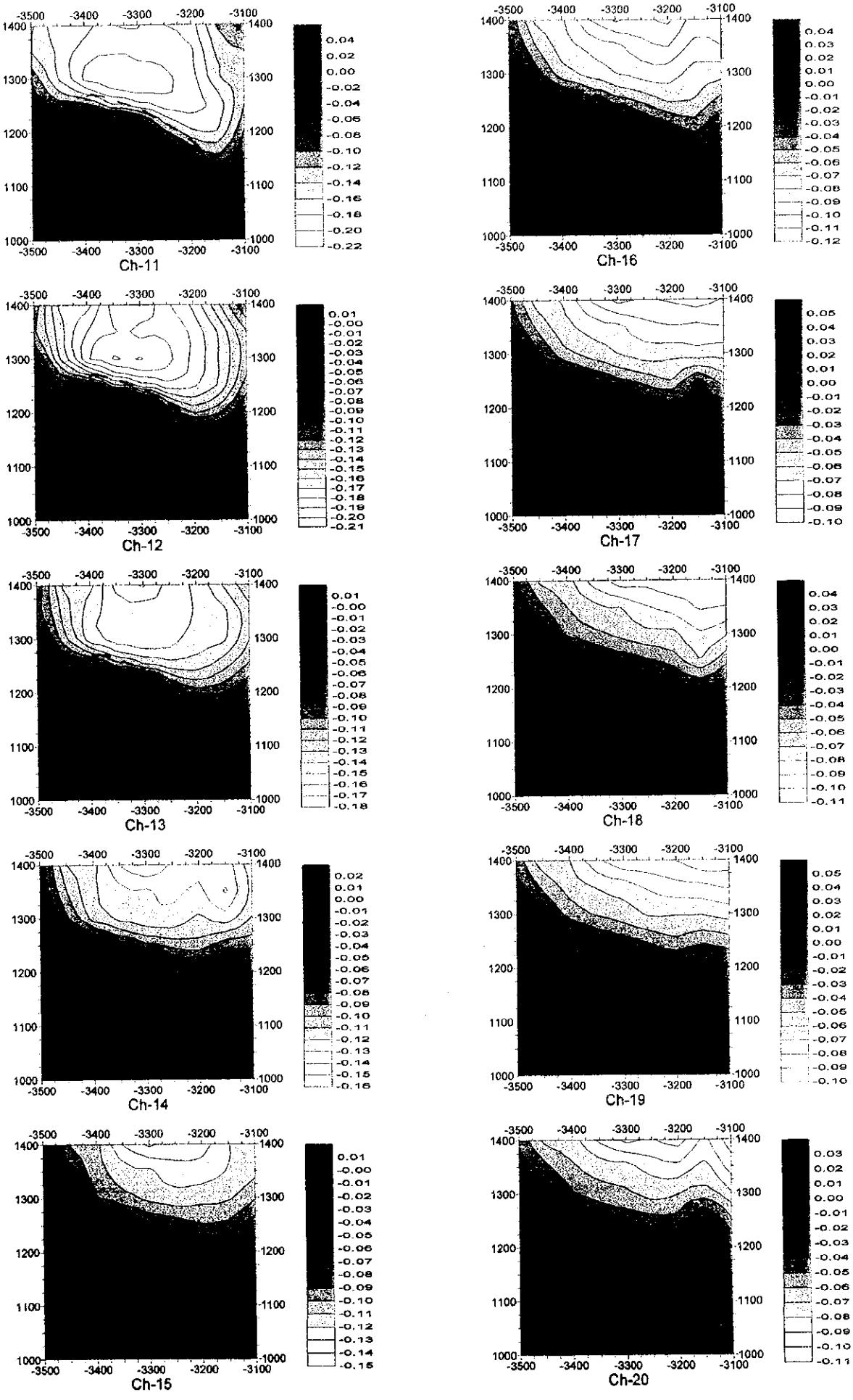


Fig. II -6-9(2) TEM response maps of Loop6 (Ch11-Ch20)

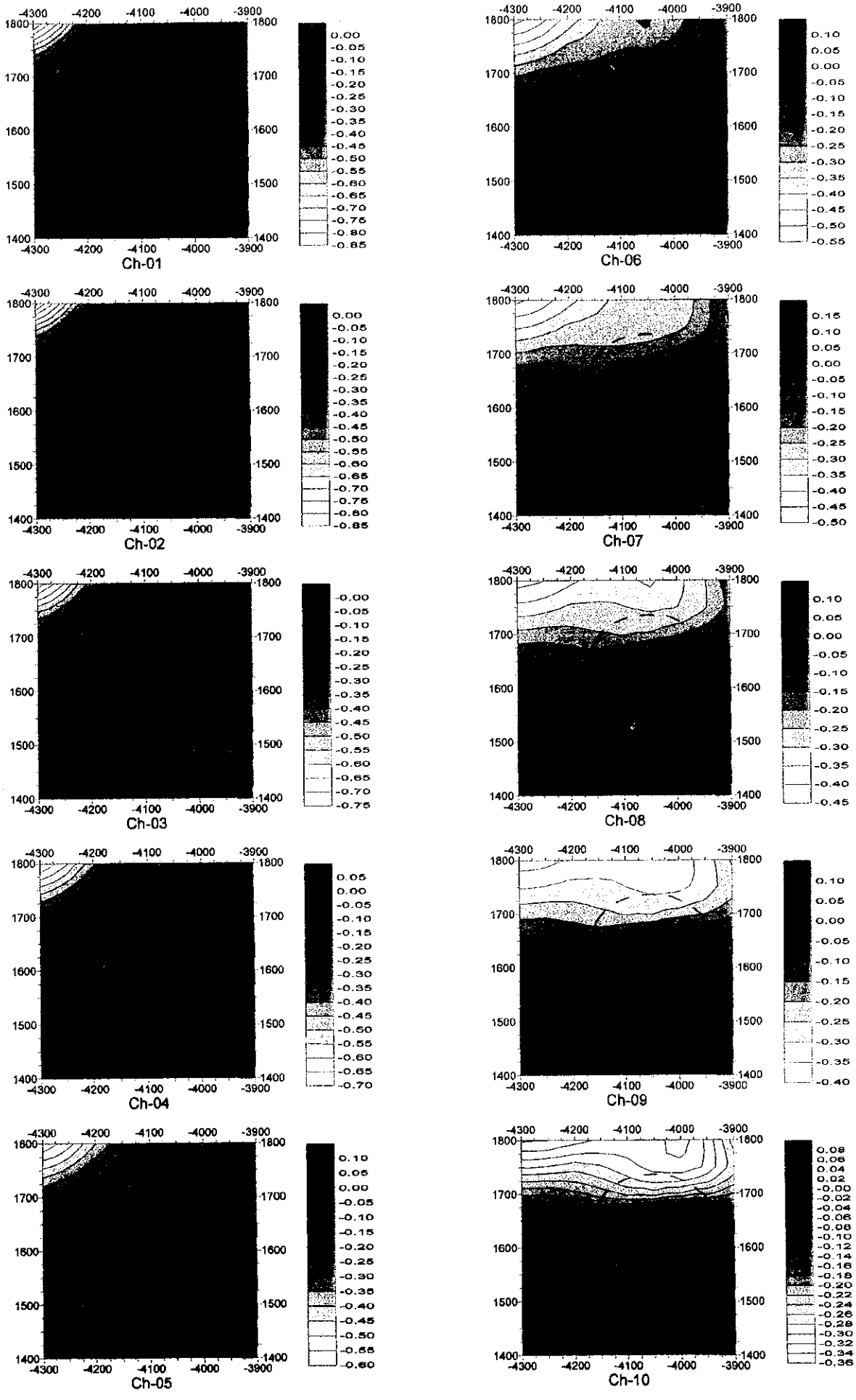


Fig. Ⅱ-6-10(1) TEM response maps of Loop7 (Ch1-Ch10)

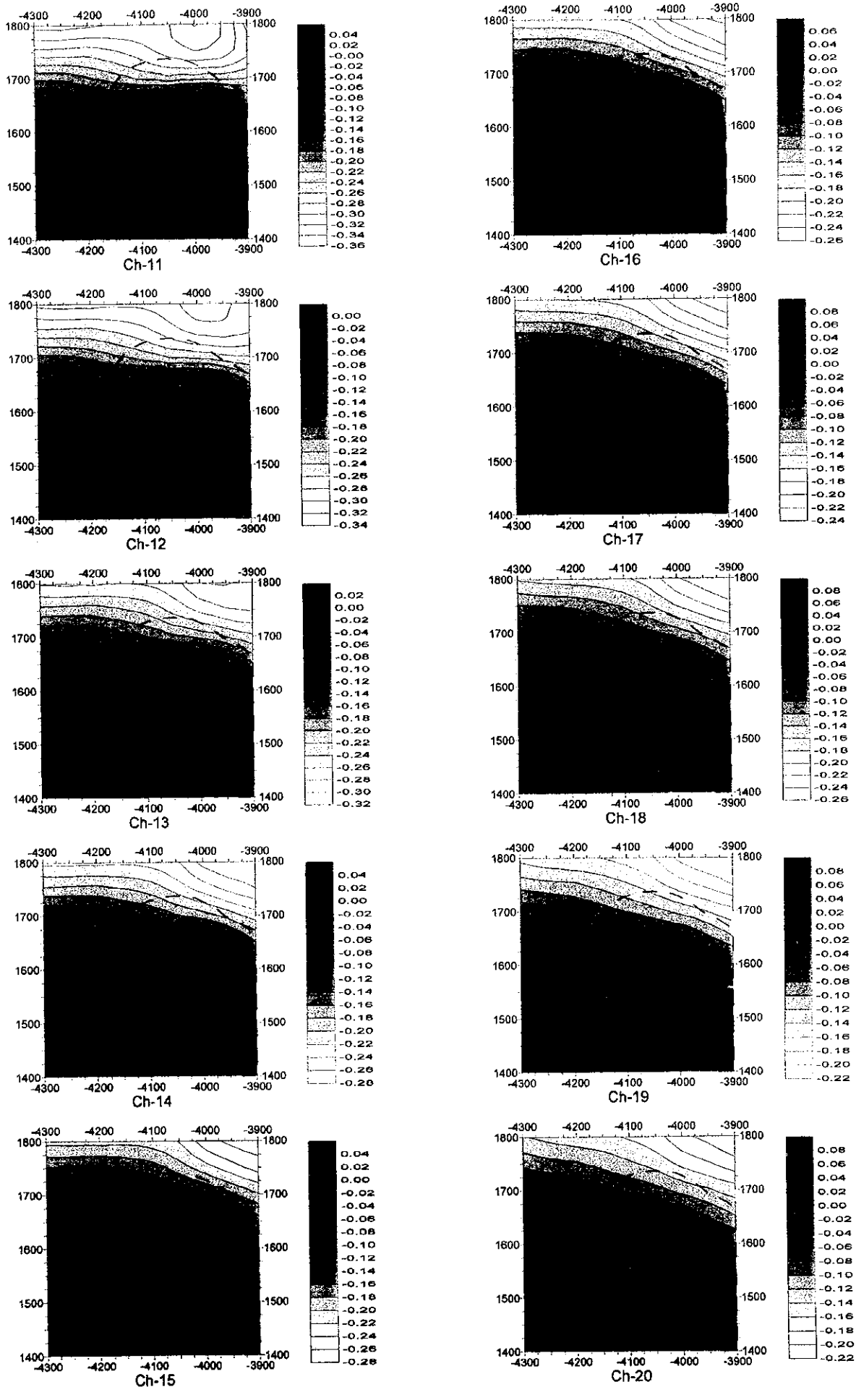
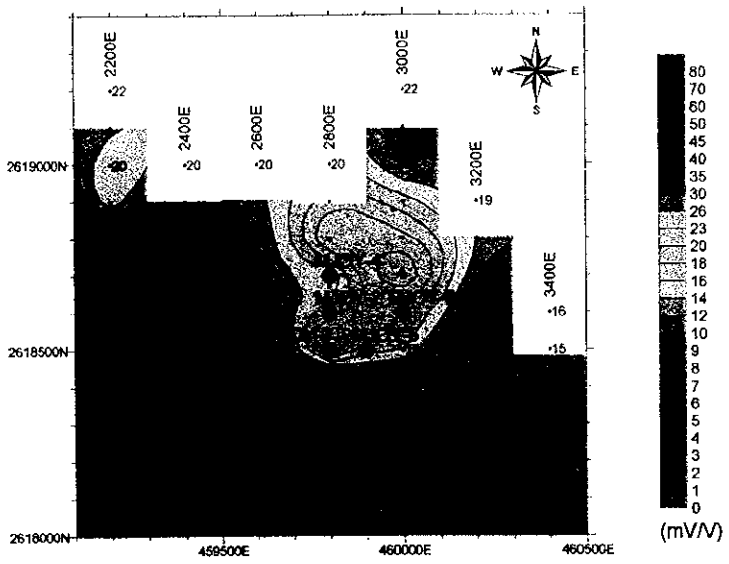
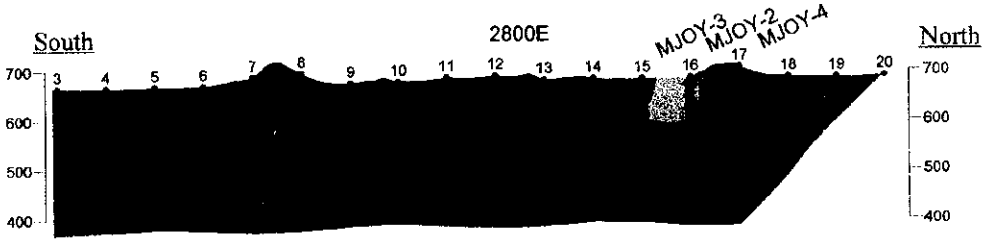


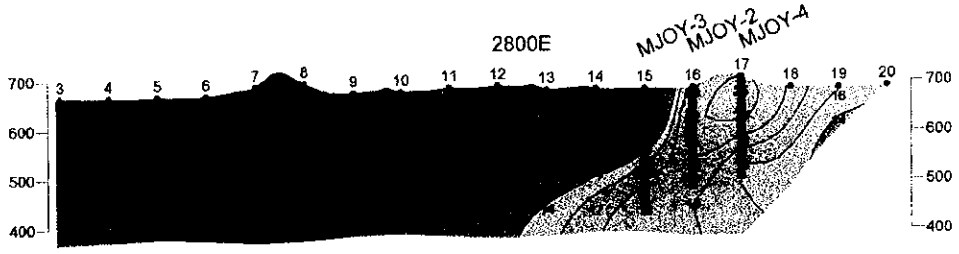
Fig. II -6-10(2) TEM response maps of Loop7 (Ch11-Ch20)



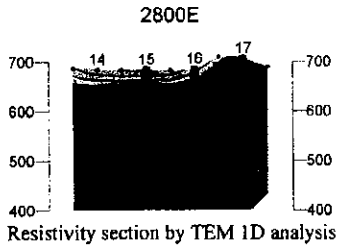
Chargeability plane map for N=2



Resistivity section by TDIP 2D analysis

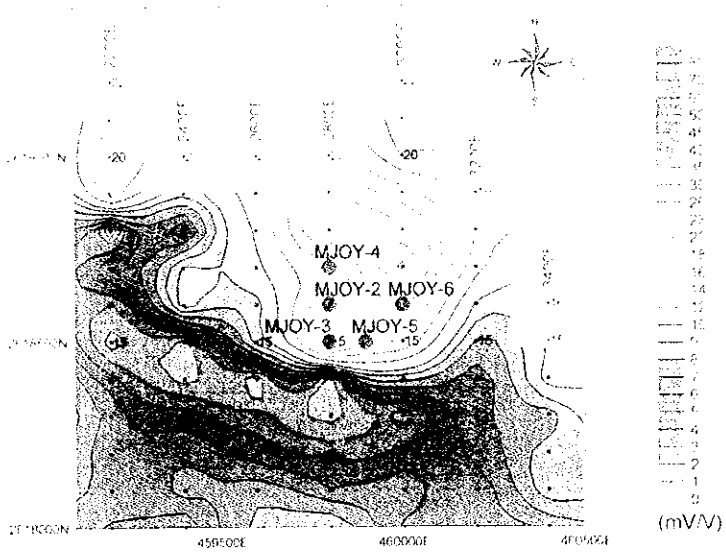


Chargeability section by TDIP 2D analysis

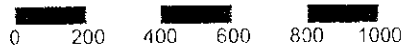


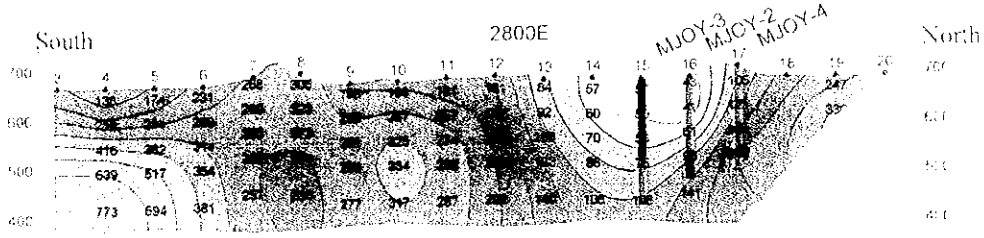
Resistivity section by TEM 1D analysis

Fig. II -6-11 Results of TDIP & TEM survey in Quron Al-Akhbab area

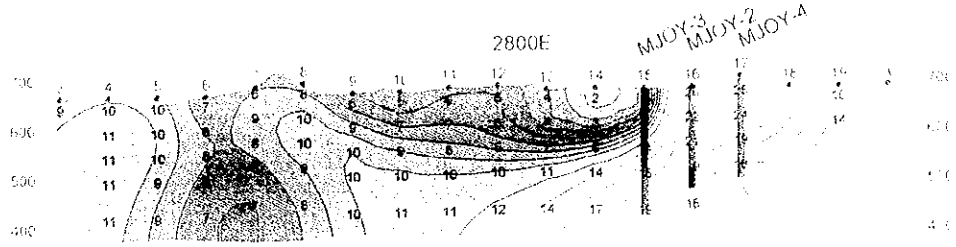


Chargeability plane map for N= 2

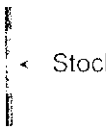


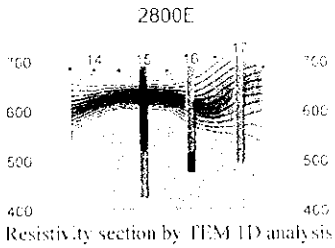


Resistivity section by TDIP 2D analysis



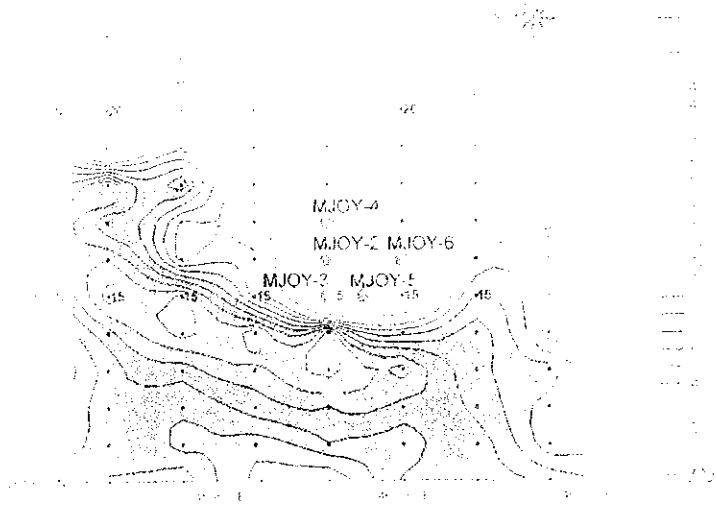
Chargeability section by TDIP 2D analysis



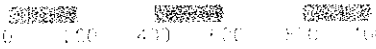


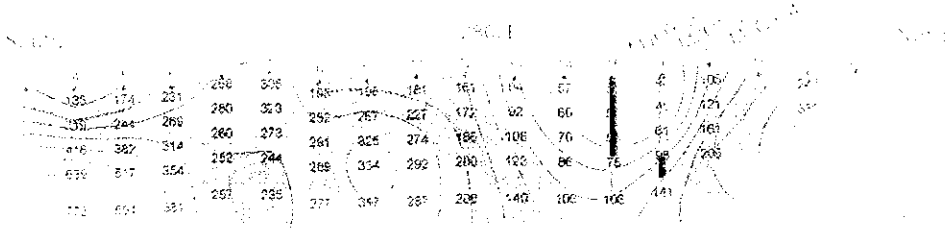
Resistivity section by TEM 1D analysis

Fig. II-6-11 Results of TDIP & TEM survey in Quron Al-Akhbab area



Chargeability plane map for N...





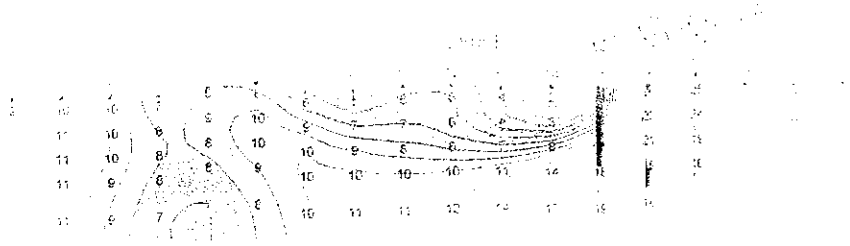
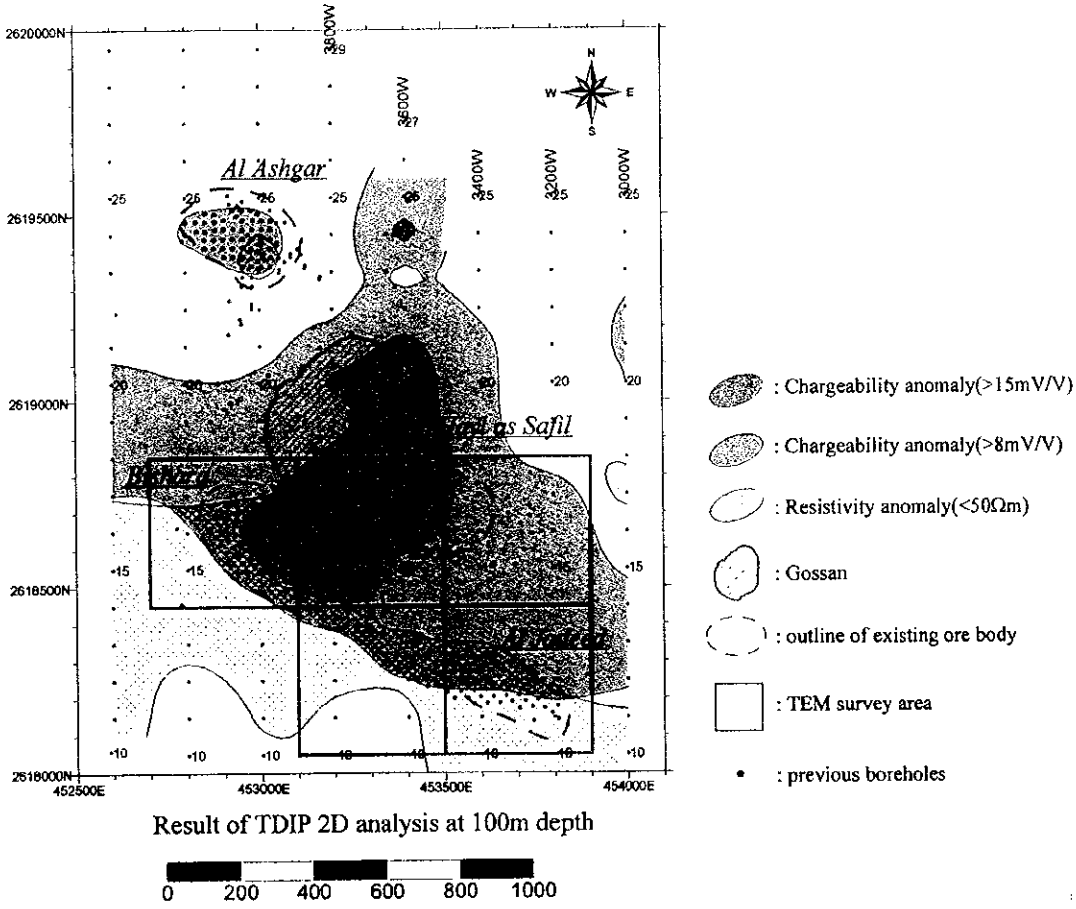
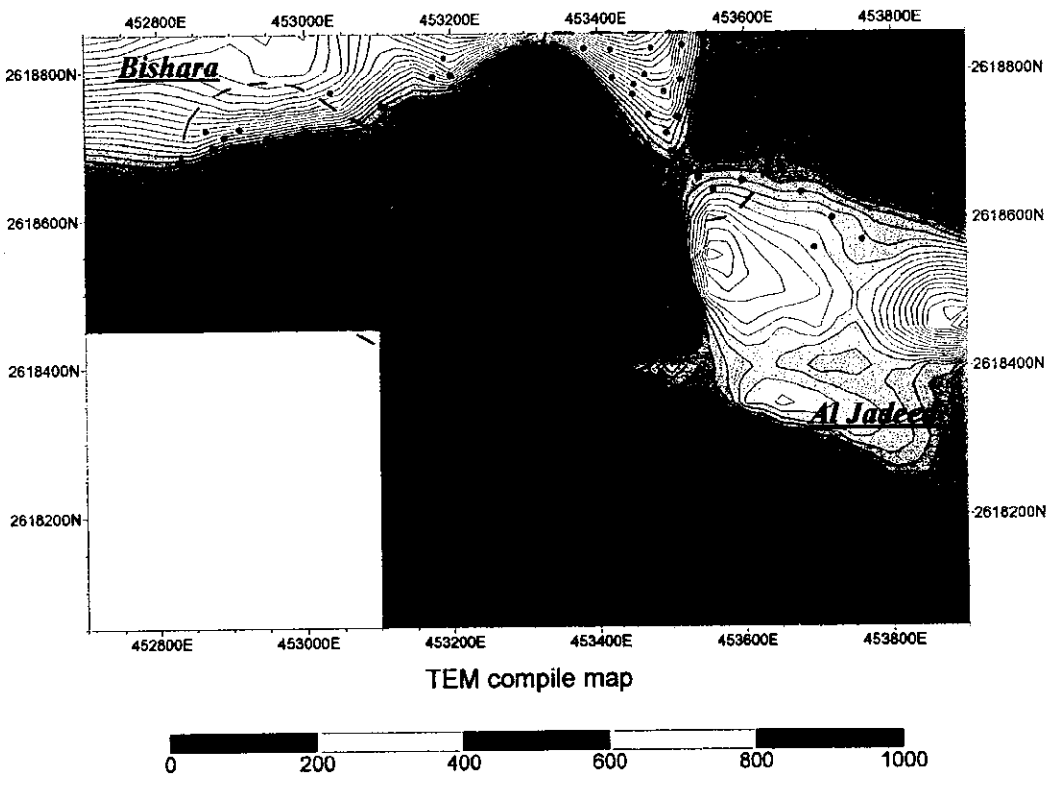


Fig. 3.6.11 Results of IDDIP & EM survey in Qaroun Al-Akhdar area

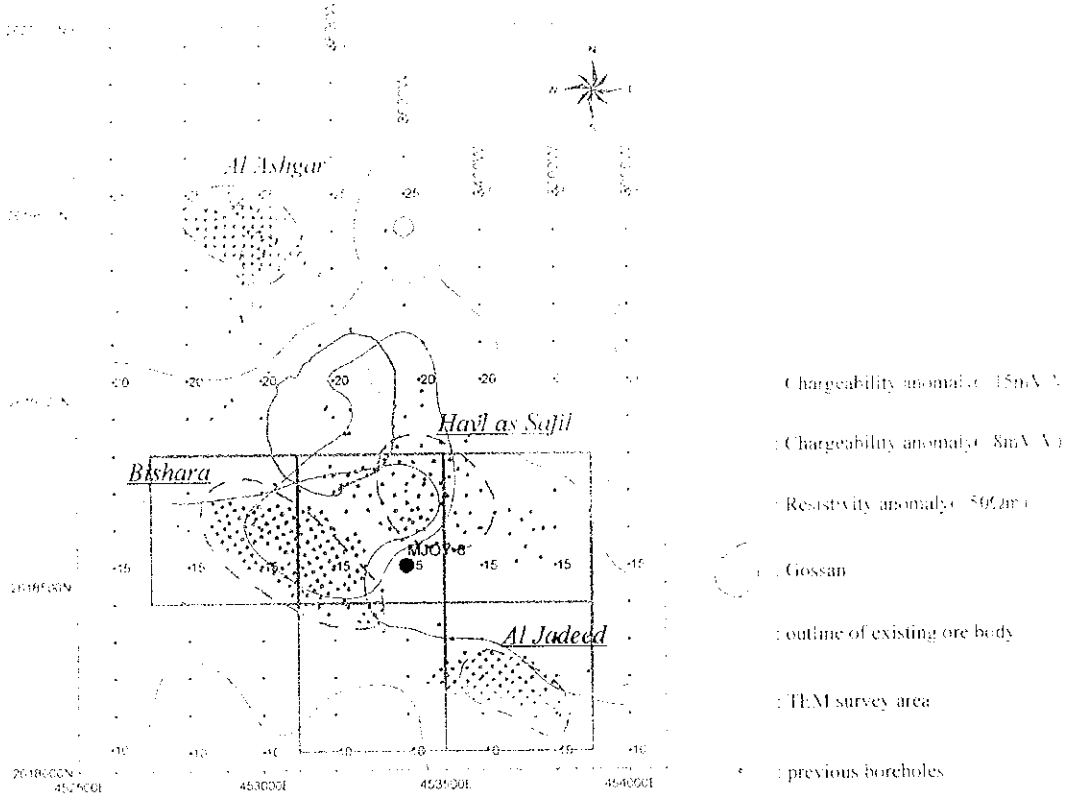


Result of TDIP 2D analysis at 100m depth



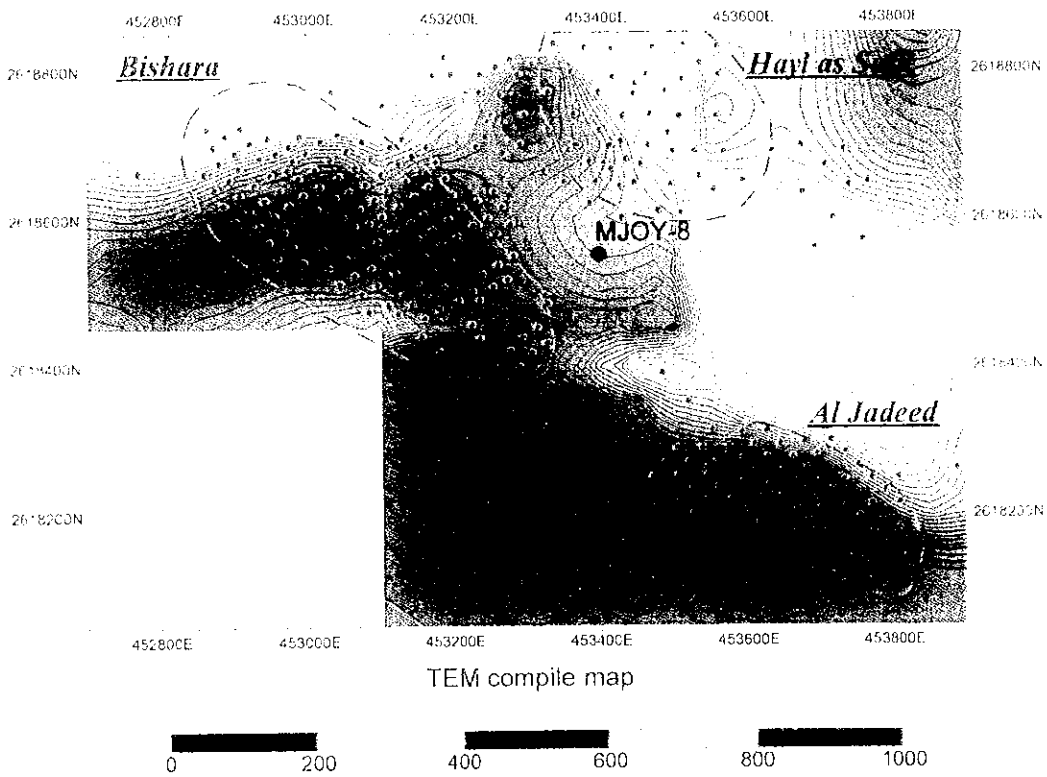
TEM compile map

Fig. II -6-12 Results of TDIP & TEM survey in Hayl as Safil area



Result of TDIP 2D analysis at 100m depth

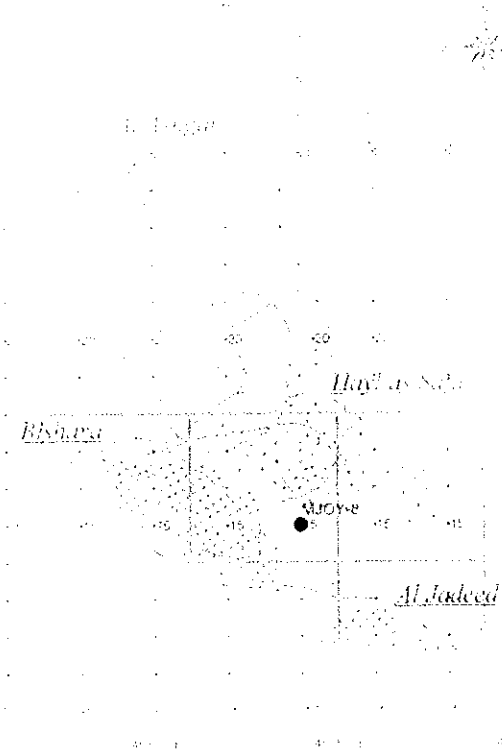
0 200 400 600 800 1000



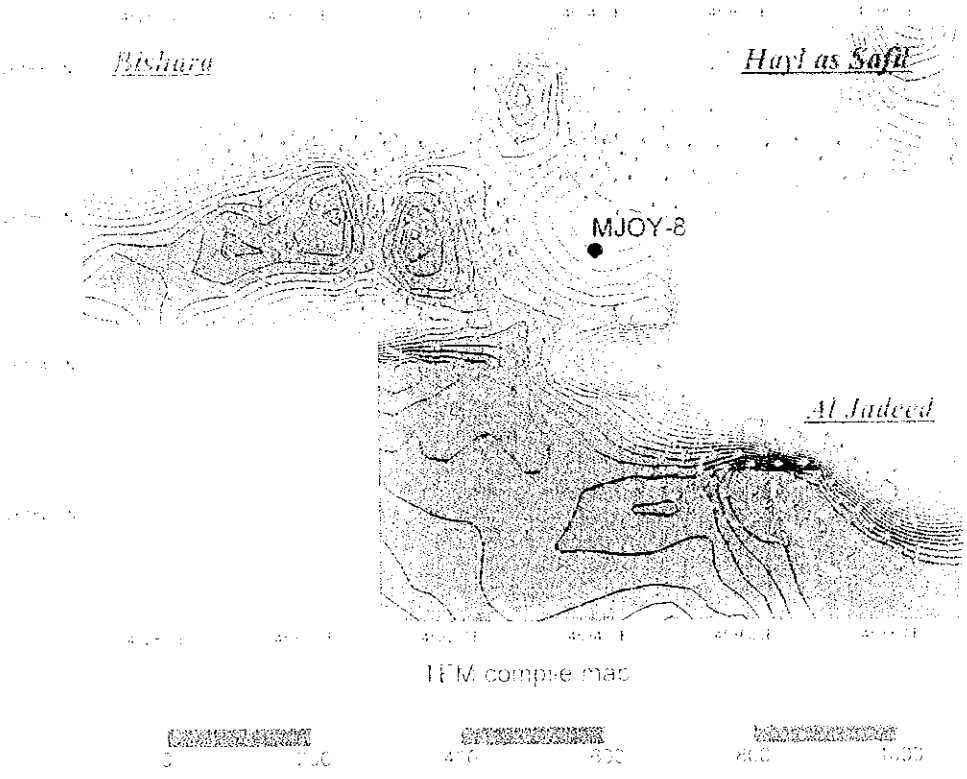
TEM compile map

0 200 400 600 800 1000

Fig. II -6-12 Results of TDIP & TEM survey in Hayl as Safil area



Results of TDIP-IP analysis at 70m depth



TEM complex map

Fig. II-6-12 Results of TDIP & TEM survey in Hayl as Safil area

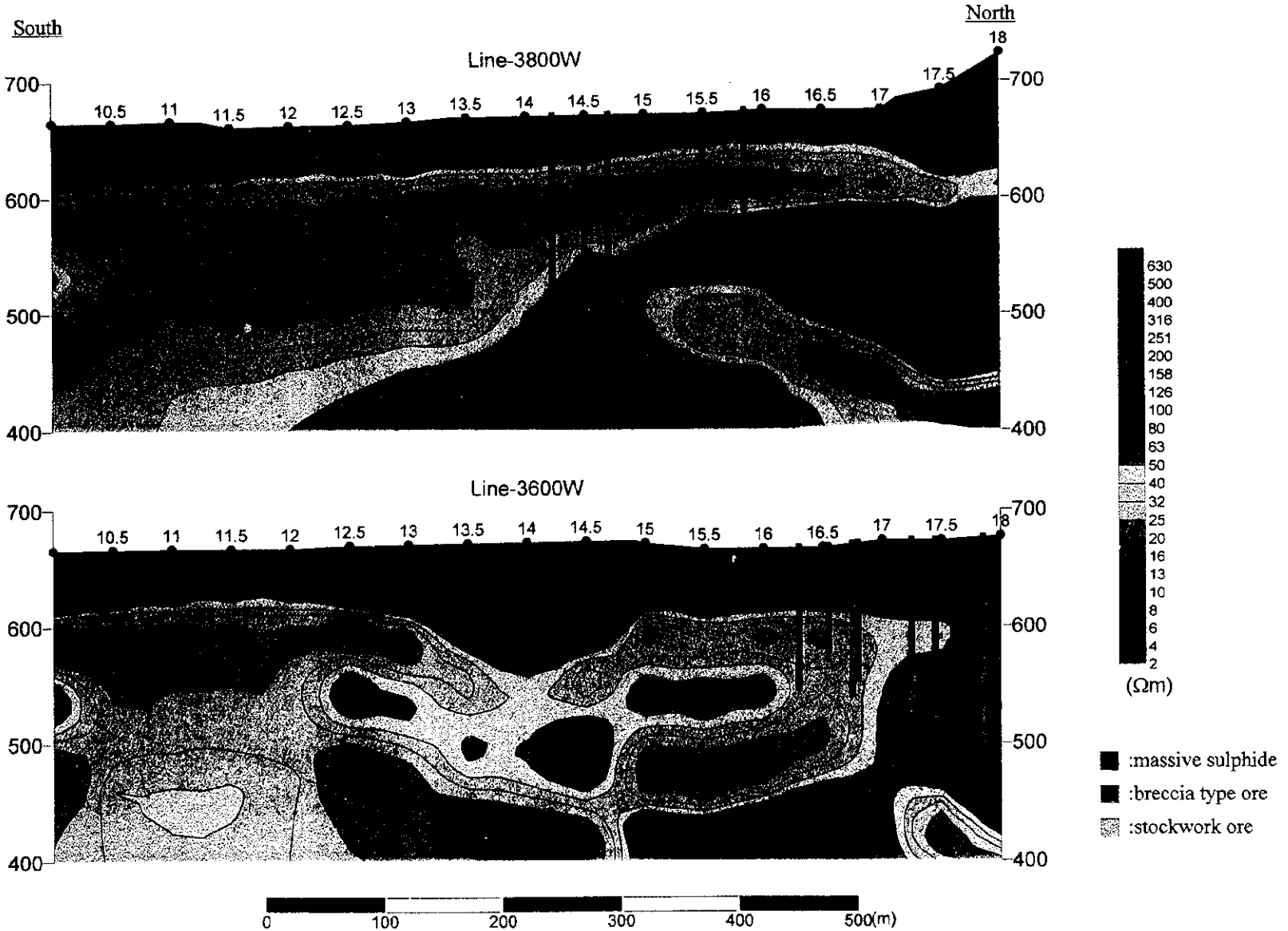


Fig. II -6-13 Resistivity sections by TEM 1D analysis in Hayl as Safil area

CHAPTER 7 DRILLING SURVEY

7-1 Background and Objectives

Drilling survey was carried out in order to clarify the mineralization on geophysical anomaly zones detected by the TDIP and TEM surveys conducted during the Phase I of this project.

7-2 Survey Areas and Amounts

Drilling survey was conducted at Rakah, Quron Al-Akhbab, Tawi Rakah and Hayl as Safil areas. Figs. II-7-1 shows the location of the boreholes. The total amount of survey consists of 8 boreholes with a drilling length of 1,904.25m.

7-3 Survey Method

7-3-1 Drilling operation

The drilling operations were done by using two types of rigs mentioned in Appendix 1. The wire line method was utilized. Table II-7-1 and Appendix 2 shows the progress records of the drillings.

7-3-2 Core logging

Description of the drill cores was conducted at the drilling site during drilling operations and compiled in a 1:200 log sheet. Core sampling was carried out concurrent to core logging activities. Amount of laboratory works are indicated in Table I -1-3.

7-4 Survey Results

Drilling logs are shown in Appendix 3A. The results of chemical analysis are shown in Appendix 4A. The results of drilling survey are described for each area as follows:

7-4-1 Rakah area

In this area, high chargeability and low resistivity anomaly zone was detected to the southeast of Rakah open pit by TDIP survey. TEM survey was also conducted on this anomaly zone. Drilling survey was carried out by drilling one borehole in high TEM response anomaly at the middle to deep part.

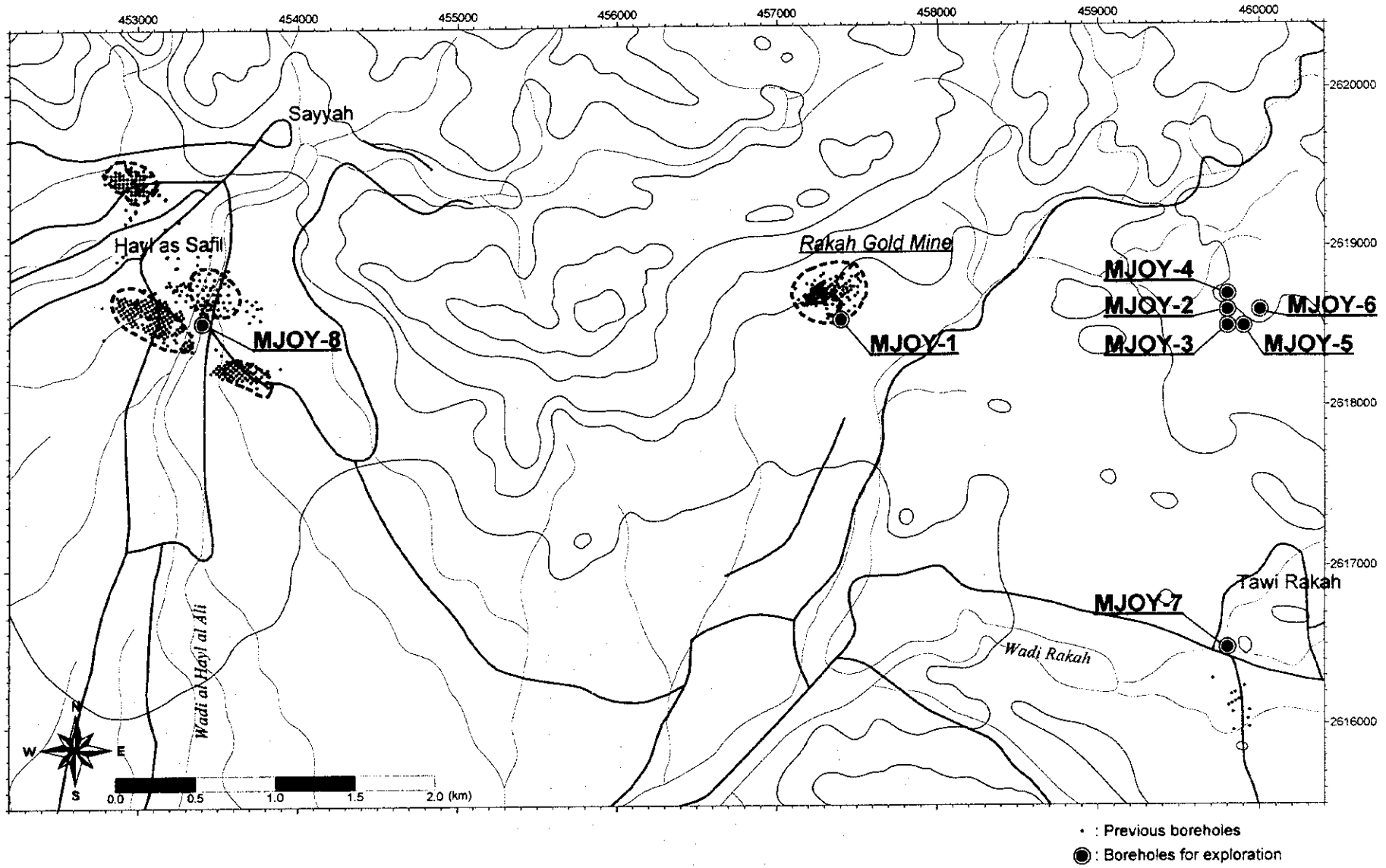


Fig. II-7-1 Location map of boreholes for exploration

Table II-7-1 Drilling survey conducted in Phase I

Area Name	Holes	Coordinate		Length	Length	Inclination	Direction
		N (km)	E (km)	planned (m)	excuted (m)	(deg.)	
(1) Rakah area	MJOY-1	2,618.587	457.422	250	251.10	-90	-
	Total length			250	251.10		
(2) Quron Al-Akhbab area	MJOY-2	2,618.681	459.832	200	200.35	-90	-
	MJOY-3	2,618.580	459.836	250	251.10	-90	-
	MJOY-4	2,618.797	459.836	200	200.10	-90	-
	MJOY-5	2,618.576	459.939	250	250.10	-90	-
	MJOY-6	2,618.693	460.041	250	250.65	-90	-
	Total length			1,150	1,152.30		
(3) Tawi Rakah area	MJOY-7	2,616.471	459.882	250	250.60	-90	-
	Total length			250	250.60		
(4) Hayl as Safil area	MJOY-8	2,618.558	453.449	250	250.25	-90	-
	Total length			250	250.25		
Grand total length				1,900	1,904.25		

(1) MJOY-1 borehole

Geology: Consisting of Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -7.15m Lasail Unit. Slightly gossanized and weathered part.

-7.15m ~ -171.35m Lasail Unit. Consisting mainly of basaltic massive lava accompanied by basaltic pillow lava and hyaloclastite. Intercalating two sheets of metalliferous sediments of 15-20cm thick between -77.80m and -78.35m.

-171.35m Fault.

-171.35m ~ -251.10m(end of hole) Lasail Unit. Consisting of basaltic pillow lava and massive lava. Many basaltic dikes are intruded.

Mineralization: Only pyrite dissemination and veinlets are recognized at the part above -171.35m. Below -171.35m, pyrite dissemination are well developed at the whole part and quartz veinlets with pyrite are also recognized. Pyrite-quartz veins with chalcopyrite are recognized partly below -191.10m.

Alteration: Silicification is recognized at the whole part. The strength of silicification is relatively weak above -171.35m and intense below -171.35m.

7-4-2 Quron Al-Akhbab area

In this area, TEM survey was also conducted within a remarkable high chargeability and low resistivity anomaly zone detected by TDIP survey. Drilling of the borehole MJOY-3 was carried out in the high TEM response zone, becoming clear that the mineralization zone presents a good correlation with the high chargeability zone. To further confirm these results, 4 more boreholes were carried out in the high chargeability zone.

(1) MJOY-2 borehole

Geology: Consisting of Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -200.35m (end of hole) Lasail Unit. Consisting mainly of basaltic pillow lava. Accompanied by a few massive lava at the lowest part. Variole texture is recognized partly in pillow lava.

Mineralization: The part between 0.00m and -160.75m forms stockwork ore in which pyrite-quartz veins accompanied by chalcopyrite are well developed. Almost all sulphide is oxidized between 0.00m and -17.70m. Weak pyrite dissemination is recognized at the whole part. Very weak chalcopyrite dissemination is recognized from -17.70m to -130.50m. Below -160.75m, copper mineralization is not recognized. Average grade of copper is 0.83% between -17.70m and -89.70m, indicating a relatively high grade.

Alteration: Silicification is recognized at the whole part. Epidote dissemination is partly recognized below -104.00m.

(2) MJOY-3 borehole

Geology: Consisting of Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -159.40m Lasail Unit. Consisting mainly of basaltic pillow lava accompanied by basaltic massive lava. Variole texture is partly recognized in pillow lava below -87.15m.

-159.40m Fault.

-159.40m ~ -251.10m(end of hole) Lasail Unit. Consisting of basaltic pillow lava, and partially accompanied by hyaloclastite. Variole texture is partly recognized in pillow lava.

Mineralization: Above -106.70m, weak pyrite dissemination is recognized partly. Between -106.70m and -159.40m, middle to strong pyrite dissemination accompanied by many pyrite veinlets are recognized all over. Copper mineralization is recognized below -166.00m. Below -170.10m, the formed stockwork ore consists mainly of chalcopyrite and quartz vein with pyrite. Pyrite dissemination and veinlets are also recognized in this part. Chalcopyrite dissemination is recognized partly.

Alteration: Silicification is recognized at the whole part. The strength of silicification is relatively weak above -103.20m but intense below -103.20m

(3) MJOY-4 borehole

Geology: Consisting of Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -200.10m(end of hole) Lasail Unit. Consisting mainly of basaltic pillow lava, accompanied by basaltic massive lava at the middle to deep part. Basaltic dikes intrude partly.

Mineralization: Weak pyrite dissemination and pyrite-quartz veinlets are recognized at the whole part. Chalcopyrite veinlets with quartz and pyrite are sparsely recognized in the whole part.

Alteration: Silicification is recognized at the whole part. Especially, the interval between -171.00m and -191.75m shows intense silicification.

(4) MJOY-5 borehole

Geology: Consisting of Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -119.40m Lasail Unit. Consisting mainly of basaltic pillow lava accompanied by basaltic massive lava.

-119.40m ~ -119.80m Fault accompanied by intensely silicificated fracture zone.

-119.80m ~ -250.10m(end of hole) Consisting of basaltic pillow lava. Intercalating doleritic sheetflow accompanied by basaltic dikes between -150.10m and -167.20m.

Mineralization: Mineralization is not recognized above the fault of -119.40m. Below the fault, weak pyrite dissemination with pyrite-quartz veinlets is recognized at the whole part. Chalcopyrite veinlets with a little quartz and pyrite are also observed sparsely in the whole inteval.

Alteration: Alteration is not recognized above the fault. Below the fault, silicification is recognized at the whole part. Epidote veinlets are observed between -122.15m and -142.90m.

(5) MJOY-6 borehole

Geology: Consisting of Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -250.65m(end of hole) Lasail Unit. Consisting mainly of basaltic pillow lava accompanied by basaltic massive lava. Basaltic dikes intrude below -195.95m.

Mineralization: Chalcopyrite-quartz vein with a little pyrite are recognized continuously between -23.35m and -165.05m. Average grade of copper is 0.75% at the part between -114.15m and -165.05m. Below -165.05m, copper mineralization is also recognized, but chalcopyrite-quartz vein are sparsely recognized. Pyrite dissemination and veinlets are observed in the whole interval, but with a very weak intensity.

Alteration: Silicification is recognized at the whole part.

7-4-3 Tawi Rakah area

In this area, remarkable chargeability anomaly is detected around and to the north of the existing mineral showing. Drilling survey was carried out at one borehole in high chargeability zone to the north of the mineral showing.

(1) MJOY-7 borehole

Geology: Consisting of Quaternary sediments and Lasail Unit of the Samail Volcanic Rocks.

0.00m ~ -3.50m Unconsolidated Quaternary sediments.

-3.50m ~ -250.60m(end of hole) Lasail Unit. Consisting of basaltic pillow lava and massive lava. Pillow lava is dominant at the part above -139.20m. Basaltic dikes are intruded sparsely.

Mineralization: Mineralization is observed above -135.85m. Pyrite dissemination and veinlets are continuously recognized between -14.90m and -135.85m. Chalcopyrite-quartz veinlets with epidote and pyrite are partly recognized between -16.35m and -135.85m. Chalcopyrite dissemination is also partly found.

Alteration: Weak silicification is observed at the whole part. Epidote-quartz veins are recognized below -113.95m.

7-4-4 Hayl as Safil area

Drilling survey was carried out at one borehole in high metal factor amonaly zone to the south of gossan.

(1) MJOY-8

Geology: Consisting of Quaternary sediments and Lasail Unit and Geotimes Unit of the Samail Volcanic Rocks.

0.00m ~ -17.40m Unconsolidated Quaternary sediments.

-17.40m ~ -146.30m Lasail Unit. Consisting of basaltic pillow lava and massive lava. Variole texture is partly recognized in pillow lava. Many small cracks and hematite

filling up interpillow are also observed.

-146.30m ~ -183.60m Lasail Unit. Consisting of reddish brown metalliferous sediments and peperite(consisting of breccia of basaltic lava and metalliferous sediments, and formed by intruding lava into unconsolidated metalliferous sediments)

-183.60m ~ -225.60m Geotimes Unit. Consisting of basaltic pillow lava accompanied by thick interpillow with hematite.

-225.60m ~ -250.25m(end of hole) Geotimes Unit. Consisting of slumped sediments in which gray - dark gray pyroclastic rocks and reddish brown metalliferous sediments show schistose-like banded structure.

Mineralization: Mineralization is not recognized. Chalcopyrite is recognized in silicificated breccia within slumped sediments.

Alteration: Silicification is thoroughly observed. Quarts veinlets are recognized in many parts.

7-5 Further Considerations

7-5-1 Rakah area

High chargeability zone was detected to the southeast of Rakah open pit by TDIP survey. Drilling survey was carried out on the high TEM response zone detected by the TEM survey conducted on the above mentioned high chargeability zone. As the result of drilling survey, low grade stockwork accompanied partly by chalcopyrite veinlets was intersected below -171.35m. Fig. II -7-2 shows cross section. Though stockwork ore were detected to the northeast of open pit by previous drilling survey, TDIP survey in this phase detected remarkable anomaly to the southeast of open pit. Due to the potential seen for new deposits to the south of the existing ore body, further survey is required to investigate on the possibility of increasing ore reserves.

7-5-2 Quron Al-Akhbab area

Drilling survey was carried out at five boreholes on the remarkable chargeability anomaly zone detected by TDIP survey. Stockwork ore were intersected in all boreholes. At MJOY-2 borehole, stockwork ore is intersected at -17.70m with an average grade of 0.83%Cu between -17.70 and -89.70m (See Table II -7-2). Fig. II -7-3 shows cross sections across the borehole. As the result of drilling and geophysical survey, this mineralized zone extends about 250m in E-W direction and about 150m in N-S direction (See Fig. I -4-2). Further investigation will be required in the next phase to clarify the nature of this mineralized zone.

7-5-3 Tawi Rakah area

Remarkable chargeability anomaly similar to that in Quron Al-Akhbab area was detected around and to the north of existing mineral showing. Drilling survey carried out one borehole in the northern anomaly, and low grade stockwork consisting of chalcopyrite accompanied by intense pyrite dissemination was intersected between -14.90m and -107.00m. Weak copper mineralization is

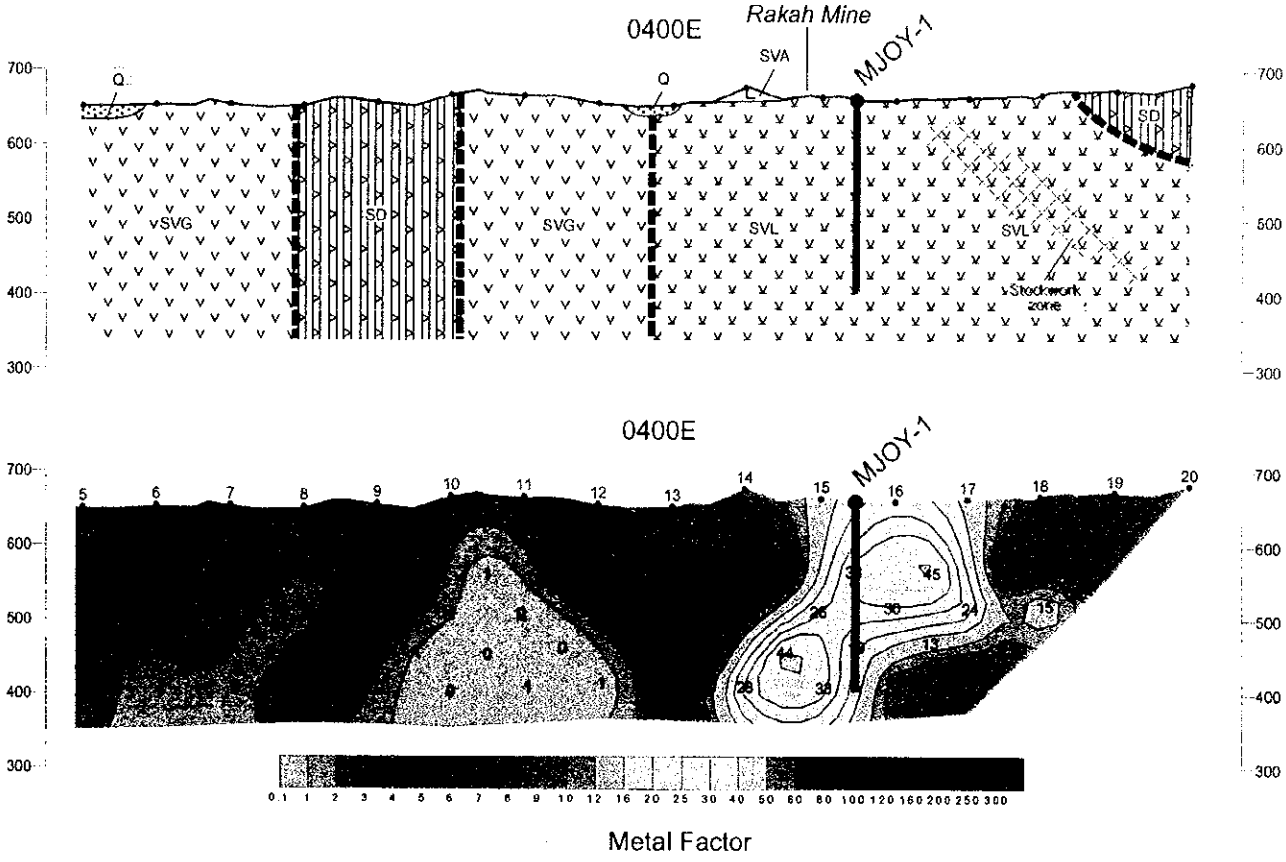


Fig. II-7-2 Cross section of borehole site in Rakah area; comparison with IP pseudo-section.

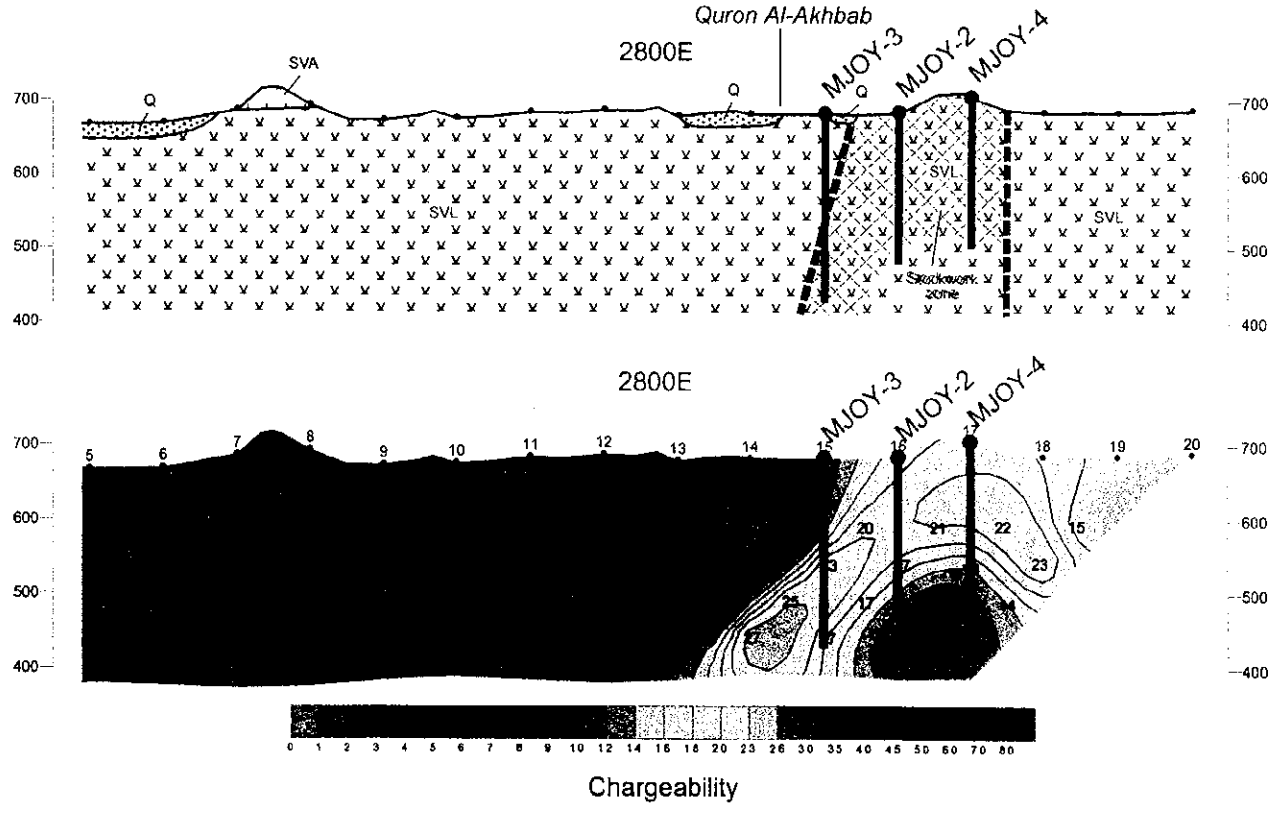


Fig. II-7-3 Cross section of borehole site in Quron Al-Akhbab area; comparison with IP pseudo-section.

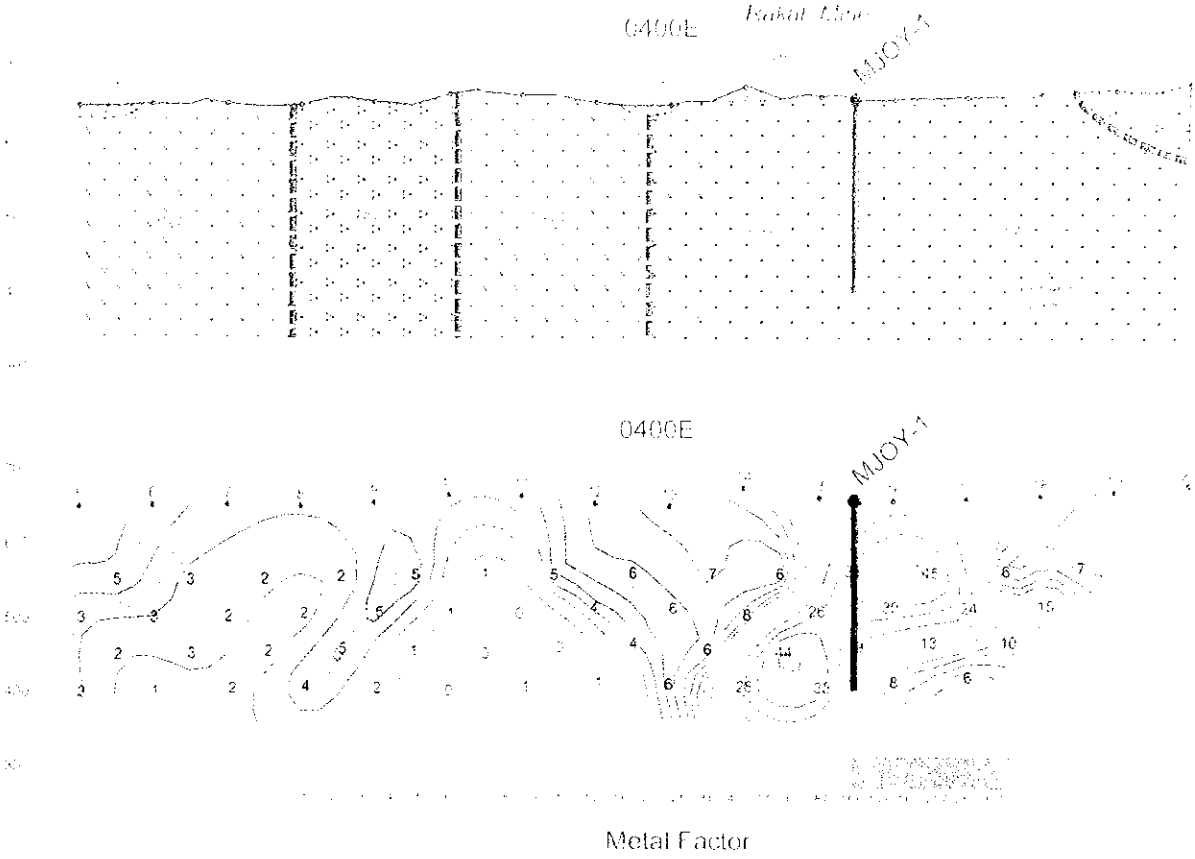


Fig. II-7-2 Cross section of borehole site in Rakah area: comparison with IP pseudo-section

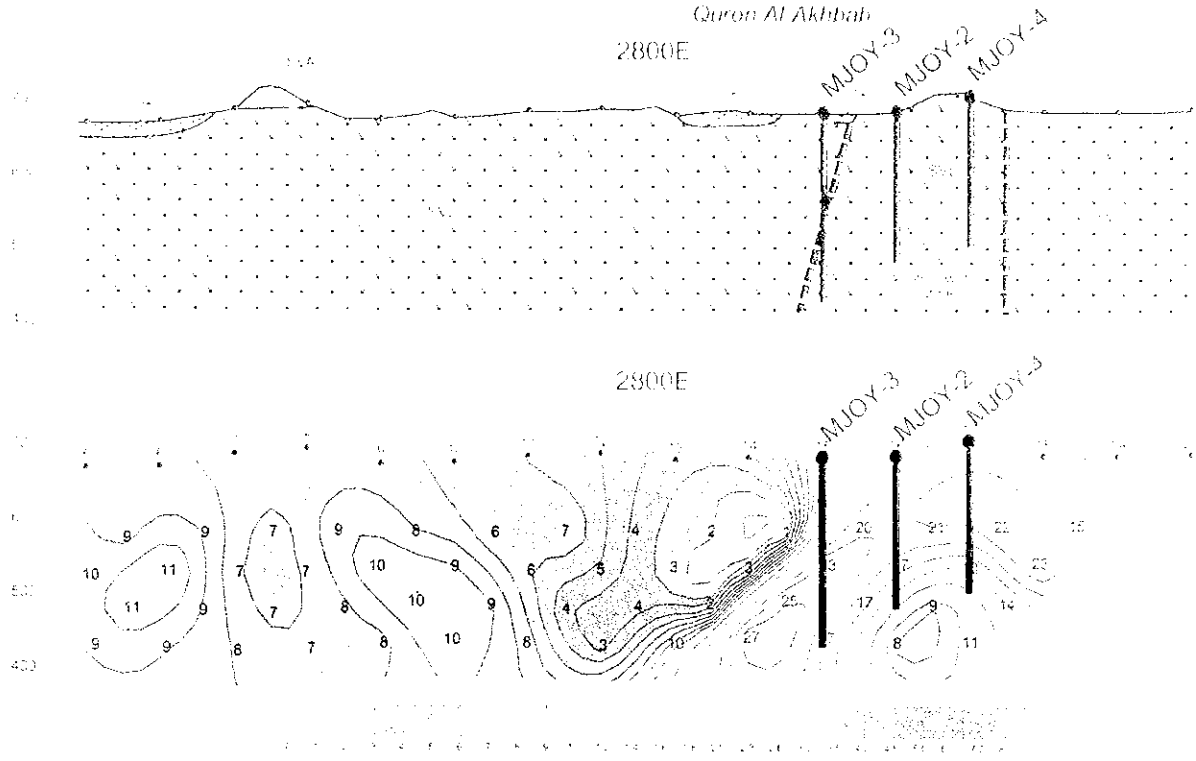


Fig. II-7-3 Cross section of borehole site in Quron Al-Akhbab area: comparison with IP pseudo-section.

Table Ⅱ-7-2 Summary of results on drilling survey in Phase I

Area Name	Bore Hole NO.	Type of Ore	Depth (m)		Thickness (m)	Average Grade	
			from	to		Cu(%)	Au(g/t)
Quron Al-Akhbab	MJOY-2	stockwork	17.70	89.70	72.00	0.83	0.35
		stockwork	89.70	127.70	38.00	0.37	0.34
		stockwork	127.70	160.75	33.05	0.29	0.36
	MJOY-3	stockwork	170.10	216.20	46.10	0.50	0.29
		stockwork	221.90	225.90	4.00	0.16	0.11
		stockwork	240.50	245.45	4.95	0.34	0.26
	MJOY-4	stockwork	15.60	41.30	25.70	0.07	0.03
		stockwork	61.00	92.45	31.45	0.11	0.06
		stockwork	131.15	139.50	8.35	0.15	0.07
	MJOY-5	stockwork	120.25	149.05	28.80	0.23	0.06
	MJOY-6	stockwork	23.35	71.35	48.00	0.29	0.08
		stockwork	71.35	98.15	26.80	0.32	0.05
		stockwork	98.15	114.15	16.00	0.46	0.07
		stockwork	114.15	165.05	50.90	0.76	0.04
Tawi Rakah	MJOY-7	stockwork	14.90	40.50	25.60	0.16	0.05
		stockwork	48.80	54.80	6.00	0.10	0.09
		stockwork	71.00	83.35	12.35	0.16	0.03
		stockwork	90.95	101.00	10.05	0.22	0.03

recognized continuously to -140m. Fig. II-7-4 shows cross sections across the borehole. As the result of previous drilling survey and TDIP survey in this Phase, there is a promising place for copper mineralization are seen to the west and south of the existing mineral showing.

7-5-4 Hayl as Safil area

In this area, remarkable chargeability anomaly was detected around the gossan. At the south part of this anomaly zone, the detected low resistivity zone showed also high metal factors. Drilling survey was carried out at one borehole in this high metal factor zone. As a result, intense silicification was recognized but no mineralization was observed. Fig. II-7-5 shows cross sections across the borehole. According to the geophysical survey, high metal factor zone of N=1 seems to correspond to the location of existing ore and high TEM response zone has a good correlation with the location of massive sulphide ore. Interesting place for exploration is seen to the north and surroundings of Hayl as Safil ore body in a part where drilling survey have not been yet carried out.

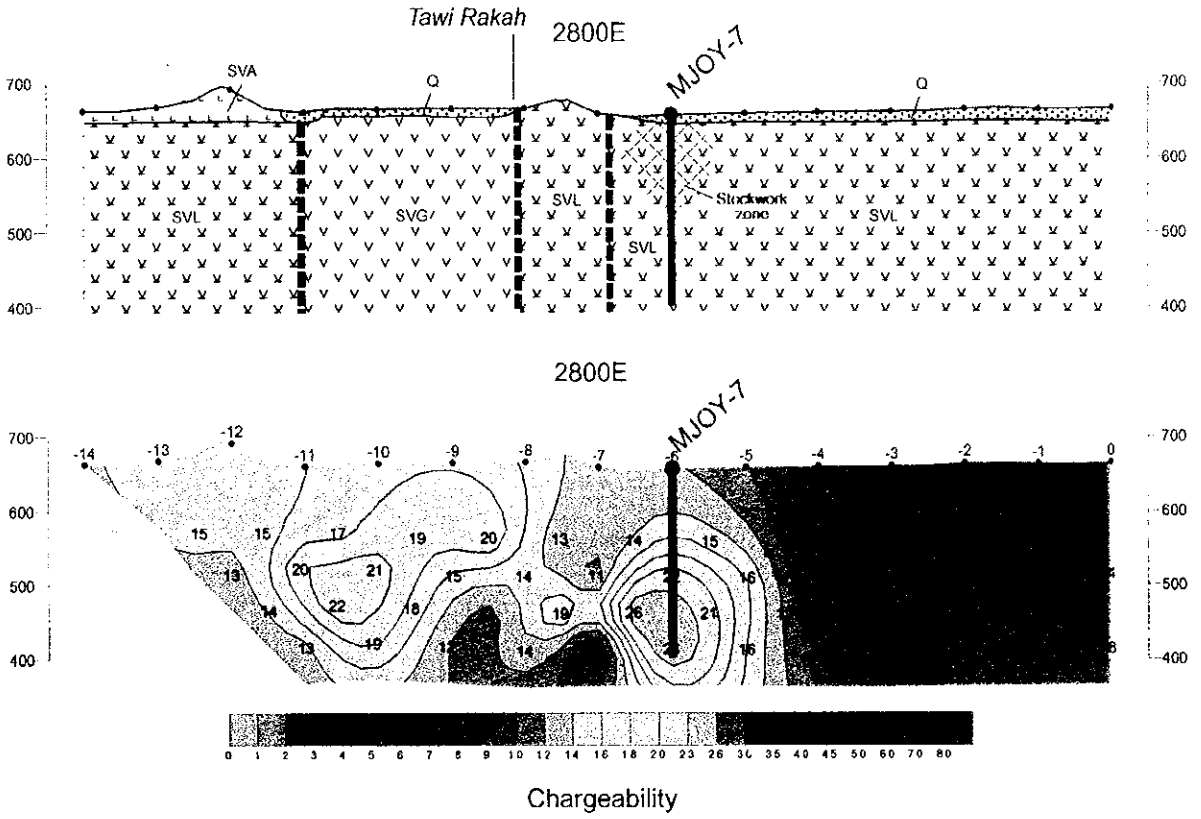


Fig. II-7-4 Cross section of borehole site in Tawi Rakah area; comparison with IP pseudo-section.

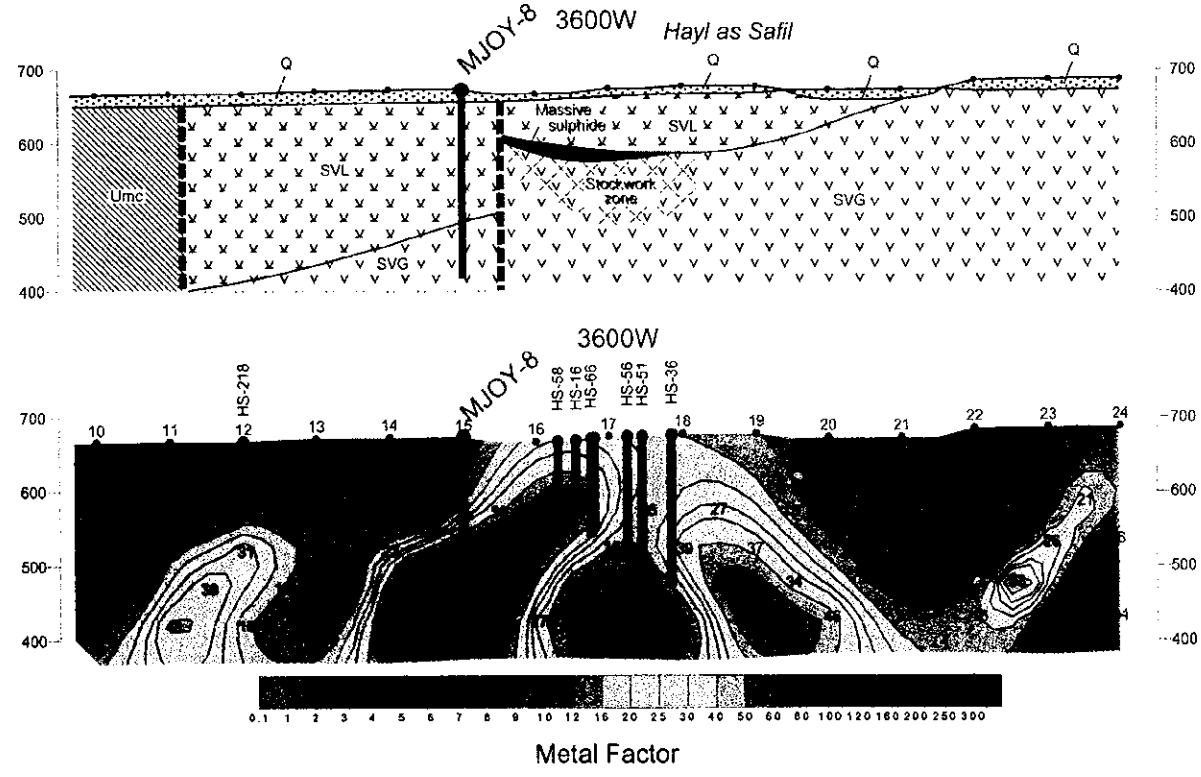


Fig. II-7-5 Cross section of borehole site in Hayl as Safil area; comparison with IP pseudo-section.

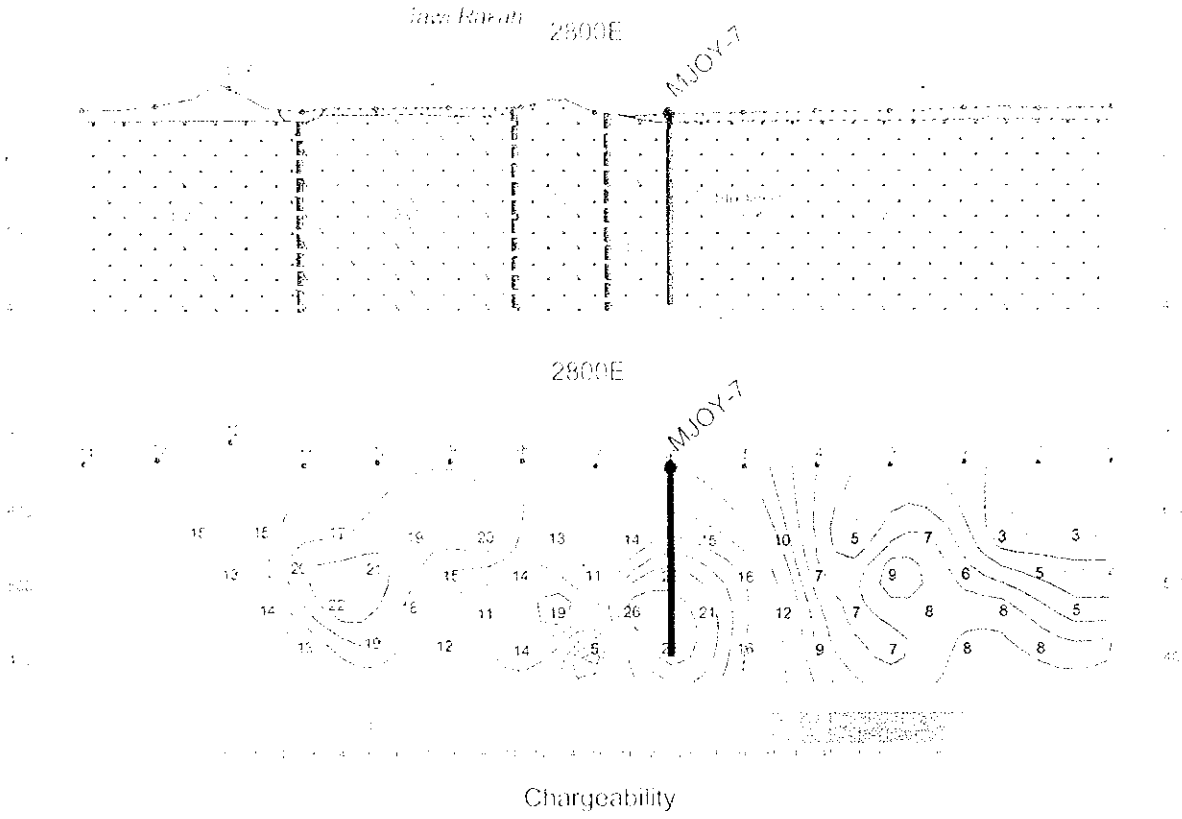


Fig. II-7-4 Cross section of borehole site in Jawa Rakah area: comparison with IP pseudo-section

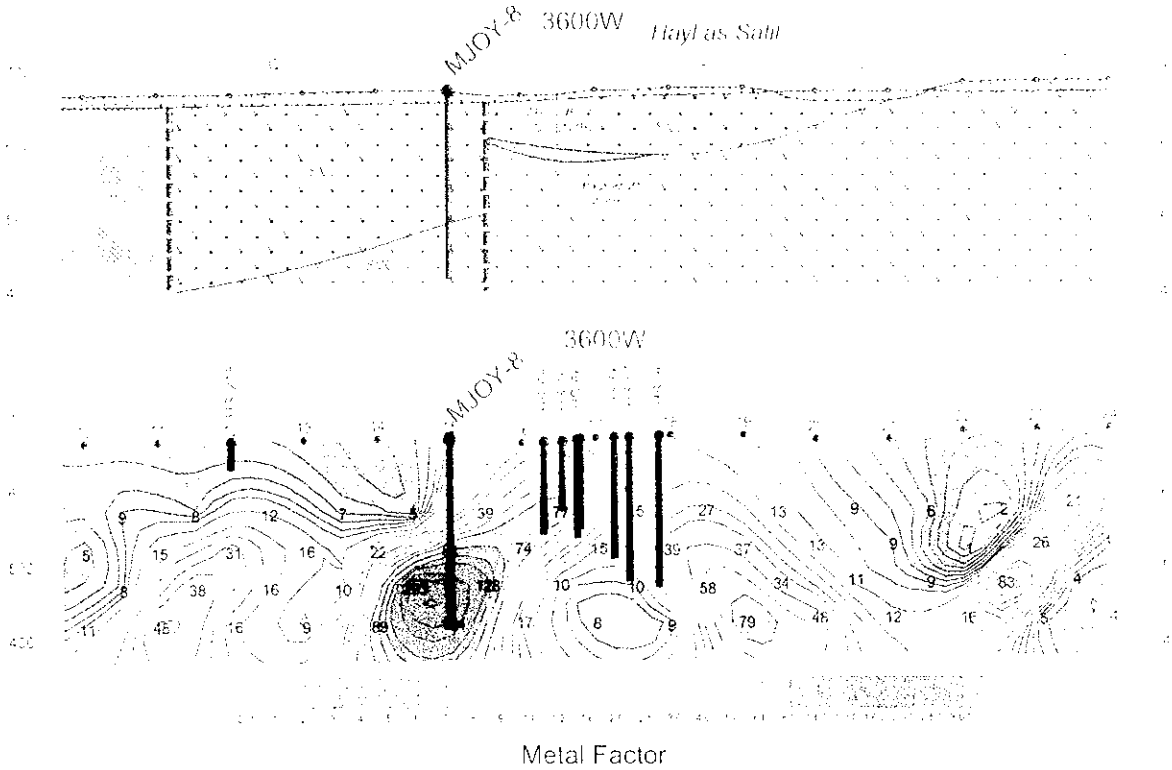


Fig. II-7-5 Cross section of borehole site in Hayl as Safil area: comparison with IP pseudo-section

PART III CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 1 CONCLUSIONS

The main objectives of this project during this fiscal year in Yanqul areas are:

1. Examination of various processing methods to increase the recover of copper and gold together with planning the processing flow.
2. Confirmation of minable ore by re-interpretaion of existing data.
3. Increase the amount of minable ore by finding new ore bodies.
4. Collection of basic environmental data.

The survey results can be summarized as conclusions as follows:

(1) Metallurgical tests

i) Copper recoveries form rougher/scavenger flotation varied from 94% to 96% for the stockwork samples and from 80% to 90% for the breccia and massive sulphide samples. Concentrate grades also varied, ranging from 42% in the rougher 1 concentrate for Rakah massive sulphide to 22% to 25% for the remaining samples.

ii) A significant result of the test program is that all samples responded well to the same collectors, with pH being the only main variable between the conditions suitable for the respective ore types.

iii) As a results of the mineralogical tests, it is found that reground level can be achieved without using ultra fine grinding technology. Therefore, normal tower mill or ball mill are considered to be good enough. Decision for re-grounding level is one of the activities scheduled for the next year's metallurgical tests.

iv) Cyanid leaching of pyrite concentrates were low at approximately 30%. Re-grinding increased the extraction.

(2) Environmental Survey

i) In order to study ground water movement, permeability and water quality near Rakah and Hayl as Safil mining areas were studied by measuring water recovery and water quality in 5 drillings made for that purpose.

ii) All the wells, which were drilled in a wadi, showed a little amount of water due to recent dry weather conditions.

iii) Water quality results indicate a weak alkalinity with a little higher pH in comparison with the Japanese river waters. Total dissolved solids (TDS) show high values ranging from 200 to 1200 mg/l with high calcium hardness. Compared with previous data, Nitrite Nitrogen values indicate extraordinarily higher values.

(3) Existing Data Analysis

i) In order to confirm the geological and minable ore reserves, the following items are to be needed to clarify: detailed geological and ore body model, distribution of each ore type, proper method for ore reserve calculations and optimization of the ore reserve parameters.

ii) Mineralization at Yanqul region is mainly stockwork accompanied by massive and brecciated ore types.

(4) Exploration

i) Geophysical anomalies were found in five areas including known mineralized zones:: Quron Al-Akhbab, Tawi Rakah mineral showing, Rakah gold mine, Najaid area, and Hayl as Safil ore deposit.

ii) Among the above 5 areas, a promising copper mineralization (stockwork mineralization) was detected in Quron Al-Akhbab.

iii) Geophysical anomalies detected over Hayl as Safil deposit were effective to delineate the location of the deposit, indicating a good coincidence of massive sulphide distribution with high TEM responses.

CHAPTER 2 RECOMMENDATIONS

Since the Phase II will be the last year of this project, final interpretation must be conducted during the phase.

The works for following items are proposed for the next phase.

1) Metallurgical aspects
   a. Decision on the metallurgical method and design of plant
   b. Additional metallurgical tests
2) Mining aspects
   a. Minable ore reserve calculation (for each ore type)
   b. Pit design
   c. Mining schedule and production plan
3) Infrastructure
   a. Waste dam design
   b. Environmental countermeasures for the waste dam
   c. Electricity and water supply
   d. Diversion of Wadi and roads
   e. Peripheral facilities
4) Environment

   Collection of basic environmental data.
5) Financial and economic evaluation
6) Exploration
   a. To delineate ore reserve in Quron Al-Akbab a detailed survey shall be conducted.
   b. In other areas among various geophysical anomalies, detailed geophysical and drilling surveys should be carried out to evaluate the mineral potential.
7) Comprehensive evaluation.

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APPENDICES

Appendix 1

Drilling equipments and consumed materials

Drilling Equipment-(1) Exploration and metallurgical test

	Rig-1	Rig-2
Model	RAMROD-II	VOL-180
Maker	Joy Manufacturing Co. USA	Voltas Ltd. India
Mounting	Truck mounted 4WD	Truck mounted 4WD
Drilling capacity with NX size wire line coring	450 m	650 m
Angle hole drilling capacity	Upto 60 deg.	Vertical only
Circulation pump	35 GPM 800 PSI	37 GPM 1000 PSI

Drilling for metallurgical test: Rig-1

Mineral exploration drilling: Rig-1 and Rig-2

Drilling Equipment-(2) Environmental survey

No.	DESCRIPTION	SPECIFICATION
1	Model - As per manufacturer's	Ingersoll Rand , T4W HP 900
2	Mast Rating / Max.Static Hook Load	31,750 Kgs
3	Draw Weight / Pull Back	17,000 Kgs
4	Pipe Racking System/Capacity	Swing In / Out Carousel ; 76.0 Mtr
5	Power Pack Engine Type / Capacity	GM 12V 71 TA ; 530 HP
6	Foam Injection Pump Type/Capacity/Pressure	Triplex single acting ; 95.0 Ltr/Min ; 3791.7 kPa
7	Rotary table / Type	Top Head Drive ; Hydraulic
8	Max.Torque /RPM	9763 Nm / 80 RPM
9	Table Opening	20 "
10	Levelling Jack	Two at drilling end & One at front
11	Tank volumes - Fuel	600 Litres
12	Working Clearance - below crown	8.2 Metres
13	Compressor for Air/Foam drilling , Type/Output	Screw Type ; 2412.9 kPa / 425 Lps
14	Power Source	Direct drive from Diesel engine
15	Overall Weight - Tonnes	24 T
16	Overall Length - Metres	10.7 M
17	Overall Width - Metres	2.4 M
18	Overall Height When Travelling - Metres	3.9 M
19	Is Rig Carrier or Trailer or Skid Mounted	Carrier Mounted
20	Carrier Engine - Type / Capacity	Cummins L1OC ; 240 HP @2100 RPM
21	No. of Front Axles	One
22	No. of Front Driving Axles	None
23	No. of Rear Axles	Two
24	No. of Rear Driving Axles	Two
25	Transport speed on graded roads	50 Km/Hr
26	Drill pipe	4 1/2" dia Internal up set , 25' long

Consumed material-(1) Exploration

Hole No.	MJOY-1	MJOY-2	MJOY-3	MJOY-4	MJOY-5	MJOY-6
Bit: NW	1	1	1	1	1	1
Bit: NX	1	1	1	1	1	1
Bit: BX	-	-	-	-	-	-
Light Oil (l)	30	25	30	30	35	30
Mud (kg)	240	210	260	200	280	260
Cement (kg)	100	100	150	100	150	150

Hole No.	MJOY-7	MJOY-8
Bit: NW	1	1
Bit: NX	1	1
Bit: BX	-	-
Light Oil (l)	30	30
Mud (kg)	220	260
Cement (kg)	150	150

Consumed material-(2) Metallurgical test

Hole No.	MJOY-P1	MJOY-P2	MJOY-P3	MJOY-P4	MJOY-P5
Bit: NC	1	1	1	1	1
Bit: NW	1	1	1	1	1
Bit: NX	-	-	-	-	-
Light Oil (l)	20	20	20	20	20
Mud (kg)	120	100	150	150	170
Cement (kg)	150	100	160	200	150

Appendix 2

Generalized drilling results and progress record of drilling

Progress record of drilling-(1) Exploration

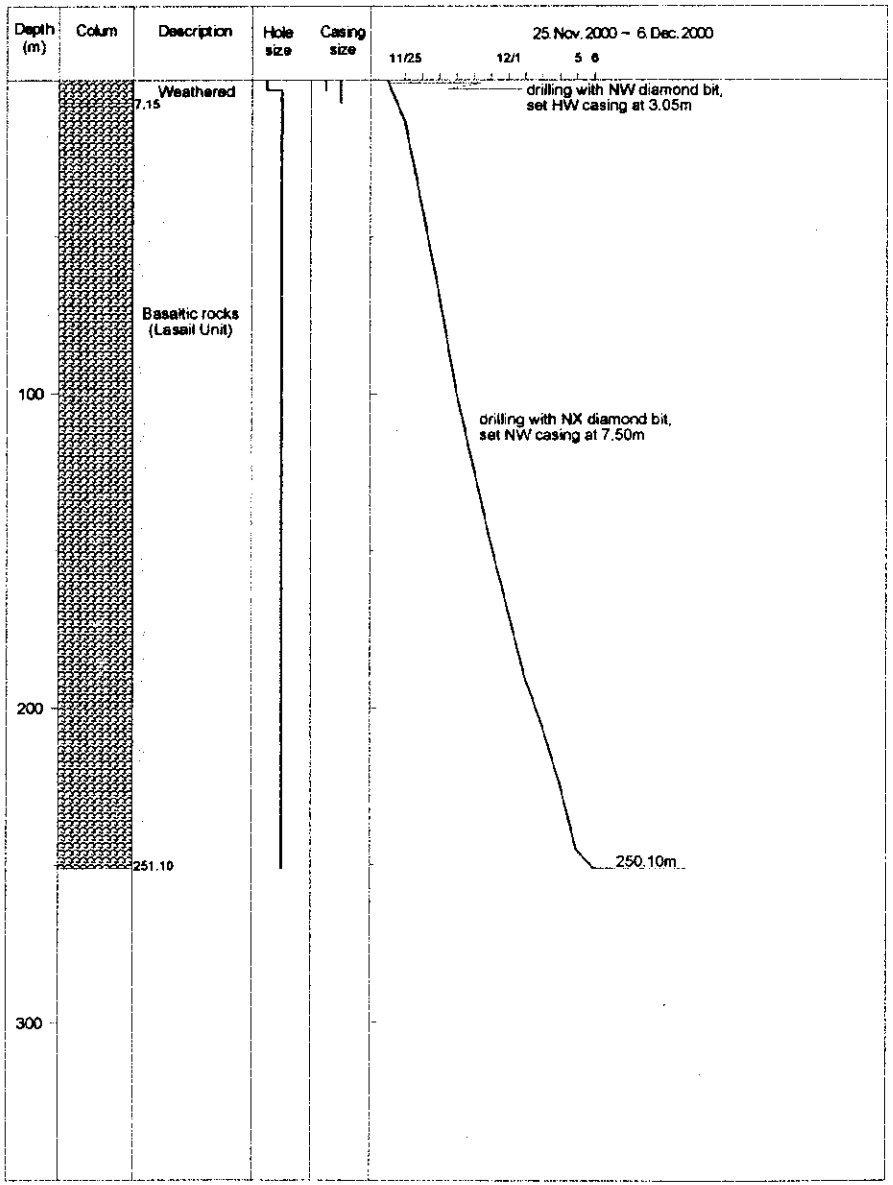
	Hole No.		MJOY-1	MJOY-2	MJOY-3	MJOY-4	MJOY-5
Drilling Priod	Preparation Days	(A)	11/24 1	12/24 0.5	12/7 0.5	1/1 0.5	12/30 0.5
	Drilling Days	(B)	11/25 to 12/6 11.5	12/24 to 12/31 7.5	12/7 to 12/19 11	1/2 to 1/10 8.5	12/30 to 1/9 10.5
	Removing Days	(C)	12/6 0.5	1/1 0.5	12/19 0.5	1/10 0.5	1/10 0.5
	Total days	(D)	13	8.5	12	9.5	11.5
Depth	Planned depth	(E)	250m	200m	250m	200m	250m
	Drilled depth	(F)	251.10m	200.35m	251.10m	200.10m	250.10m
Recovery	Overburden	(G)	0.00m	0.00m	0.00m	0.00m	2.00m
	Core length	(H)	251.10m	199.25m	251.10m	198.90m	248.10m
	Recovery	(H/F)	100%	99%	100%	99%	99%
Casing	HW casing		3.05m	-	-	-	-
	NW casing		7.50m	6.50m	3.50m	3.40m	3.40m
	NX casing		-	-	-	-	-
Rate	meter /day	(F/B)	21.83m	26.71m	22.83m	23.54m	23.82m
	meter/ total day	(F/D)	19.32m	23.57m	20.93m	21.06m	21.75m

	Hole No.		MJOY-6	MJOY-7	MJOY-8
Drilling Priod	Preparation Days	(A)	1/10 0.5	1/11 0.5	1/23 0.5
	Drilling Days	(B)	1/11 to 1/23 12.5	1/11 to 1/22 11	1/23 to 2/3 11.5
	Removing Days	(C)	1/23 0.5	1/22 0.5	2/3 0.5
	Total days	(D)	13.5	12	12.5
Depth	Planned depth	(E)	250m	250m	250m
	Drilled depth	(F)	250.65m	250.60m	250.25m
Recovery	Overburden	(G)	0.00m	2.50m	2.00m
	Core length	(H)	250.45m	247.80m	243.70m
	Recovery	(H/F)	100%	99%	97%
Casing	HW casing		-	-	-
	NW casing		11.75m	12.50m	18.50m
	NX casing		-	-	-
Rate	meter /day	(F/B)	20.05m	22.78m	21.76m
	meter/ total day	(F/D)	18.57m	20.88m	20.02m

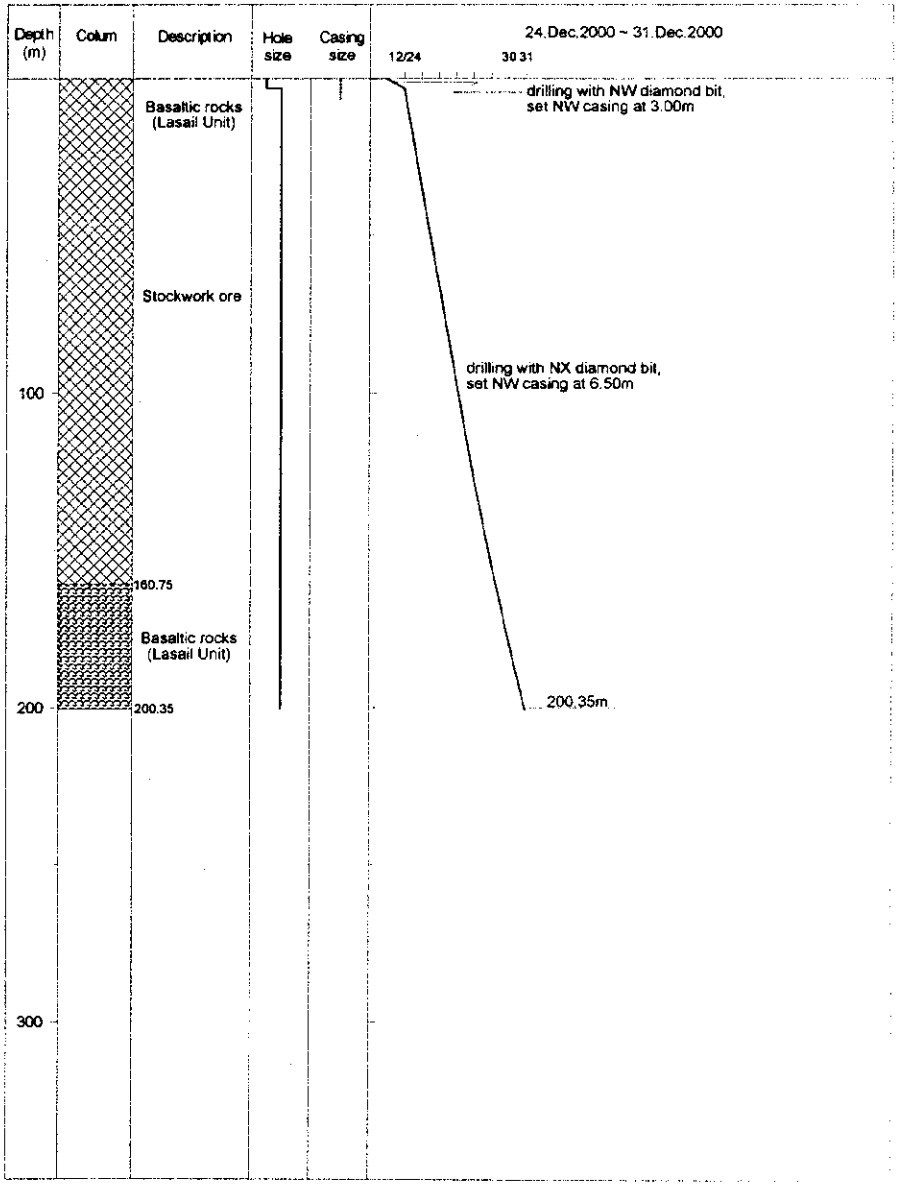
Progress record of drilling-(2) Metallurgical test

	Hole No.	MJOY-P1	MJOY-P2	MJOY-P3	MJOY-P4	MJOY-P5
Drilling Priod	Preparation	9/8	9/17	9/25	10/8	10/19
	Days (A)	1	0.5	0.5	0.5	0.5
	Drilling	9/9 to 9/16	9/18 to 9/24	9/26 to 10/7	10/8 to 10/18	10/20 to 10/29
	Days (B)	8	7	11.5	10.5	10
	Removing	9/17	9/25	10/7	10/19	10/30
	Days (C)	0.5	0.5	0.5	0.5	0.5
	Total days (D)	9.5	8	12.5	11.5	11
Depth	Planned depth (E)	125m	125m	125m	125m	125m
	Drilled depth (F)	125.65m	125.80m	125.65m	137.55m	126.00m
Recovery	Overburden (G)	0.00m	1.00m	1.00m	1.00m	0.75m
	Core length (H)	116.40m	123.95m	120.25m	125.70m	122.90m
	Recovery (H/F)	93%	99%	96%	91%	98%
Casing	HW casing	8.25m	4.00m	3.00m	14.25m	7.10m
	NW casing	-	-	-	-	-
	NX casing	-	-	-	-	-
Rate	meter /day (F/B)	15.71m	17.97m	10.93m	13.10m	12.60m
	meter/ total day (F/D)	13.23m	15.73m	10.05m	11.96m	11.45m

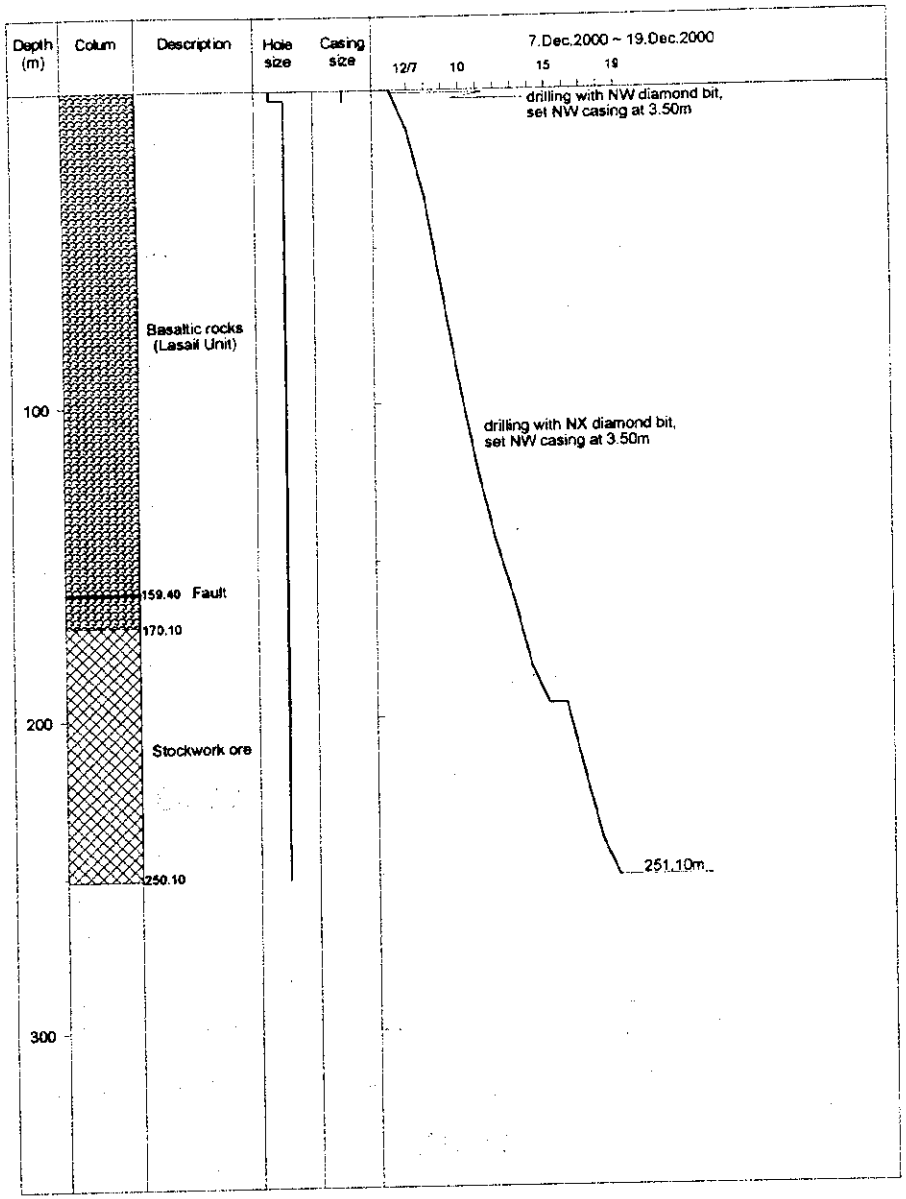
MJOY-1


Depth (m)
Colum
Description
Hole size
Casing size
25.Nov.2000 ~ 6.Dec.2000
11/25
12/1
5
6
Weathered
7.15
Basaltic rocks (Lasail Unit)
drilling with NW diamond bit, set HW casing at 3.05m
drilling with NX diamond bit, set NW casing at 7.50m
250.10m
251.10
100
200
300

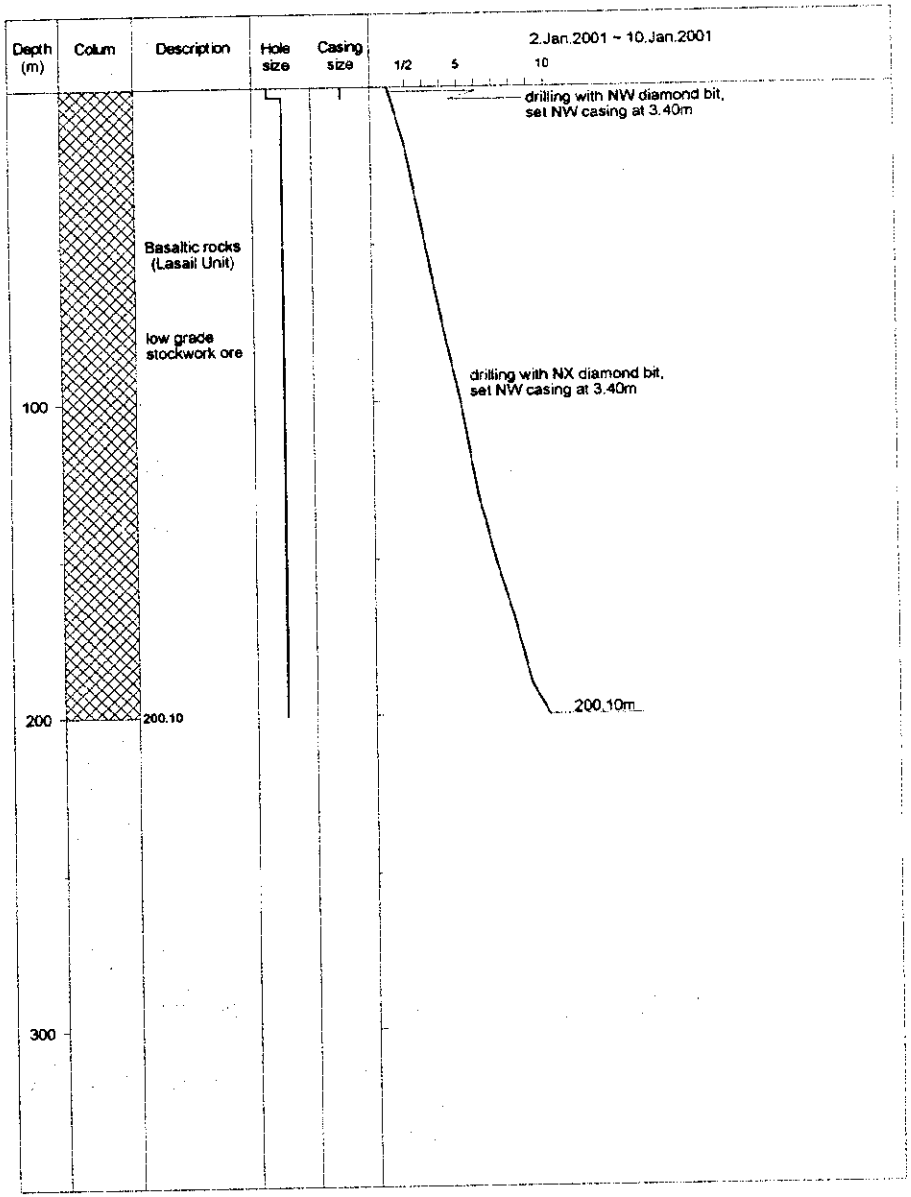
MJOY-2


Depth (m)
Colum
Description
Hole size
Casing size
24.Dec.2000 ~ 31.Dec.2000
12/24
30
31
Basaltic rocks (Lasail Unit)
Stockwork ore
160.75
Basaltic rocks (Lasail Unit)
200.35
drilling with NW diamond bit, set NW casing at 3.00m
drilling with NX diamond bit, set NW casing at 6.50m
200.35m
100
200
300

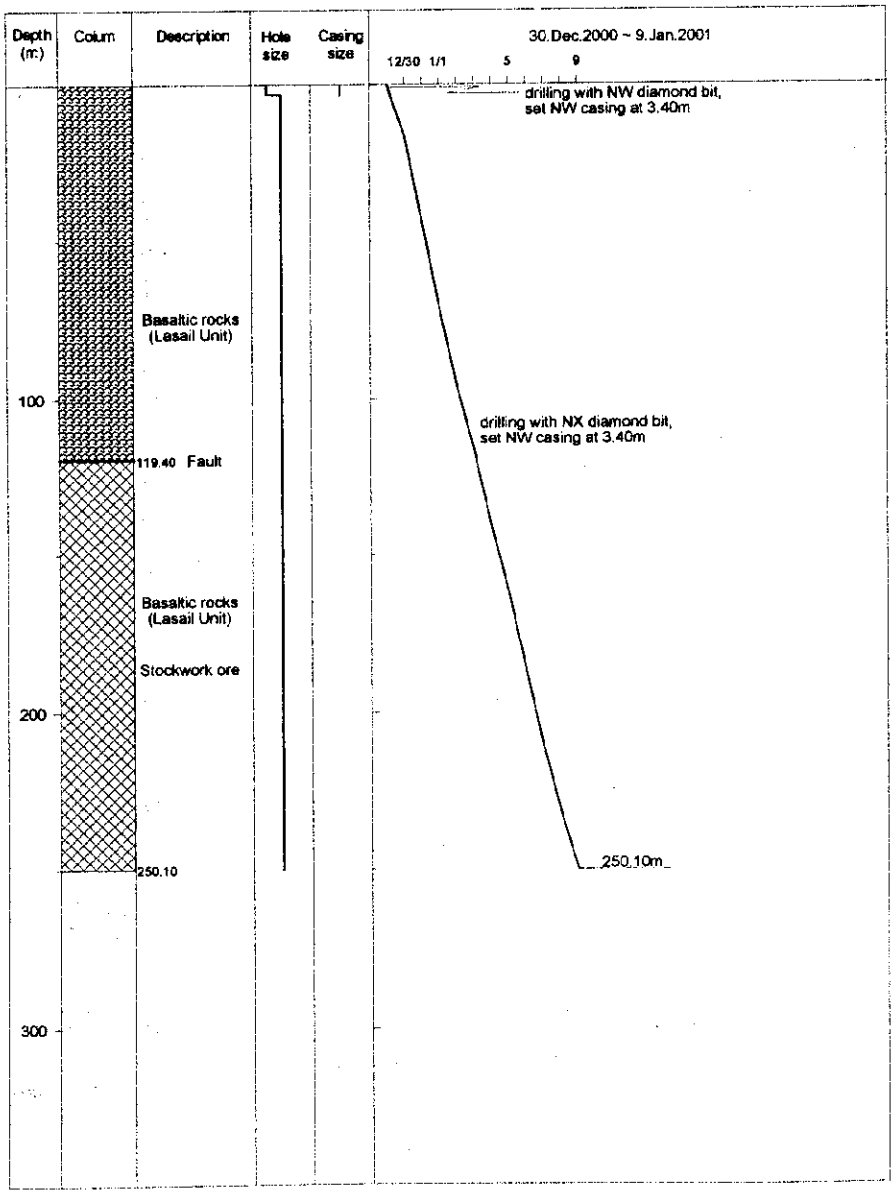
MJOY-3


Depth (m)
Colum
Description
Hole size
Casing size
7.Dec.2000 ~ 19.Dec.2000
12/7
10
15
19
drilling with NW diamond bit, set NW casing at 3.50m
Basaltic rocks (Lasail Unit)
drilling with NX diamond bit, set NW casing at 3.50m
159.40 Fault
170.10
Stockwork ore
250.10
251.10m
100
200
300

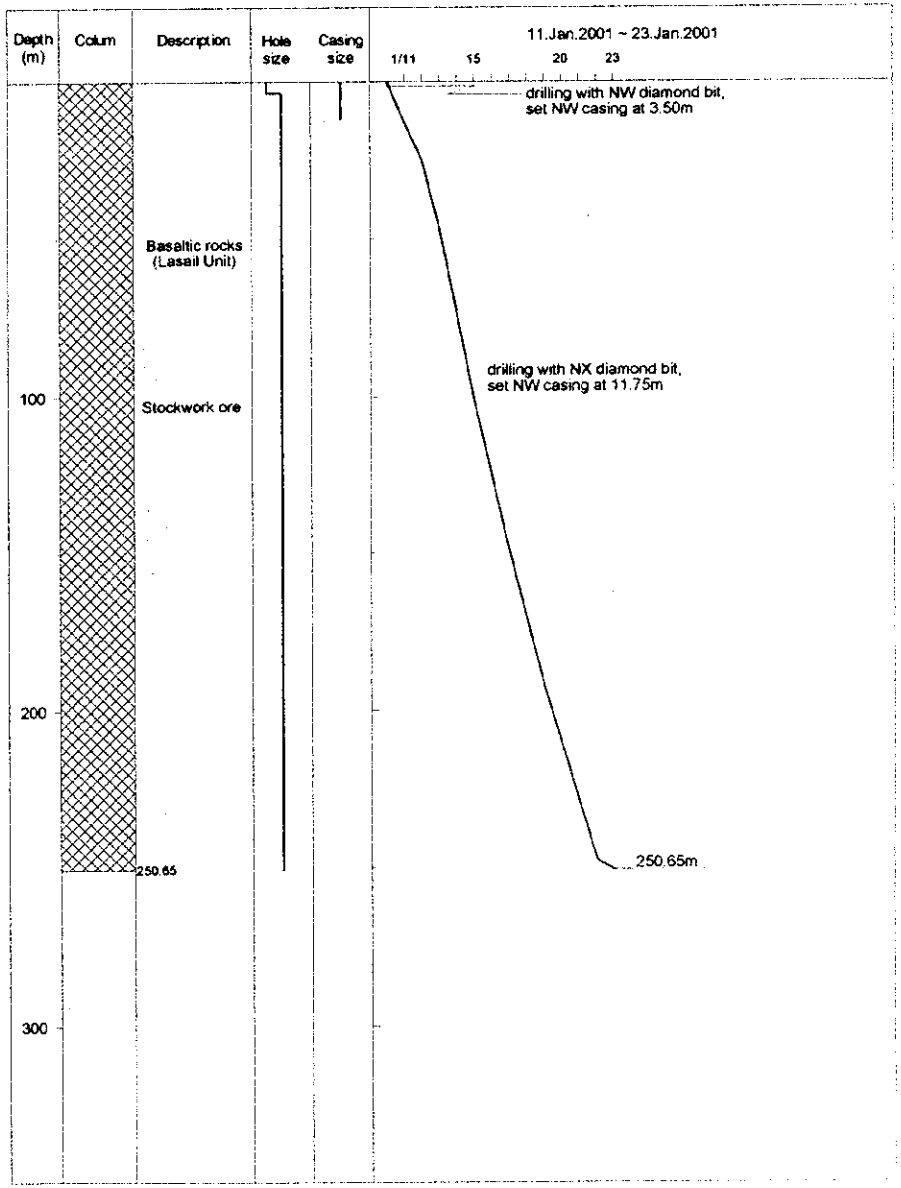
MJOY-4


Depth (m)
Colum
Description
Hole size
Casing size
2.Jan.2001 ~ 10.Jan.2001
1/2
5
10
drilling with NW diamond bit, set NW casing at 3.40m
Basaltic rocks (Lasail Unit)
low grade stockwork ore
drilling with NX diamond bit, set NW casing at 3.40m
200.10
200.10m
100
200
300

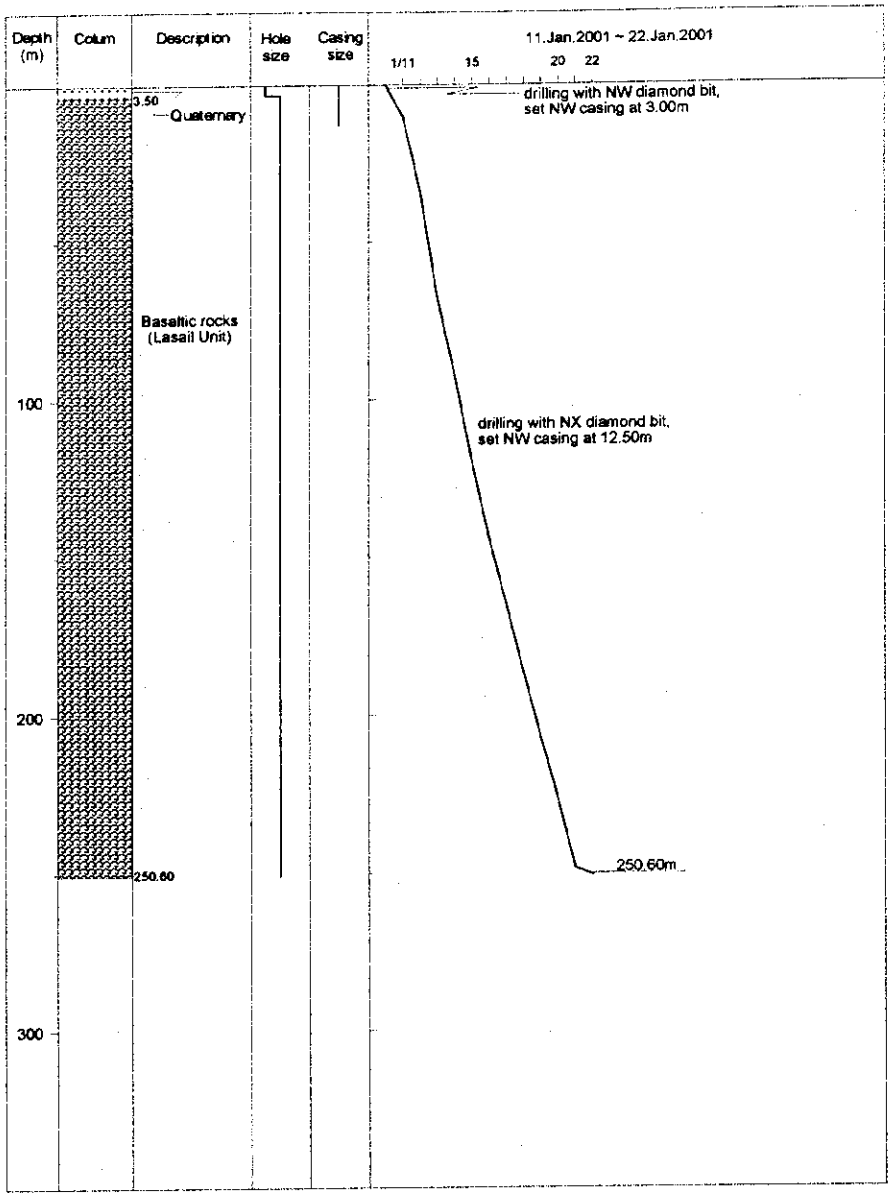
MJOY-5


Depth (m:)
Colum
Description
Hole size
Casing size
30.Dec.2000 ~ 9.Jan.2001
12/30 1/1 5 9
drilling with NW diamond bit, set NW casing at 3.40m
drilling with NX diamond bit, set NW casing at 3.40m
Basaltic rocks (Lasail Unit)
119.40 Fault
Basaltic rocks (Lasail Unit)
Stockwork ore
250.10
250.10m
100
200
300

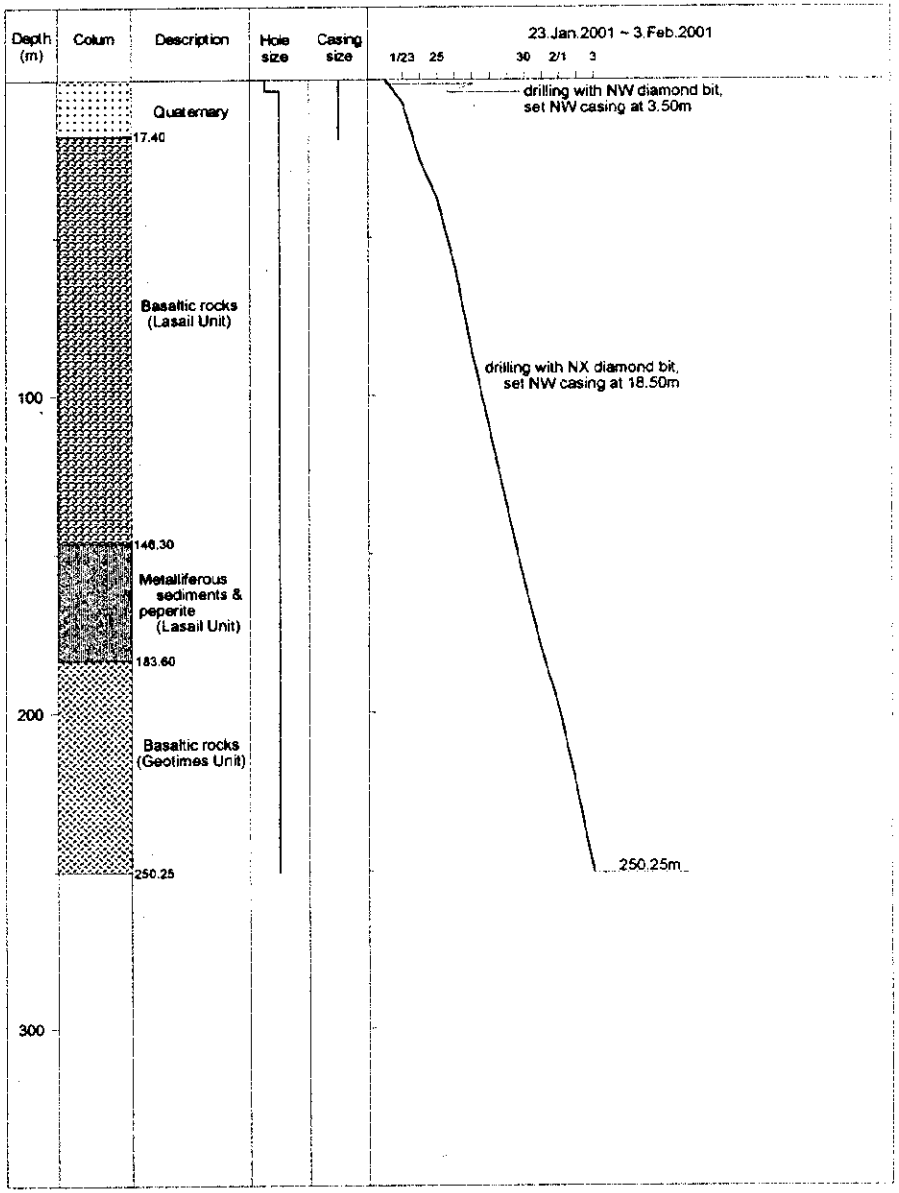
MJOY-6


Depth (m)
Colum
Description
Hole size
Casing size
11.Jan.2001 ~ 23.Jan.2001
1/11 15 20 23
drilling with NW diamond bit, set NW casing at 3.50m
drilling with NX diamond bit, set NW casing at 11.75m
Basaltic rocks (Lasail Unit)
Stockwork ore
250.65
250.65m
100
200
300

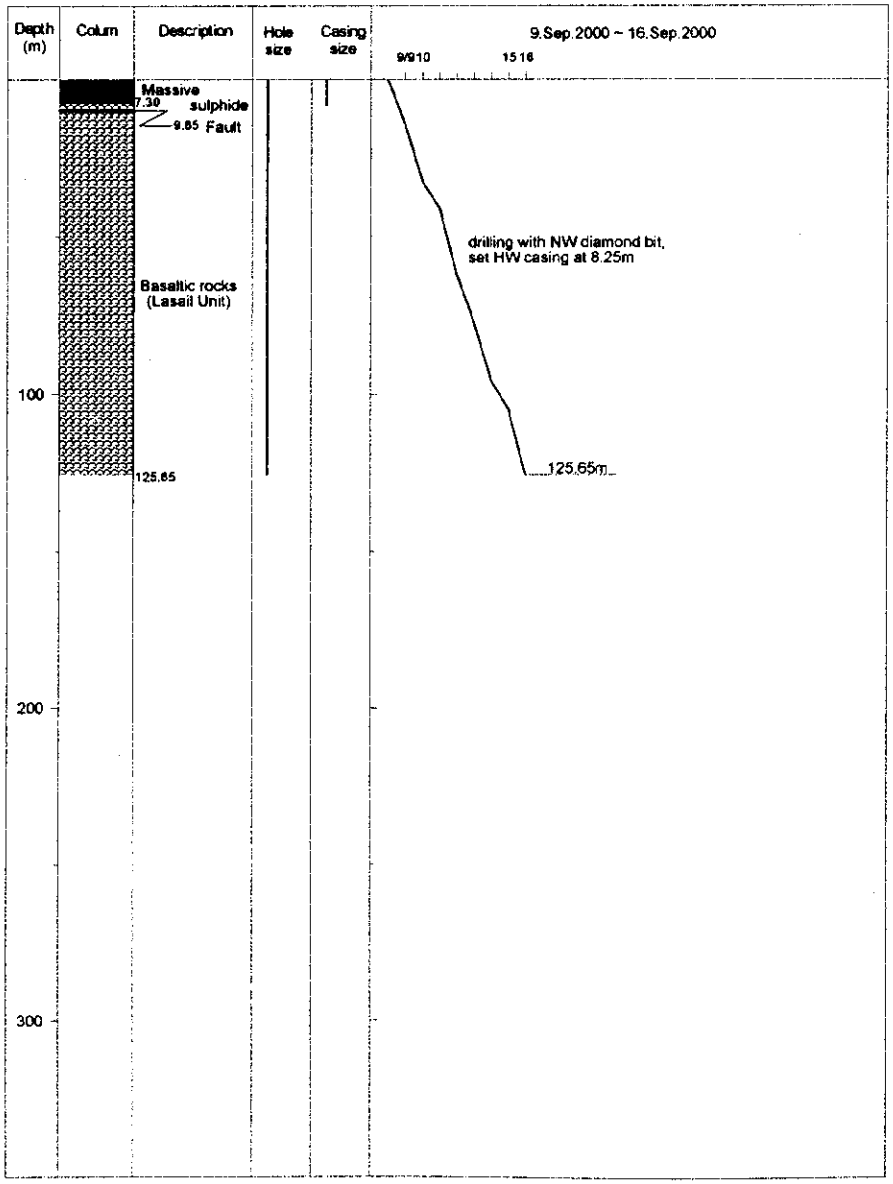
MJOY-7


Depth (m)
Colum
Description
Hole size
Casing size
11.Jan.2001 ~ 22.Jan.2001
1/11
15
20
22
drilling with NW diamond bit, set NW casing at 3.00m
3.50
Quaternary
Basaltic rocks (Lasail Unit)
drilling with NX diamond bit, set NW casing at 12.50m
100
200
250.60
250.60m
300

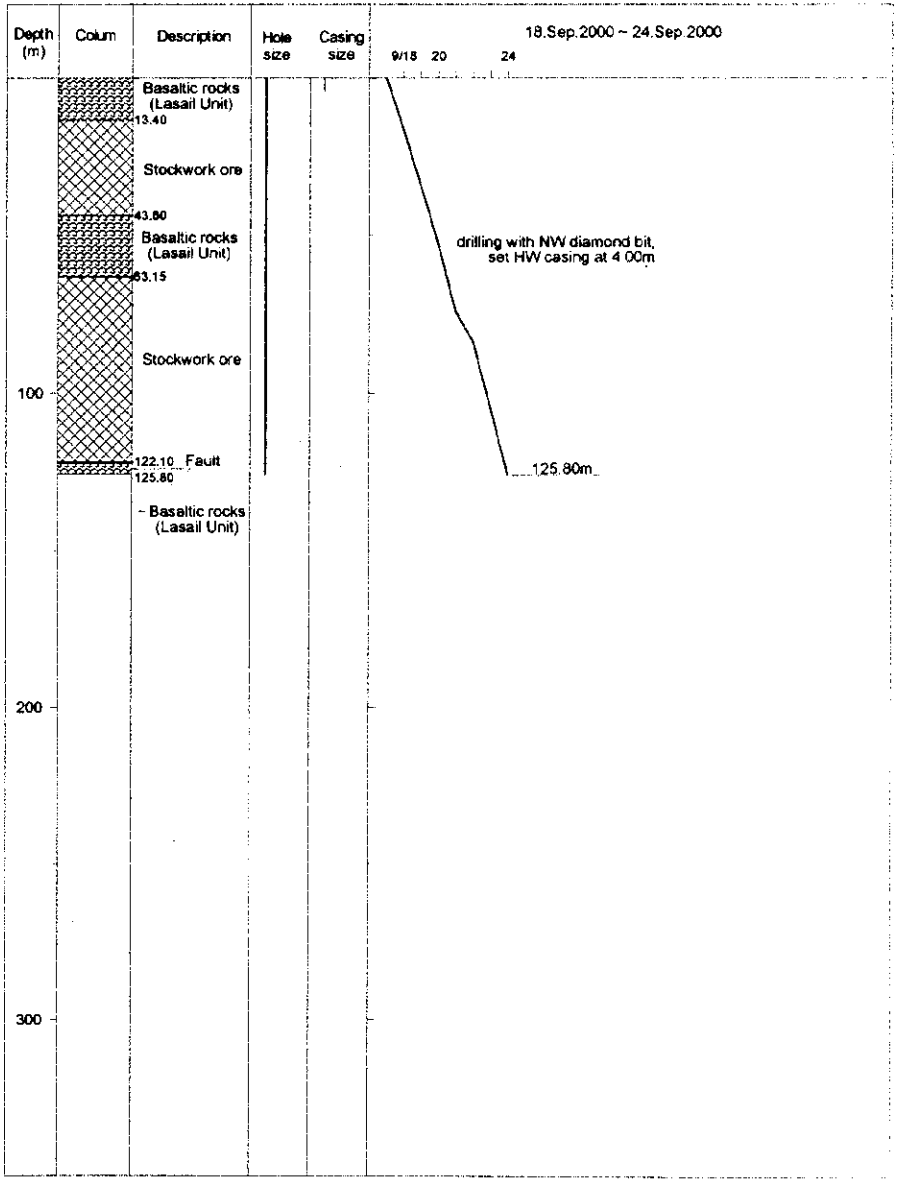
MJOY-8


Depth (m)
Colum
Description
Hole size
Casing size
23.Jan.2001 ~ 3.Feb.2001
1/23
25
30
2/1
3
drilling with NW diamond bit, set NW casing at 3.50m
Quaternary
17.40
Basaltic rocks (Lasail Unit)
drilling with NX diamond bit, set NW casing at 18.50m
100
146.30
Metalliferous sediments & peperite (Lasail Unit)
183.60
200
Basaltic rocks (Geotimes Unit)
250.25
250.25m
300

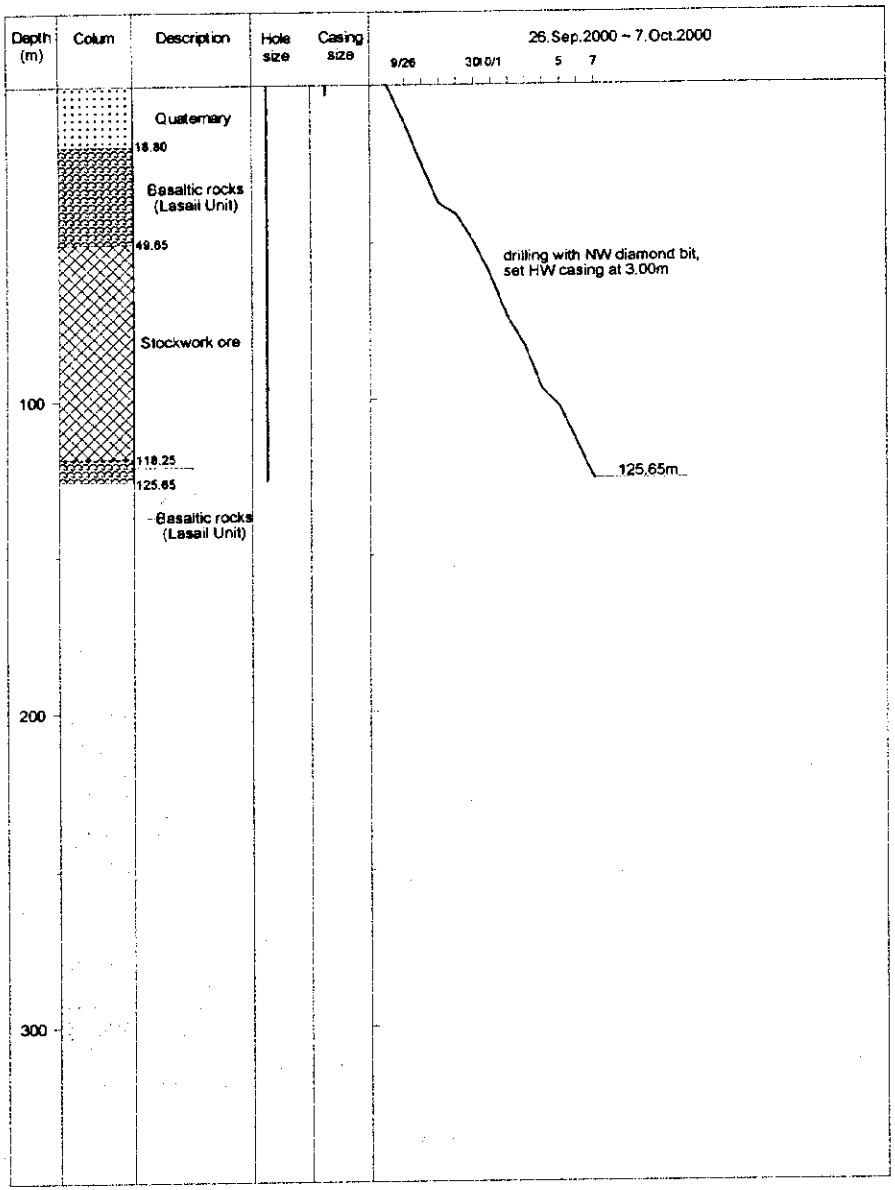
MJOY-P1



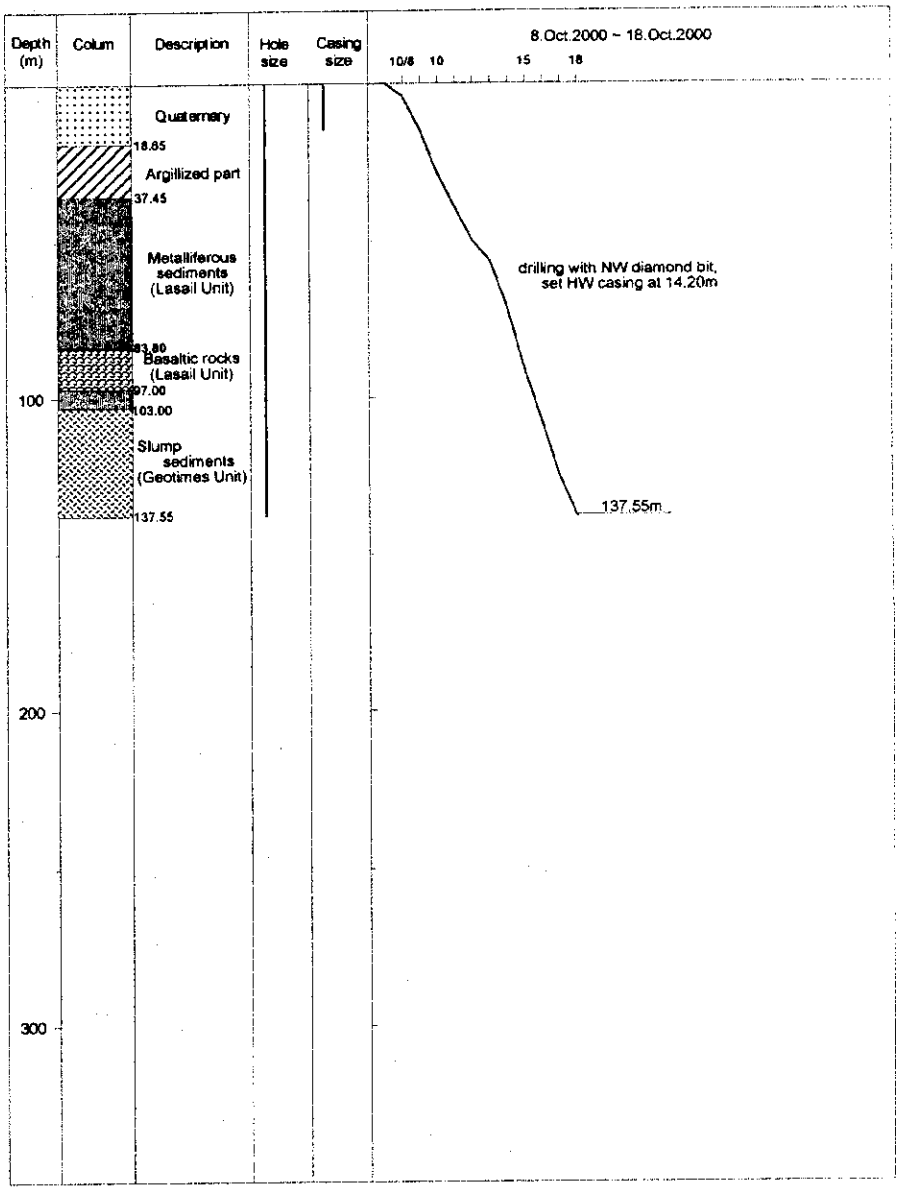
MJOY-P2



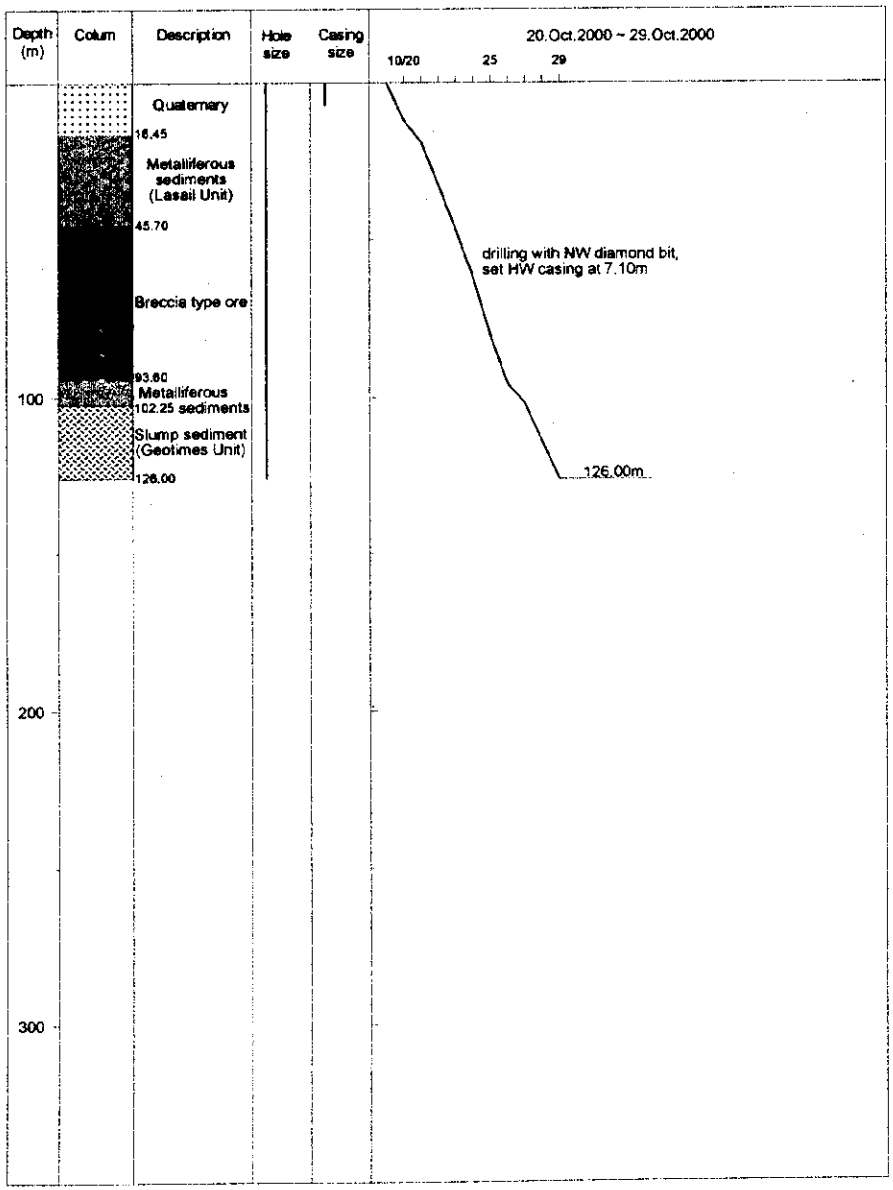
MJOY-P3



MJOY-P4



MJOY-P5


Depth (m)
Colum
Description
Hole size
Casing size
20.Oct.2000 ~ 29.Oct.2000
10/20
25
29
Quaternary
16.45
Metalliferous sediments (Lasail Unit)
45.70
Breccia type ore
93.60
Metalliferous
102.25 sediments
Slump sediment (Geotimes Unit)
126.00
drilling with NW diamond bit, set HW casing at 7.10m
126.00m
100
200
300

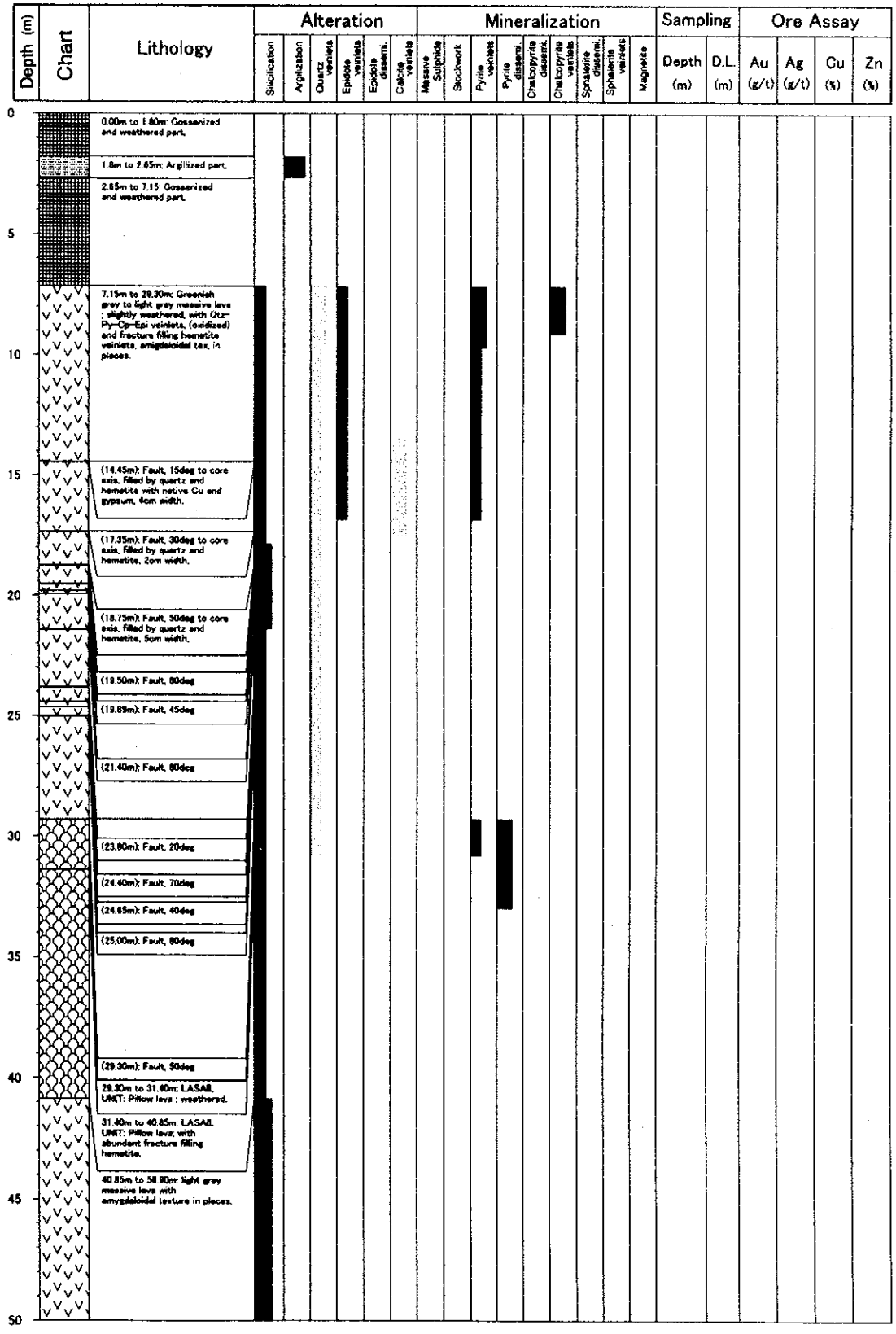
Appendix 3

Geologic core logs

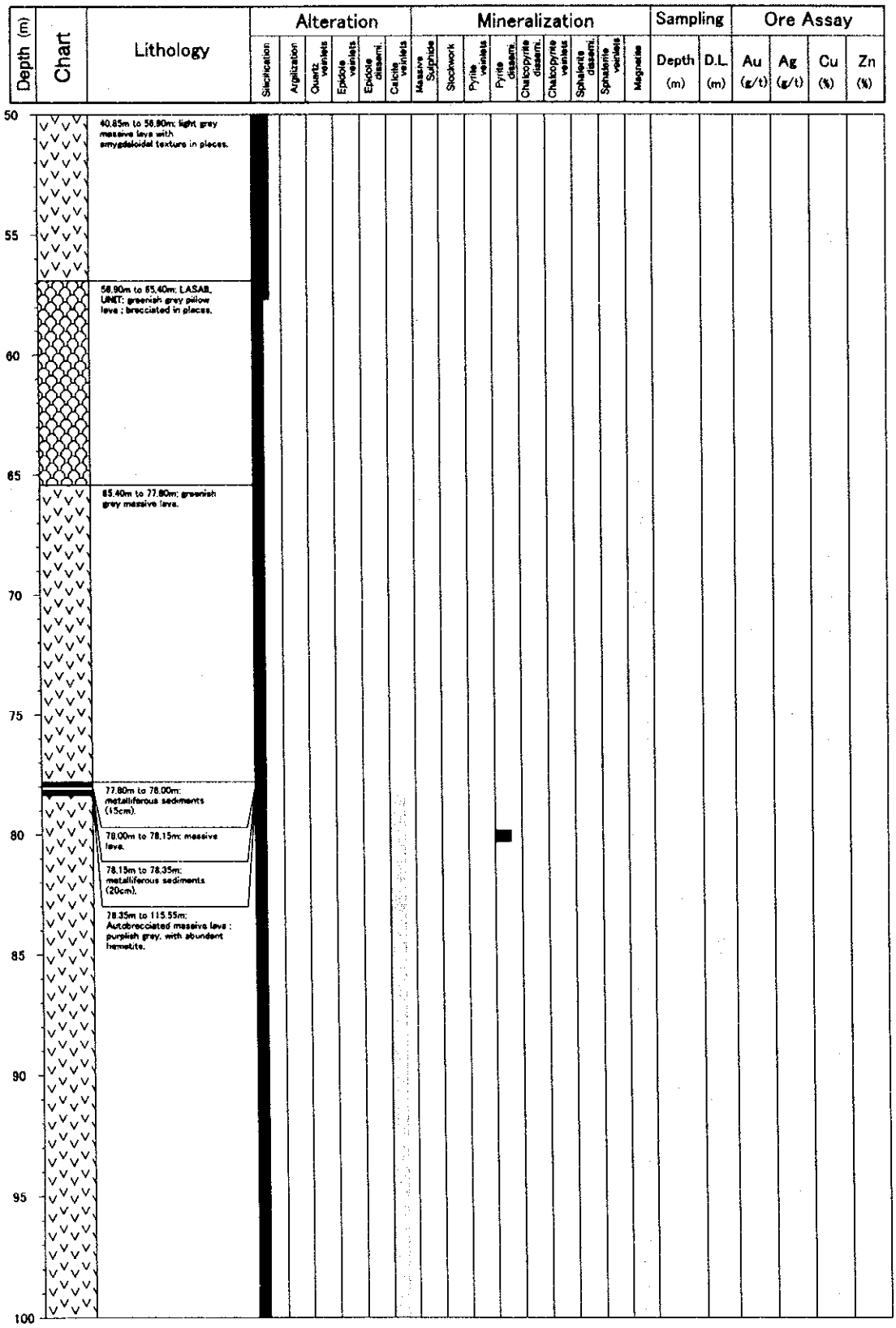
Appendix 3A

Geologic core logs for the drill holes of exploration work

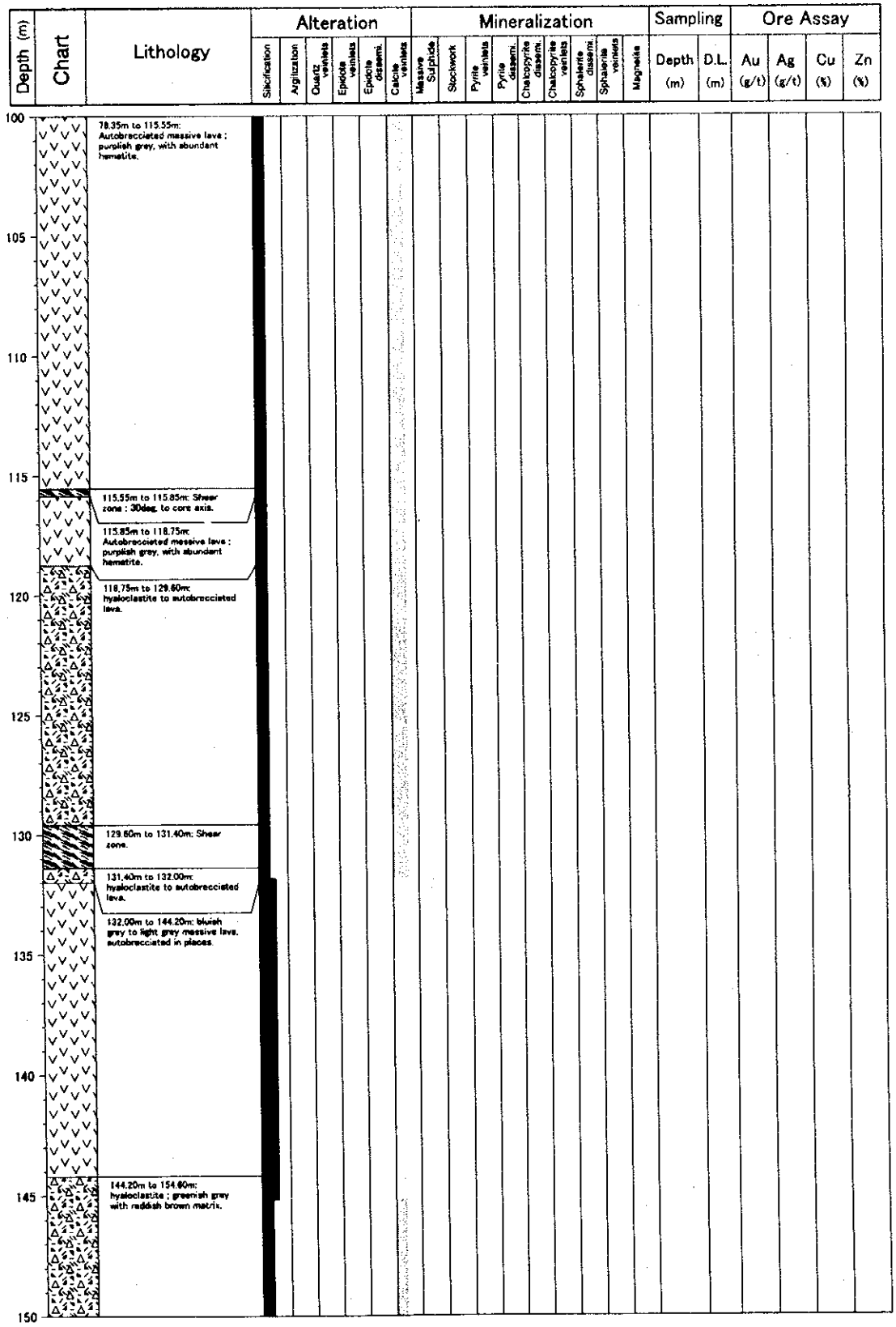
Hole No. MJOY-1 (251.10m ; from 0.00 m to 50.00 m)



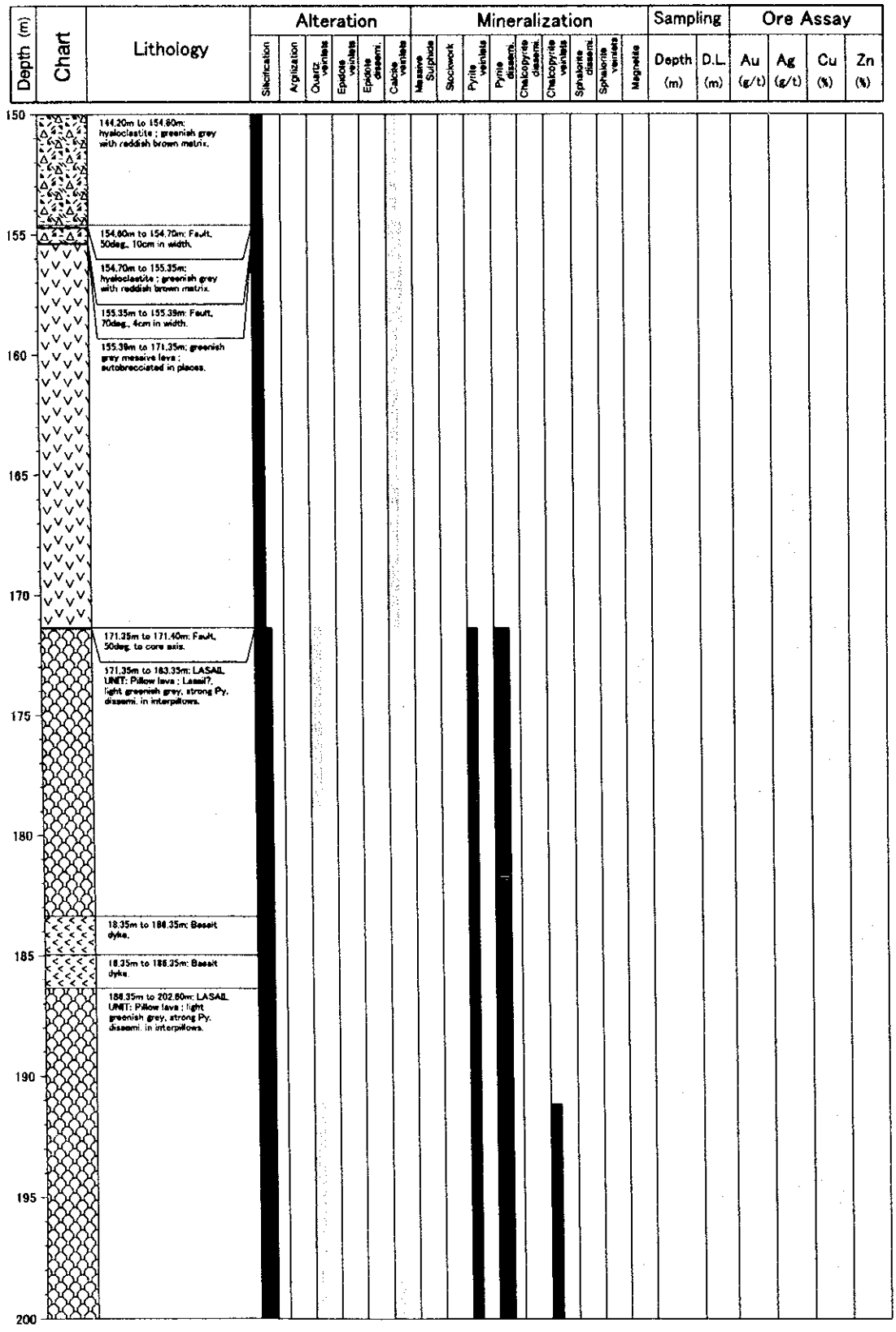
Hole No. MJOY-1 (251.10m ; from 50.00 m to 100.00 m)



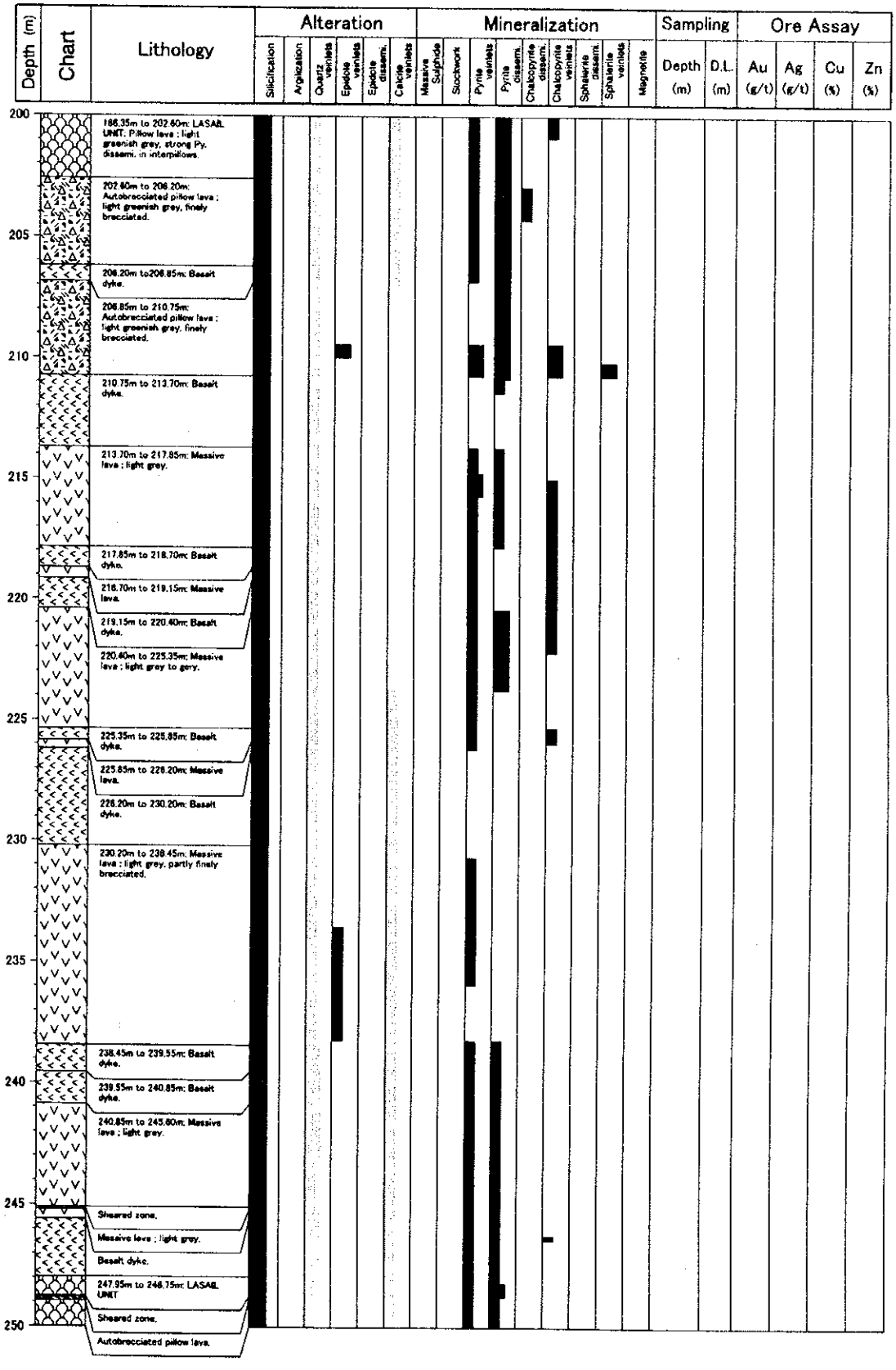
Hole No. MJOY-1 (251.10m ; from 100.00 m to 150.00 m)



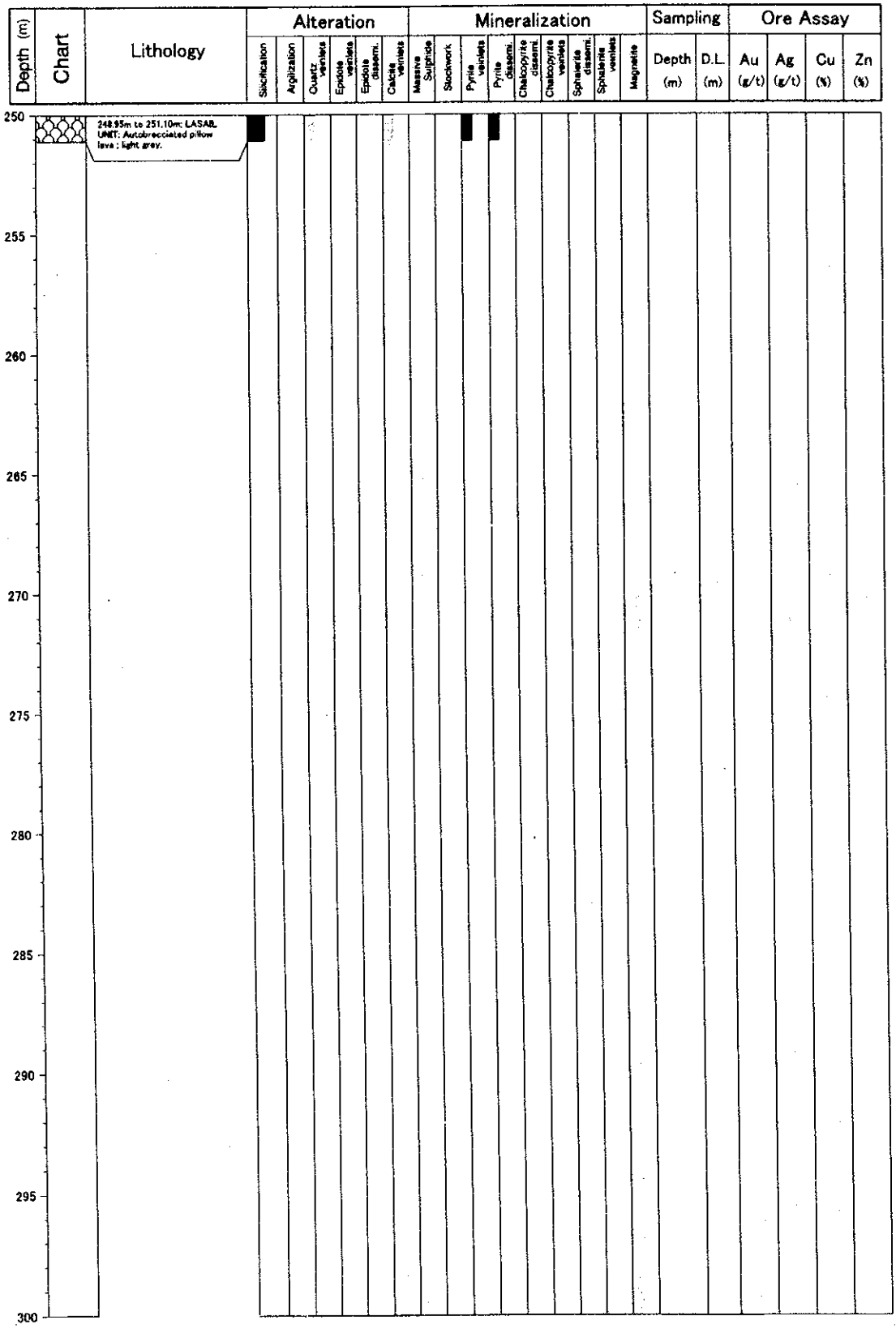
Hole No. MJOY-1 (251.10m ; from 150.00 m to 200.00 m)



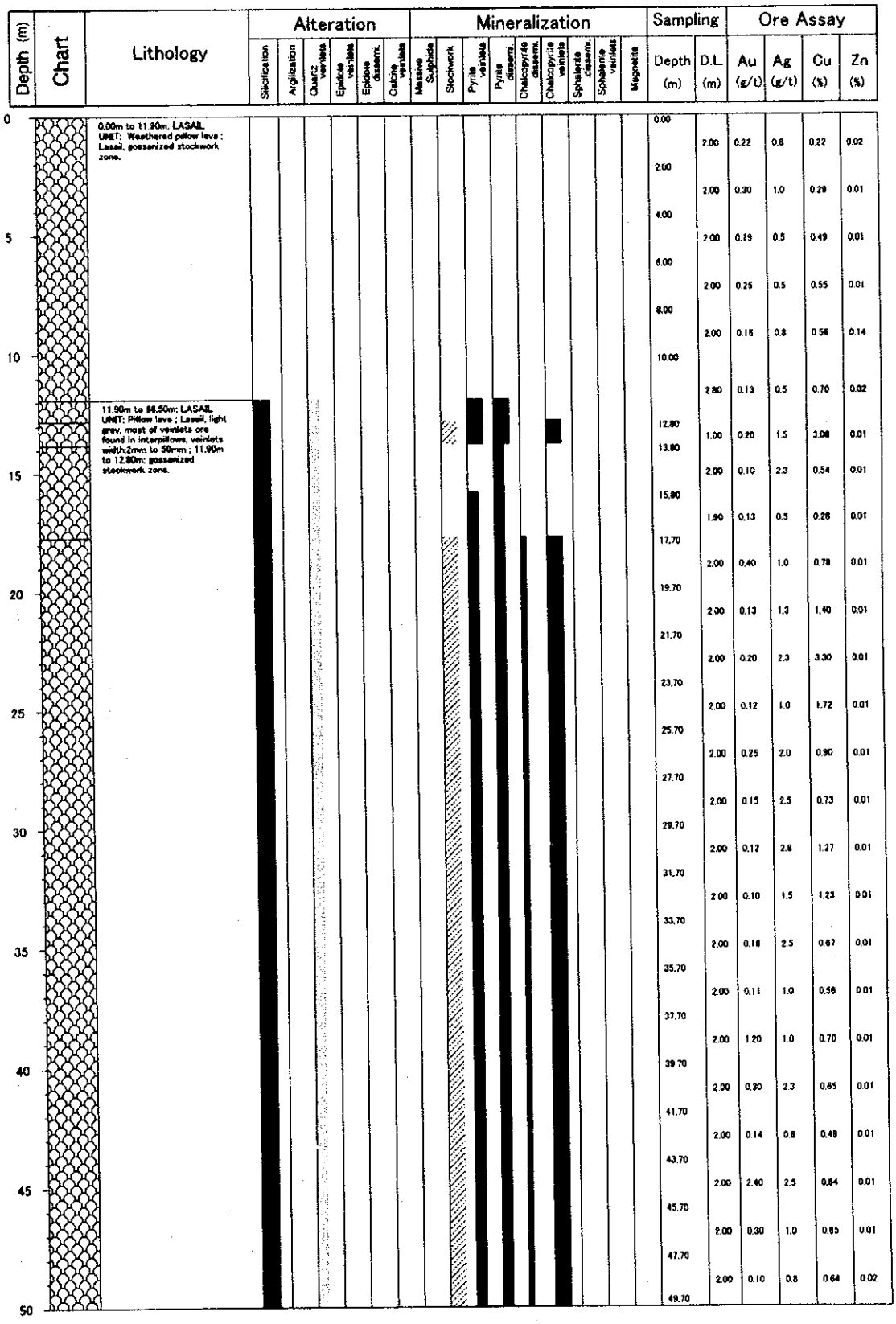
Hole No. MJOY-1 (251.10m ; from 200.00 m to 250.00 m)



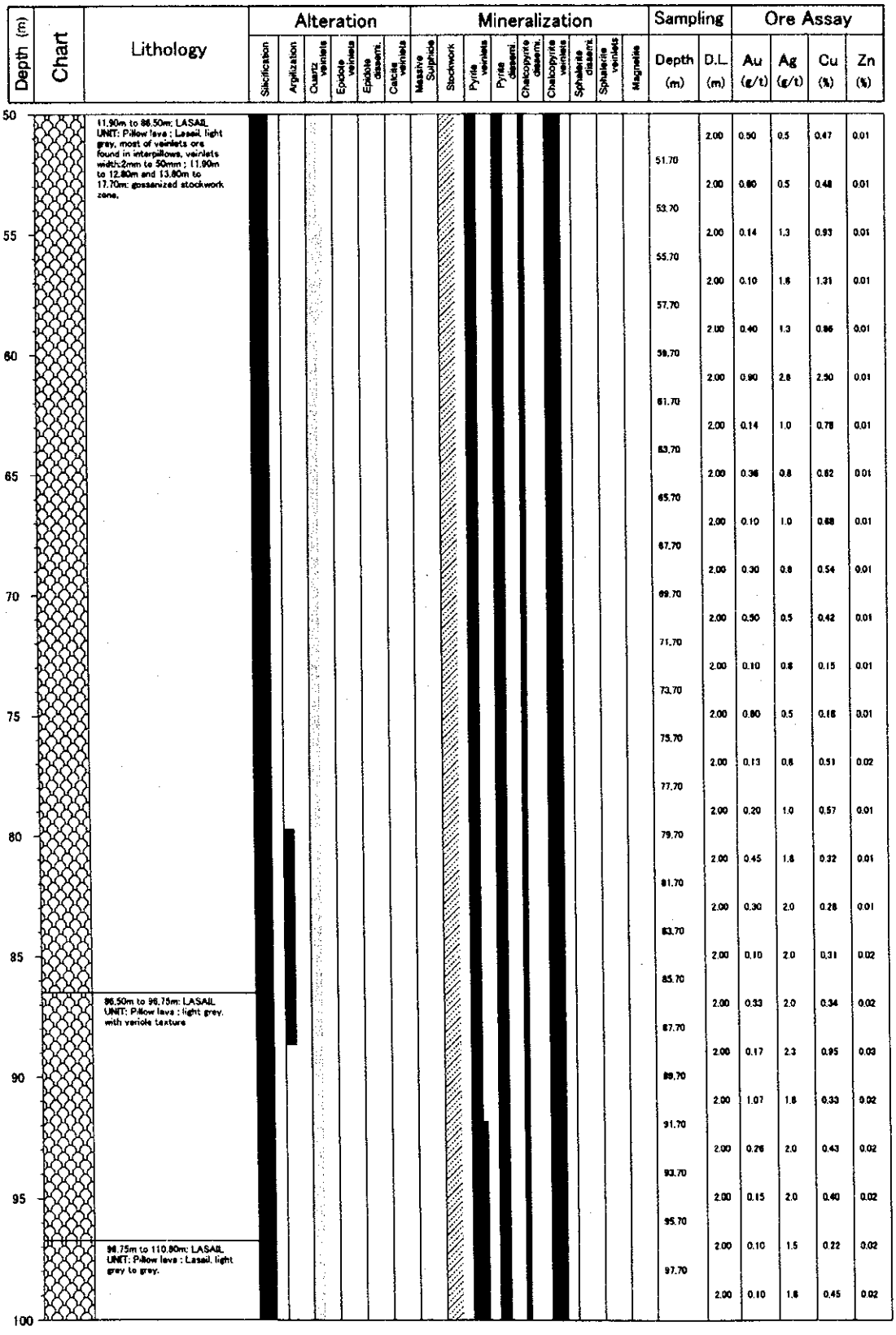
Hole No. MJOY-1 (251.10m ; from 250.00 m to 251.10 m)



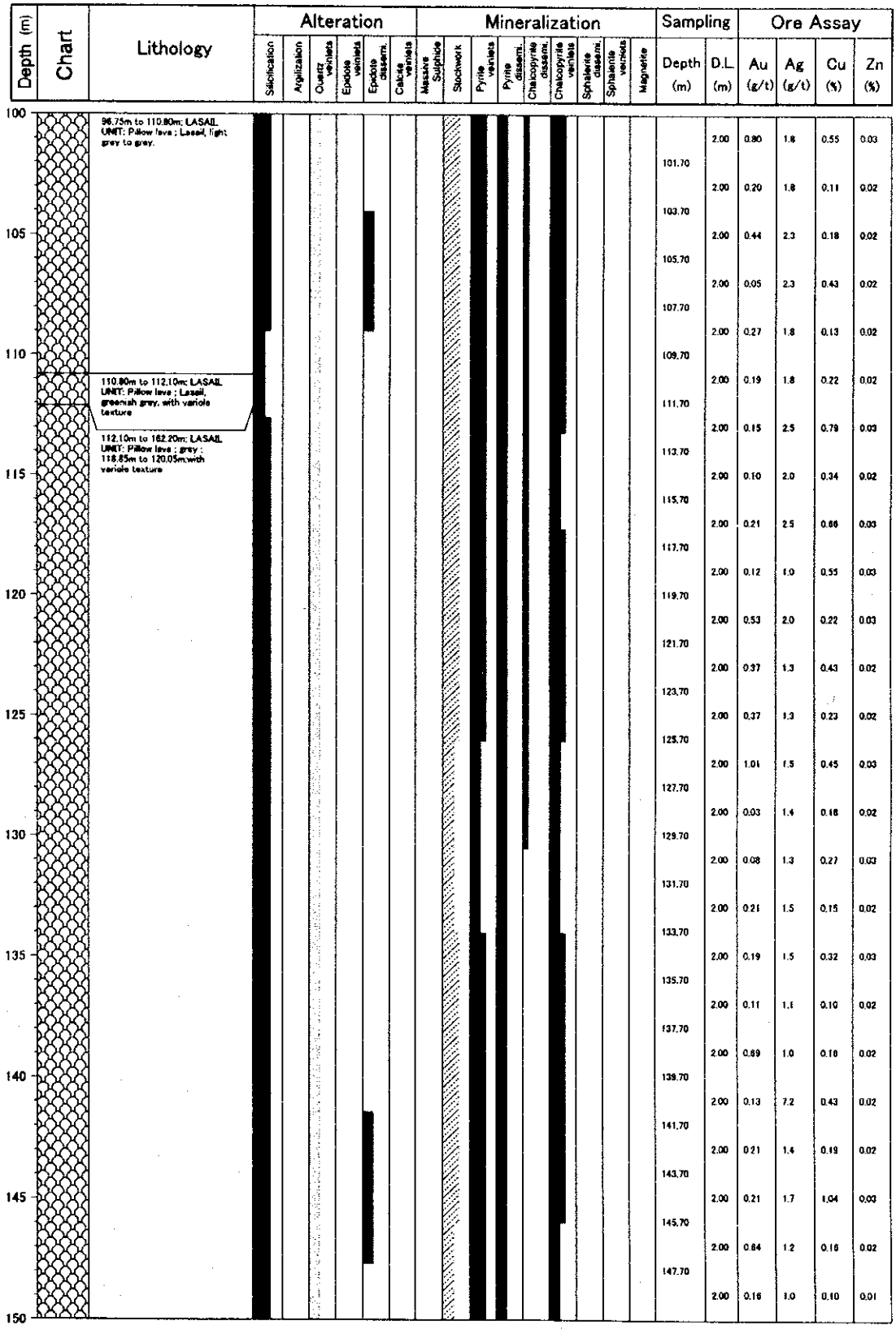
Hole No. MJOY-2 (200.35m ; from 0.00 m to 50.00 m)



Hole No. MJOY-2 (200.35m ; from 50.00 m to 100.00 m)

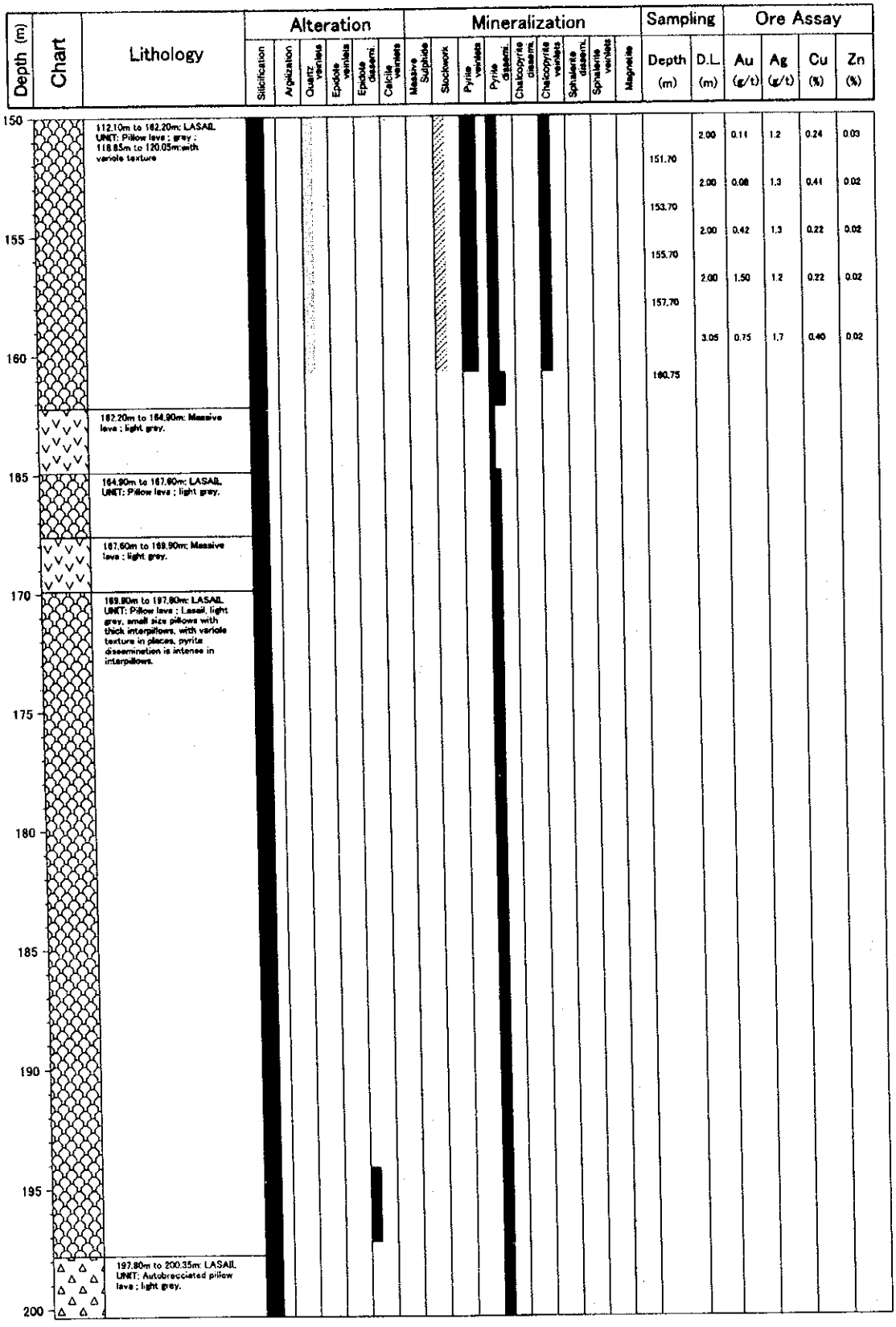


Hole No. MJOY-2 (200.35m ; from 100.00 m to 150.00 m)

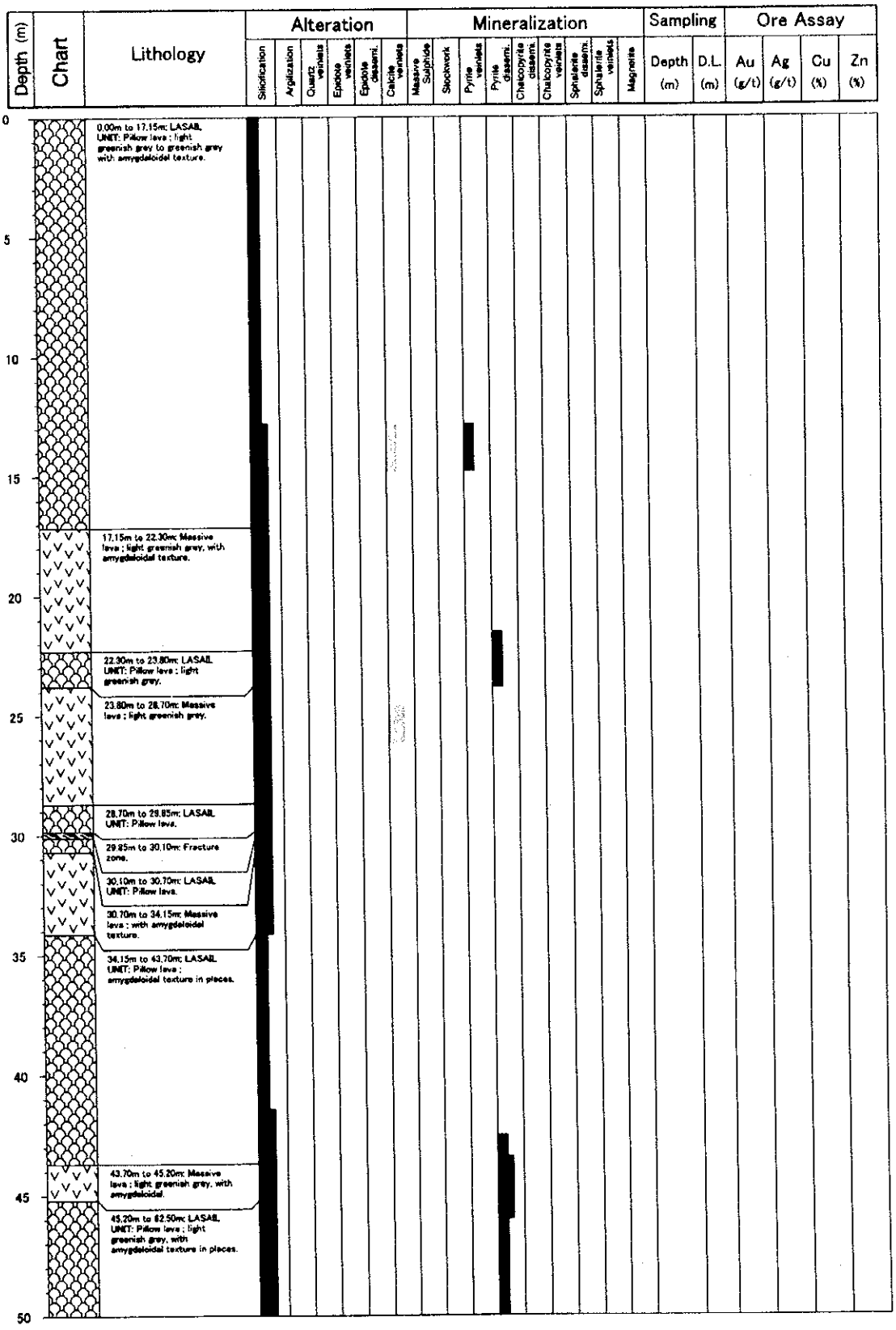


Depth (m)	D.L (m)	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)
101.70	2.00	0.80	1.8	0.55	0.03
103.70	2.00	0.20	1.8	0.11	0.02
105.70	2.00	0.44	2.3	0.18	0.02
107.70	2.00	0.05	2.3	0.43	0.02
109.70	2.00	0.27	1.8	0.13	0.02
111.70	2.00	0.19	1.8	0.22	0.02
113.70	2.00	0.15	2.5	0.79	0.03
115.70	2.00	0.10	2.0	0.34	0.02
117.70	2.00	0.21	2.5	0.66	0.03
119.70	2.00	0.12	1.0	0.55	0.03
121.70	2.00	0.53	2.0	0.22	0.03
123.70	2.00	0.37	1.3	0.43	0.02
125.70	2.00	0.37	1.3	0.23	0.02
127.70	2.00	1.01	1.5	0.45	0.03
129.70	2.00	0.03	1.4	0.18	0.02
131.70	2.00	0.08	1.3	0.27	0.03
133.70	2.00	0.21	1.5	0.15	0.02
135.70	2.00	0.19	1.5	0.32	0.03
137.70	2.00	0.11	1.1	0.10	0.02
139.70	2.00	0.89	1.0	0.10	0.02
141.70	2.00	0.13	7.2	0.43	0.02
143.70	2.00	0.21	1.4	0.19	0.02
145.70	2.00	0.21	1.7	1.04	0.03
147.70	2.00	0.84	1.2	0.16	0.02
	2.00	0.16	1.0	0.10	0.01

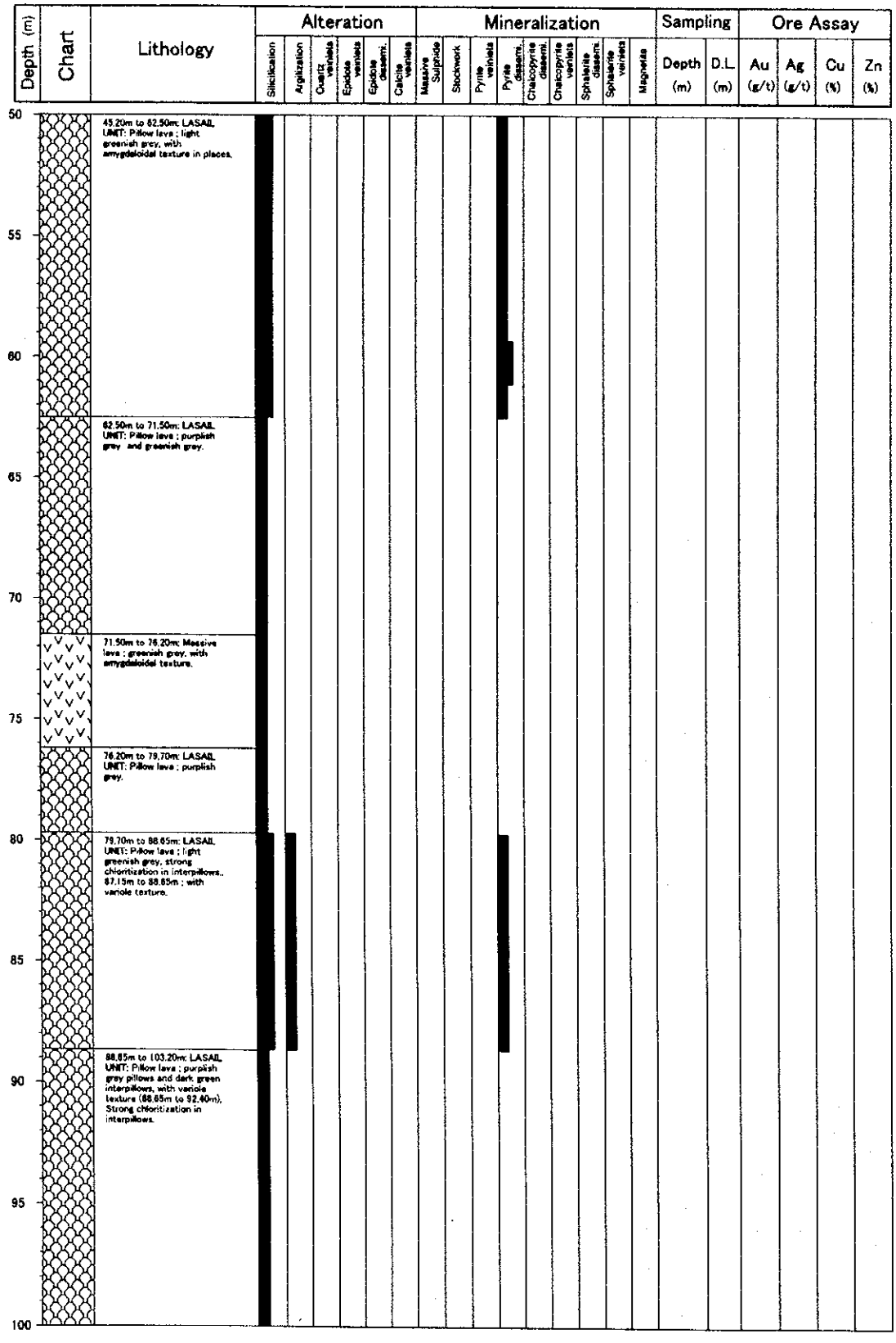
Hole No. MJOY-2 (200.35m ; from 150.00 m to 200.35 m)



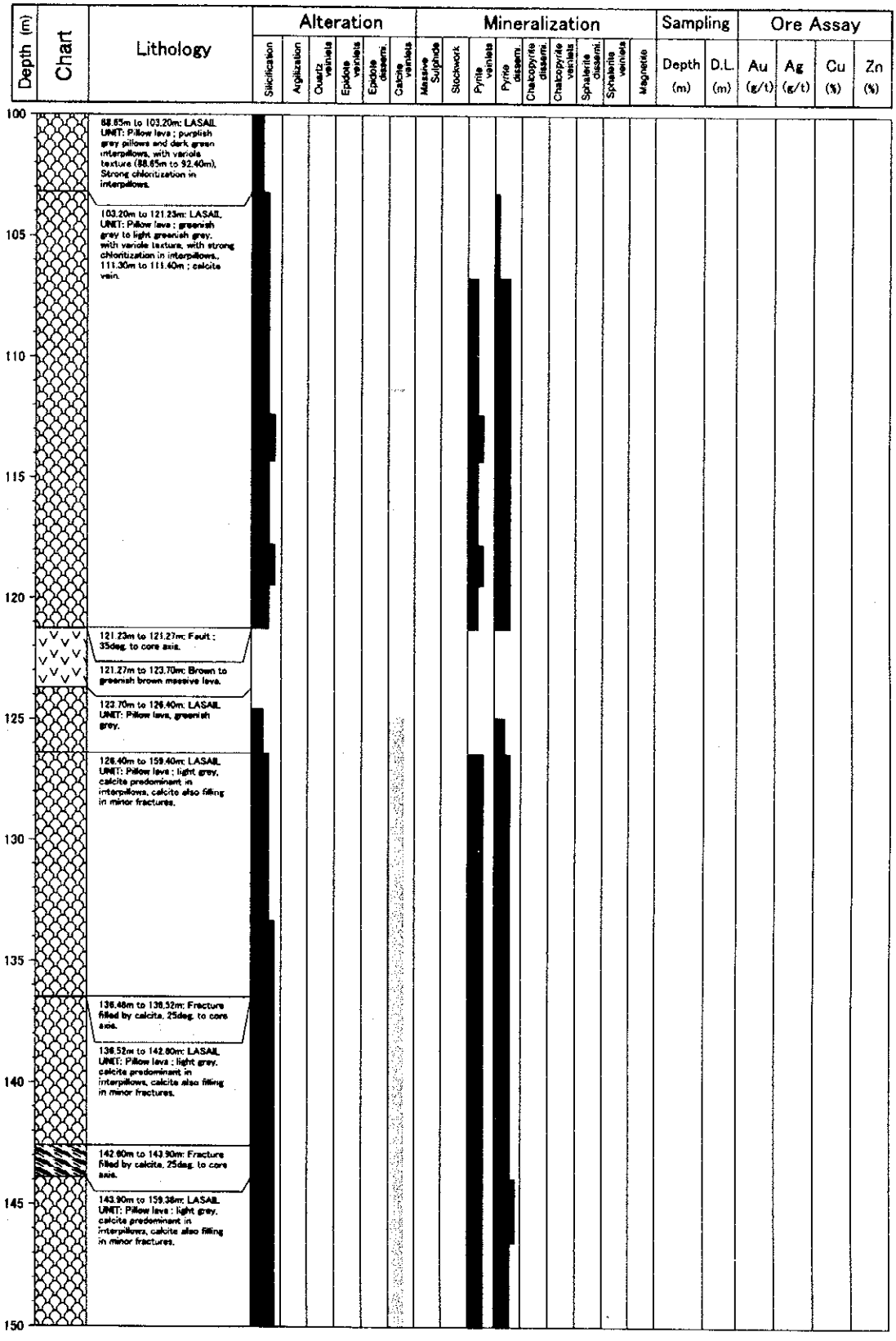
Hole No. MJOY-3 (251.10m ; from 0.00 m to 50.00 m)



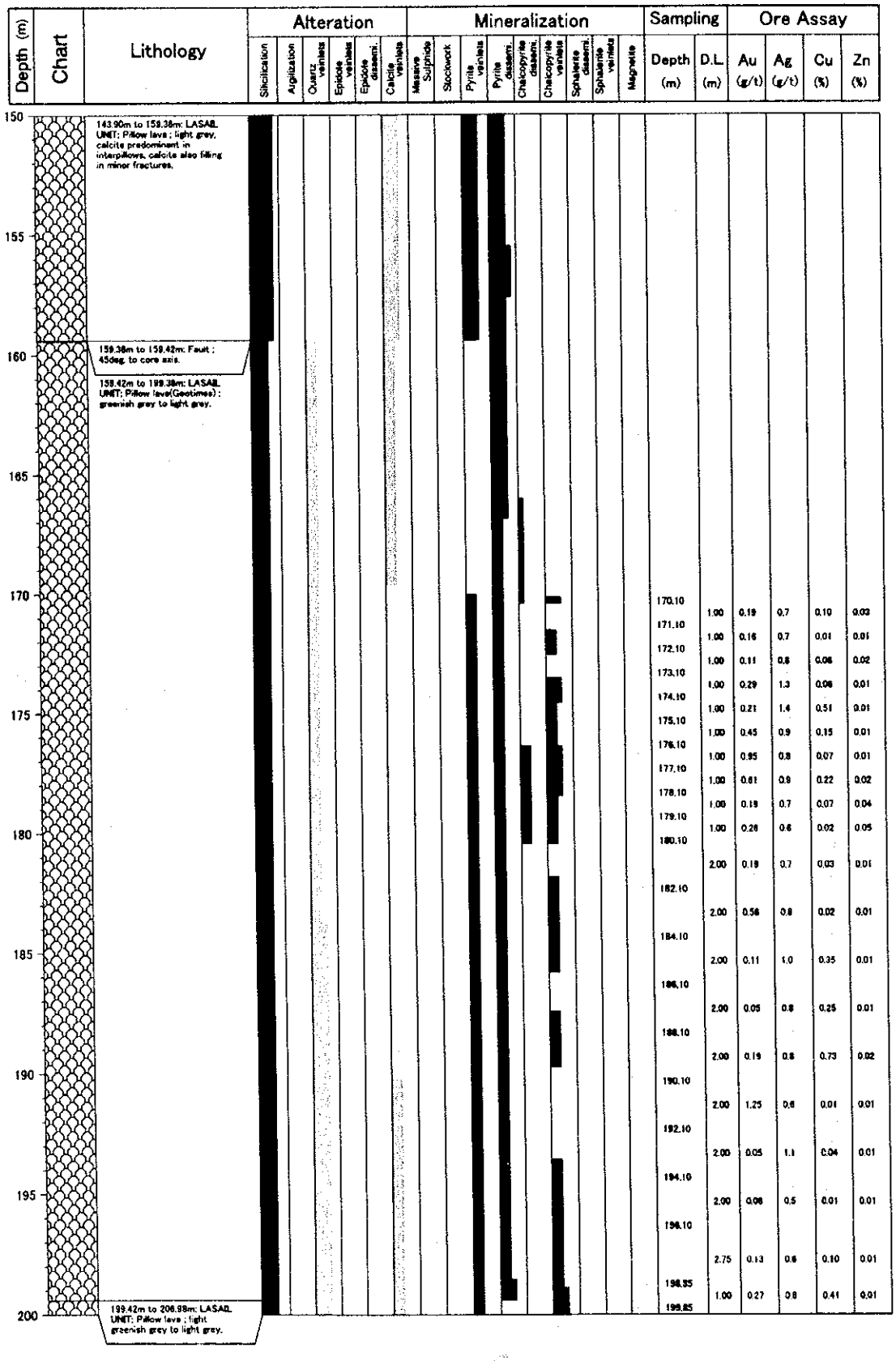
Hole No. MJOY-3 (251.10m ; from 50.00 m to 100.00 m)



Hole No. MJOY-3 (251.10m ; from 100.00 m to 150.00 m)

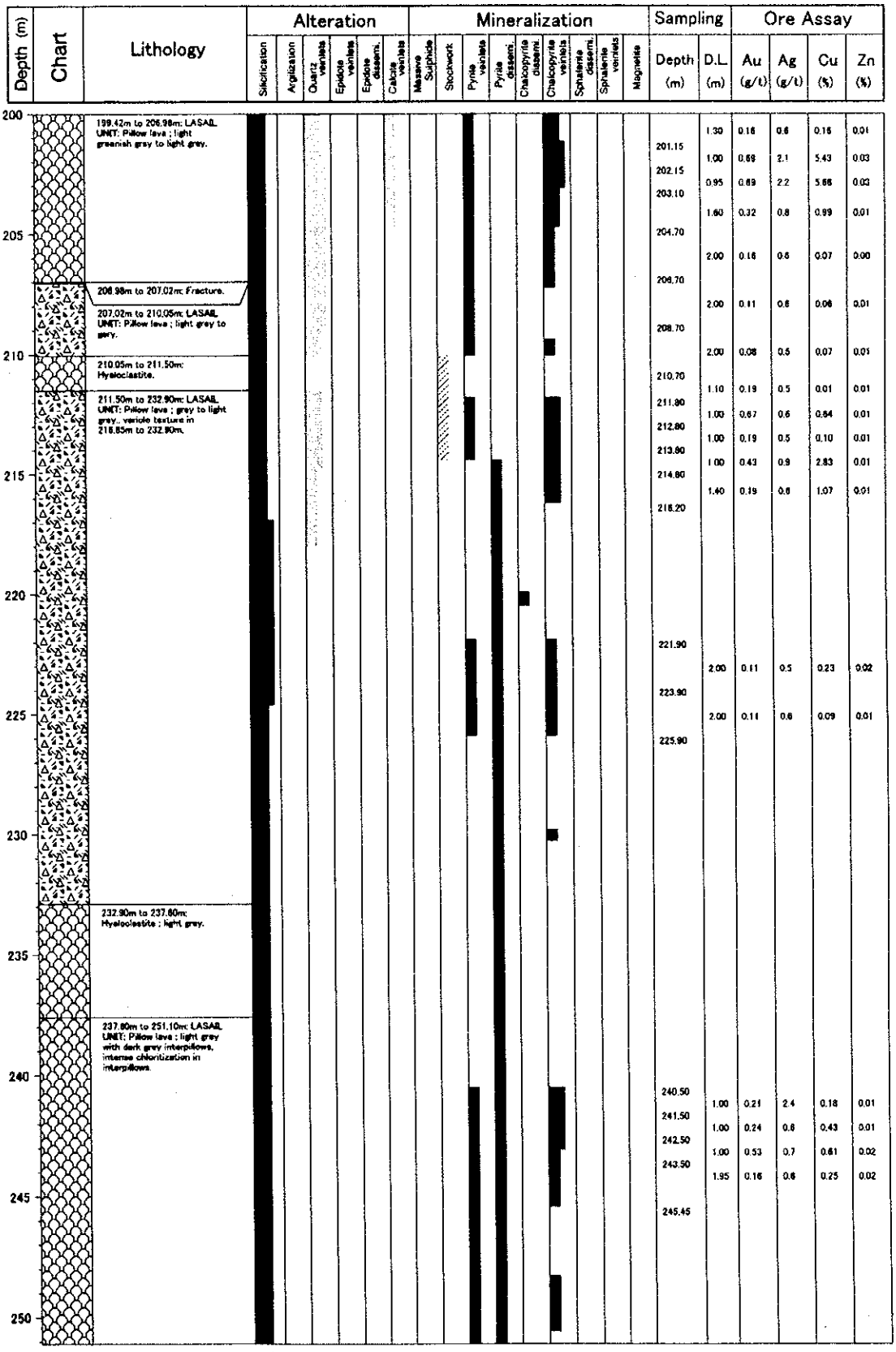


Hole No. MJOY-3 (251.10m ; from 150.00 m to 200.00 m)

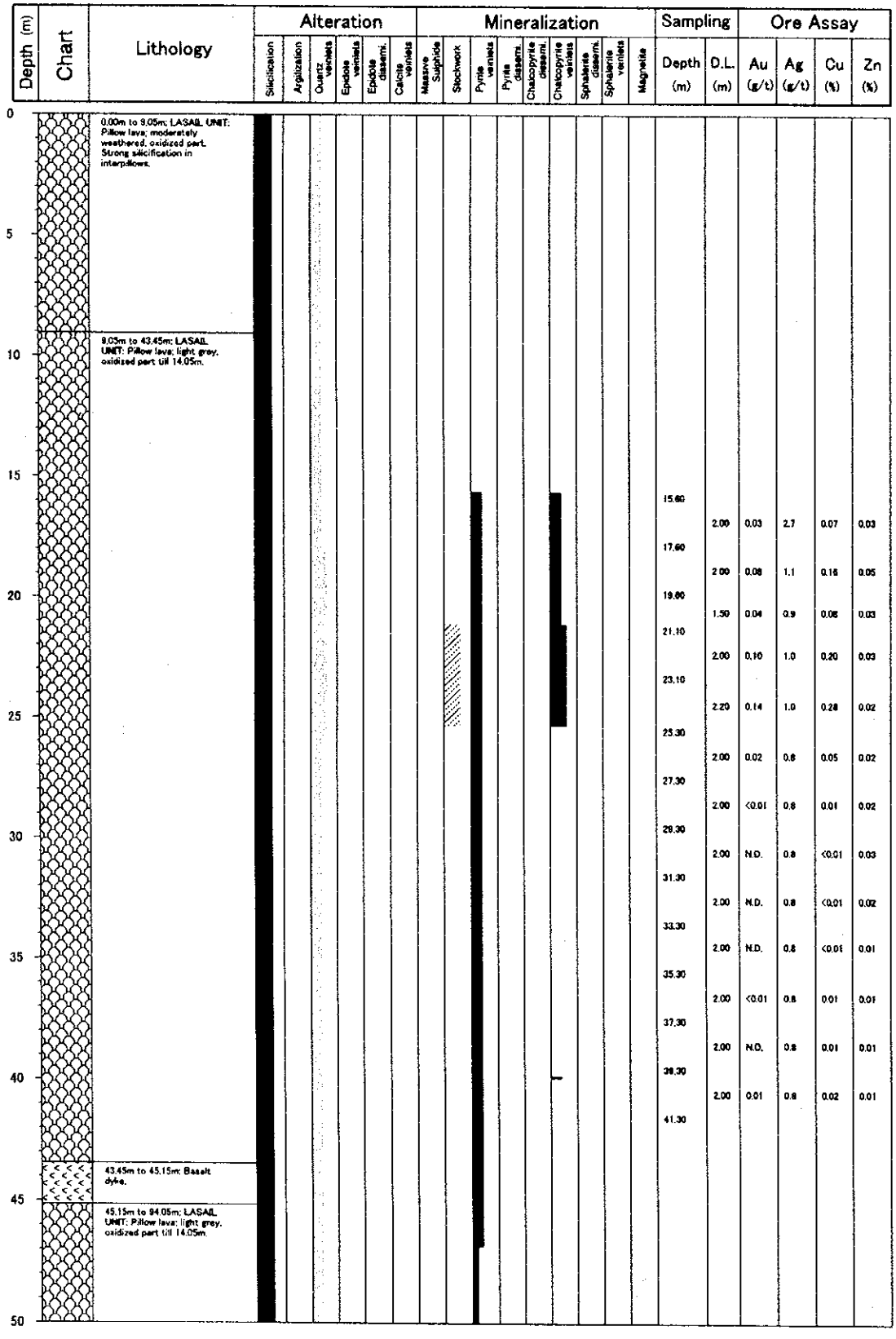


Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)
170.10	1.00	0.19	0.7	0.10	0.03
171.10	1.00	0.16	0.7	0.01	0.01
172.10	1.00	0.11	0.8	0.06	0.02
173.10	1.00	0.29	1.3	0.06	0.01
174.10	1.00	0.21	1.4	0.51	0.01
175.10	1.00	0.45	0.9	0.15	0.01
176.10	1.00	0.95	0.8	0.07	0.01
177.10	1.00	0.61	0.9	0.22	0.02
178.10	1.00	0.19	0.7	0.07	0.04
179.10	1.00	0.26	0.6	0.02	0.05
180.10	2.00	0.19	0.7	0.03	0.01
182.10	2.00	0.56	0.8	0.02	0.01
184.10	2.00	0.11	1.0	0.35	0.01
186.10	2.00	0.05	0.8	0.25	0.01
188.10	2.00	0.19	0.8	0.73	0.02
190.10	2.00	1.25	0.6	0.01	0.01
192.10	2.00	0.05	1.1	0.04	0.01
194.10	2.00	0.08	0.5	0.01	0.01
196.10	2.75	0.13	0.6	0.10	0.01
198.85	1.00	0.27	0.8	0.41	0.01
199.85					

Hole No. MJOY-3 (251.10m ; from 200.00 m to 251.10 m)



Hole No. MJOY-4 (200.10m ; from 0.00 m to 50.00 m)



Hole No. MJOY-4 (200.10m ; from 50.00 m to 100.00 m)