THE REPUBLIC OF INDONESIA

REPORT ON THE COOPERATIVE MINERAL EXPLORATION

OF

NOTHERN SUMATRA

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APRIL 1985

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN

国際協力事業団 常6:8.5- 108 登録No. 15089 MPN

Errata

page and line	error	correct
1 up 4	at the zinc mineraization,	zinc mineralization at
	Muara Sipongi B	the Muara Sipongi B
2 up 8	each hole is shown	each hole are shown
Fig 1-3	o Third phase	• Third phase
Table 1-2	- survey Result	Survey Result
6 up 8	Pentonite	Bentonite
8 dawn 1	epidote skarn	epidote skarn pyrite
		dissemination
12 up 5	as follows	as shows at 11 page
14 dawn 2	catacracized cleavage	cataclastic cleavage
Table 3-1	o rare	rare
17 dawn 18	argiraceous	argillaceous
17 dawn 6	(fault clay part	(fault clay part)
20 up 17	mineralization zoned	mineralized zones
22 dawn 6	banded ore disse-	banded or disse-
23 up 23	mineralized Zones	mineralized zones
23 dawn 18	p+85 %	9.85 %
23 dawn 14	C.82 % of Cu	0.82 %
24 up 8	Mineralized zones	mineralized zone
25 up 7	1,000 m s,1.	1,000 m s.l.
22 Fig 4-8	MJI-15	MJI-5

PREFACE

The Government of Japan, in response to a request extended by the Government of the Republic of Indonesia, agreed to conduct a metallic mineral exploration survey in Northern Sumatra, and commissioned its implementation to the Japan International Cooperation Agency.

The Agency, taking into consideration the importance of the technical nature of this survey, sought the cooperation of the Metal Mining Agency of Japan in order to accomplish the contemplated task.

The Government of the Republic of Indonesia appointed the Directorate of Mineral Resources to execute the survey as counterpart to the Japanese team.

The survey is being carried out jointly by experts from both Governments.

The third phase of the collaboration survey consists of drilling exploration for metallic minerals.

This report summarizes the results of the third phase of the survey and will later form a portion of the final report on the results obtained throughout the survey.

We wish to take this opportunity to express our gratitude to all sides concerned in the execution of the survey.

April 30, 1985

Prof. Dr. J.A. KATILI

Director General of Geology and Mineral Resources Ministry of Mines and Energy Republic of Indonesia Reisake Anita

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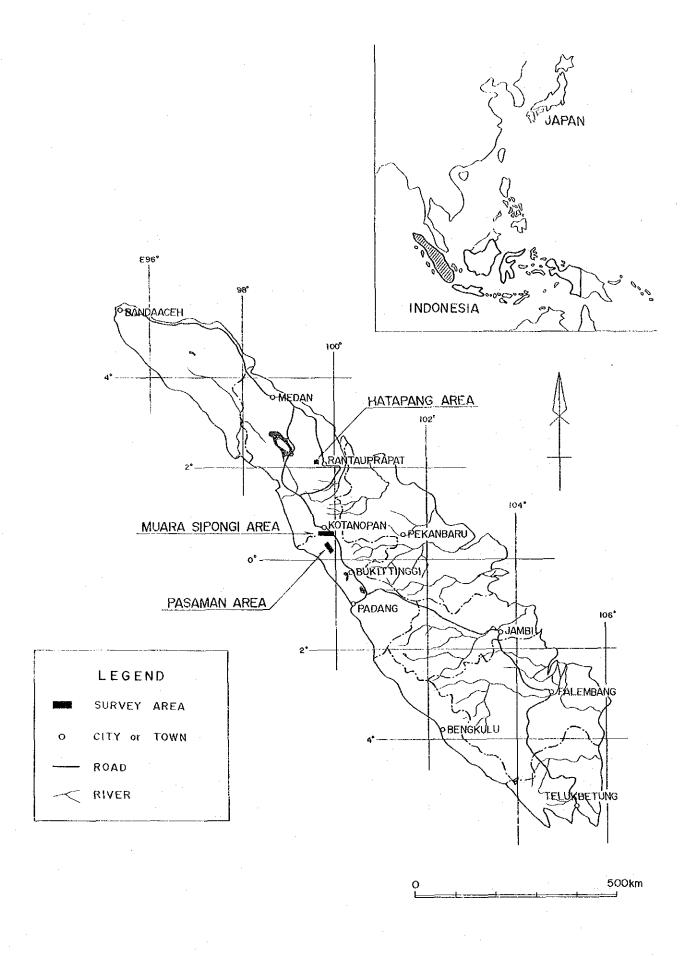


Fig. 1-1 Location Map of Survey Areas in Northern Sumatra

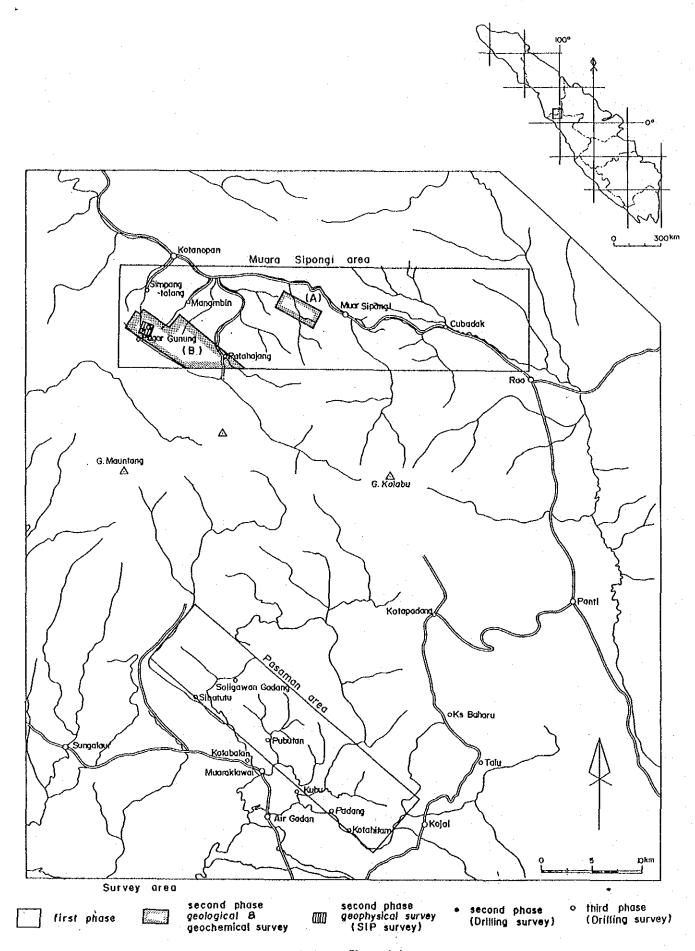


Fig. 1-2 Location Map of Muara Sipongi Area

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SUMMARY

Within the frame work of the Cooperative Mineral Exploration Survey in Northern Sumatra, a drilling survey was successively conducted to explore Pagar Gunung East Mineralized Zone in third phase. Nine holes (total drilling length: 2,103.90 m) were carried out. As the result of the survey, emplacement condition, relation with geology, igneous activity, scale and grade on the Pagar Gunung Mineralized zone were elucidated.

The Pagar Gunung Area consists of Sedimentary Rock and Pyroclastic Rock Member and Basic Volcanic Rock Member, Patahajang Formation, the Permian — the Carboniferous. Both Members made contact with the thrust fault, and it is inferred that the Basic Volcanic Rock

Member is an allochthonous rock body.

The Sedimentary Rock and Pyroclastic Rock Member, emplacing Pagar Gunung Mineralized Zones, in divided into Argillaceous Rock Predominance Facies at the upper part and Siliceous Rock-Pyroclastic Rock Predominance Facies at the lower part. At the northern part of the survey area, mylonite (granodiorite) and quartz diorite have intruded into the Member.

The Drilling survey found many mineralized zones, and based on the stratigraphycal position of their emplacement, they are grouped into four mineralized zones, namely Mineralized

Zone I', Mineralized Zone I, Mineralized Zone II and Mineralized Zone III.

The Mineralized Zone I', and I embeding in Argillaceous Rock Predominance Facies have replaced intercalated calcareous shale, and consist of chalcopyrite, galena, sphalerite accompany by epidote-clinopyroxene skarn. Mineralized Zone I extends to east-west direction with 1,200 m extention, having alternately a rich part and a poor part. Mineralized Zone I' is located at 70 m upper horizone of Mineralized Zone I, and was newly found by the drilling survey. It has the same ore composition of the zone I, but its gold content ranging from 0.4–1.6 g/t is higher than the Zone I.

The Mineralized Zone II, emplacing into Siliceous Rock-Pyroclastic Rock Predominance Facies, consists of several sub-zones, especially at the east part of the Pagar Gunung area. The Zone II is divided into six sub-Zones, correlating with their stratigraphycal situation. They consist mainly of pyrrhotite and pyrite associating with epidote-garnet skarn. Upper sub-Zones contain small amounts of sphalerite, but the Mineralized Zone is generally low grade of silver. cooper-lead and zinc.

The possible ore reserve, calculating Mineralized Zone I' and I, is expected 800,000t, mean

thickness 0.88 m, silver 68 g/t, copper 0.45, lead 1.20% and zinc 4.60%.

Silver bearing lead-zinc mineralized zones of Pagar Gunung are skarn type ore deposit replaced selectively calcareous shale intercalating in Argillaceous Rock Predominance Facies, but have stratabound control. As a result of the above fact, it is very effectively on an exploration survey of silver bearing copper-lead -zinc ore deposit at Pagar Gunung area to trace calcareous shale intercalation in Argillaceous Rock Predominance Facies of Patahajang Formation.

CHAPTER 1 OUTLINE OF SURVEY

1-1 INTRODUCTION

Within the frame work of the third phase of the Cooperative Mineral Exploration Survey in Northern Sumatra of the Republic of Indonesia a drilling survey was conducted at Pagar Gunung lead and at the zinc mineralization area, Muara Sipongi Area B, continuing through the second phase.

In the second survey, geological, geochemical and geophysical surveys (SIP method) were carried out to shed more light on the Pagar Gunung mineralized area. As a result of the survey, emplacement and continuity of Pagar Gunung mineralized zone it was found to extend about one kilometer in an east-west direction, and to be divided into two mineralized zones, namely east and west mineralized zones. Drilling survey (five holes, total length 1,200 m) was successively performed in the phase to determine the West Mineralized Zone.

In the third phase, a drilling survey was continued to explore East Mineralized zone and the part between the West and East Mineralized zone. (nine holes, total length 2,100 m).

1-2 SURVEY SCHEDULE AND SURVEY TEAM MEMBERS

The third survey was conducted from June 25, 1984 to March 23, 1985. The survey was carried out under the cooperation survey with the Japanese survey team of the Metal Mining Agency of Japan and its Indonesian counterpart of the Directorate of Mineral Resources, Directorate General of Geology and Mineral Resources, Ministry of Mines and Energy.

(1) Period of Field Survey

From June 25, 1984 to March 23, 1985 (actual drilling operation period) From July 20, 1984 to February 18, 1985

Survey Members

Japanese Members

Indonesian Members

Survey programing and negotiation

Makoto Ishida (MMAJ) Ken Nakayama (MMAJ) Takashi Kamiki (MMAJ)

Members of the survey team Sakae Ichihara (MMAJ)

(Leader and Economic Geology)

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Yukio Kawamura (MMAJ) Mitsuo Sasaki (MMAJ) Masazo Haga (MMAJ)

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Yaya Sunarya (DMR)

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(Drilling)

Madtuhi (DMR) Supratono (DMR)

Tono Hardian (DMR)

Ruhiat (DMR)

Kisman (DMR) Bany Johan (DMR)

(Assistant) M.Mamat (DMR)

MMAJ: Metal Mining Agency of Japan DMR: Directorate of Mineral Resources

1-3 Purpose of the Drilling Survey

The purpose of the third phase survey (drilling survey) was to explore and make clear an emplacement condition, scale, grade of the deep extention, east extention of the East Mineralized Zone and part between the West and East zones of Pagar Gunung silver bearing lead-zinc mineralized zone.

1-4 Location and Programme of the Drilling Survey

Location of the drill holes (nine holes, total length planned 2,100 m) and drill length, purpose of each hole is shown in Table 1-1, Fig. 1-3.

Table 1-1 Programme and Purpose of Drilling Survey

Hole No.	Location	Length Drilled	Dip	Purpose
MJI-6	east of MJI-12 (1,207.26 m)	250 (m)	-90°	east extention of Pagar Gunung east mineralized zone
MJI-7	Between MJI-11, 12 (1,218.19 m)	200	-90°	deep extention of Pagar Gung east mineralized zone
MJI-8	F line 4.0 (1,257.00 m)	250	-90°	part between Pagar Gunung east and west mineralized zone
MJI-9	G line 4.0 (1,235.65 m)	250	-90°	ditto
MJI-10	H line 4.5 (1,156.32)	200	-90°	SIP anomaly located at north parallel zone of Pagar Gunung Mineralized zone
MJI-11	H line 4.5 (1,235.89 m)	250	-90°	deep extention of Pagar Gunung East Mineralized zone
MJI-12	I line 4.0 (1191.73 m)	250	90°	ditto
MJI-13	80 m sw of MJI-6 (1,234.00 m)	250	-90°	Deep and east extention of Pagar Gunung East Mineralized Zone
MJI-14	130 m east of MJI-6 (1, 268.00 m)	250	-90°	East extention of Pagar Gunung mineralized zone
	Total	2,100		o versione exercise de la companya d

1-5 Drilling Holes Performed

Hole length, core recovery, drilling period of each hole are shown in Table 1-2.

Table 1-2 Drilling survey Result

Drilling	Drill	Drill	151	Surface	Core	Core Core		eriod	
No.	Length Planed	Length Performed	Dip	Soil	Length	Recovery	Start.	Finish	
МЈІ-6	(m) 250	(m) 250.30	-90°	(m) 9.00	(m) 221.90	% 92.0	Nov. 25 '84	Dec. 12 '84	
MJI-7	200	200.40	-90°	12.00	169.20	89.8	Dec. 17 '84	Dec. 30 '84	
MJI-8	250	250.50	-90°	16.00	215.50	91.9	Oct. 28 '84	Nov. 13 '84	
MJ1-9	250	250.50	-90°	8.00	219.45	90.5	Oct. 10 '84	Oct. 20 '84	
MJI-10	200	200.50	-90°	7.00	167.45	86.5	Sep. 12 '84	Sep. 23 '84	
MJI-11	250	250.20	-90°	13.30	183.50	77.5	July 20 '84	Aug. 12 '84	
MJI-12	200	200.30	-90°	5.00	168.60	86.3	Aug. 20 '84	Sep. 4 '84	
MJ1-13	250	250.50	-90°	9.00	208.40	86.3	Jan. 29 '85	Feb. 18 '85	
MJ1-14	250	250.70	-90°	21.00	202.60	88.2	Jan. 10 '85	Jan 23 '85	
Total	2,100	(2,103.90)		(100.30)	1,756.60	87.7			

Core Recovery =
$$\frac{\text{Core length}}{\text{Hole length} - \text{Surface soil}} \times 100 (\%)$$

1-6 Laboratory Work and Core Logging Work

The lithology, alteration and mineralization of the drilling core area observed at the Pagar Gunung drilling base camp, and compiled in the core logging chart (1/200 scale). 1/4 part of the ore samples were splited by a diamond cutter, and collected for chemical assay. Laboratory work is shown as follows:

(1)	Microscopic observation of rock thin section	46	pieces
(2)	Microscopic observation of ore sample	43	pieces
(3)	Chemical assay of ore sample		
	(Au, Ag, Cu, Pb, Zn)	21	pieces
(4)	Chemical assay of ore sample		
	(Ag, Cu, Pb, Zn)	103	pieces

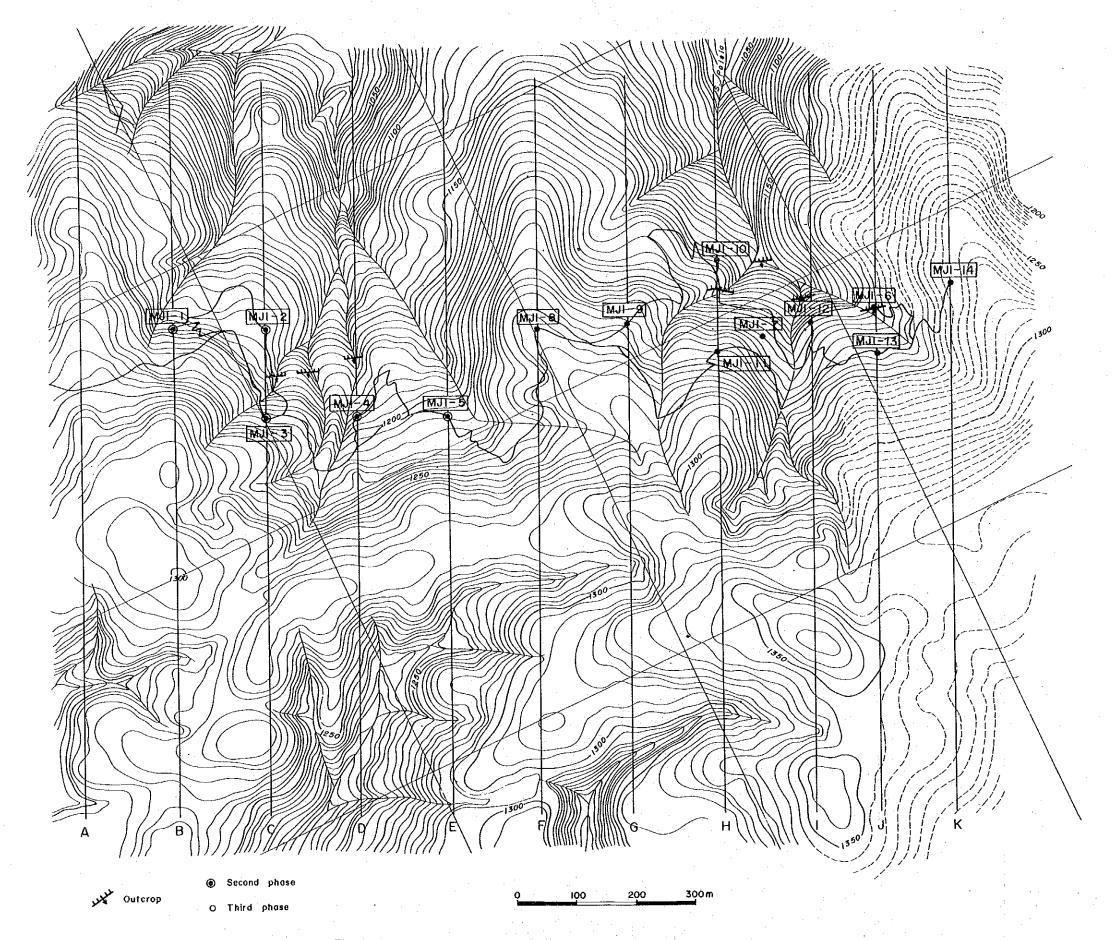


Fig. 1-3 Location Map of Drill Holes in Pagar Gunung Area

CHAPTER 2 DRILLING OPERATION

2-1 DRILLING METHOD

The drilling operation was performed by means of a wire line method using an oversized diamond bit of NQ (79 mm diameter) and BQ (62 mm diameter), while non core drilling using tri-cone bit (98.4 mm) through surface soil and weather rock was performed.

Bentonite was used for material of mud water. When drilling through the fault part and fractured part, libonite mixed bentonite water was circulated to keep a good hole condition. It was very effective to add suitably mud oil (lubricant) in mud water to reduce torque resistance caused

by wall collapse.

Circulating water often leaked out through a crack or a fracture in ground. Telstop (cotton residual), Seaclay (asbestos fraction) and Telseal (vermiculite fraction) were mixed in circulating mud water to stop leakage of water through the crack and fractured of rock. When circulating water severely leaked, cementing work was done, and when no way to stop leakage of circulating water the drilling operation was done supplying continuously clean water.

Drilling programme is shown in Fig. 2-1.

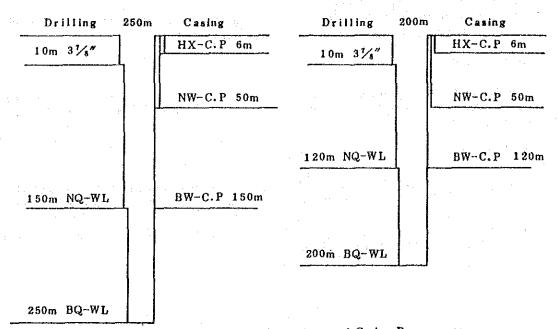


Fig. 2-1 Drilling and Casing Programme

In this survey, the inner tube of the core barrel which was plated with chrome metal inside of its tube was used. The Usage of the core barrel promoted a better core recovery, namely the average core recovery reached 90% and especially mineralized part was 100%.

2-2 Drilling Machine and Consumables Used

Koken OE-8BL (drilling capacity 300 m) was used. Table 2-1 shows specification of drilling machine, pump, engine and so on. Consumables including bit, drilling mud-oil, cement etc is shown in Table 2-2-2-5. Drilling muds were brought from Japan, but bentonite and mud oil were used up and then a certain amount of the materials were purchased at Medan. Light oil and cement were purchased at Kotanopan, the nearest town from the drilling place.

2-3 Operation Member, Shift and Drilling Record

The Operation of the move-in and move-out from site to site and preparation in the drilling site were done on a one shift per one day system, while drilling operation was carried out by three shifts per one day, eight hours per one shift. One shift of drilling work was organised by a Japanese engineer, an Indonesian counterpart (DMR) and two Indonesian workers.

Record of operations are shown in Table 2-6—Table 2-24 and Fig. 2-2—Fig. 2-10.

2-4 Transportation and Road Construction

Pentonite, spare parts etc shipped from Japan were unloaded at Harbour Belawan (Medan), and were transported to Kotanopan through Sumatra Travers Road by large truck (capacity 6 tons), and from Kotanopan to Simpang Tolang by small truck (capacity 2 tons). There are about 650 km from Medan to Kotanopan, and 6 km from Kotanopan to Simpang Tolang.

Via a mountain road of 9 km, these materials were conveyed from Simpang Tolang to

Pagar Gunung base camp by human power.

These materials arrived at Belawan on July 13, 1984 and customs clearance of the materials

were processed until August 18, 1984.

There was no access from drilling site to drilling site, and the transportation road was constructed. The total distance of constructed road reached 3,500 m.

2-5 Water Supply

The Water for the drilling operation was supplied by natural running through piping from a neighbouring river. But water was supplied by pump to MJI-8, because the site was situated at the top of the ridge.

2-6 Withdrawal

After completion of the survey, all drilling machine and equipment were transported to Pagar Gunung base Camp, and only the machines and engine pumps, derrick were taken out from Pagar Gunung.

The cores were stored at the core house of the Pagar Gunung base camp, and they were

delivered to the Directorate of Mineral Resources.

Table 2-1 Drilling Machine and Equipment used

·	
Drilling Machine Model "OE – 8BL"	1 set
Specifications: Capacity Dimensions L x W x H Hoisting capacity Spindle speed Engine Model NS - 130CG	300 mm (BQ WL) 1,550 mm x 700 mm x 1,260 mm 2,000 kg Forward 100, 190, 320, 530, rpm 13 HP/2,200 rpm
Drilling pump Model "MG - 10"	1 set
Specifications: Piston diameter Stroke Capacity Dimensions L x W x H Engine Model NS - 110C	68 mm 100 mm Discharge capacity Max pressure 1,690 mm x 580 mm x 980 mm 11 HP/2,200 rpm
Water supply pump Model "MG - 5h"	l set
Specifications: Capacity Engine Model NS – 50C	Discharge capacity Max pressure 6 HP/2,400 rpm 60 2/min 30 kg/cm ²
Wire line hoist Model "WLH – 4"	1 set
Specifications: Rope capacity Hoisting speed Engine Model NS – 40C	500 m 8 ~ 105 m/min 5 HP/2,400 rpm
Mud mixer Model "MCE – 100"	l set
Capacity Engine Model NS – 40C	100 g/600 rpm 5 HP/2,400 rpm
Generator Model "NDY – 3.2S"	l set
Generator Model "YSG – 2S"	l set
Drilling tools	
Drilling rod	NQ WL 3 m 70 pcs BQ WL 3 m 110 pcs
Casing pipe	HX 0.5 m 2 pcs
	HX 1 m 6 pcs NW 1 m 3 pcs
	NW 3 m 20 pcs
	BW 1 m 3 pcs BW 3 m 70 pcs
Derrick	1 set
Specifications:	
Height Max load capacity	9.5 m 6,000 kg

Table 2-2 Specification of Diamond Bit Used

Used								
Total bit Used	10	12	13	5	9	16	10	72
Waterway	4	4	4	9	4	4	4	
Stones per carat	25	25	25	08 ~ 09	25	25	25	ž.
Matrix	E	CE	٦	нн8	ជា	CE	O	
Carats per bit	. Ct	30	30	25	22	22	22	*1,879
Type of bit	NQ – WL	NQ - WL	NQ - WL	NQ - WL	BQ - WL	BQ – WL	BQ - WL	
Size of bit		1	13.0 IIIIII			62.0 mm		Total
Item				Diamond Bit				

E : for ordinary rock
CE : for ordinary rock
* : total amount of dia

C : for hard rock

HH8 : for Imprignate bit

: total amount of diamnd carat

Table 2-3 Drilling Meterage of Diamond Bit (NQ) Used

Yearn	Cina	Bit No.			Drilliı	ng Metera	ige by ho	le Unit:	Meter			Total (m)
Item	PING	BIL INO.	MJI-6	MJI-7	MJI-8	MJI-9	MJI-10	MJ I-11	MJI-12	MJ1-13	MJI-14	Total (III)
. i		184459						21.40				21.40
		184460	, i					31.20				31.20
		184461							22.30			22.30
		184462							39.20			39.20
		184463					12.80					12.80
		184464				38.80						38.80
		184465				31.90						31.90
		184466				20.60						20.60
		184467			52.40						1	52.40
		184468			20.10							20.10
[184469	10.30	8.90								19.20
		184470		[30.90							30.90
		184471									23.20	23.20
		184472						27.15				27.15
		184473	•					23.30				23.30
		184474							14.20	<u> </u>		14.20
Dia		184475							41.90			41.90
Dia- mond	NQ	184476					32.60					32.60
bit		184477					33.50					33.50
		184478									28.10	28.10
		184479				28.30						28.30
		184480	14.40									14.40
	:	184481	53.00		·							53.00
. }		184482		43.20								43.20
		184483		22.90						I		22.90
		184484						37.95				37.95
		184485				23.40						23.40
		184486			30.60							30.60
		184487	26.00								:	26.00
		184488	37.30									37.30
.]		284147							19.50			19.50
		284148		14.50								14.50
7		284149		18.50								18.50
1		284150					28.15					28.15
		284151								34.00		34.00
	3 1	1841531								29.60		29.60
		1841532									22.90	22.90
		401-7					444	. :	,		54.80	54.80
		403-7								44.70	1	44.70
		404-3								32.70		32.70
	1	otal	141.00	108.00	134.00	143.00	107.05	141.00	137.10	141.00	129.00	1,181.15
	Tot	al			Dri	illed leng	th/bit (1	,181.15/4	10)			29.53

Table 2-4 Drilling Meterage of Diamond Bit (BQ) Used

	· · ·		·····	· · · · · · · · · · · · · · · · · · ·		-	7 7 7 h		·	·		r
V 4	C:	D:A NI			Drilli	ng Metera	ge by ho	le Unit:				Total (m
Item	Size	Bit No.	MJI-6	МЈІ-7	MJI-8	MJ1-9	MJI-10	MJI-11	MJI-12	мл-13	MJI-14	Total (III
		172685						14.40				14.40
		172686						15.40				15.40
		172687						18.75				18.75
		172688						22.80		· .		22.80
		172689						17.65				17.65
		172690						11.20	8.10			19.30
		174504					54.40	1				54.40
		174505					32.05		* j.i.			32.05
÷	-	174506				20.80					1	20.80
		174507				29.30						29.30
	ļ	174508	13.60									13.60
		174509		26.20	-							26.20
		174510	4.10	1 -	35.10						100	39.20
	Ì	174511			40.00							40.00
ia-	ļ	174512							Ì		31.10	31.10
ond	BQ	174513								21.50		21.50
t		174514							42.10			42.10
		174515				37.60					et st	37.60
		174516				12.80						12.80
		174517	52.00									52.00
		174518	19.90									19.90
		174519	10.70	18.10								28.80
		174520	<u> </u>		25.40			Ī		l		25.40
	}	174521		36.10							1.5	36.10
		174522									39.70	39.70
1.		174523									8.50	8.50
		NS301		-				İ			21.40	21.40
		NS304								16.60		16.60
		NS307		·					7	19.40		19.40
		NS309						·		15.70		15.70
	1	NS310				· · · ·				17.60		17.60
		NS312								9.70		9.70
	T	otal	100.30	80.40	100.50	100.50	86.45	100.20	50.20	100.50	100.70	819.75
	Total			Di	illed leng	th/bit	•	(819.75/3	2)		25.62
Gr	and T	otal		Dı	illed leng	th/bit (N	Q and B	Q) (2,	000.90/7	2)		27.79

Table 2-5 List of Consumables Used

			_									
Description	Specifications	Umit				1		1			,	Total
			9][W	MJI-7	MJ]-8	MJI-9	MJI-10	MJI-11	M31-12	MJI-13	MJI-14	
Light oil		o.	1.105	978	1,110	1.125	710	1,695	930	1,350	943	9,943
Engine oil		æ	29	28	20	20	18	. 20	20	36	32	223
Hydraulic oil		ð	5	12	4	8	18	12	9	9	24	85
Gear oil		ğ		4		80		10				22
Grease		32	9	∞	ď	9	5	œ	9	20	01	74
Bentonite		χg	4,575	2.075	2,975	3.275	1,975	4.500	2,450	3,300	3,400	28,525
Libonite		Kg			820						400	1,220
C.M.C		Kg	92	46	121	56	22	181	27	80	42	199
Caustic soda		ž,			12						∞	20
Tel - stop		χg	28	47	120	185	15		18	61	99	557
Sea Clay		Ϋ́g	7.0	25	210	160	65		09		ΙΟ	009
Tel - seal		Kg	40	30	40	30	10		10	20	70	200
Cutting oil		ο _τ	126	140	115	170	41	200	09	118	89	1,038
Calcium chloride		Kg	18	8	25	28	5	16	9	12	10	128
Cement		Ks.	1,560	640	1,520	1,880	480	1,840	909	380	560	9,960
Diamong bit	NQ - WL	od.	S	4	4	\$	4	5	S	4	4	40
Diamond bit	BQ - WL	od .	4	2	3	4	2	9	1	٥	4	32
Diamond reamer	NO - WL	bc	C1	5	-	2	Ċ	2	r-4	2	2	91
Diamond reamer	BQ - WL	bc	2	1	• 1	.2	1	2	1	2	1	13
Casing bit	WN - XN	od [-	1			1	2		2		7.
Casing metal shoe	ΗX	26	7		_	1	1	1	1	1	1	10
Casing metal shoe	BX - BW	DC	-	_	_		1	1	1	_	1	6
Tri cone bit	3.7/8"	og.	t			1 1	1	.1	1	1	1	6
Core barrel Assy	NQ - WL	set			_			1	1		1	4
Core barrel Assy	8Q - WL	set				Į		1	:	-		4
Inner tube	NQ - WL	bc		2		1		-1	-		ći	7
Inner tube	BO WL	o	-			Ç		-	1.		-	9
Core lifter case	NO WL	bc	4	. 4	S	9	4	5	4	9	4	42
Core lifter case	BQ - WL	bc	4	7	4	4	m	4	2	4	3	30
Core lifter	NQ WL	bc	S	4	9	9	4	9	4	9	4	45
Core lifter	BQ WL	bc .	4	3	4	4	7	4	2	4	3	30
Thrust ball bearing	NO - WL	2	4	4	4	4	4	4	4	4	4	36
Thrust ball bearing	BQ W.L	2. 2.	¥	4	4	4	4	4	7	4	vł	36
Innertube stabilizer	NQ - WL	2	7	61	_	7	2	2	ı	2	. 2	91
innercube stabilizer	BQ WL	ઝ	2	_	_	2		2	1	71		13
Chack piece	NO - WL	1es	1			-					1	4
Chack piece	BQ WL	set		_		_	: !	I				'n
Cylinder liner	68 mm	bc	2			(1		2			2	9
Piston rod		ፈ	6			2		2			2	6
Piston rubber	68 mm	bc	4	च	œ.	4	4	4	4	4	4	4
Wire rope	6 m/m 300 m	roll			1							C1
Core Box	NO - WL	g	27	30	26	27	19	22	28	28	25	222
Core Box	RO - Wi	20	17		1.2	-1-	_	4	٥	**		

Table 2-6 Working Time Analysis of the Drilling Operation

			• ••				<u> </u>	· ·							Ĭ	:														ĺ							:	
	G. Total	ч	.00.08	280,00,	112,00	472,00,	40°00	.00,941	144°80′	360°00′	36,00	256,00	152°00′	464 00	67°30′	184 00	280,00	531°30′	42°00'	144°00′	112°00′	298°00′	.05,68	240°10′	303°50	631°30"	42,00,	272°00′	378,00,	35,00	269,00.	224°00′	528°00′	.00,88	169°20	142°40°	400,00	4,063°00′
	Road con- struction and others	ч				(137°00')																											(248°00')					(385°00')
	Removing	ų	72,00.		8,80,	.00,08	32,00.		8,00,	40.00	40,00,		16°00′	56°00′	59°30'		8,00	67°30'	34,00.		8,00.	45,00	70°30′		8,00,	78°30′	34,00.	206201	54°30′	27°00		16°00′:	43,00	64°00′		11,30,	75°30'	537°00°
time	Total	ч	8,00,	280,00	104.00	392,00	,00°8	176°00'	136,00	320,000	16°00′	256°00′	136°00′	408,00	8,00.	184°00′	272°00'	464°00′	8,00	144°00'	104,00.	256°00′	17°00'	240°10′	295°50°	553,00.	8,00,	272°00′	323°30′	8,00.	269°00	208°00′	485°00	24°00	169°20	131°10	324°30′	3,526°00′
Working time	Recovering	æ		11,20.	20,	12°10'		19°20′	15°10	34°30′	3,50	52°10	36°30′	92,00.	.04	12°50	136°30′	150,00.		3,20,		3°50′		25,00	63°20°	88°20′		13°30′	13°30′		26°50	9°00′	35,20		13°20	.04 _o \$	22,00′	452°10
	Other Working	ц	2,40,	107°10′	36°50′	346°40′	2°30′	73°50′	45,40,	122°00'	5 40	80,00	42,20	128 20	3,00.	.02,89	79°20′	150°40	4,30	54°20'	36°10′	00,56	11,00	131,30	135°40′	278°10′	5°30	101,00	130°50	4°30	106°50′	97°10′	208,30	17°30	76.40	40°10	134°20	1,394°30
	Drilling	Е	2,20,	161°30′	,02,99	233°10′	5°30′	82°50′	75°10′	163°30	7,00	123°50	56°50	187°40′	4°20'	102°50′	.01,95	163°20	3°30′	85°50'	67°50′	157°10	6,00,	83,40	.05,96	1.86°30′	2°30'	157°30'	179°10′	3°30	135, 20.	101°50′	240°40	6,30	79°20′	82,20	168 10	1,679°20
s man	Worker	man	274	182	84	639	134	212	154	500	152	223	212	287	194	145	265	604	137	66	119	355	265	279	245	789	116	397	570	153	228	205	586	286	163	220	699	5,299
Working man	Engineer.	man	0	47	. 12	108	30	30	26	76	23	. 5	28	. 93	99	32	46	108	30	56	22		40	8	56	136	19.	56	91	16	9	42	194	39	25	31	95	879
1	Total	shift	0	78	21	59	ار	22	81	45	7	23	28	58	s	50	38	99	\$	80	14	37	10	200	37	77	5	27	46	4	35	28	99	1.1	25	20	. 26	510
Shift	Drilling	shift		27	- 61	47	1	5	16	38	2	. 22	22	46	1.	16	27	44	-	18	12	31	C 3	54	28	54		23	38		30	24	55	cı	17	18	37	390
	Core length	E	ı	123.90	98.00	221.90	1	91.30	77.90	169.20	•	118.65	96.85	215.50	1	124.25	95.20	219.45	1	81.80	85.65	167.45	,	94.70	88.80	283,50	1	121.95	168.60		126.90	81.50	208,40	1	112.45	90.15	202.60	1,756.60
Drilling	Drilling	E	00'6	141.00	100.30	250.30	12,00	108.00	80.40	200,40	16.00	134,00	100.50	250.50	7.00	143.00	100.50	250.50	2.0	107.05	86.45	200.50	9.00	141.00	100.20	250.20	13.00	137.10	200.30	86	141.00	100.50	250.50	21.00	129.00	100.70	250.70	2,103.90
	Bit size	,	3.7/8	ş	8	Total	3.7/8	9	gg gg	total	3.7/8"	2	8	total	37/8"	8	8	total	3.7/8"	g	8	total	37/8	8	%	total	37/8"	0 G	leto	3.7/8"	Š	8	total	3.7/8"	8	80	total	Ę
	Hole No.			MJI-6	1			MJI-7				M.71-8				S-II-N				01-IUM	'			MJI-11				MJ-12			MJ1.13		- 1,		MJ1-14			Grand Total

Table 2-7 Record of the Drilling Operation on MJI-6

	Γ	rilling lengt	h	Т	'otal	Shi	ft	Workin	g man
	Shift, 1	Shift, 2	Shift. 3	Drilling	Core length	Drilling	Total	Engineer	Worker
November 16 17	m Reassemb Reassemb	m	m	m	m	shift	shift 2	man 8	man 55
18 19 20 21 22 23 24	Reassemb Reassemb Reassemb Reassemb Reassemb Reassemb						7	28	184
25 26 27 28 29 30 December	12.00 2.90 1.20 4.30 7.10 5.30	Reaming 1.70 6.10 4.50 8.40	1.90 5.30 6.20 5.10 8.60	12.00 4.80 8.20 16.60 16.70 22.30	1.50 2.00 3.90 13.70 15.20 22.30				
December	8.00	4.00	5.40	17.40	17.40	18	19	28	197
2 3 4 5 6	5.90 4.00 5.70 3.80 5.20	6.20 4.60 5.00 1.10 2.20	5.30 4.50 7.00 6.00 3.20	17.40 13.10 17.70 10.90 10.60	16.30 11.00 16.80 10.90 9.90				
7 8	3.40 4.70	6.50 6.10	6.90 5.80	16.80 16.60	16.80 15.20	21	21	28	134
9 10 11 12	6.70 5.70 7.30 Dismant	6.60 6.00 3.00	6.00 7.90 Out-C.P	19.30 19.60 10.30	19.30 19.60 10.10	8	10	16	69
Total	93.20	72.00	85.10	250.30	221.90	47	59	108	639

Abbreviation

Pds,	Preparation for drilling site
Transpor,	Transportation
Reassemb,	Reassemblage
Dismant,	Dismantlement
Ins-C.P,	Inserting casing pipe
Out C.P.	Taking out casing pipe

Cem, Cementing work
Cem-Cut, Cutting cementing part
Stop-wat, Stoping for water leakage
Pws, Preparation for drilling site
Rsdg, Repair work for sink of
drilling graund

Table 2-8 Record of the Drilling Operation on MJI-7

		rilling lengt	h	ı	otal .	Shi	ft	Workin	g man
	Shift. 1	Shift. 2	Shift, 3	Drilling	Core length	Drilling	Total	Engineer	Worker
December	m	m	m	m	m	shift	shift	man	man
13	Reassemb								
14	Reassemb			1 .	7				
15	Reassemb	. :				· · · · · · · · · · · · · · · · · · ·	3	- 12	110
16	Reassemb								
17	13.40	:		13.40	0.90				:
18	5.40	7.10	1.10	13.60	8.45				
19	2.30	8.00	0.70	11.00	10.00				
20	Cem-Cut	5.90	0.60	6.50	5.80				
21	2.10	7.20	7.50	16.80	11.90				
22	5.60	9.70	8.00	23.30	22.45	15	17	28	142
23	6.50	6.90	6.20	19.60	19.00]
24	6.80	4.20	3.20	14.20	11.30				
25	2.30	6.00	6.10	14.40	14.20				
26	6.00	6.60	3.40	16.00	16.00				
27	4.40	5.70	5.30	15.40	15.30				
28	3.50	5.40	5.00	13.90	13.90			[,
29	5.50	4.60	4.30	14.40	13.70	21	21	28	152
30	5.20	2.70	Out-C.P	7.90	6.30				
31	Dismant	, ;				2	4	8	96
Total	69.00	80.00	51.40	200.40	169.20	38	45	: 76	500

Table 2-9 Record of the Drilling Operation on MJI-8

	D	rilling lengtl	າ	1	otal	Shii	ft : · ·	Workin	g man
	Shift. 1	Shift. 2	Shift, 3	Drilling	Core length	Drilling	Total	Engineer	Worker
October	m	m	· m	m	m	shift	shift	man	man
22	Off day								
23	Reassemb	·							
24	Reassemb		,				. :		
25	Reassemb								
26	Reassemb								
27	Reassemb						5	20	143
28	7.70	9.20	7.90	24.80	6.40				
29	5.10	5.90	6.70	17.70	12.05				
30	4.40	1.10	8.20	13.70	13.00				
31	6.00	6.10	9.50	21.60	19.55			· .	
November				. :					
1	2.40	Cem-Cut	1.60	4.00	3.60				-
2	7.80	10.40	8.80	27.00	25.55	1			:
3	8.80	6.40	6.30	21.50	19.40	20	21	28	136
4	5.20	5.10	5.40	15.70	15.70				
5	4.00	3.80	7.20	15.00	14.20		:		
6	7.00	2.40	1.90	11.30	11.25				!
7	Stop-wat	0.90	4.50	5.40	5.40				
8	3.40	4.00	7.70	15.10	15.10				
9	4.20	6.10	Stop-wat	10.30	10.20			[
10	Stop-wat	7.50	4.10	11.60	11.50	18	21	28	186
11	2.40	4.30	3.70	10.40	9.60				
12	3.40	3.50	4.70	11.60	10.20	4.			:
13	7.40	6.40	Out-C.P	13.80	12.80			:	
14	Dismant	,		J. John					
15	Dismant					8	10	17	122
Total	79.20	83.10	88.20	250.50	215.50	46	57	93	587

Table 2-10 Record of the Drilling Operation on MJI-9

<u></u>	, I	Orilling lengt	h	T e	otal	Shi	ft	Workin	g man
	Shift. 1	Shift. 2	Shift, 3	Drilling	Core length	Drilling	Total	Engineer	Worker
September	m	m	m	m	m	shift	shift	man	man
25	Reassemb							:	
26	Reassemb						1 2		·.
27	Reassemb						7 24		in the
28	Reassemb		:)]		٠.	100	
- 29	Reassemb					1 .	5	20	126
30	Reassemb								
October					[*				
1	Reassemb			19.54					.5
2	13.00	10.70	10.00	33.70	17.45	·	,		
3	5.30	Reaming	8.80	14.10	11.85				
4	8.00	9.30	Cem	17.30	14.20	1	;		
5	Cem-Cut	9.20	9.20	18.40	16.75	:			
. 6	8.30	8.00	9.60	25.90	23.80	12	17	28	171
.7	7.30	10.70	9.50	27.50	27.10				
8	6.10	7.00	Ins-C.P	13.10	13.10				
9	8.30	8.90	7.30	24.50	24.50				
10	5.40	7.70	1.20	14.30	14.30			V.	
11	4.10	6.50	5.50	16.10	15.00				
12	2.40	Stop-wat	Stop-wat	2.40	2.10	1 11			
13	1.10	Stop-wat	0.10	1.20	1.15	17	21	28	147
14	2.50	Stop-wat	Stop-wat	2.50	2.45				
15	Stop-wat.	0.45	0.60	1.05	0.95				
16	0.15	1.55	1.50	3.20	2.35		 		. 1
17	1.85	Stop-wat	Stop-wat	1.85	1.85	: .			
18	Stop-wat	3.85	7.45	11.30	9.70	·	[]		
19	1.80	2.90	2.90	7.60	6.65			14.44	
20	5.30	6.90	2.30	14.50	14.20	15	21	28	148
21	Out-C.P	Dismant					1	4	12
Total	80.90	93.65	75.95	250.50	219.45	44	65	108	604

Table 2-11 Record of the Drilling Operation on MJI-10

	I. I	rilling lengtl	ì	П	`otal	Shi	ſt	Workin	g man
	Shift, 1	Shift. 2	Shift. 3	Drilling	Core length	Drilling	Total	Engineer	Worker
September	m	m	m	m	m	shift	shift	man	man
8:	Transpor				,		1	4	32
. 9:	Reassemb						İ	l	
10	Reassemb								
11	Reassemb								
12	7.80			7.80	0.80				
13	5.20	6.10		11.30	5.20				
14	5.80	5.80	6.40	18.00	8.80				
15	2.50	7.00	4.50	14.00	11.70	9	12 .	28	148
16	8.20	8.10	5.70	22.00	19.20				
· 17.	8.50	4.30	8.40	21.20	16.50			ļ ·	
18	5.30	6.10	5.60	17.00	16.85		:		
19	2.75	3.25	7.20	13.20	13.20	£ 4		ļ	
20	6.70	6.70	7.10	20.50	20.50	: :		ļ.	
21	8.40	9.10	5.90	23.40	22.60			. *	
22	7.20	8.00	8.60	23.80	23.80	21	21	28	123
23	8.30	Out-C.P		8.30	8.30				,
24	Dismant			:		1 .	3	8	52
Total	76.65	64.45	59.40	200.50	167.45	31	37	68	355

Table 2-12 Record of the Drilling Operation on MJI-11

	Γ	orilling lengt		7	`otal	Shi	ſt	Workin	g man
	Shift. 1	Shift. 2	Shift: 3	Drilling	Core length	Drilling	Total	Engineer	Worker
July	m	m	m	m	m	shift	shift	mạn	man
12	Pds								
13	Pds		,		1 4.				
14	Reassemb						3	12	70
15	Reassemb								
16	Reassemb			***	,	* .			
17	Reassemb			-11					
18	Reassemb	÷		# *** *					51
19	Reassemb	N 4.							
20	5.00			5.00	<u>-</u>	:			
21	4.00			4.00		2	7	- 28	195
22	6.00	8.10	6.90	21.00	12.90	199	: :		
23	Reaming	6.80	7.30	14.10	10.85		ľ		*
24	0.30	Reaming	Reaming	0.30	0.20				."
25	1.40	5.75	4.85	12.00	6.75				\$
26	1.90	Cem	Cem-Cut	1.90	1.00				
27	6.20	6.70	7.40	20.30	14.10		1.50		:
28	7.10	7.75	8.55	23.40	18.90	16	21	, . 28	202
29	8.50	7.75	7.45	23.70	18.10				
30	7.40	4.20	8.50	20.10	9.60				
31	3.70	0.50	Ins-C.P	4.20	2.30				
August									
1	3.10	5.30	3,20	11.60	8.50				
2	4.00	4.60	4.80	13.40	12.10				
3	3.70	2.80	6.70	13.20	12.90				
4	5.50	3.45	Cem	8.95	8.95	19	- 21	28	161
5	Cem-Cut	1.40	Cem	1.40	1.30				
6	Cem-Cut	0.15	Cem	0.15	0.15				
7	4.30	3.80	Stop-wat	8.10	8.10				
8	2.20	0.70	3.50	6.40	5.15				
9	5.10	3.05	3.45	11.60	9.90	,			
10	5.00	3.35	3.15	11.50	9.70			ĺ	
11	2.70	2.60	4.60	9.90	8.80	16	21	28	116
12	4.00	Out-C.P		4.00	3,25	·····	i		
13	Out-C.P	Out-C.P							,
14	Dismant					1	5	12	45
Total	91.10	78.75	80.35	250.20	183.50	54	78	136	789

Table 2-13 Record of the Drilling Operation on MJI-12

	L. C	Prilling lengt	h	1	Cotal	Shi	ft: j : j	Workin	g man
	Shift. 1	Shift, 2	Shift. 3	Drilling	Core length	Drilling	Total	Engineer	Worker
August	m	m	m	m	m	shift	shift	man	man
15	Reassemb								
16	Reassemb	· .		i		·		i 	
17	Off day								
18	Reassemb						3	12	76
19	Reassemb		: 1						
20	13.00	5.00		18.00	3,40				
21	3.00	6.20		9.20	8.10				
22	4.00	4.10		8.10	6.05		·		
23	6.30	4.00		10.30	8.40				
24	4.50	6.00	•	10.50	10.50				
25	7.65	7.25		14.90	14.90	12	13	28	245
26	5.60	3.10	, n	8.70	7.65	:			
27	2.80	3.70		6.50	4.05	.*			
28	5.00	4.10		9.10	5.95				
29	6.20	4.50	4.60	15.30	14.80				
: 30	4.70	3.80	6.00	14.50	13.75				
31	5.50	3.10	7.70	16.30	16.30	·			
September	l I				}				
1	7.60	1.10	4.30	13.00	12.00	18	18	28	143
2	5.00	4.90	8.30	18.20	17.30				
3	4.80	5.30	6.10	16.20	14.90				
4	5.60	4.00	1.90	11.50.	10.55	1.			
5	Out-C.P	Dismant							
6	Dismant								·
7	Dismant					9	13	23	106
Total	91.25	70.15	38.90	200.30	168.60	39	47	91	570

Table 2-14 Record of the Drilling Operation on MJI-13

	Drilling length			Total		Shift		Working man	
	Shift, 1	Shift. 2	Shift. 3	Drilling	Core length	Drilling	Total	Engineer	Worker
January	m	m	m	m	m	shift	shift	man	man
26	Reassemb						1	4	38
27	Reassemb				:				
28	Reassemb							age to a se	
29	8.00			8.00	· · ·	ar e			
30	6.10	6.00	8.00	20.10	15.80				
31	2.30	2.90	Reaming	5.20	2.95				
February							:	e de la companya de l	
1	3.50	3.70	4.00	11.20	8.45			as te	
2	5.00	6.00	7.10	18.10	13.40	12	15	28	194
3	0.30	Cem-Cut	5.10	5.40	5.10				
4	1.10	2.60	Cem	3.70	3.20				
5	Cem-Cut	3.30	6.00	9.30	9.30				,
6	6.00	2.60	6.00	14.60	14.60				
7	6.30	6.10	6.10	18.50	18.50				- 1. -
8	6.10	5.00	6.30	17.40	17.40			11	
9	5.20	5.00	4.50	14.70	14.40	18	21	28	143
10	3.80	3.20	5.50	12.50	11.95				
11 -	4.30	5.10	3.40	12.80	10.85	1.00		<u> </u>	
12	3.30	5.70	4.60	13.60	9.80				
13	4.50	3.30	3.20	11.00	7.15	. :	[
14	Rsdg	5.70	6.60	12.30	9.85				
15	3.50	3.80	4.60	11.90	10.70	1 1			
16	4.90	3.70	3.70	12.30	10.80	20	21	28	113
17	4.00	3.80	4.20	12.00	9.10	-			
18	3.50	2.40	Out-C.P	5.90	5.10				
19	Dismant		141						- n [* .
20	Dismant					5	8	16	- 98
Total	81.70	79.90	88.80	250.50	208.40	55	66	104	586

Table 2-15 Record of the Drilling Operation on MJI-14

	Drilling length			Total		Shift		Working man	
	Shift, 1	Shift, 2	Shift, 3	Drilling	Core length	Drilling	Total	Engineer	Worker
Jánuary	m	m	m	m	m	shift	shift	man	man
1	Off day		:						
2	Pds			,					
3	Reassemb								
4	Reassemb			١.				,	
5	Reassemb						4	16	119
6	Reassemb			· · · · · ·					
7	Reassemb								
8	Reassemb	1							
. 9	Reassemb	•							
10	8.00			8.00	_				
11	Pws	13.00	9.30	22.30	6.50		·		
12	10.00	1.70	7.00	18.70	11.65	6	11	28	241
13	3.50	9.80	7.30	20.60	17.50				
14	3.00	Cem	Cem-Cut	3.00	2.70				
15	9.60	10.30	11.50	31.40	28.70				
16,	9.70	11.00	9.20	29.90	29.50		,		-
17	6.30	7.40	2.40	16.10	15.90				
18	4.60	4.70	8.10	17.40	13.90				
19	6.20	5.40	6.60	18.20	17.75	19	21	28	122
20	5.20	6.30	6.60	18.10	18.10				
21	7.30	6.40	7.00	20.70	20.30	·			
22	6.60	4.60	6.20	17.40	12.20		ļ		
23	1.80	2.70	4.40	8.90	7.90				
24	Out-C.P		· :				·		
24	Dismant		÷ .				14.5	-	
25	Dismant					12	14	23	187
Total	81.80	83.30	85.60	250.70	202.60	37	50	95	669

Table 2-16 Summary of the Drilling Operation on MJI-6

	<u> </u>		: .	 -	Sarve	y Period		<u> </u>	1144	Total	man day
			Per	iod		days	W	ork day	off day	Engineer	worker
-	Preparation	16.11	1984	~ 24.1	1.1984	9		days 9	days 0	man 36	man 239
rtion	Drilling	25.11.	1984	~ 11.12	2.1984	17	dril	ling 7	0	68	385
Operation	2.2			:			reco	overing O	0	0	0
	Removing	12.12	1984	~ 12.12	2.1984	1		.1	0	4	15
	Total	16.11	1984	~ 12.12	2.1984	27	1	27	0	108	639
	Length	250.00	'nı	Surfac Overb		9.00	m	(Core recov	ery of 100 m	hole
ngth	planed Increase		m	Quate			m	Depth o	of hole	core recovery	core recovery cumulated
ng le	or Decrease	:		Core le	ength	221.90		(n:	1)	(%)	(%)
Drilling length	in length						-	0~	100	85.7	
	Length			Core			%	100~		93.8	89.9
<u></u>	drilled	250.30	F	recove	ry	92.0		200~	250.3	99.6	92.0
	Drilling		233	10′ h	59.5	49.	% 4	12.	Effici	ency of Drill	ing
	Other worki	ng	146	°40′	37.4	31.	1		n/work (m/day)	250.3 i	n/17 days m/day)
	Recovering		12	°10′	3.1	2.	6	ļ	n/total		n/49 shift
Working hours	Total		392	,00,	100	83.	1	shift (r	n/shift)	(5.11 n	n/shift)
ing h	Reasse	mblage	72	,00,		15.	2	D	rilling len	gth/bit (each	sized bit)
Work	Disma	ntlement	8	,00,	 	. 1.	7	Bit si	ize 3 7	/8 N Q	B Q
	Water transportation	on						Drilled length		0 141.0	0 100.30
	Road constr and others	uction						Core length	0	123.9	0 98.00
	G. Total		472	,00,		100	,				
rted	Size	meterage	d	neterage rilling ength	× 100	Reco	overy				
insce		(m)		(%)	l	(9	6)				
pipe	НХ	6.50		2.0	<u> </u>	10	00				
Casing pipe inscerted	NW	18.00		7.2	2	10	00				
Ö	BW	150.00		60.0)	- 10	00				

Table 2-17 Summary of the Drilling Operation on MJI-7

			· · · · · · · · · · · · · · · · · · ·			Sarve	y Pe	riod				1	Total	man day
				Per	iod		day	/s	wo	ork day	off day	Er	ngineer	worker
	Preparation	1 2	13.12.	1984	~ 16.12	2.1984	4			days 4	days 0	1	man 6	man 125
tion	Drilling		17 12	1084	~ 30.12	1984	14	į.		ing 4	0	5	6	330
Operation	Dimme		17,12,						ecc	overing 0	0		0	0
	Removing		31.12.	1984	~31.12	2.1984	1			1	0	:	4	45
	Total		13.12.	1984	~ 31.12	2.1984	19)	i	9	0	7	16	500
	Length planed		200.00	m	Surfac		12	.00 m		(Core recov	ery o	f 100 m	hole
Drilling length	Increase or			m	Quate		-	m		Depth o	ļ	reco	ore very %)	core recovery cumulated (%)
Drilling	Decrease in length		· · · · · · · · · · · · · · · · · · ·		Core le	ength	169	.20		0~	100	85	5.1	
	Length drilled		200.40		Core recove	rv	89	8 %		100~	200.4	93	3.9	89.9
	Drilling			163	h °10′		76	45.4	%		Effic	iency	of Drill	ing
	Other worl	king	3		°00'	38.1		33.9			n/work (m/day)		200.40 (14.31	m/14 days m/day)
	Recovering Total	}			°30′	10.8	-	9.6 88.9		Total (n/total n/shift)		200.40 (5.01 n	m/40 shift n/shift)
nours		sem	blage		°00′		+	8.9	-			L eth/b		sized bit)
working hours			lement		°00′			2.2		Bit s			NQ	· · · · · · · · · · · · · · · · · · ·
wo	Water transportat	ion								Drilled length	1 12.	00	108.0	0 80.40
	Road cons	truc	ction		, ,					Core length	0		91.3	0 77.90
	G. Total			360	°00′			100						÷
Casing pipe inscerted	Size	J	neterage	0	neterage Irilling ength	× 100	l	Recove	ery					
inso			(m)	\perp	(%)		_	(%)						
; pipe	HX	ļ	5.00	1	2.5		_	100			e e			
asing	NW		27.00		13.		_	100						
	BW	1	20.00	_	60.0)		100	_	<u> </u>		10.1		

Table 2-18 Summary of the Drilling Operation on MJI-8

		<u> </u>		 	Sarv	ey l	Period				<u> </u>	Total	man day
			I	'eriod		T	lays	WO	ork day	off	day	Engineer	worker
	Preparation	22.	10.198	34 ~ 27.1	0.1984	1	6		days 5	da 1	ays	man 20	man 143
tion	Drilling	28	10 109	34 ~ 13.1	1 1084		17	dril	ling 6	0		63	325
Operation	Drilling	20.	10.190	94 15,1	1,1704			reco	vering 1	0		3	54
	Removing	14.	11.198	34 ~ 15.1	1.1984		2		2	0		7	65
	Total	22.	10.198	34 ~ 15.1	1.1984		25	2	24	1		93	587
	Length planed	250.0	m m		ce soil		16.00	m	(Core r	ecove	ry of 100 m	hole
length	Increase		m		ernaty			m	Depth o		3	core recovery (%)	core recovery cumulated (%)
Drilling length	or Decrease in length			Соге	length	2	15.50	·.	(m 0 ~			86.6	
··.	Length drilled	250.:	50	Core	егу		91.9	%	100 ~ 200 ~		_	95.6 93.5	91.5 91.9
	Drilling		18	7°40′	46.0	%	40.4	% 1		Е	fficie	ncy of Drilli	ing
	Other worki	ng		8°20′	31.5	·.	27.		Total r				n/17 days m/day)
ırs	Recovering Total	·		2°00′ 8°00′	22.5		19.8 87.9		Total r				n/51 shift n/shift)
nou g	Reasse	emblage	1	0°00'			8.0	5	D	rilling	lengt	h/bit (each	sized bit)
working hours	Disma	ntlemen	t 1	6°00′			3.5	5	Bit si	ze	3 7/8	3 NQ	B Q
W	Water transportation	on							Drilled length		16.00	0 134.0	0 100.50
	Road constr and others	uction							Core length		0	118.6	5 96.85
	G. Total		46	4°00′			100				-		
Casing pipe inscerted	Size	metera	ge	meterage drilling length	× 100		Reco						
se ins	НХ	(m) 5.00		2.			10						
id Su	NW	48.00		19.			10						
Casii	BW	150.00		60.			10	<u> </u>					

Table 2-19 Summary of the Drilling Operation on MJI-9

		T	Sarvey Period Period days work day off d								Total	man day
	y and the					da	ys	WO	rk day	off day	Engineer	worker
- 1	Preparation	25.9.1	984 ~	~ 1.10.1	984	,	7		days 7	days 0	man 28	man 176
Operation	Drilling	2.10.1	984 ^	~ 20.10.	1984	1	9		5	0 .	61	348
Ope									overing 4	0	15	74
	Removing	21.10.	1984	~21.10),1984		1		1	0	4	6
	Total	25.9.1	984 -	~ 21.10.	1984	2	7	2	27	0	108	604
	Length planed	250.00		Surfac Overb	urden	:	n 3,00		C	Core recov	ery of 100 i	
Drilling length	Increase or		Quaternary m			m		Depth o		core recovery (%)	core recovery cumulated (%)	
Orilling	Decrease in		Core length		219	9.45		0~		81.7		
-	length			Core			%	_	100~	200	99.0	90.7
	Length drilled	250.50		recove	ry	90	0.5		200~	250.5	89.7	90.5
	Drilling		163	°20′ ^{lı}	35.2	6	30.7	%		Effici	ency of Dri	lling
	Other worki	ng		°40′	32.5		28.4		Total n	n/work (m/day)		m/19 days 8 m/day)
,	Recovering Total		150 464	°00′ °00′	32.3 100	-	28.2 87.3	_		n/total n/shift)		m/57 shift m/shift)
hour	Reasso	emblage	59	°30′		+	11.2	_	D	rilling leng	 gth/bit (eacl	ı sized bit)
working hours	Disma	ntlement	8	°00′		+	1.5		Bit si	ze 37	/8 N (Q BQ
M	Water transportation	on							Drilled length		0 143.	00 100.50
	Road constr and others	uction							Core length	0	124.	25 95.20
	G. Total		531	°30′			100					
rted	Size	meterage	d	neterage rilling ength	× 100		Recov	ery				
insce		(m)	1	(%)			(%)				. *	
pipe	НХ	4.00		1.6	5		100					
Casing pipe inscerted	NW	39.00		15.0	5		100					••
ပြ	BW	150.00		60.0)		100					

Table 2-20 Summary of the Drilling Operation on MJI-10

					Sarve	y Period	<u></u>			Total	man day
			Per	iod	**************************************	days	wo	ork day	off day	Engineer	worker
	Preparation	8.9.19	84 ~	11.9.19	84	4		days 4	days 0	man 16	man 137
Operation	Drilling	12.9.1	984 ^	~ 23.9.1	984	12]	ling 2	0	48	193
Oper			:				reco	overing 0	0	0	0
	Removing	24,9.1	984 ^	~ 24.9.1	984	1		1	0	4	25
	Total	8.9.19	84 ~	24.9.19	84	17		700	0	68	355
	Length planed	200.00		Surfac Overb Quate	urden	7.00	m	()	Core recov	ery of 100 m	hole
Drilling length	Increase or		m				m	Depth o		core recovery (%)	recovery cumulated (%)
rilling	Decrease in	:	-	Core length		167.45		0~100		73.0	
<u> </u>	length	+++		Соге			Of.	100~	200.5	99.1	86.5
	Length drilled	200.50		tecove	гу	86.5	10				
	Drilling	• • •	157	, 10. p	61.4	52.	% 7		Effici	ency of Drill	ng
	Other work	ing		°00′	37.1				n/work (m/day)	200.5 i (16.7 n	n/12 days ı/day)
	Recovering		256°	°50′	1.5	85.		Total 1	n/total		n/32 shift
ours	Total	hla-a	L	,00, 00,	100	85.	المسترشي		n/shift)	th/bit (each	n/shift)
Woking hours		emblage intlement	i	°00′		2.		Bit si	<u></u>	<u> </u>	
Wok	Water	muemem	°		· · · · · · · · · · · · · · · · · · ·		. /	Drilled			
	transportati	on				1.		length		0 107.0	5 86.45
	Road constr and others	ruction						Core length	0	81.8	0 85.65
	G. Total		298	,00,		100					
rted	Size	meterage	d	neterage rilling ength	× 100	Reco	overy		yerine Gusting Silving		
insce		(m)		(%)	1	(9	%)			The state of the s	
Casing pipe inscerted	HX	5.00		2.5	5	10	00				
sing	NW	42.00		20.9)	10	00				
్ర	BW	114.05		56.9)	10	00		;	Avert y	

Table 2-21 Summary of the Drilling Operation on MJI-11

				<u>`</u>	Sarve	y Perloc	1			Tot	d m	an day
			Period			days	wo	ork day	off day	Engine	er	worker
	Preparation	12.7.1	984 ~	- 19.7.1	984	8		days 8	days 0	32 ma		man 225
tion	Drilling	20,7,1	984 ^	· 13.8.1	984	25		ling 21	0	87		503
Operation							reco	overing 4	0	13		43
	Removing	14.8.1	984 ^	44.8.1	984	1		1	0	4		18
	Total	12.7.1	984 ^	· 14.8.1	984	34		34	0	136		789
	Length planed	250.00	m	Surfac		13.30	m	(Core reco	very of 100	m h	ole
ngth	Increase		m	Overburden Quaternary			m		of hole	core recovery		core recovery umulated
Drilling length	or Decrease		144	Core length		183.50	.	(m	n)'	(%)		(%)
Drilli	in length			Colc length		105.50		0~100		72.5		
	Length	1.	<u> </u>	Core	-	: :	%	100~	200	80.0		76.5
	drilled	250.20	; 	recove	ту	77.5	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	200~	250.2	80.9		77.5
	Drilling		186	'30'	33.7	29.	% .5		Effic	iency of D	rilling	3
	Other work	· _	278		50.3				n/work (m/day)			/25 days /day)
S	Recovering Total		553°		16.0 100	87			n/total n/shift)			i/69 shift shift)
hour	Reass	emblage	70°	30'		11.	.2	D	rilling len	gth/bit (ea	ch siz	ed bit)
Woking hours	Dism	antlement	8	,00,		1	.3	Bit s	ize 3.7	7/8 N	Q	B Q
M	Water transportati	on				1.4.		Drilled length	9.0	00 14	1.00	100.20
	Road const and others	ruction		:1				Core length	0	9.	4.70	88.80
	G. Total		631°	,30,		100						
rted	Size	meterage	d	eterage rilling ngth		Reco	overy		1 1 1			
insce		(m)	10	(%)		(9	%)					
Casing pipe inscerted	НХ	5.00		2.0)	1	00					
asing	NW	45.80		18.3	3	1	00					
Ű	BW	150.00		60.0)	. 1	00	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				·

Table 2-22 Summary of the Drilling Operation on MJI-12

					Sarve	y Period				Total	man day
		Period				days	w	ork day	off day	Engineer	worker
	Preparation	15,8,1	984 ^	~ 19.8.1	984	5	:	days 4	days 1	man 16	man 91
Operation	Drilling	20,8.1	984 ~	~ 4.9.19	84	16	<u> </u>	6	0	64	446
Oper								overing 0	0	0,	0
	Removing	5.9.19	1984 ~ 7.9.1984		3		3	0	11	33	
	Total	15,8,1	984 -	7.9.19	84	24	1	23	1	91	570
	Length planed	200.00	m	Surfac	e soil	5,00	m	(Core recov	ery of 100 n	hole
ngth	Increase		Quaternary		m		Depth of hole		core recovery	core recovery cumulated	
Drilling length	or Decrease	_	m Core length		ength	168.60		(m)	(%)	(%)
Drill	in length		Core long.					0~		77.6	7. 11 11
	Length drilled	200.30		Core recove		86.3	%	100~	200.3	94.9	86.3
	Drilling		179	, 10. p	55.4	47.4	% 4		Effici	ency of Drill	ing
1	Other working	<u> </u>	130	°50′	40.4	34.6	5		n/work (m/day)		m/16 days m/day)
	Recovering		13	30,	4.2	3.0	6		n/total		0 m/39 shift
ours	Total		323	30'	100	85.0	5	shift (n	n/shift)		n/shift)
working hours	Reassen	rblage	34	,00,		9.0	0	D	rilling leng	gth/bit (each	sized bit)
work	Dismant	lement	20	30'		5.4	4	Bit si	ze 3 7,	/8 N Q	B Q
	Water transportation	1	:					Drilled length	13.0	00 137.1	0 50.20
	Road construction and others	ction					Core length	0	121.9	5 46.65	
	G. Total		378°00′		100	· · · ·					
rted	Size	meterage	d	neterage rilling ength	× 100	Reco	very				
insce		(m)	(%)		(%	5)					
pipe	НХ	5.00		2.5	5	10	0				
Casing pipe inscerted	NW	30.00		15.0)	10	0	1 1 14 1 1	+1		
Ü	BW 1	50.10			10	Ó -					

Table 2-23 Summary of the Drilling Operation on MJI-13

		.	Sarv Period				Period		· · · · · · · · · · · · · · · · · · ·			Total	man day
	aliani da santa Kabupatèn da santa		Period 1.1.1985 ~ 9.1.1985			d	ays	WC	ork day	off day	E	igineer	worker
	Preparation	1.1.19	85~	9.1.198	5		9		days 8	days I	3	man 2	man 250
Operation	Drilling	10.1.1	985	~ 23.1.1	985		14		ling 3	0	5	2	358
Oper					· . · · ·			ecc	overing 1	0		4	9
	Removing	24.1.1	985	~ 25.1.1	985		2		2	0		7	52
	Total	1.1.19	85 ~	25.1.19	85	[2.5		24	1	5	5	669
	Length planed	250.00	m	Surfac	urden	2	m 00.13		(Core reco	very o	f 100 m	
Drilling length	Increase or		Quaternary m				m		Depth of hole (m)		reco	ore ivery %)	core recovery cumulated (%)
rillin	Decrease in	· -	Core length		ength	20)2.60		0~	100	80).4	
	length		Core				ed		100~	200	95	5.0	88.5
	Length drilled	250.70		recove	гу	8	38.0 %		200~	250.7	87	7.0	88.2
	Drilling		168	հ °10՝	51.8	%	42.0	%		Effic	iency	of Drill	ing
	Other work			°20′	41.4		33.6	-		m/work (m/day)			m/14 days m/day)
urs	Recovering Total			,30, , ₀₀ ,	6.8	-	5.5 81.1		Total shift (1	n/total n/shift)			m/40 shift n/shift)
ng hc	Reass	emblage	64	°00'	· .		16.0	•	Drilling leng		ngth/bit (each s		sized bit)
working hours	Dism	antlement	11	°30′			2.9		Bit s	ize 3 7	7/8	NQ	B Q
	Water transportat	ion							Drilled length		.00	129.0	0 100.70
	Road const and others	ruction							Core length	0		112.4	5 90.15
	G. Total		400°00'			100							
rted	Size	meterage	length			Recove	ery		. :				
insce		(m)		(%)			(%)			4		٠	
Casing pipe inscerted	нх	5.00	\perp	2.0) 		1,00						
asing	NW	50.00		19.9)		100	:		•			·
	BW	150.00		60.0)		100						

Table 2-24 Summary of the Drilling Operation on MJI-14

					Sarve	y Period	- 11 - 12 - 12 - 12 - 12 - 12 - 12 - 12			Total	man day
			Per	iod		days	wo	ork day	off day	Engineer	worker
	Preparation	26.1.1	985 ~	28.1.1	985	3		days 3	days 0	man 12	man 113
ation	Drilling	29.1.1	985 ^	· · 18.2.1	985	21	drill 2	ling 20	0	80	400
Operation			:				reco	overing I	0	4	9
	Removing	19.2.1	985 ^	- 20.2.1	985	2		2	0	8	64
	Total	26.1.1	985 ^	- 20.2.1	985	26	.2	6	0	104	586
	Length planed	250.00	m	Surfac Overb	urden	9.00	m	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Core recov	ery of 100 n	A 77 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
ength	Increase		m	Quate	rnary	<u> </u>	m	Depth o	,	core recovery (%)	core recovery cumulated (%)
Drilling length	or Decrease in	-		Core l	ength	208.40		0~		84.8	
Δ	length			0			nt .	100~	200	87.5	86.2
	Length drilled	250.50		Core recove	ry	86.3	%	200~	250.5	86.5	86.3
	Drilling		240°	h '40'	49.6	45.	% 5		Effici	ency of Drill	ing
	Other work	ing	208	1000	43.0	39.	1 1 1 1 1		n/work (m/day)	250.50 (11.93	m/21 days m/day)
ırs	Recovering Total	<u> </u>	35°	°50′	100	6. 91.			n/total n/shift)		m/61 shift n/shift)
od g		emblage		,00.	<u>.</u>	5.				th/bit (each	sized bit)
working hours		ntlement	16°	,00,		3.)	Bit si	ze 3 7	/8 N Q	B Q
	Water transportati	on						Drilled length	9.0	0 141.0	100.50
	Road constr and others	uction		,				Core length	-	126.9	0 81.50
	G. Total		528°	'00'		100	ar at				
rted	Size	meterage	d	neterage rilling ength	x 100	Reco	very				
Casing pipe inscerted		(m)		(%)) · · · · · · · · · · · · · · · · · · ·	(%	6)				
pipe	нх	6.00		2.4	1	10	0				
asing	NW	39.00		15.6	5	10	0.		+ 2* + 2*		
ت	BW	150.00		60.0)	10	00			Set 1	

Fig. 2-2 Drilling Progress on MJI-6

Fig. 2-3 Drilling Progress on MJI-7

Fig. 2-4 Drilling Progress on MJI-8

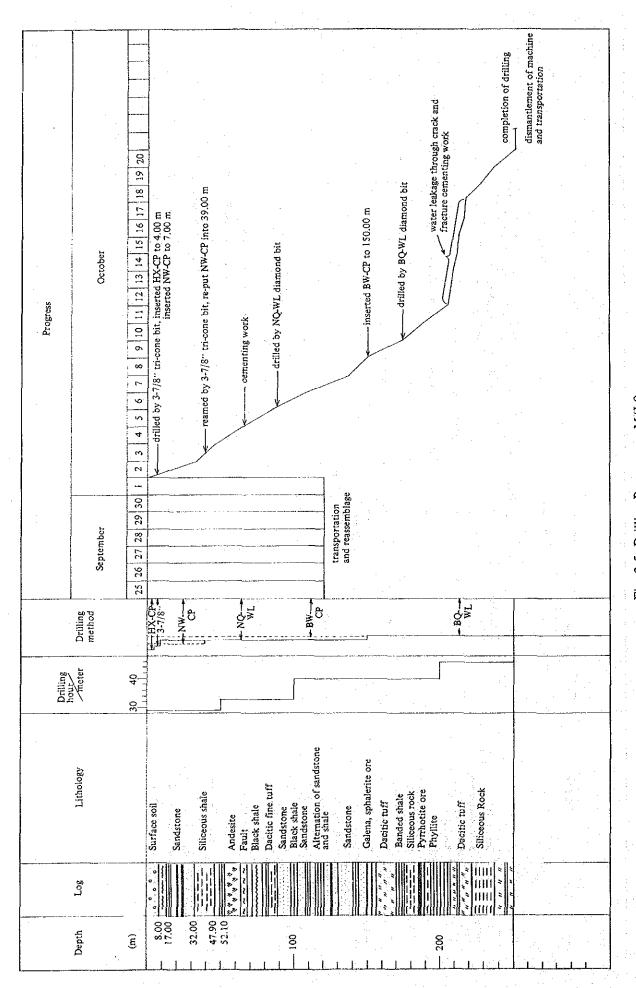


Fig. 2-5 Drilling Progress on MJI-9

Fig. 2-6 Drilling Progress on MJI-10

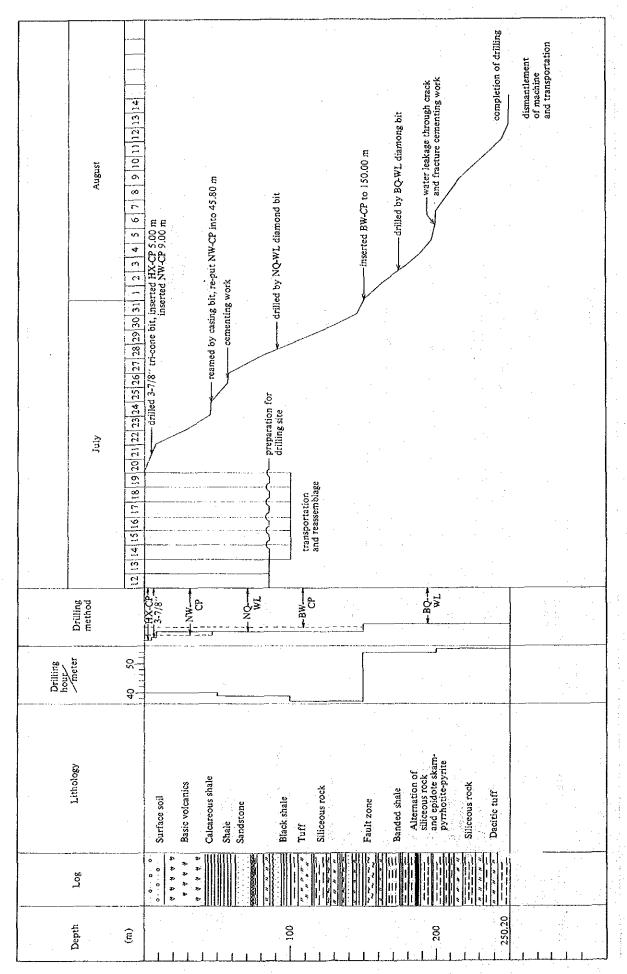


Fig. 2-7 Drilling Progress on MJI-11

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Fig. 2-8 Drilling Progress on MJI-12

Fig. 2-9 Drilling Progress on MJI-13

Fig. 2-10 Drilling Progress on MJF-14

CHAPTER 3 The Geology and Mineralization by Drilling Survey

Geological and ore log of drill holes are shown in Fig. 3-1 – Fig. 3.10. Chemical assay results of the ore samples are summarized in Table 3-3 and Table 3-4, Fig. 3-11. Observation data of thin sections and ore polished specimens are compiled in Table 3-1, Table 3-2 and Fig. 3-12.

3-1 MJI-6

0 m - 9.00 m: Surface soil and weathered rock

9.00 m - 34.40 m: Alternation stratum of sandstone, siliceous shale, black shale. Sandstone is coarse grained arkosic sandstone, consisting of plagioclase, quartz and rock fragment, and has a clear grade bedding. Pyrite dissemination is observed at 20 m - 32 m

32.40 m - 50.50 m. Pault clay zone. There are breccias of acidic tuff and lappili tuff with fault clay. Galena, sphalerite and pyrrhotite bearing ore and disseminated ore breccias occur at 38.60 m - 38.90 m.

 $50.50 \ m - 67.50 \ m$: Mainly sandstone and shale. Intercalation of acidic tuff is observed in some place. Sandstone and shale is calcareous. Calcareous congromerate is observed at around 55 m, and pebble shale with flat-shaped siliceous rock pebble and calcareous rock pebble are distributed at around 66 m. In the calcareous shale horizone, following mineralizations are embedded:

Depth (m)	Width (m)	Host rock	Mineralization
61.70 62.80	1.10	calcareous sandstone and shale	banded and disseminated galena sphalerite and pyrrhotite
64.15 — 64.35	0.20	calcareous shale	veinlet and dissemination ore consisting of chalcopyrite, sphalerite and pyrrhotite

67.50~m-99.00~m: Mainly acidic tuff, shale and fine grained siliceous rock. Disseminated Pyrite is embeded in a epidote skarn at 77.00~m-78.30~m. Banded pyrite ore at 82.95~m-83.00~m and veinlets constituting of galena and sphalerite at 83.60~m-83.80~m. They are embeded in epidotized calcareous shale and sandstone (epidote skarn) at 82.00~m-84.00~m. At the boundary part of this strata and banded shale green skarn associating with banded pyrite ore including small amount of galena and sphalerite from 98.15~m to 98.95~m.

99.00 m - 102.00 m. The part consists of banded shale with alternation of thin mud and sand layers (1 mm in thickness). The rock is slaty with schistose texture.

 $102.00 \, m - 250.30 \, m$. Mainly alternation of fine siliceous rock, coarse grained siliceous rock and shale (slate). Hard massive siliceous rock was catacrastised with catacrastic cleavage: and is called catacrasite like rock. It is very difficult to identify the siliceous rock, because of its strong silicification, but sometimes the coarse siliceous rock is recognized as a pyroclastic texture, and

Depth (m)	Width (m)	Host rock	Mineralization
127.20 127.80	0.60	epidote skarn	banded pyrite-pyrrhotite ore with small amount of galena and sphalerite
163.80 - 166.85	3.05	epidote skarn	banded pyrite – pyrrhotite
169.70 - 175.70	6.00	epidote skarn	ditto

under microscopic observation, tuffaceous sandstone, andesitic tuff are observable; therefor, their original rock composition could be tuffaceous rock.

In the horizone, following mineralizations were caught through drilling:

3-2 MJI-7

0.00 m - 12.00 m: Surface soil and weathered rock

 $12.00 \ m - 21.00 \ m$: Sedimentary rock consisting of limestone (associated with congromeratic limestone) and black shale.

21.00 m - 37.30 m: Alternation of sandstone and shale. The sandstone is arkosic having a beautiful graded bedding.

37.30 m - 70.60 m: Acidic tuff, fine grained siliceous rock black shale. Segregated quarts veins occur in the black shale.

70.60 m - 76.60 m: Fault breccia and fault clay. Fault breccia of pyrite ore was observed at 76.00 m.

76.60 m - 103.00 m: Alternation bed of calcareous rock, calcareous shale. Following mineralizations were caught in the horizon:

Depth (m)	Depth (m)	Host rock	Mineralization
77.10 – 77.30	0.70	calcareous shale	banded — disseminated galena-sphalerite оте
78.60 - 78.85	0.25	clacareous shale	pyrite veinlets
79.80 - 80.65	0.85	calcareous shale	pyrite veinlets
88.70 - 88.80	0.10	epidote skarn	galena-sphalerite veinlets
94.50 - 94.65	0.15	epidote skarn	pyrite veinlets
101.80 - 101.90	0.10	epidote skarn	pyrite veinlets

In the horizone, epidotization is common.

 $103.00 \, m - 119.40 \, m$: Fine siliceous rock, acidic tuff and shale. Epidote siliceous skarn is observed at contact part between the strata and banded shale distributed under horizon.

119.40 m - 120.40 m: Mainly silicified rock. The original rock could be fine siliceous rock, siliceous sandstone or acidic tuff. Siliceous massive rock is catacrastized, and has clear catacrastic cleavage. Many epidote skarn layer are interbeded in the horizon and mineralizations associated with pyrite and pyrrhotite are embeded in the skarn layers, as follows:

Depth (m)	Width (m)	Host rock	Mineralization
124.80 - 124.65	0.85	epidote skarn	pyrite dissemination
127.80 — 127.45	0.15	epidote skarn	pyrite dissemination
131.50 - 132.00	0.50	epidote skarn	pyrite dissemination
132.45 — 132.85	0.40	epidote skarn	banded pyrrotite ore
140.70 – 140.70	0.65	epidote skarn	ditto
157.55 – 158.90	1.35	epidote skarn	a fifther an early

3-1 MJI-8

0.00 m - 16.00 m; Surface soil

16.00 m - 24.00 m; massive green basic volcanic rock. The rock is partly brecciated.

24.00 m - 29.70 m: Fault clay zone (black shale)

29.70 m - 98.60 m: Calcareous bleck shale (at 35.00 m - 39.00 m, 46.00 m - 60.00 m) and black shale with intercaration of sandstone. The horizon is correlative with mineralizazed zone I' horizone which embeds lead-spharerite ore as newly found ore, but there is no indication of mineralization.

98.60 m - 104.70 m: Alternation bed of shale and sandstone. The sandstone has very distinct grade bedding.

104.70~m-153.50~m: Mainly calcareous rocks consists of calcareous sandstone, calcareous shale. Pebble limestone, and calcareous flat pebble shale occur characteristically in the formation. The calcareous pebble shale which is distributed at 136.00~m-141.50~m is correlative with Mineralized Zone I (Pagar Gunung lead-zinc mineralized zone), but the hole failed to catch the ore.

 $153.50 \, m - 186.50 \, m$: Alternation bed with fine siliceous rock, dacitic tuff, sandstone and shale. Massive siliceous rock is catacrastized, and became catacrastic like rock with clear catacrastic cleavage. Adjacent boundary with banded shale underly the formation, a pyritization part is recognized.

 $186.50 \, m - 193.00 \, m$: Banded shale which is alternated with very fine sandy part and mud

part. The rock is semi-schist with weak schistosity.

 $193.00 \ m - 250.50 \ m$: The zone consists of fine siliceous rock, siliceous sandstone, dacitic tuff and shale. Fine siliceous and shale were metemorphosed slightly, and show as semi-schist (slate). Dactitic tuff was catacrastized. Spots or banded epidote is observable, and pyrite is disseminated at adjacent part of epidotization.

The following mineralization is embedded in the stratum:

Depth (m)	Width (m)	Host rock	Mineralization
213.08 – 213.15	0.07	Epidote skarn	Banded pyrite
215.05 — 215.30	0.25	Epidote skarn	Banded pyrrhotite (sphalerite)
237.20 – 237.40	0.20	Epidote skarn	ditto

Weakly mineralized epidote skarn layers are embedded at $215.50 \,\mathrm{m} - 216.40 \,\mathrm{m}$, and $-241.85 \,\mathrm{m}$.

3-4 MJI-9 (1997) (1997)

0.00 m - 8.00 m: Surface soil and weathered rock.

 $8.00 \ m - 57.50 \ m$: Shale (calcareous shale in some part), sandstone and sericitized white siliceous rock. These rocks have schistosity, and kink band texture showing sharp bending of schist-sity occurs characteristically in some part.

57.50~m-64.10~m: Dark green andesite. The rock is composed of plagioclase and a little maffic mineral (altered pyroxene) and biotite of phenocryst in ground mass of quartz and plagioclase, and has undergone chloritization and epidotization. It is regarded as a member of the basic volcanic rock distributed at the top ridge of the Pagar Gunung mountain. Shear zone (fault zone) is commonly observable between the Basic Vokanic Rock Member and lower member. 64.10~m-109.00~m: Alternation with black shale, fine siliceous rock and fine grained \sim coarse grained sandstone. The sandstone shows good graded bedding, and sedimentary cycle of coarce sandstone and fine grained sandstone to shale is observed. Between 64.10~m and 83.00~m, rocks are fractured very much, supposing an effect of a shear zone at just the contact part of Basic

Volcanic Rock Member.

109.00 m - 132.00 m: Alternated strata with dacitic tuff, black shale and sandstone.

132.00 m - 152.00 m: Alternation with black shale and sandstone. At 138.00 m - 140.00, dacitic sandy tuff is intercalated in the strata. Calcareous sandstone and shale have undergone skarnization containing epidote, wollastonite and a few clinopyroxene at 149.00 m - 152.00 m. Following mineralization is embedded in the skarn:

Depth (m)	Width (m)	Host rock	Mineralization
149.40 — 149.60	0.20	wollastonite, calcareous rock	network veinlets of sphalerite
150.40 — 151.40	1.00	green skarn, calcareous shale	Banded chalcopyrite- galena-sphalerite ore

The ore at 150.40 m - 151.40 m contains epidote and clinopyroxene as skarn mineral.

 $152.00 \ m - 169.70 \ m$: Massive cataclastized coarse siliceous rock. The rock is catacrasite like rock having a clear cataclastic cleavage. But the rock remains pyroclastic texture in some part, supposing dacitic pyroclastic rock (tuff and lapilli tuff) as the original rock. Below 165 m, spoted epidote occurs, increasing downward.

 $169.70 \, m - 175.00 \, m$: Banded shale, a semi-schist with schistosity.

 $175.00 \, m - 250.00 \, m$: Alternation with fine siliceous rock, massive siliceous rock (dacitic tuff) and siliceous shale. They became semi-schist and cataclastite, showing schistosity and cataclastic cleavage. Below 203.00 m, epidote occurs. Spotted, vein of epidote are common at the part, and banded epidote skarn layers are distributed at many parts, a skarn layer (for example, at around 191.80 m) contains garnet (grandite). The Main mineralization is as follows:

Depth (m)	Width (m)	Host rock	Mineralization
191.50 – 192.05	0.55	epidote skarn	banded pyrrhotite ore
220.80 - 220.90	0.10	quartz vein	brecciated pyrite ore
231.60 - 131.80	0.20	epidote skarn	banded pyrrhotite ore
235.60	0.05	siliceous shale	galena-sphalerite-pyrite vein

The ore at 235.60 m is fissure filling vein, filled with a fine crack intercrossing with 80 degree in the drilling core.

3-5 MJI-10

0.00 m - 7.00 m: Surface soil weathered rock

7.00 m - 7.10 m: Breccia tuffaceous shale. The rock is correlative with stratum of most lower part distributing at horizon of mineralized zone I.

7.10 m - 23.40 m: Alternation with sandstone, fine siliceous rock and shale. Sandstone distributed at 20 m - 23.40 m is calcareous rock.

 $23.40 \ m - 29.00 \ m$; Banded shale

 $29.00 \ m - 101.00 \ m$: Alternation with dacitic tuff and tuffaceous sandstone. Spotted epidotes occur in tuffaceous rock. At 40 m - 47 m and 70 m - 72 m, dacites having quartz phenocryst are distributed. Massive siliceous rocks are strongly catacrastized. Pyrite ore associating with epidote skarn in embedded at the rock.

 $101.00 \ m - 183.00 \ m$: Light-coloured massive rock, containing muscovite. Through microscopic observation, felspar is strongly sericitized, and quartz shows oscillatory extinction. The rock can be identified as granodiorite, though it is strongly mylonized. At 175.00 m - 182.00 m, quartz diorite consisting of plagioclase, quartz and altered mafic mineral has intruded into the granodiorite.

183.00 m - 200.50 m; Fine siliceous rock and coarse tuffaceous rock. The rock has undergone sericitization and kaolinization at 195 m and its neighbour. Massive pyrite ore is embeded at 189.00 m - 190.40 m, but its gangue mineral is mostly quartz, not epidote or calcite skarn minerals.

3-6 MJI-11

 $00.00 \ m - 13.30 \ m$: Surface soil and weathered rock

13.30 m - 40.60 m: Massive green-coloured basic volcanic rock (basaltic tuff and basalt), partly brecciated rock. At 16.00 m - 40.60 m, the rock has been fractured by shearing.

40.60 m - 61.50 m: Sandstone, black shale. Sandstone at just below of basic volcanic rock (at 40.60 m - 41.80 m), fault zone at 41.80 m - 42.40 m, calcareous rock at 42.40 m - 42.20 m, fault clay at 48.20 m - 51.00 m and black shale at 51.00 m - 61.50 m. From 40.60 m to 51.00 m, there are many fault clay parts and brecciation of rock, showing shear zone.

61.50 m - 71.90 m: Coarse to fine grained graywacke sandstone having good grade bedding. 71.90 m - 145.80 m: Alternation bed with sandy tuff, sandstone, fine siliceous rock and shale.

Pyrite dissemination is partly observed.

 $145.80 \, m - 154.80 \, m$: Shale is predominantly distributed throughout. The shale is mostly calcareous rock, and at lower horizon, there is pebble shale with siliceous rock and calcareous breccia, sub-brescia from 153.80 m to 154.80 m. The horizon is correlative with emplacement part of mineralized zone I (silver bearing lead-zinc ore zone), but the hole did not succeed in locating the ore, because there are many faults.

154.80 m - 173.40 m: Fine siliceous rock and dacitic tuff.

173.40 m - 175.00 m: Banded shale alternated with very thin mud material and sand-silt material. It is semi-schist having weak schistosity. The bed is very extensively continued to an east and west extention from MJI-3 to MJI-14, though it has very thin thickness (about 10 m - 2° m), and is useful to use for a kie bed. Many pyrrhotite-pyrite bearing epidote skarn layers occur below the bed.

Depth (m)	Width (m)	Host rock	Mineralization
184.00 - 184.10	0.10	Epidote skarn	banded sphalerite, pyrrhotite
185.20 — 186.70	1.50	Epidote skarn	banded pyrrhotite
192.55 — 192.95	0.40	Epidote skarn	ditto
194.60 194.75	0.15	Epidote skarn	banded (sphalerite) pyrrhotite
195.15 - 195.40	0.25	Epidote skarn	ditto
195.70 - 195.80	0.10	Epidote skarn	banded skarn
203.70 - 204.00	0.30	Epidote skarn	ditto
205.35 - 206.55	1.20	Epidote skarn	ditto
207.50 - 208.60	1.10	Epidote skarn	ditto
209.90 - 210.30	0.40	Epidote skarn	banded pyrrhotite-pyrite

175.60 m - 250.30 m; Mainly siliceous shale, shale, siliceous sandstone and dacitic tuff, and they are semi-schist and catacrasite like rock, forming schistosity and catacrastic cleavages. The rocks have extensively undergone silicification and epidotization, especially calcareous parts alter to epidote-garnet skarn. Banded pyrrhotite-pyrite ores are embeded in the skarn layer as follows:

The mineralization can be grouped into three sub zones as indicated in the above chart, namely from 184.00 to 186.70 m, 192.55 m - 195.80 m and 203.70 m - 210.30 m. Pyrrhotite content decreases and pyrite content increases toward a deep zone, and sphalerite increases toward an upper horizone. The mineralization, it is infered, was formed by skarnization of calcareous part of siliceous slate (or clacareous siliceous sandstone).

3-7 MJI-12

0.00 m - 5.00 m: Surface soil and weathered rock

 $5.00 \, m - 26.10 \, m$: Mainly sandstone, but intercalated bed of shale at 14.30 m - 16.90 m and limestone at 16.90 m - 17.40 m. Grade bedding is observable in the sandstone, but not a clear comparing case of MJI-11.

26.10 m = 43.90 m. Tuffaceous rock. Slightly greenish andesitic tuff and tuff breccia, contain-

ing epidote and chlorite.

43.90 m - 80.95 m: Alternation of sandstone and shale, mostly calcareous rock. There is clinopyroxene-chlorite bearing wollastonite-epidote skarn, and within the skarn zone, three mineralizations were detected by the drilling as follows:

Depth (m)	Width (m)	Host rock	Mineralization
49.60 – 49.90	0.30	green skarn (calcareous sandstone)	sphalerite veinlets
51.60 - 51.80	0.20	ditto	sphalerite dissemination
52.60 52.60	0.60	ditto	ditto

Mineralization at 49.60 - 49.90 is network ore which sphalerite fills small fissures in wollastnite skarn. From 72.30 to 73.30 m, there is calcite epidote skarn associated with sphalerite-pyrite-chalcopyrite dissemination. Banded chalcopyrite-galena-sphalerite bearing skarn consisting of epidote and clinopyroxene was found by drilling. The mineralization is deep extention of Pagar Gunung East Mineralized zone (Outcrop B). According to a mineralogical test by an electron probe micro analyser on skarn minerals of the outcrop by second phase survey, clinopyroxene is identified to composition of (Di_{55.6} ·Hd_{34.9} ·Jo_{9.0}) - (Di_{58.0} ·Hd_{30.5} ·Jo_{11.5}), and epidote is pistacite containig much iron.

80.95 m - 111.20 m. Alternation of dacite tuff, fine grained siliceous slate, and slate. Much epidote occurs at 105.00 m - 109.00 m. Sphalerite dissemination is embeded within the epidote skarn from 108.35 to 108.75 m.

112.20 m - 115.30 m: Banded shale (slaty) with alternation of thin mud part and silt part. $115.30 \, m = 200.30 \, m$: Alternation with fine siliceous rock, sandstone, dacitic tuff and slate. Massive siliceous rocks are catacratized. Whole rocks have been undergone epidotization, and spoted epidote and epidote veins are observable at any part. Much mineralization, showing in the next table, is embeded:

- Depth (m)	Width (m)	Host rock	Mineralization
120.50 — 120.80	0.35	Epidote skarn	banded galena-sphalerite-pyrite
126.85 - 127.25	0.40	ditto	ditto
130.05 - 130.55	0.50	ditto	banded galena-sphalerite-pyrite
136.30 - 136.80	0.50	ditto	banded pyrrhotite
138.60 - 138.75	0.15	ditto	disseminated (sphalerire) pyrite
139.20 — 140.90	1.70	ditto	banded pyrite and pyrrhotite
141.35 - 143.00	1.65	ditto	banded-dissemination of pyrite and pyrrhotite
143.50 - 145.00	1.50	ditto	banded (pyrrhotite) pyrite
172.35 - 175.65	3.20	ditto	(chalcopyrite) - Pyrite-pyrrhtite

The mineralized (Mineralized zone II) zones of the hole is counted mostly in many subzones, compared with other drillings, therefore, based on the hole's result, the mineralization is grouped in the following chart:

Mineralization Group	Depth	Mineralization
Mineralized Sub-zone II-1	108.35 - 108.75	(Sphalerite) pyrrhotite
Mineralized Sub-zone II-2	120.50 - 120.85	ditto
Mineralized Sub-zone II-3	126.85 127.25	mainly pyrrhotite
Mineralized Sub-zone II-4	130.05 - 130.55	ditto
Mineralized Sub-zone II-5	136.30 - 145.00	ditto
Mineralized Sub-zone II-6	172.05 — 175.65	pyrrhotite-pyrite

It is a general tendency that the lower zone, especially Mineralized sub-Zone II-6, contains only pyrrhotite and pyrite, and a very little amount of lead, zinc and copper.

3-8 MJI-13

0.00 m - 9.00 m: Surface soil and weathered rock.

9.00 m - 11.50 m: Massive green sandstone containing chlorite, epidote and quartz fragment. There are many calcite veinlets.

11.50 m - 13.40 m: Fault clay.

13.40~m-46.00~m: Alternation of limestone, clacareous shale, shale. Limestone, calcareous pebble shale and calcareous shale are predominant and distributed at 13.40~m-26.00~m. Chalcopyrite-galena-sphalerite ore was detected at 23.10~m-24.20~m within the calcareous rock horizon.

The mineralization is located at 70 m upper from Mineralized zone I, and also is a deep extention

of the newly found outcrop at drilling site MJI-9. Host rock of the mineralization is calcreous pebbel shale, being similar to Mineralized Zone I. But in comparison with Mineralized Zone I, skarnization of the mineralization is weaker. (The mineralization is named mineralized zone I'). A chemical assay result of the ore shows that the ore is of good quality of grade, especially silver and gold comparing with other ores, namely Au: 0.4 g/t, silver: 195 g/t, Cu: 1.25%, Pb: 1.31%, and Zn: 9.85%.

 $46.00 \, m - 74.00 \, m$. Fine grained siliceous rock, shale and sandstone. Sandstone have not crear grade bedding. Massive pyrite ore is embedded at $66.80 \, m - 67.00 \, m$.

 $74.00 \ m - 84.00 \ m$. Tuffaceous sandstone. It has undergone silicification and is a very hard rock. $84.00 \ m - 104.50 \ m$. Alternation with calcareous sandstone, epidote bearing tuffaceous sandstone, and calcareous shale. Also calcareous pebble shale is distributed, and has undergone mineralization, similar to other drilling.

Following ores were caught through drilling:

Depth (m)	Width (m)	Host rock	Minaralization
95.10 - 95.30	0.20	epidote calcareous shale	pyrite veinlets
95.75 – 95.80	0.05	dìtto	galena-sphalerite-pyrite banded ore
96.35 – 97.20	0.85	ditto	galena-sphalerite-veinlet- disseminated ore
100.10 - 100.45	0.35	ditto	chalcopyrite-sphalerite- pyrrhotite banded ore

The ores are correlative with Meneralized Zone I, and result of the MJI-6 drilling as following chart.

MJI-13	MJI-6	Mineralization
95.10 — 95.30 95.75 — 95.80 96.35 — 97.20	61.70 - 62.80	banded — disseminated galena-sphalerite-рутгhotite
100.10 - 100.45 102.20 - 102.40	64.15 – 64.35	chalcopyrite-sphalerite-pyrrhotite

 $104.50 \, m - 146.50 \, m$: Tuffaceous sandstone, fine grained siliceous rock and slate. Banded pyrite pyrrhotite ore is observed at 114.10 m - 114.40 m, and clacareous siliceous rock is recognized at 133.00 m and around.

14650 m - 150.50 m; Mainly black state. It is correlated with banded shale.

 $150.50\ m-250.50\ m$: The rock distributed in this range has undergone strong silicification; therefore it is very difficult to indentify the rock originally at times, but there could be alternation beds with fine grained siliceous rock, tuffaceous sandy tuff and tuff. They are cataclasite like rock or semi-schist, judging existense of weak schistosity and catacracized cleavage. Following mineralizations were detected by the drilling:

Depth (m)	Width (m)	Host rock	Mineralization
184.60 — 184.70	0.10	shale, fine grained siliceous rock	massive pyrite
195.40 – 196.70	1.30	fine siliceous rock epidote-garnet skarn	banded pyrite-pyrrhotite
803.00 - 205.50	2.05	ditto	massive - disseminated pyrite ore
248.80 — 249.50	0.70	epidote skarn	hassive – disseminated pyrite ore

Toward deep part, the mineralization increases amount of pyrite, while pyrrhotite decreases.

3-9 MJI-14

0 m-21.00 m: Surface soil and weathered rock.

21.00 m - 33.00 m. Massive green basic volcanic rock. The rock was brecciated.

 $33.00 \, m - 40.00 \, m$: Fault clay part. (fault). In the fault, following ores are accomanied as follows:

Depth (m)	Width (m)	Mineralization
36.40 – 36.45	0.05	galena-sphalerite – pyrite
38.30 - 38.50	0.20	ditto
39.10 - 39.80	0.70	ditto (sludge)

The ore is in the same group of Mineralized Zone I' which crops out at MJI-6 drilling site and was detected at 23.10 m - 24.20 m of MJI-13 drilling, but the ore occurs as drag ore in the

40.00 m - 85.50 m: Limestone at 40.00 m - 43.00 m, calcareous shale at 43.00 m - 52.50 mand balck shale at 52.50 m - 85.50 m. Black shale contains intercalated thin sandstone layers. Altered andesite at 65.90 m - 69.60 m contained sericite and pyrite dissemination. 85.50 m - 96.30 m: Fault clay zone. In the fault, fault breccias of coarse sandstone are included. 96.50 m - 101.70 m: Fault clay.

107.20 m - 116.20 m: Grade bedded sandstone and black shale.

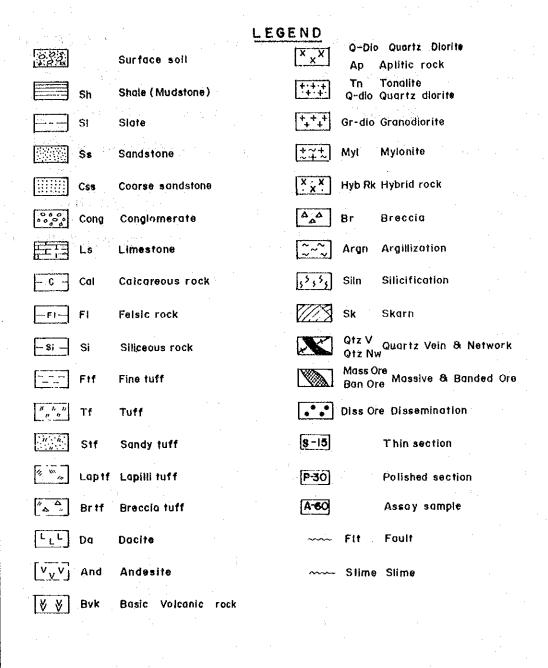
116.20 m - 134.30 m: Dacitic sandstone. Small faults appear at 123.00 m - 124.00 m, at 127.00 m -129.00 m.

134.30 m - 161.90 m: Alternated bed with calcareous rock, sandstone and shale. Dissemination and filmy ore consisting of galena, sphalerite, pyrite are embeded along the bedding of calcareous pebble shale at 141.65 m - 142.35 m. The mineralized part has undergone sericitization with ores, but no skarn mineral occur such as epidote and clinopyroxene. This part could be the poor mineralized part of the Mineralized Zone I.

 $164.70 \ m - 167.70 \ m$: Fault clay zone. $167.70 \ m - 250.70 \ m$: The part consists of coarse-fine grained sandstone, fine sandstone, dacitic tuff, sandy dacitic tuff and so on. Most rock has undergone silicification, especially very strong silicification at 197.00 m - 212.50 m. Mineralizations are distributed at the following depths:

Depth (m)	Width (m)	Host rock	Mineralization
192.10 — 192.15	0.05	silicified sandstone	coarse galena-sphalerite-pyrite ore (vein type)
215.50 — 224.50	9.00	Epidote garnet skarn	banded pyrrhotite-pyrite ore
236.70 - 236.74	0.05	Epidote skarn	banded pyrite ore
239.20 — 239.40	0.20	Epidote skarn	pyrite dissemination

Garnet (grandite)-epidote skarn is embeded at 215.50 m - 224.50 m.



Abbreviation

Da	Dacite	Ру	Pyrite	Qtz.	Quartz
And	Andesite	Pyr	Pyrhotite	Cal	Calcite
Brk	Basic igneous rock	Сp	Chalcopyrite	Chl	Chlorite
Ар	Aplitic rock	Sph	Sphalerite	Se	Sericite
Q-dio	Quartz diorite	Gal	Galena	Vnt	Veinlet
G-dio	Granodiorite	Epd	Epidote	Netw	Network
		Px	Pyroxene	Altn	Alternation
		Cly	Clay	Fit	Fault
		()	Containing	intm	
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Fig. 3-1 Regent of Geological Log

6-1

Drill Hole No : MJI-6

Pagar Gunung East Elevation : 1, 207. 26 m.s.l

Coordinate point : from MJI-12

Inclination : -90°

Depth : 250.30 ^m

Core Recovery : 92.0 %

Drilling Machine: OE-8BL

Location

Term: Nov. 25, 1984 ~ Dec. 12,1984

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Drill Hole No. MJI-7

Pagar Gunung East Elevation

1,218. 19 m.s.l

middle point of MUI-11 & MUI-12

Coordinate Point

- 90° Inclination

Depth

Location

200. 40^m

Core Recovery

89 8 %

Drilling Machine: OE-8BL

Term . Dec. 17,1984 ~ Dec. 30. 1984

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		( Seg QIz V)		^ "			
40	<u> </u>	No Core (FIt)	<u></u>	J	LI		····

		Caal		l			As	say	Res	ults	***		
- 1		Geol	Lithology	. '	alization	Sample		wd	Au		Çu	Ρb	Zn
- 1		Log			etc.	No.	(m )	(cm)	g/t	9/1	°/ ₀	%	%
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Ţ,	78.60 78.65		ore (Cal roch) A 7-1 Py Stringers P-8	Py↓ Fy⁄⁄⁄⁄⁄⁄⁄⁄⁄ Py 1	pd .		ļ					•	:
_	79.80	<del></del>	Calcaneous Rk	*************************************	1								-
	80.65	**************************************	Py Stringers in Cal rock	Py T								•	
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-	7	C C	Cal F. Ss.	1. 1.	* 4*			٠.		27	٠.		
+		c c	wi r. 58.	-			5,1	* • .	٠.,				
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[8	8.70 8.80	c t	Erd Sk ( Gal-s Ph V)	Gol Sph E	pd :	Á 7-5	88.70 ~ 88.80	10	Π	28.0	0.01	1.42	1.44
	0	c c	Cal Ss	¥			00.00		L	<u></u>	L	<u> </u>	<u> </u>
1		V		<u> </u>		L							· · · · ·

				•		Ass	soy	Res	ults	*		
Depth (m)	Geal Log.	Lithology	Mineralizat etc.		Sample No.		wd (cm)		Ag g/I	Cu %	Рb %	200
		Cal Sh	••					٠				
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	⋛≣	Cal Rk	4 . 1									
.	_ <u>c</u> _	Py Veinlet (94.50~94.65).	Ру V									
-95	_ c _	·	L Epst V		}							
		Cal Sil Rk	1.									
.		Epd V.			]					٠.		
	==			•								
-100	C C	Cal Ss Py Diss (Epd Sk)	1									
•	<u>c</u> '.c	Cal Ss	Epd				<u>]</u>					
	; ¢ ;	F Ss										
1	" "	Black Sh							:			
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	11 11	Do Tf										
	4" "		]	•								
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.			Qtz V				:					
-110		Do S Tf (Epd spot)										
		Epd Sil Sh	Py Diss	-								
		F Ss (Sil)	Epd			:				•	% . 	
-	" "	Do Tf (Sil)										
∽115 -	" " " >>>>>>	E (No Core)	1	7								
. 1	11111	Epd S High Sill Rk		T Fit				٠;				
-	<i>"</i> """	- Sil Do Tf		i								
			. \$ A	1					٠.			
-120		Sill Sh	Py Diss Stin	1					•		٠.	
. ;	****		:	FI t					٠			
-		Sill Ss	T	· 7					-			
-	==	Sil F Rk	Epd V.									
	===		1 _						•		. 1	
-125 -		Banded Pyrrh are	Pyrrh ore Epd	5k								
	Ē		Epd Sk	i		1						
		Py Diss (Epd Sk)	Py Olss	•							e Military Transfer	
-		SII F RK	Epd V					akir. Carata			V.	Ė
-130		:	,	ŧ		1.5-1		·				4 Sz
131.35	××××	Banded Pyrch ore	Pyrrh Egg Sk		A 7-2	131.50 w 132.00	50		1. 9	0.0	5 <0.0	10
- 132.00 132.46 132.65 "		P-9 Banded Pyrth ore P-10	Pyrrh EDD Sk		<b>-</b>	132.45 ~	40	1-	1.9	0.0	<b>&lt;</b> 0.0	10
. 36.50	" "	P-10 Sill Da Tf ( Sandy )	Py Diss		A 7-3	132.85		1		ــــــــــــــــــــــــــــــــــــــ	<u> </u>	Ţ
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	1 <i>4.</i> 44./	Epd Sk Band	Epd Sk		1	1	i			4.00		

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		. 4 %						-	7 -	- 4			
	Denth	Geol		Mineralization		As	say	Re	sults				
	(m)	Log.	Lithology	etc.	Sample		wd '	Au g/t		Cu %	Рb %	Zn %	
4	140.05	x	Banded Py-Pyrrh ore	Py Pyrrh	No.	(m) 140.05 ^ 140.70	(cm) 65	<0.1			0.14		
	F140.70	3 = =	A 7-4 P-11 Epd Fine Sit Rk	不		140.70		- <b>.</b>		l	II		
	-		(silicifid Da Tf?)	1	·								
	- 145			Epd Siln									
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e s	-	======================================		Py Diss									
:	-	= = = = = = = = = = = = = = = = = = = =	Py Veinlet Py Diss	1						•			
	-150		•										
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•	}	930	Da Tf			·							
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	-155	<b>3</b>											
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	-		Epd Sill Sk (Py)										
	-160		Epd rich part										
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	[	5/1		Slin Epd (Channe									
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	190	7 " " " "	Gray Sh (Phy)					٠				- <del>-                                  </del>	

Depth Geo		Minaudiaction	Ass	say Results		
(m) Log	Lithology	Mineralization etc	Sample Depth No. (m)	wd Au Ai (cm) g/1 g/	3 <b>- 1</b> - 2 - 1 - 3 - 1	Zr •/
1 1 7	Epd Sil Do Tf	Ţ				
- 195 - 195		Sitn				
		Py Diss				
- 4.5 5.4	Sil Do S Tf Sh ( Phyllite)			·		

Drill Hole No. MJI - 8 8-1

Location :

Pagar Gunung East

Elevation

: 1,257. 00 m.s.l

Coordinate Point: F line 4.0

Inclination

- 90°

Depth

250.50^m

Core Recovery : 91.9 %

Drilling Machine : OE 8BL

Term: Oct. 28,1984~Nov. 13,1984

Depth	Gool		Mineralization	<u></u>	As	say	Resu	ılts			
(m)	Log.	Lithology	etc.	Sample No.	Depth (m)	wd (cm)	1	Àg g/t	Cu %	Pb %	Zn %
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	~¥ ″	Byk Tf									
	¥ ″ ¥								4.4		
24.40	" <b>∀</b> "										
-25	*****		Ţ								
			(Py Diss)								
÷	*****	Black Sh.	Fit								
	*****	(Sheared Clay)									
29.70	$\approx$										
30						1		•			
					-						
		Black Sh	<u> </u>								
					* .						
- 35	_ <u> </u>										
	- š	Black Cal Sh						•	:		
		(sheared day)	• •								
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Depth	Geol	Lithology	Mineralization	Sample	Ass Depth	wd I	Resul	Ag	Cu	Pb	Zn
(m)	Log		etc.	No.	(m)	(cm)	g/t	,	%	•/•	%
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61.10		Sheared Black Sh		-	i. I						
		Black Sh									
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65		Fine Si ( Datf ?)					÷				
66.60		Black Sh									17-
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					Ass	say F	?esu	ts		······································	
1 1	Geol	Lithology	Mineralization	Sample		wd		Ag	Cu	Pb	Zn
(m)	Log.	In the second	etc.	No.	(m )	(cm)			%	%	1 1
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-											Ī
- 95		Black Sh						•			
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Ì		F Ss									ļ
-100		(grading)									
1		Css Sil Sh	•								
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104.70		↑ (grading)					•				
-105		Css									
+		Black Sh									
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1		Cal Ss									
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	0 0 •	Cal Cong									
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	0000	Br (Flt)									
118.50	0 1 1	Cal Cong									
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		Black Sh							•		
-		Cal Ss				İ					•
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-		Cal Ss			-						
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		Black Sh									
		AF SI (groding)									
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-130		M Ss									
-		Ss (CSc ~ Fss)	•								
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+	1, ", " 11 "	Da Tf].					
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		Sh (heterogeneous)								1	
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L								19	1.5		
140		Sh (Alt mud. Silt)		<u></u>		1					

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D	Canl		A A !		Δss	ay	Resu	lts	:		
Depth		Lithology	Mineralization	Sample	Depth	wd	Au	Ag	Cu	Pb	Zn
(m)	Log.		etc.	No.	(m)	(cm)	g /t	9/1	%	%	%
											
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-	4 11	(Lithic Tf)									
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-	4 4										1
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-150		Ss (Mud Seam)				! 			.*		
-	****										
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-	54-7-57)									
L F	===	Sh (beterogenous)	T				1.7	: 1			
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-	===	Da Ftf (Sil Rk)	Epđ								
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	11 #	Da Tf (Sil Rk)									
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	三蛙	Do Ftf (Sil Rk)									
h	===					} }				÷.	
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-	플로티	Da F tf (Sil Rk)									
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		Banded Sh	:	1			4.	3	:,.		
r		(Alt Banding Sh. Ss.)			,						
"		Panding 31.337									

										8	- 5	<u> </u>	
	Depth (m)	Geol Log	Lithology	Min	eralization etc.	4	Depth	say wd	Res	Αg	S Cu	Pb	Zn
	1117	ACXXXX	Q1z V	, , , , , , , , , , , , , , , , , , ,		No.	(m)	(cm)	g/t	9/1	%	%	%
		****	UIZ V										
•	-	11. 11. 11 11. 11. 11.		1	À								
T.	-195	4 - 4 - 11 . 11 - 4 - 11 . 11 - 11	Do Tf	Py Valniat	Epd								
., '	_		(Epd Veinlet)	.	Q1z V								
				Pyrrh	¥ ¥								
	-200		Da Fif (Sil Rk)	Veinler	¥ Qız V		-						
	- :: 	===	e e e e e e e e e e e e e e e e e e e	1	. T				-				
	<u> </u>	"," 1" g	Do Tf (Epd Spot)	Рy	Epd				٠				
	205												
	_		Da Ftf (Sil Rk) (Mossive) Catacrastic		ı								
		1 L L 1 L L 1 L L	(Epd Spot)(Da)		Fractures								
	-210	LLL	(Mylonitic) Epd Sk	'	Epd (Spot)								
	-	ŭ w ŭ	Alt (Sh. DaFtf-sil Rk)										
•	_213.08		Epd - Sk (Py)	Py Dis	\$								
	_213.15 215	==== n:n:v ====	Д8-1 S8-1		Epd .	Δ 8-1	2 5.05 ~ 2 5.30	25		1. 9	0.01	0.01	0.24
	-	**************************************	Epd Sk(Gal Sph)Pyrrh ore (215 05~215 30) S-17 A8-1 P-12								•		
	-	XXXXX	Epd Sk Pyrrh, Veinlet				-						
	-	******************************	Epd Sk Epd Sk			THE STATE OF THE S							
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-	L	\$\$\ \$\ \$\ \$\ \$\ \$\ \$\ \$\ \$\ \$\ \$\ \$\ \$\	(Pebble IcmDio) S-18 Epd rich Py Veinlet										
	-		who tren i à Actuel	Py Diss	: Epd								
i .	-	11:21:11 11:41:11 11:5:11	Da Stf (Epd) Epd Sk		·								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-230	;i. ": ii.	Do Sif (Epd) Do Fif (Epd)		<u> </u>								
	-		Epd Sk (Pyrch)		€pd								
	-	"	2)1. 231.70 ~ 231.75 2. 23200 ~ 232.03										
	235	##. ##. ==== =============================	Do Tf (Epd)		Epd								
	237.20 237,40	(XX.7.XXXV	Do F11 S 8-2 Epd Sk (Pyrrh Sph) A8-2 P-13	Py Dias	i i	A8-2	237.20 ~ 237.40	50		l. 9	< 0.0	۵٥ ا	1.22
		. u . u . u . u . u . u . u . u . u . u	Do F Stf (Epd)						- 		. 4	_1,_,,	, loon to 1 to 10 to 1
	240					_L	1,	<u>.l</u>					

						As	say	Res	ults			
Depth	Geol	Lithology	Mineral iza	rion	Somple	Depth	wd	Αu	Ag	Cu	Pb	Zn
(m)	Log.		etc.		No.	(m)	(cm)	9/1	9/1	%	%	%
-	**************************************	Epd Sk Py Diss 241.80 ~241.85	Py Mp	·								• .
- - 245	₩	Epd Qtz Da Ftf	Epa									•
-		Py Diss 246.60 246.65 Py Diss 247.70 247.75								. :		
250 250.50	: w, · w,	Do FIf										<u> </u>
							<u> </u>					

Drilling No. : MJI-9 9-1

Location

: Pagar Gunung East

Elevation

: 1235.65 m.s.l

Coordinate Point: Gline 4.0

Inclination

90°

Depth

: 250.50^m

Core Recovery: 90.5%

Drilling Machine: OE-8BL

Term: Oct. 2, 1984-Oct. 20, 1984

			<u> </u>	1	^		3 4 4	, , i à -			
Depth		Lithology	Mineralization	Sample	····	wd F	Res	Agʻ		Pb	Zn
(m)			etc.	No.	(m)	(cm)					
-	0 0	•	:								
-	0.0		·								
	0										
5	0 0	Surface Soil	·								
-	00 o										,
-	0.0										
8,00		Css Sh (black)									
-10	8 A A	Sh (wheathered) Fit Br	·								:
. "		only slime									
-	— č —	Cal sh Silty		E							
-		Sh (black)									
- -15	Ċ				•						•
		Cal sh					•		-		
-	- £ -								el e		
-		Css Fss (silty)									
- 20	LEL	Da		,							
-									•		
-											•
		Ss	•								
-25							-				
-		Sh (Sandy)									
-								٠			
•		Ss				·			3		
~30	21//	Sh									
-		Css					:	•			
		Sh (black)						: .			
· [Sil sh (white)	Kirk	.				. :			4
-35		Kirk band	band T		:						
		Sil sh (white)	Micro folding								: 1
.			个								
		Ss (with mud film)		Fig.	3-5 Geo	ologica	l Lo	g of	MJI-	9	
40		Sil sh (white)									

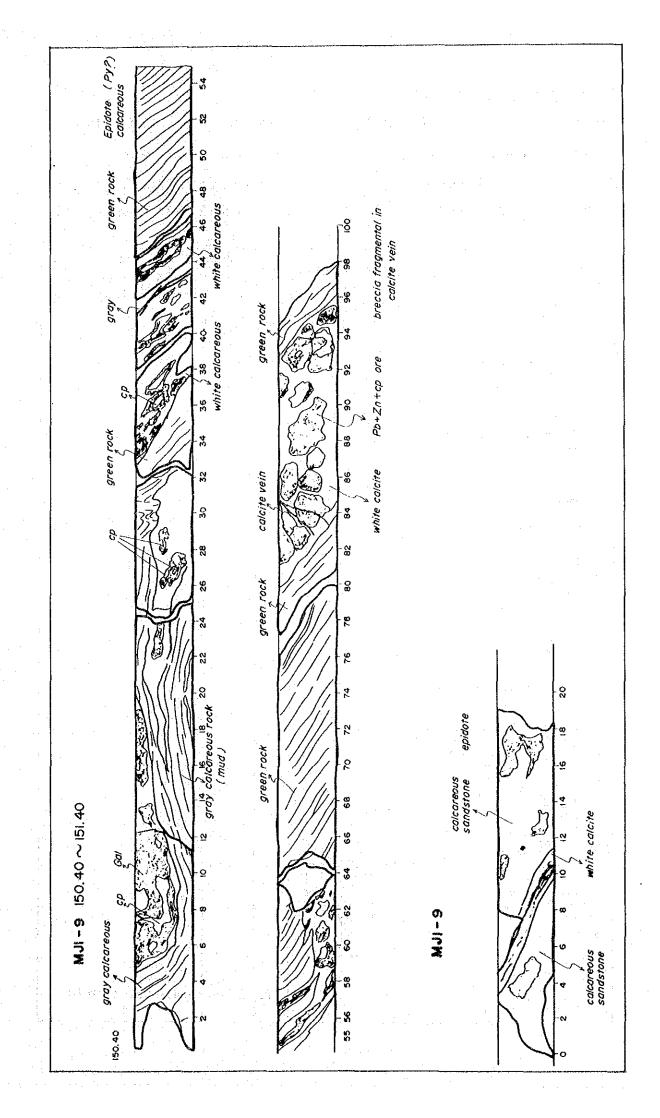
							-	9 -	- 2	
Depth	Geol		Mineralization			αу	·			
(m)	log	: Lithology (1986)	etc.	Sample No.	Depth (m)	wd (cm)	Au 9/t	Ag g/t	Cu a/t	P
40					3.5			A Çeşil		L
		and the second							•	
			micro				.+[1.000	4	
-45		Silsh (White)	l folding							
,										
470		Sh (black)	!					i.	:	
47.90		Sn (block) Ss Sh				Î		:		
-50		i								
		\$s								
		Sh	•							
		Ss				! }				
- 55		Sh								
•			·		·		٠.			
	V	Sheared	Shegred							
	* *		Py diss							
60	¥ ¥	Brk (And)	Py diss							
		:								
	* × ×	S-19		.						
65	V / ``	Ss Sh (Sheared)	·							
	L L L	Sh (Sheared) Da Ss				!]				
		JS ,	Fractura (Shered							
		Sh (black)	part)	-					•	
- 70				İ						
			1	1						
•		The control of the co		.						
	174.00	· .								
-75	^~~	Only slime								
	, 4° 4.	Da Stf	·							
		:	:				e e			
_	~ ~ .	Cly (Fault)						4.		
-80	li j d	DaStf		.			e Cherry Grant			
	====	:					- 3	• .		:
-0 5		0-14			:		14.85		:	
		Datf			. Agada	ego es 10°	4.12			٠.
90	(θ_i,η_i)	Da S tf								_

D41			A & 2		A 88	ay Resi	ilts			
Depth (m)		Lithology	Mineralization etc.	Sample No.	Depth (m)	wd Au (cm) g/t	Ag g/t	Cu g/t	Pb g/t	Zn g/f
		∱fìne	·							
-95		course		i i						ļ
-	(;;;; ====	Css (include with Sh fragment) Sh (black)	·		1		•			
-		Css Css								
-100										
		Ss	·					;		
-105		Sh								:
-		Css		:						-
-110	*, * <i>)</i> ;	Sh (gray silt) (flattened Qz peble)	·							
-	n	Sil Sh (DaFtf)								
115	### ### ### ### #### #################	Ch/marity silky)						٠		
		Sh(massive silty)								
-120		FSs (Silty)								. •
-	# # # #	Dast (with mud fragment) Datf						٠		
-125	" " " " "	Sh				·.				
<u> </u>	H W.	DaStf Sh								
-130	11 11 11 11 11 11	Da Tf (with mud fragment) Sh Da Stf (with mud layer) Sh S-20 Da Stf (with mud layer)				:			s.	
-		Ss (with mud layer) folding								
-135		Altn (Sh†ss) folding					:			
		Altn (Sh+Ss)								
140	4	Do Stf Sh (black)			· .			····	111	

				T	Ass	ay Re	sults			
Depth (m)	Geol log	Lithology	Mineralization	Sample	<u> </u>	wd , A	Au Ag	Cu		Zn
	100		etc.	No.	(m)	(cm) g	/t g/t	q/t	g/f	g/f
140								:**		
, ·		,		,					,	
						1				
		Altn (Sh+fss)			-					
145 145		Cas				1.	•		5 0	
-		Css (with mud thin layer)	•							
		Cas (white indentitional day)				4 4 7				
		Sh	1					· · .		
- ,		Epd. Ss	4 1	A 9 -1	149.40 ~	20	7.0	0.10	0.04	12,30
150		Sph Veinlets diss P-14 Epd Ss	Cp ⁴ Sph Epd (Sk)						1	
		Band op-sph-gal-pyrrh ore with skarn calcareous	Gal.Sk	A 9-2	150.40 ~	50	193.2	0.63	2.03	6.52
-	11 11 0	SilSdysh p⊸l5	1	_	150,90 ~					<u> </u>
-	11 11	P-16	t.	A 9 - 3	151.40	50	136.0	1.00	1. 34	8.52
-	" "			AVER	150.40 w 151.40	100	164.6	0.82	1.69	7,52
 155	" " "				:		-			
-	" " "									
.	11 11 11			. '						
-	11 11 11			i :						
	11 11	Do ##					•			
~ 1 6 0	7 11 11	Datf				:				
	11 11 11				1.51					
-	" "	:								
-	11 11 11									
6 5	11 4 . *									
-	" "	(Epd)	Epd							
	11 11 4	(Epd)	! .			· · · ·				
-	# # # # #						• •		•	
-	281 July 2	Band Py Pyrrh ore	Pypyrrh							
170		Sh (black)	ţ ¥							
-		Altn (Sht+DaFtf)								
~		Sh (black)			. ***					
-		Banded sh (mud+ Ss)				· .				:
175		1	:							
-113	u 11 u	Da Sdytf (With mud - layer)				}		1.		
а .							· · · · · · · · · · · ·			
•		Datf (Epd Veinlets)	Ť				·			
-					. 1					
1 8 0	* " h	Off (Block)	Py diss Veinlets							
-	11 11 11	Sh	1		1 - 1 - 1					
-	10 H 10 H	Do off		1	ş- , - is	1	lag to the	$\mathcal{S}_{\mathcal{T}}$	٠	
<u>-</u>	W7W	Da Stf (with mud layer) Sil Sh		1 4	10 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1 m					: .
- 1		JH JB			٠.					: .
-185		Datf				L graf	1,1 1,1		24 s.	
-			1						* *	<u>.</u>
-	77777	Cly Strong Sk (Epd)	1 本	1			1.1			
		Pyrrh Veint	Pyrrh Epd			3.44		.1	٠	
100			Veinlet					- :	1347	: :
190				اا		<u> </u>			100	

. 1		1		<u> </u>				Λεσ	ay F		9 -			
	Depth (m)		Lithology	Miner	aliza etc	ation	Sample No.		wd (cm)	Au		Cu	Pb a/t	
	190	20.9800S	DaFtf (epd) \$-21 Band Pyrrh ore	Pyrrh one	Epd sk		9-4	191.50 192.05	55			0.02		
	• •			T	-Mr					٠				3
	195		Sh (black)											
	- -		}Altn (Sh+ftf)						1					
	-		Sh (black)											
	200 		Da Ftf Da Ftf											
		11 11 11 11 11 11 11 11 11 11 11 11 11	Latf (Siliceous)					i			٠			
	203	" " "	Eart (Sinceous)											
	_		Da Ft Py diss (bonding)											j
·	-	9 H H	Datf (spotted)		7₹ . Epd									
	→ \$10	# # # # # #	San Coponica,											
e de la companya de l	- - 	====												
		" " "												
1	215 	1, 1, "												
		11 22											٠	
	- 220	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	Epd Da Tf											
	<u>.</u>		Py ore (fragmental)											
	-		Epd Da F tf Sh thin layer											
	225	11 11 11 11 11 11	Epd Datf (Siliceous)								·			
/ \	-		Epd										•	
	230		Da Ftf (Siliceous)			·								
	• •		Band Pyrrh ore				A 9-5	235.60	3		6.6	0.03	0.10	0.90
	<u>.</u>		Epd Da Ftf (Siliceous)											
	-235	~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Gal-Sph-Pyrrh ore Diped 80° Gal-Sph-Pyrrh ore Diped 80° P-17											
		# 11 /1 	Diped 80° P-17			·	·							
	- 240	4 # 4 4 # 4 # #					-				٠			
จา	<u></u>		•				·							

Depth	Geol		Mineralization		Ass	ay Results
(m)	log	Lithology	etc.	Sample No	Depth (m)	wd Au Ag Cu Pb Zn (cm) g/t g/t g/t g/t g/t
240	tu bi m u m	Epd Do Lap tf				
<u>-</u> .	# # # # # #	Epd Datf				Property of the second
-245	" " " " " " " " " " " " " " " " " " "					
-		Epd Da tf	·			
- 250	11 9 4 11 11 11 11		€pd			
-250,50 -			V		<u> </u>	



10.-1

Drilling No. : MJI-10

Location

: Pagar Gunung East

Elevation

Inclination

1156.32 m.s.l.

Coordinate Point : I line 3.0

Depth

: 200.50^m

Core Recovery: 86.5%

90°

Drilling Machine : OE-8BL

Term: Sept.12,1984-Sept.23,1984

			<u> </u>]	Δ ς ς	ay Results		1.1
Depth	l i	Lithology	Mineralization	Sample	Depth	wd Au Ag		Žn.
(m)	log		etc.	No.	(m)	(cm) g/t g/t	g/t g/t g	1/ †
	0.0.	•						
[0.1				•			
-	0.0	Curton Call			14			
- !	0	Surface Soil						
-5	0.0						:	
-	00						,	٠.
-	= 0 aa	Sh (heterogeneous)	•	i . i :		[
		Do Tas	1					•
-10		Do Etf	! !					•
		Da Mudy Ftf Qtz V	: ,		·			
- 1		Ss				' .		I
-		3\$		1				:
-		Css	: 1	:				
15			<u> </u> 	•				·
		Cal Sh (black)				'		
_		ė.	1	<u>.</u>				
-		Slime						
- 20						400 A 400 MINOR A		,
-		Ss (partly calcareous)				1 i i		1
<u> </u>			!	i		1		
		Sh (banded mud and-	i I			İ		:
-25	· ii · ii	calcareous) Da Stf (contain mud)	! !					
		Ss (mudy) Da Ftf	Pydiss	1				. V
-		Sh (silty)	1					1
		:		1		: ! [÷ \$.	
-		Sh (black) Da Ftf					ē.	
30		Slime	1					
		Da Ftf	Fault				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
		Stime	₩] -		eri eri	
-	11 11 11 12 11	Do tf					e grit	:
35	11 11	Da Lotf						÷.
}	#1 #1	Da Lotf	Epd (spot)					- 11
	" . " !!							1
	,, ,	Dotf	1 x - 1 4 1 1	Fig	. 3-6 Ge	ological Log of	MH-10	3.5 4
40	,,""			<u> </u>				.

Danak	C I		BAL Heiman		Ass	oy Results
Depth (m)	log	L ithology	Mineralization etc.	Sample No	Depth (m)	wd Au Ag Cu Pb Zn (cm) g/t g/t g/t g/t
40	<i>// 1/ //</i> L L					
	L L L					
•	LL					
-45	L L L	Da				
-45	L L L					
	և և և					
	" " "	DoTf				,
50	11	DaStf	Epd (Spot)			
	## ## ## ###	DaTf				
55	C	Do Cal (Epd) Diss ore (Py. Epd) Alo-I Mass ore (Py. Epd) P-18	Epd rich	A10-1	54.30 54.75	4 5 14.7 0.02 0.11 0.14
•		Da Tf (Fractured)	<u>+</u>			
•	\$\\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	Da Tf (Arg)	Fault T +			
•	11 11 11 11 11		Fractun			
-60	# . # . # . # . # . # . # . # . # . # .	Da Stf Sh	1			
•		Da F tf (mudy)				
•		Sn (banded mud, - Siliceous)				
65		Da Ftf (fine sandy)				
-		Qtz.V (Py)				
•	·	DaFtf				
	אן נון נו	Da Laptf	·			
-70 -	#/ L L L	Sh (Silty) Da Tf				
•	L L L	Sh (thin layer) Da Ss				
	-1-1-	F silty (Tf)				
- 75	_= 3:93:51	Ss				
		Sh _S -22 Ss				· · · · · · · · · · · · · · · · · · ·
	33.00.00 33.00.45.	Ss	•			
•		Sh (Contain Siliceous—				
-80		layer) Ss (fine)	Pydiss Epd			
		Ss (fine)	±	. % .		
		Ss (fine, mud clastic)	1			
-85		F Sil (Da Tf) Arg Da Ftf	T T			
		FTf(mudy)				e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co
	~~ ~~	Arg (red Qz)	Py dies			energy of the second second
	1 11	Do Tf				
90	11 11					

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				T	A -		1 4			-
Depth	Geol		Mineralization	ļ.,		ay Re		3 450		
(m)		Lithology	etc.	Sample No.	Depth (m)	wd A (cm) g	u Ag	Cu	Pb	Zn
90	. i . ii			NO.	(m /	(citt) 8/	1 147	, ,	y/I	1977
-	· · •	Do Stf						:		i i
-	n n			'						
-		Da Stf (Coarse grain)						. ,		
-		Sh								:
⁻⁹⁵						1			•	1975 A. 1971 A.
-	x	Q — Dio	Pydias			1.				5. 7.
•	V , V	Da Tf	* *	. !						
-	1 . 4									
-	, ,,	Da Tf (Sdy)	€po				•		•	
100	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4								
-	<i>y</i> ~ *	•	<u>†</u>						٠.	
-	~ + ~		Epd Veinlet							
•	+ +		_							
	نه. +. <i>م</i> ر						1 11 1	<u> </u>		
105	4 ~ 1	Myl (Gradio)	·			1.0				
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110	~ + ~					1 1				
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	~ +~					} : ·	1 1			
-	t ~ t	•								
-	~ + ~									:
115	+ ~ +		Epd			1 1 1 -		•		:
.	~ + ~ + + ~ +		Py dist (Spot)	:		a second				5
	~ + ~				•					
-	+ ~ +									
-	~ + ~									
-120	÷~~ +								: -	11 1
-	X X						1.			
-	x x	Tn P								
-	хх	•					.::			
-	X +~+	Da Ftf S-23			٠					
-125	~ + ~ X X	Breccioted				: . :.	11, 1			N 1 + }
.	^x Î	Tn P	·							
.	X X									
•	+ +	s - 24	Epd	ļ					:	**
-	~ + ~		海(Spot)			i se e e		: · .		
-130	+~+					1.45		1. 	÷	- 1
-	~ + ~	Banded Pyrite (5 cm)						1.1	-	:
٠ (* ~ +) Py diss					- 1	. * •	
· .	* * * * *		1		A gradient	144 4	: - %		÷.,	
-	~+~					. :		n. 1	:	3
~135	+ ~ +				ł			fra vist. Like		1 fr 2
- [~ +~	Da Tf		- ;				17. 1%.		. Name of Party
•	+ ~- *	(Very Siliceous)				North A	4 . A	en i en en Les desta		7
- }	~*~	rance e market					1} *	. * ** *** *	. •	
	+~*	Pybanded (IOcm)								
140	~ * ~	- , Journald (1970)			1	 				

		معمد موسود و مرود و مساور و مس						0 -	4	_
epth m)	Geol log	Lithology	Mineralization etc.	Sample No.	Ass Depth (m)	ay F	Au	Ag		Pb Zn 1/1 g/
140	4 ~ 4	Py banded ore (5 cm)		NO.	(1117	(CIII)	14,1	7/1	9/1/	۱۷۱۱۹۷
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	+~+						+ 2			
	~ + ~	÷								
-: 48	~ + ~				•					
70	+ .~ +			•						
	+ ~ +									
	~ + ~									
	* ~ ;+ ~ * ~				1.					
50	+~+	Py diss Qtz (IOcm)	*							
	4 ~ 4		€pd							
	~ +~		(Spot)							
•	L L L	Da								
	~ * ~									
55	+ ~ + ~ +~									
	+ ~ + ~ +~		-							
	+ ~ +	*								
	+~+	Myl. (GrDio)	* .							
••	-+~	myi (di Dio)								
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	+~+									
	~ + ~									
	+ ~ '									
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	+~+									
	~ + ~	•								
70	~+~		Py diss							
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	+ ~ *	S-25			ļ					
75	+~~	3-23								
	x · x	Hyb Rk								
:	- X - + +	Tn (bio.hb Tn)								
	XX		工							
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	L+~+								•	
	×××	Q - Dio								
		Da Ftt				-				
665		च्यार इ.स.		1						
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	+ ~ + ^ + ~									
	+ ~ +	Da Tf (coarsa Tf)								
90	- + ~ + ~ +	Mass-Diss Py P-19								

Depth	Geol		Mineralization -		Ass	ay F	₹es	ult	5	Charles	
(m)	log	Lithology	etc.	Sample No.	Depth (m)	wd (cm)		Ag g/I	Cu g/t	Pb g/t	Zn g/t
190	XXXX ",","	Mass ore (Py,Qtz)	Py mass ore	A 10-2	189.80 190.40	60	le di	0.5	<0.01	0.01	0,03
-	11 11 11 11 11 11 11 11	Datf (coarse tf)									
195	" " " " " " ~ ~ ~	A	Py imp 不		. :						
-	" ~ ~ ~ 2	Arg Siln	*							•	
	9 4 4 9 4 9 4 4	Datf (coarsetf)	Arg n								
-200 -200,50	~ ~	Da				<u>, 7, 7, 7, 7</u>	- 1 - 1 -	.47r 	··· .	<u></u>	•
									• • •		·

Drilling No. : MJI-II

11-1

Location

: Pagar Gunung East

Elevation

: 1,235.89 m.s.l.

Coordinate Point : H line 4.5

Inclination

: -90°

Depth

250.20 m

Core Recovery: 77.5 %

Drilling Machine : OE-8BL

Term: July.20, 1984- Aug. 12, 1984

Depth (m)		4									
	log	Lithology	Mineralization etc.	Sample No.		ay wd (cm)	Au g/t	Ag g/t	Сu	Pb g/t	Zn g/t
LÌ	0.0										
	0000										
-	00;										
-	٠,٠٠	•									
5	000										
	000.	Surface Coll									٠.
	000	Surface Soil			-						
-	00					İ	ų.				
- 10	000										
-	000	•									
-	000			· 		ļ					
13.30	0.0	Dali / Woodhana d									
-	∀	Brk (Weathered)									
15	4.6							•	:		
	* 4										
	∀										
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-20	* *	8vk				İ					
-	⋄ ♥										
-	*										
	//										
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-25	٧			:					:		
	.* ∀										-
27.80	∀	Byk (Tf)				<u> </u> 					
-	∀ ⊌	DIR (11)	:								
- 30	₹		1	W 1	_						
-	₩	Bvk									
<u> </u>	∀				٠						
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- 35	. 1										
-	* \$	Byk (Br)									
- 1	, *	D le							•		
-	¥ ₩	Bvk		171	3-7 Ge	l ologic	al 1 e	പ്പെട്ട	MJ	1-11	
40	₩ # ₩.*	Đyk (Tf)	4.	rıg.	, 3-7 G8	Ologic	ai L/	,5 U	2120		

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epth	Geol	forms and some	Mineralization			ay Res			
(m)	log	Lithology	etc.	Sample No.	Depth (m)	wd Au tcm) g/t	Ag Cu g/t g/	i Pb t g/t	Zn g/
40.60	#¥ W	Altn Ss; Sh	l						******
41.80 42.40		Ls	k Fault						٠.
2	- c		个			21 1		,	
45	C _ ===	Col Sh							
:	L - C - : :		en en en en en en en en en en en en en e						
	00					, F - F.			
48,20 49,40	₩ Ċ	Cal sh (sheared)	1						
49.90	{} }	Ft cly	Fault		i				
50.75 51.00	~ ~ ~	Ft cly	∓	.					:
		Sh Sh (Sandy)					1		
		in (admay)							٠
55		Sh							
		Sii							
59.20 50		Ft							
{		_							7
61.50	31211	, fine			**,	. 2 	-	•	
		Ss (medium) Engles (Sh fragment)			•				
55		(Sh fragment) 差 小		:			٠		
ļ									
			•						
}		Ss (Course)							
70		Ss (Course) es					19 19 19 19 19 19 19 19 19 19 19 19 19 1	i	. •
1.20 71.90	====		<i>T</i> F		·				
		T	TPy dies					1	
74.70	n .n:						* *		٠
	(10 (10 kg)							1	
}			· :			e that			
ļ			T						
30	11.11	F datf. S datf (Altn)	Py diss			41 - 11	1.1		
.	=====		Veinlet					1	:
ŀ	11 11		*					:	:
F	" "				Ì	esta de la	. % 	er Ng	
35	~ ~ ~		-						. :
Į.	6.4					1 ····	1 1 N	i .	
	2 7 2								: 1
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					A \$ 5	g y	Resul	ts	
Depth m	log	Lithology	Mineralization etc.	Sample No.		wd (m)	Au A	g Cu	Pb Zr g/t g/
	~ ~ ~						- 		
ŀ	11 11		ች						
93.05	2.2.2	Sh							
	we'esas	on .				٠.			
95		Sh (gray Sil Sh)]			
96,20	2.40.5	S s	'		:				
		Sh ShSs	Py diss						
}		Sil (gray)							
-100		Sit (gruy)						: .	
		DoFtf							-
	====	te v i	<u> </u> <u>*</u>						
	===								
-105		Ss			† . 				
	H . 4.						÷		
<u> </u>	<i>u. "</i>	Da Stf	·						
-	7 7		·						
-110	11.54 11.54	S-27		:					
L	*: "" :			} 					
111.15	. //							٠.	-
II2 A5	nn	CSs (tf)							
<u>.</u>									
115 115.50		Sh						4	
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-									
ISO	// ·//	da Stf (sh)						1	
Ĺ	10 W							•	
- 122.70			· .						
F.			: •						
-125	~~~~	Cly (Fit)	T Fault						
.	~~~	OIJ (I II I			: :				
	10.530		Py Veinlet 👤						
	<i>ii.</i> : <i>ii</i> .	Da	Py diss	100 mm					
-130		Da Stf	:		:		•		
<u> </u>		Da Cs tf	;						
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	11 4 11	Stf Fine Stf	11						
-135	~~~		7			+ 1 .			
		Cly (F1)	Fault	100				No see the	
		CSs CS CS					:		
	~,~,~	Cly (Fit)						* •	
140		Da Fif	er er er er er er er er er er er er er e			•			
1.40	لتتا			نسينينا	L				

										11	- 4	1	
epth (m)	Geol log	Litholog	y	Miner	alization etc.	Somple No.		wd (cm)		Ag	Cu	Pb g/t	Zr g/
141.00													
142.70											. :		
145.30 144.00	* ~ ~ ~	Cly(Fit)		B. 4155						. · ·			-
145		Ss (Calcareous)		Fy diss		Ď.					1+		
		Sh (Calcareous)											
	A_A_A	Cly (F			-	٠.							
149.00	10/51V-62		.		· 2 .	1							
150	~~~~ ~~~~~	Cly (Ft)			T in								
					K—Fault—X (Fractured					t			
	000	S-28 (And S S-29 Heterogineous sh	2.11 /		ж, -						٠.		
55	0 0 0	(Cal Rk.Do Pebbl	8)	本									
	 	Da Ftf											
		DUTTI											
159.40		•										٠.	
159.80				. }									
	n n	Da Lap tf						:			:		
	HI III			Py diss Veinlet			٠						
164 .10	/// //// /// A	Da Ftf (Br)							1.	•			
65	Δ Δ 	DGFII (BI)								•			
		Da F tf									•		
16940 70	A . v	0-14											
)/ //	Das tf		₩.				·	***				
	1 1	:									÷		
17340		Sh (Banded mud	8asil)										
175	~ ~ ~	Clu /5+\			·	:					٠.		
		Cly (Ft)								:	. :		
	7 7			不	承								
		s-30	ļ. Į.	y, Pyrch and a	Epd				ş.,				
to			ſ	4						y tida			
	==	S-31			·). (1)		
	 	S-32				A11-1	184.00	10	<0.1	2.5	0.07	0.11	1.3
184.iO 95		All-I banded Py P-20 (Sph)		_#	,	A11-2	(85,20			0.9	0.05	0.01	
		P-21 P-22		Py Py Sond ore	TEpd #		185.70 185.70	50	2 : 15		7.7		
		A11-2 ~ 11-3 A11-4		1		AI I-3	186,20 186,20	50		100	0.04	0.01	-
Ì	<i>5.052</i> :					A11-4	186.70	50				<0.01	-
0						AVER	186,70	150		0.7	0,04	< 0.01	0.1

					•				·	11	- 5		
	<u> </u>	1		T		<u> </u>	Ass	ΛV	200	111+4			
	Depth (in)	14 3 1	Lithology		alization etc	Sample No		wd (cm)	Au	Ag	Cu		
	-	====		İ	Epd				1	•			
=	-	(*		75-		A11-5	192,55 ℃	50		1.0	0.08	0.01	0.08
	ŀ	XXXXXX	A I I-5 Epd	Pyrrh: Py	T		192.95 194.60 ~					L	
	195		S-33	Band ore	Epd ·	All-\$	194.75	20		1.2	0.08	<0.01	0.06
	-		Epd Br (Sh) All-6~11-8 Ep Ftf			All-7	195.15 ~ 195.40	20	<0.1	0.9	0.05	<0.01	6.94
-	-	A A A	Do Ftf. sh (Altn)	*		Ali-s	195.70 ~ 195.80	40		t.l	0.08	0.01	0.02
	ļ	20					100.00		·			:	
	200	""	Epss Wallastonite S-34					! 	:				
		<i>y y</i>	Da S dy tf].						• •		-	
		$\frac{n}{n},\frac{n}{n}$					203.70 ~		т -			<u></u>	
	-	***********	A11-9			A11-9	204.00	30		0.9	0.04	(0,01	0.06
	-205		A11-10 ~ A11-12			A11-10	205.35 ~	50		5.8	0.04	0.05	0 14
		****	P-25 banded Pyrrh-Py (Sph)	Pyrry Py Band ore			205.85 205.85 ~						├─┤
	207.4		AH-13 × H-14			A11-11	206.35 206.35 ~	50	-	3.2	0.04		0.04
		*****				All-18	206.55 205.35 ~	50			0.03	<u></u>	0.11
	-210		Sh A-II~I5	*		AVER	206.55	120	<u> </u>	4.4	0.04	0.04	0.09
		4 11 11	Dott/End)	Pyrth		Ail-i3	207,50 ~ 208.00	50		1.5	0.03	0.04	0.05
	}	""""	Datf (Epd) Ftf			AII- (4	208.00~ 208.60	60		0.8	0.02	0.01	0.01
•	-215		Sh. Da Ftf (Altn)			AVER	207.50 % 208.60	110		1. 1	0.03	0.00	80.0
		# # #	Qfz V S-35 S-36		· [A(1+)\$	209.90~	40	Γ	0.7	0 03	<0.01	001
			Datf	Рy		A	210,30		J	L		10.01	
		H H											
	- 220	=====		c									
	}												
•	t				Epd I								
	-225												
•		·, · · · ·	Epd Stf										
O :	227.30	111 111	•										
	}	# III	Ep Lop tf	Pydiss									
	230	4 m											
	-	9/3/162 	Epd chi And Stf	Py diss									
	<u> </u>	===	Ep Ftf										
	-235												
	- %35												
	-	# # # # # # #	Datf	Py diss			'						-
		# # # # #	Epd Lth tf								•		
	240	""		Py diss									

					Ass	ay:	Res	ult			
Depth (m)		Li thology	Mineralization etc	Sample No.	Depth (m)	wd (cm)		Ag g/t			
	 // // //	Da Ftf									
-	" " " " " " " " " " " " " " " " " " "	Lith Datf						÷		r 	i
-		Da Fif					11				
245 -		thin mud film			-			:		:	
-		Da Ftf									
-		thin mud layer	Epd I						÷		
250		Da Ftf	│								

Pyrr gray sil Py gray sil 195,65			
MJI-II 194.95 ~ 195.65 polish Pyrr banding Py.Sph so band. massive Py, Sph so so so massive Py, Sph so so massive Py, Sph so so so massive Py, Sph so so so massive Py, Sph so so so so so so so so so so so so so s	sandy? section park gree	gray sii	

Drilling No. : MJI-12

12-1

Location : Pagar Gunung East

Elevation : 1,91.73 m.s.l.

Coordinate Point : I line 4.0

Inclination : -90°

Depth : 200.30 ^m

Core Recovery: 86.3 %

Drilling Machine : OE-8BL

Term : Aug. 20, 1984-Sep. 4, 1984

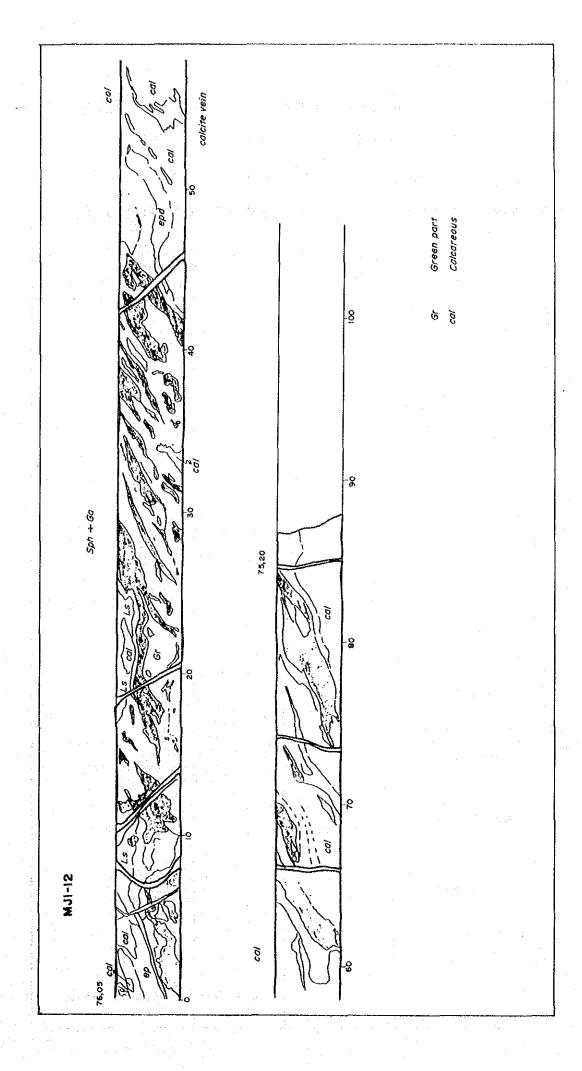
-	,		<u> </u>	J	Δει	ay I	Re a	ált.			
Depth (m)	Geol log	Lithology	Mineralization etc.	Sample No.	Y	wd (cm)	Au	Ag	Ca	Pb g/t	Zn a/t
	000	<u> </u>		110.	, <i>,</i>	1000	137		1	I.	L
	000							• • •			
	.00.	Surface Soil									
	0.00	341400 3011									
	00									•	
- 5						ļ					
•		C- (Wagshard)						•			
		Ss (Weathered)					٠				
-10											
13.00											
		CSs									
14.30											
16.90	7, 1,	Sh (hard Sil) Cal									
							:				
		•	i i i i i i i i i i i i i i i i i i i		٠.						
-20		Ss		ļ							
		35					•				
		Fs\$		}					•		
		Coarse Ss									
		Sh								:	
- 25	111/11					1					
	11 11 11 11	Da Lap If							÷		
	77 77	Da sd tf				1					
•	4 11	Da Lap tf		ł							
29.90	I /. I	· ·									
29.90 3015	c	100 (0011)					11				
		Cal					:		. •		
30 QA		Ls (banded mud. Ls)		i					•		
32,90		Sh (Maret)				1	e Ve				
34.00		Sh(Hard)								**	
-35		Ss		1						· ·	
		(And) Brtf (Epd chi)	1							M	
		Qtz V	1		I	1			' K Z Y I	12	
30,40				Fig	3-8 Ge	ologica	al Lo	g of	MI	-1 Z	
40	1111111	(And) Lap of (Epd chi)		1		<u> L</u>	3	er er f			

· · · · · · · · · · · · · · · · · · ·	Depth	Gani		Adla	Allwall	A.		A * 5	ay 1	Res	uits			
	(m)	log	Lithology		alizati etc.	on	Sampie No.	Depth (m)	.wd (m)	Au g/t	Ag (Pb I/t	
		## ## # Δ # Δ	(And) Brtf (Epd,chl)											
	• :	# #	(And) Loptf (Epd.chi)		-		ļ							
	43,90	111 111	(Alla) Capit (Epatelli)											
	45	S S	Sil Sh Fit											
	- ,	,, ,, ,, ,,	Sil Sh (And) tf (Epd chi)											
		" "	Altn Sh f Sil							1 .				-
		 	Da if (And) Lap tf		T		A12-1	49,60 ~ 49,90	30		34.0 0	0.13 3	.02	3 .97
		111 111 .111 111	(And) Lap tf Sph. Gal network ore A12-1 P-26 (And) Lap tf (Epd chi)	\$ph=Gal	l Epd		A 12-2	51,60 ~	20]	20.00	06 0	.90	1.43
	•	11 111	Sph diss ore A12-2 epd rich part A12-3	<u>k</u>	1		A12-3	51,80 52,10 ~	50	<u> </u>	27.0 0	.09 1		
	53,30	<i>''' '''</i>	(And) Loptf (Epd chi)		L .			52,60		I		Ľ		
	55		CSs				; 							
	_	, , , , , , , , , , , , , , , , , , ,						:			•			
i	57,50		Cal Ss Ls				j							
	-	C C	Cal Ss											
	-60	c												
	<u> </u>	c	Cal S.											
	CA 70	c C	Cal Ss											:
	- 64,30 -65		Sh											
. :	- 1		Cal heterogineous Rk								÷			
	67,70		Sh											:
			Cal Sh d Cal Ss Cal Cong						. ·					
:	-70	ер	Epd rich rock (Epd)Ss (Sk)?				A12-4	72,30 ~ 72,80	50		1.8 0	.04 0	0.01	0.95
			Sh (Bonded)	<u> </u>			A12-5	72,80 ~ 73,30	50		0.6 0.	.01<	0.01	0.10
			Sk Sph diss \$-37, P-27	Sph-gal		٠	AVER	72.30 v 73.30	100		1.2 0.	04 <	100	0.53
	-75	11) I(1 111 111	Do Lop of Al2-4~12-5	Cp-Sk	٠			· · · · · · · · · · · · · · · · · · ·	· r					
	75,20 76,05		Col Ss Cp. Sph. Gal. Banded ore	w k			Alz-6	75,10 ~ 75,60	50	0.1	19, 8 0.	31 0	.03	7.68
		- V	Call heterogineous) All-6 ~ 11-7 P-28 Sh (partly heterogineous)				A12-7	75,60 ~ 76,10	50		28.0 0.	65 O	02	7,44
		~~~				Į	AVER	(75.104 76.10)	100		2 3.9 0.	48 0	.03	7.56
	-80		Cal Ss Sh		¥ ,	.:						-:-		
	80,95	7 - 7	S-39 (And Tf)					·			٠			
<u> </u>	-	- 1 - 1 - 1	Daftf (Ep)			1								-
						-			. **	-				-
	-05		Fit cly											:
		# # # # #	Da tf								*	·. · · '		
		″ ″ ″ <b>=</b> c=	Sh											
	90	=c=	Aifn (Epd. Sil. Sh.)							<del></del>		·		

			:					12	- 3	
Depth (m)		Lithology	Mineralization etc.	Somple	Ass Depth	wd	Au	Ag	Cu Pt	Zn
	10g	Sil Rock (Epd spot)		No.	(m)	(cm)	0/1	9/1	) /t  g/1	0/1
•		Sh (thin layer)	ŀ	1 t	***					
- , -		Fit Cly	•							
95 		Fit Ciy						. : . : * * . : *		. 8
- -		Daftf								
-100		Sh	· . 						. * - +4	
100,60		Da				1	100			1
•		Ss (mudy)			i					
—10 <b>5</b>		Ss (mud film)	•	٠						
<b>-</b> - i	""""""""""""""""""""""""""""""""""""""	Epd rich (Datf) Sh Epd rich Ru (Datf)	T Epd							
<u> </u>		Epd rich Ru (Datf) Aı	水 末 水 末	8-31A	08,35 ~ 108.75	40		4.0	0.04 0.20	0.58
~IIO		Da F tf	Pyr.Py					•		
- -	**************************************	Sh	Banded ore							
-		(Banded mudy Sil)								
· 115		Da		•		٠.				1.
. ,		Da F tf		٠						
- '	5555	Epd Sil (Strong)			-					
-120	A A A A A A A A A A A A A A A A A A A	P-29 Skarn Sph Pyr diss	Sph-Pyr	ДІ2- 9	20.50 ~	35	011	1.4	0.03 0.96	0.78
		Sph-Pyr band	diss band		120.85				,	1
	# # # # #									
		Sh thin layer	Py-Pyr	A12-10	26.85 ∼	40	<0.1	2.6	0.0 80.0	0.12
. [	NATURALIA STANTONIA		Band ore		127.25				- 1	1
• • • •			Epd .		20.0%	<del></del>				10 3
-130		Sh layer P-30 Cp-Sph-Py-Pyrrh		A12-11	30.05 ∼ 130.55	50		1.7	0.03 0.07	0.17
	// // <del></del>	Da Stf	Py, Pyr Bond			1914				
	In III III III III	Da Lap tf	f ore	A12-12	6.30 ∼ 136.80	50		0.9	0.03 <0.0	0.01
-135	## ### ###############################	Cal A 12-12	<b>ጥ</b>	A12-13	138.60 ~ 138.75	15		0.7	0.0	2 0.03
	OVXXXX		Py.Pyr Banded ore	AI 2-14	139.75 19.20 ~	50		0.5	0.01	0.01
140		F tf (SILDa) AI2-13 P-31 AI2-14 ~ AI2-15	*	A 12-15	139.70 ~ 140.20	50		-	0.05 <0.0	

												<u>-</u>	12	- 4		
	Depth	Geni	100					~ • • • -		Ass	ay i	रेडड	ults			
	(m)	log	L	itholog	) y	Mine		ation	Sample	1 005	wd	Au	Αg	Cu	Pb	Źn
	140	VCV0000	Mass-	Diss-Pyrr	h - Du	-	т:		No.	(m)	(m)	9/1	9/1	g/t		
		3000		P-32	: '	Py Banded			V15-16	140,70 140,70 ~	50		1.6	0.05	0.01	0.01
	<b>†</b>		Pyrm -	Py (Cp) Al P-33	12-21	Ore			A12-17	140,90	20		1.2	0.01	0.01	0.03
	[	W W W	Da tf	-Py A12-	22 N		Epd		AVER	(39.20 ~ 140.90)	170		1.1	0.03	k0.0 l	0.01
	-145	*****	Do If		2-24	. *	cya	1	A12-18	141,35 ~	50		2.7	0.02	0.02	0.03
	-	11 11 11					** .**	Fault	A12-19	141,85 141,85 ~			-			
	•								<b>}</b>	142,35 ~	50			0.04	<u></u>	
									A12-20	142,85 142,85 ~	50	 	3.3	0.08	0.01	0.02
	150	韪	Da F tf				1		A12-21	143,00	15	i	3.0	0.02	0.02	0.03
	<u> </u>						+		AVER	(141.35 ~) 143.00)	165	ļ	3, 1	004	0.01	0.04
	<b> </b>						Epd		<u> </u>	143,50~		!	 	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
							Veintet	•	A12-22	144,00	50		2,8	0.01	0.02	0.04
	158	N 11 11					T		A12-23	199100	50		3.7	0.01	0.02	0.02
	-	# # #	Da tf						A12-24	144,50 ~ 145,00	50	[ [	0.01	0.08	0.17	0.47
	}	n (1 11 11 11	s-40						AVER	143.50 ~ 14 5.00	150	· · ·	5.5	0.03	0.07	C 18
	ľ	**************************************						Ť	ļ		 	L		L		
	-160							Fault								
	<b> </b> -	" " "						矛								
	<b> </b>	0 11 11 11 11	Do S t	f S-41				i								
		#.#.# ≈≈≈≈≈						<u>↓</u> Foult					•			
	165	# # # # #						7			į					
	}				,			<b></b>			-					
	<b> </b>					<u> </u>		Fault								
		" " "					1	*	A12-25	172,35 ~	50		1.2	80.0	×001	<001
	-170	4 4								172,85 172,85 ~		<u>.</u>	,	****		
	-	" " "	Da tf			<u>.</u>   .	Epd		A12-26	173,35 ~	50			0.19		
		","," 808888	P - 34		•	, (	rich)		A12-27	173,85 173,85 ~	50		1.0	0.17	< 0.01	<0.01
			Banded P - 35.	Pyrhotite P-36		Т Руг, Ру	.		A12-28	174,35	50		0.8	0. 12	< 0.0	<0.01
	-178			<del></del>	2 A12-31	Band O	r•		A12-29	174,35 ~ 174,85	50		1.2	0.18	<0.01	0.01
	<b> </b>	n.0.00	Sh thin	layer	Å	Py Valata	*.		AI2-30	174,85 √ 175,35	50		2.0	0.14	<0.01	10.0
	<b>}</b>		Sh thin	layer		Veinlet			1E-51A	175,35 ~ 175,65	30		0.0	0.07	<0.01	<0.01
		11 11 11		٠	•	Py Vein			AVER	172.35~	330		1.2	0.14	<001	<0.01
	180	, , ,	Da F tf	thin loyer		Py Vein				178.65	1		Li	L,		
	<b>.</b>	11 11	Da tf					Ar on	٠							
	}							Argn 水								
٠.						·		k Foult	,		•				•	
	Lina	9 11						T								
		11 11 11 11 11 11 11 11 11 11 11 11 11	Do tf					Argn I								
		<u>" " "</u>	. <b>_</b>					Failt		-						İ
			Da F tf	•				Arg				•				
	190	",","	Datf			Py diss		Fault								

Depth Ge			Mineralization	and the state of	Ass	ay F	tesuli	<b>}</b>	4.93	
	9	Lithology	e tc.	Sample No	Depth: (m)	wd (cm)	Au A		Pb g/t	100
195	" " " " " " " " " " " " " " " " " " "	batf(SII)  S-42 Datf(SII)	Fractured Fault Fault Fractured							



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13 - 1

Drill Hole : MJI - 13

Location : Pagar Gunung East Elevation : 1,234 m.s.1

Coordinate Point : 80^m S25W of MJI-6 Inclination : -90°

Depth : 250, 50 ^m Core Recovery : 86, 3 %

Drilling Machine : OE - 8BL Term : JAN.29, 1985 ~ FEB. 18, 1985

Ĺ			Adia analim Aina	T	As	say .	Res	ults			
	Geol	Lithology	Mineralization	Sample	Depth	wd	Au	Ag	Cu	Pb	Zn
(m)	1		etc.	No.	(m)	(cm)	g/t	g/t	%	%	%
	0.0										
	0.0		1	<u> </u>		1 1					. !
•	0 0.										:
	0 0					100					
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- 5	0 0 0						÷.	1.2			
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		Green Css									
-10						.					
	<u> </u>	Green Css									:
	4 2 A	Fit Cly-Br	<u>.</u>								
	\$~^	L.s									
15	-c Č							,			
,5	- <del> </del>	•				3.7		1			
	_c_	Cal Sh									
						1 .					
-	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~										
20	8888	Br Ss									
_	c:-c	F Ss									
-		Cal Pebble Sh									· · · · ·
				A13-1	23.10 w	55		215.0	1.56	1.26	9.95
23.10 -24.20	<b>****</b>	Gal - Sph- Py ( <b>Cp) ore</b> A 13-1,2 P- <b>3</b> 7			23.65 ~	55	0.41	.78	0 8 8	134	9.76
25		Cal Pebble Sh		A 13-2	24.20		├	1	<del>                                     </del>		
_				Aver.	23.10 ~ 24.20	110	0.41	195.0	1.26	1.31	9.85
_		\$s ·									
_		(Black) Sh									
-30											
							,				:
_		(No Core) Flt?	:								4
_	~~~	/ No Cole) Lité						2.1			
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35		F Sil rock		J		- 1					
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_	===	•					ļ.	1.5"		٠.	:
		F Ss		Rio	3-9 Geo	Mogica	il I o	σnf	МII	-13	·
_		_		L'ig.	)	LOBIO	بايد عا	9 OI	171.5 1		
40		Ss		<u></u>	l	<u> </u>					·

Denti	Geol		Minan	alization .	<u></u>	Ass	ay	.,	ults	·		<del></del>
5.5		Lithology			Somple	Debth	wd.	Αu	Ag	Çu	Pb	Zn
(m)	Log		e	tc.	No.	(m)	(cm)	9/1	9/1	%	%	%
[.												
		Ls (Cal rock)										
1 300	4000	(Nocore)										:
		Ls (Cal rock)										
-45	三三	F. Sil Rock					:					
Fig. 1						*						
}												
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+			ļ.									
~50·		\$ s				4.2						,
· <b>L</b> ·			1 .			*						
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<b>L</b> .	<u>-£25</u>	Fit Cly							-			
55		Very Fss				ž .			₹			
ļ -		Ss Sh									•	
1												
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-60						f .						
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<u></u>						1	ļ .					
-65												٠.,
86.01	,					66.80 ~	-		T		<u> </u>	Ţ
67.00	XXXXXXX	Massive Py ore A 13-3	•		A13-3	67. 00	20	<u>L</u>	8.5	0,25	0.02	0.1
<b> </b>	~~~~	Д 13-3 Ft Cly										
-	· 5. '5.	i ( Gly	<i>i</i> -	- <b>V</b>	]		] .					
70	. 5	°-										
F	. 5. 5. . 5:	\$s		Ĺ			1.					
F	3:5:	) Black Sh C Ss	SI	In Catego- Stized								
-	: 5	(Epd Pole Green Ss)	Py Diss,	211260	.]							
-	3.5		Veinlet	\ \		the state of						
- 75	5 " 5	(Epd Pale Green Ss)		l						•		
	" "	(Epa Pale Green Ss)		₩				•				
L	" "	(ACI VERBEL)										
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t	11 .11						[				٠.	
<u> </u>	11 11	j			:		<u>;</u>			: :		
-85	" "	Calcarous Ss (Tf)							44.5		: :	:
- 86.30		Gal Sph Veinlets				86,30 √		1	1	<u> </u>		T
- 86. 25	3 77 7 7	Banded Gal-cp-sph-Pyrm ore			A 13-4	86.75	45		94.0	1.07	0.39	2.7
-	545	А 13-4										
ļ	4 5 4 5									-		
90	" 5 "	The second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of th		· · · · · · · · · · · · · · · · · · ·		:						
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[					Α	ssay					
Depth	Geol	Lithology	Mineralization	Sample	Depth	wd	Au	sults Ag	Cu	Pb	Zn
(m)	Log.	L111(010 g.y	etc.	No.	(m)	(cm)	1 .	0/1	%	%	%
			<u></u>	110	1,111,2	101177	LY	1 **		الكنيب	
- 1	" "	~Sph Veinlet					-		in.		
-	" "	Epd Sil Da Tf				11 11		$\mathbb{R}^{-2} = \mathbb{I}$			
}	<i>"</i>	F. 1 . F. 63 . Di. 174		A13-5	95.10 4	20	1 :::	15.5	0.16	0.08	0.68
-	# = "	Epd F Sil Rk (Tf)			95.30 96.35#		<del> </del> -				
95.10	77 XXXVVV	Py Veinlet Network AI3-5		A 13-6	96.85	50		10.0	0.06	0.04	0.72
	and so	Banded Gaitsph«Py ore		A 13-7	96.85 ₩	35		5.0	0.03	<0.01	0.63
96.35 97.20		Gal sph-py-pyrsh stringers		13-7~8	97.20	<u> </u>	-	1			
87.20		(Epd-cal rock) , Al3-6,7	•	Aver	97.20)	85	]	7.5	0.05	0,02	0.68
-		Altn Col - Sh					<u> </u>				7
-100		Banded Cp <sph<phnh ore<="" th=""><th></th><th></th><th></th><th></th><th>·</th><th>T.</th><th></th><th></th><th></th></sph<phnh>					·	T.			
(01.10) 10145	XXXX	) Alto Cal-Sh Al3-8		A13-8	100.10 4	36	<0.1	28.0	0.66	<0.01	1.74
		Py Pyrrh one (cm) P-38			102.20 4	20	1	3.3	0.06	<0.01	0.00
102.40	<b>₹</b> ∕\$^&	Banded/Diss Sph. Py ore (Epd Calcareous rock)Al3-9		A13-9	102.40	20	!	13.3	0.00	- 0.01	U.U.B
L	- 3	Cal - Pebble/Conglo - Sh									
105		Black Ch (Cal-Epd Veinlet) Fsil Rk									
		1511 RK		:	·			*1			
Ī		S.s. (Tf)								,	
Ī		٧,		] .							
-		Coarse									
-110		Grain									
<u>-</u>											.
-		Sil Black Sh									1
<u> </u>		Sil Sh		A 13-10	114.10 ~			3.9		<0.01	017
-114.10 114.40	WXXX	Banded Py-Pymh ore	·	A 13-10	114.40	30	<u>L</u>	3.9	0.13	40.01	0.17
-115		(Epd Sk) A13-10	<i>(</i>								
-	==-	F Sil Rk (Epd Band)									
-		1 34 KK (Epo Balla)					,				
-								1.			
}		Sh (Sil. Silty)									İ
-120										4	
}		Altn Sil Sh-Epd F S.s.							 		
		·									
-	===	Ss (Cal)			7.5						
-	Epd	Epd Sk (Py Veinlet)									.
-125							, 4				
-			•								
-		F Sil Rk									
<b> </b>								١ .			
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-130			•								· y - }
		Altn Sil Sh-Cal S.s.								7	
	C . C	•									
	Č	Col Ss			•						- 1
Ţ					1,						
		Cal Sil RK	*				ere ere	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	· ·		. 1
-135		Sil Rk	7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	: ,		a 4			<i>1</i> - 3.		
	77.74					1.14	i de				
<b>T</b>				1 1 1		17.4			4		
<b> </b>				4				:	*. * ***		
- I	==		•				4				
140		: 1		L				<del></del>		100	لــــــــــــــــــــــــــــــــــــــ

	Depth Geol			Mineralization			ay	Results			$\overline{}$	
	(m)		Lithology	etc.	Sample		Wd	Au	Ag	Cu	Pb	Zn •/
	140	A		VIV.	No.	( m)	(cm)	g/1	g/t	%	%	%
			Alt. S.s Sh			-						
	145		F SII Rk									
\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-			. •	.				•			
			Black Sh									
	-150		FIA De									
÷	-	2 %-	Fit Br									
	<u> </u>				] [							
	-155	[ : . · ]	F Sil Ss (Tf)	·						-		•
	-	· ; · ,						•	•			:
•	ŀ											
	-160											
net ta	-											
6 18 8 3	-											
				i j		, :						
	-165	::	Sil S.s. (Tf)									
	-											
	-		Mud fnagment									
	ŀ		was ma <b>h</b> mem									
*	-170			I		,	 	÷				
	ļ		· .			:				-		
	}											
	<u> </u>		No Core									
		.:.:										
	175											
	-	~ ^ ~ A	Fit Cly. Br.						•			
	<b> </b>											
	<u> </u>											
: *	180		Sil Da Tf (Fine)									
	<u> </u>	7 , 7	Do Tf									
	-	== = " "	Sil Da Tf (Fine)									
	<u> </u>		Da Tf			184,60 ~						
	184.70	1 V V	Massive Py ore A13-11 Sil Sh		A13-11	184, 60 ~ 184, 70	10	<0.1	2.0	0. 12	<0.0	0.01
			- Jii - Jii									
	  -		Br Rn							•		
	-	<u> </u>	(Very Coarse)				: 1	.*		-	÷	
<i>ill</i> - 1	[ 190				1		<u> </u>				<del></del>	· · · · · · · · · · · · · · · · · · ·
		: :										

							· <u>-</u>	13	<del>- 3</del>			
					Assay Results							
epth)	Geal	Lithology	Mineralization	Sample	Depth	wd		Ag	Cu	Pb	Zn	
m)	Log.		etc.	No.	(m)	(cm)	g/t	0/1	%	%	%	
190		Course. S.s. (Pebble S.s.)										
	Epd	Epd rich sil RK	•				·			. :		
	==	Coarse S.s. (Pebble S.s)	•									
		Epd rich sil Rk					r :-		1 :	r :	,	
95.40			★	A13~12	195.40 W	5,0		2.8	0. 07	<0.0	0.01	
		Banded Py-Pyrrh ore	Py-Pyrrh ore	A 13-13	195,90 A	50	<0.1		0.08	0.0	0.02	
196.70	= -  XXX	în Green Sk A 13-12, 13 ₋ 14	<b>予</b>		196.40 ~		-	-				
				A 13-14	196.70	30	ļ	3.9	-	-	0.01	
				Aver.	196.70)	(130)		3.5	0.08	<0.0	0.01	
200	~~~~	Fit Cly	Epd									
		Epd rich	·									
		SPO TIME										
		End Ck (Du Dice)	Py Diss									
205		Epd Sk (Py Diss.)						. :				
		Epd rich F Sil Rk										
	===	Cho Hell E 211 KM										
	===							•				
	===											
210					-							
			Minor		:				• .			
		Br Sil Rk	Folding									
215			i ·			1						
213	43434	Br. Cly (Fit)										
	" "	Datf (S.y.n)		-								
	"							•				
	" ,"						•					
220	~~~	Fit Cly								-		
					1.					:		
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225	=	Qtz V.	.									
***	<u>=-</u> -	Fr Sil Rk			1:						•	
		LL 211 MW	1					:				
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	a_~a^a	₿r Rk	1						*			
230										٠	2300	
							1 1 1		: *			
			Epd					* 4		11 1		
		•						· .				
				1.	4 4 4					i. (
235		Ss (Sil)									1 11	
			Epd					•		:		
		SII Ss.						1131				
	~~~	No Core Cly (?)	Epd		1	4 mg 1 mg		1625				
240	"	Sil S if			<u> </u>	<u></u>	<u> </u>		. :: ::			