

Fig. 2-3-2 Drilling Progress of MJF-5

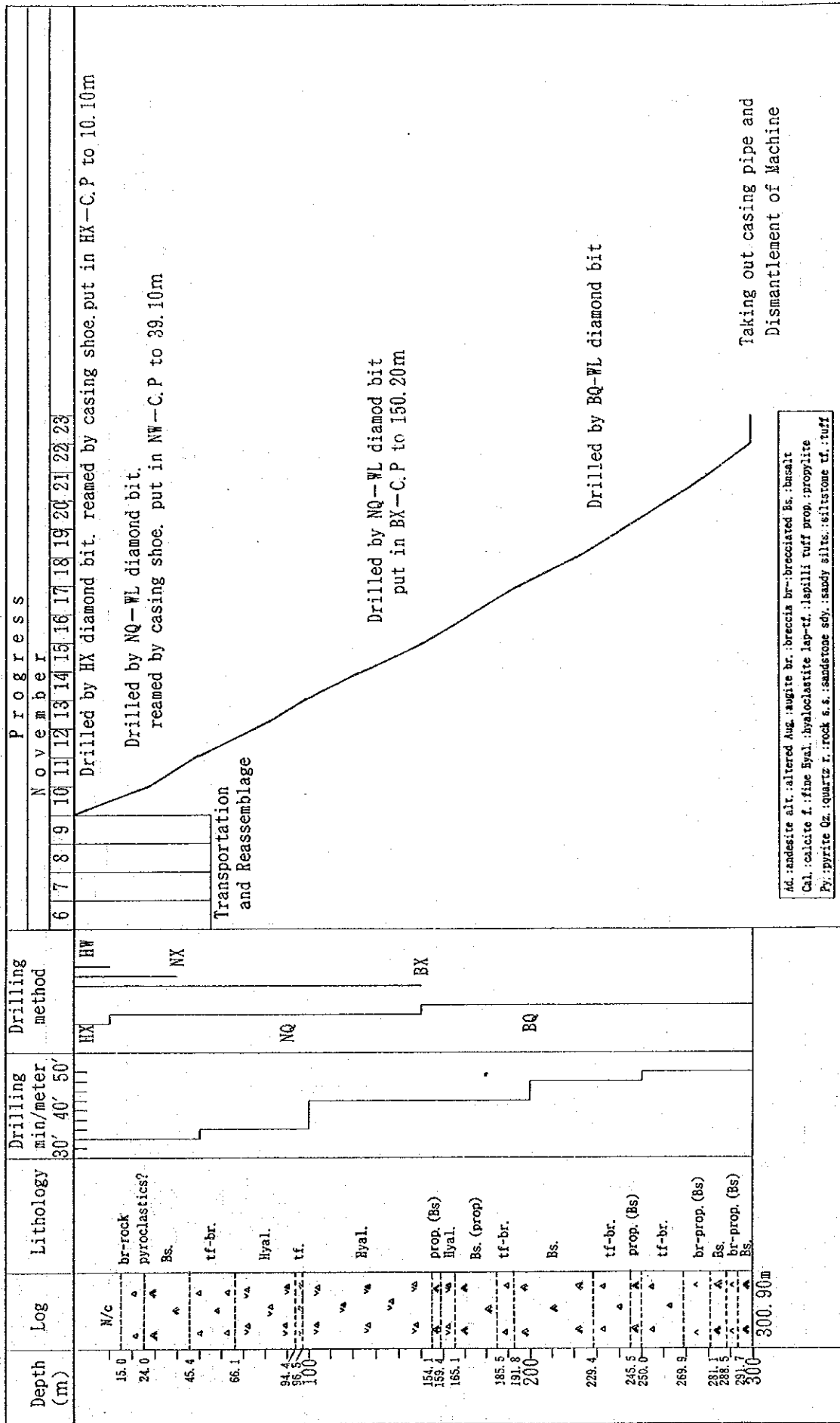
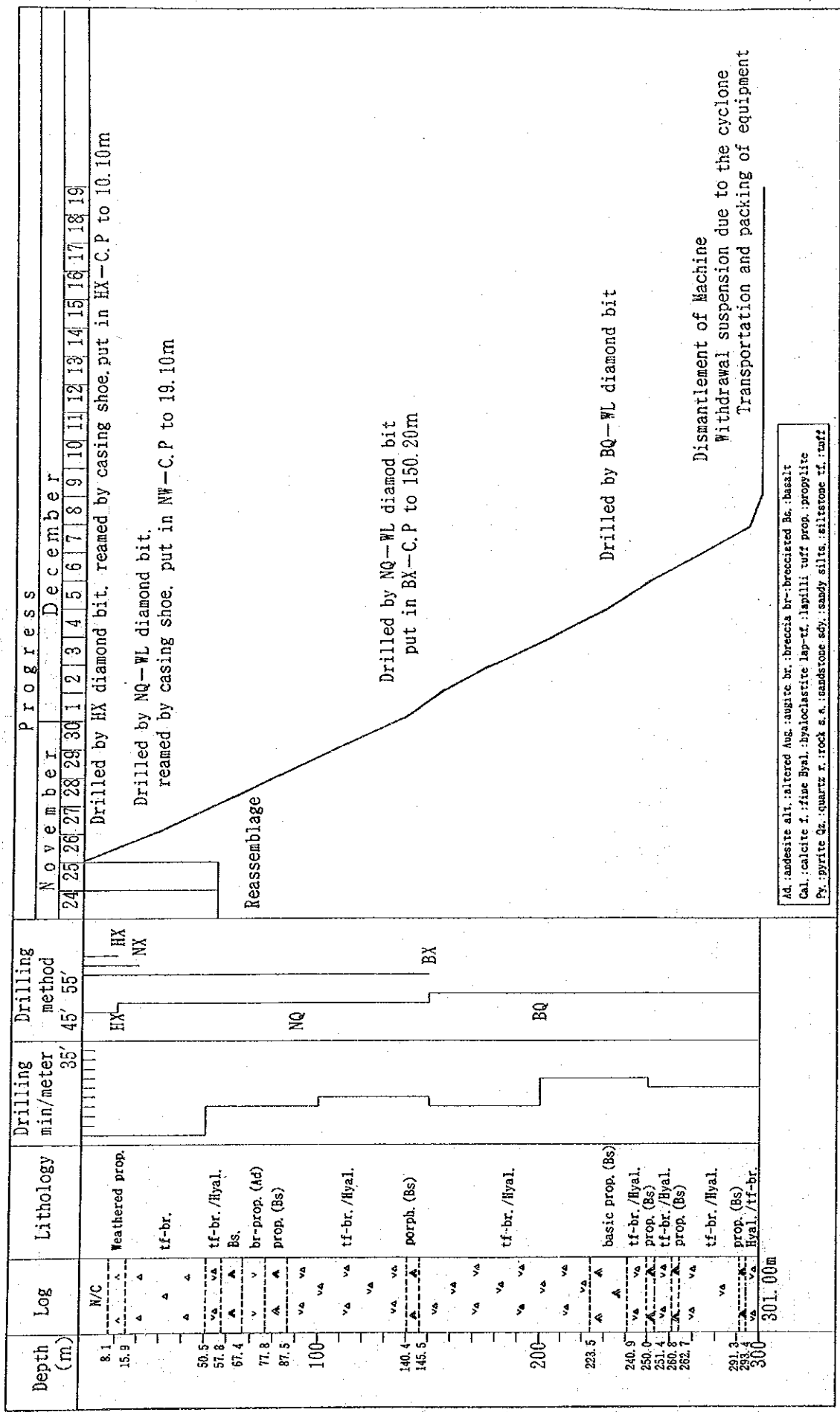


Fig. 2-3-3 Drilling Progress of MJF-6



Progress

November 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

December

Drilled by HX diamond bit. reamed by casing shoe. put in HX-C.P to 10.10m

Drilled by NQ-WL diamond bit. reamed by casing shoe. put in NW-C.P to 19.10m

Reassemblage

Drilled by NQ-WL diamond bit put in BX-C.P to 150.20m

Drilled by BQ-WL diamond bit

Dismantlement of Machine
Withdrawal suspension due to the cyclone
Transportation and packing of equipment

Ad. andesite alt. : altered Ag. : augite br. : breccia br.-brecciated Bs. : basalt
Cal. : calcite f. : fine Hyal. : hyaloclastite lap-tf. : lapilli tuff prop. : porphyrite
Py. : pyrite Qz. : quartz x. : rock s. s. : sandstone sdy. : sandy silt. : siltstone tf. : tuff

Fig. 2-3-4 Drilling Progress of MJF-7

Table 2-3-1 Summary of the Drilling Operation on MJF-5

	Survey Period				Total Men		
	Period	Days	Work day	Off day	Engineer	Worker	
Operation			days	days	men	men	
Preparation	11. 10. 1992~23. 10. 1992	13	11	2	44	105	
Drilling	24. 10. 1992~04. 11. 1992	12	Drilling	12	0	48	144
			Recovering	0	0	-	-
Removing	05. 11. 1992	1	1	0	4	12	
Total	11. 10. 1992~05. 11. 1992	26	24	2	96	261	
Drilling length	300.00m Overburden		7.10m	Core recovery of 100 m hole			
Length planed	-m	Core length	293.70m	Depth of hole	Core recovery	Core recovery cumulated	
Increase or Decrease in length				(m)	(%)	(%)	
				0.00 ~ 100.00	99.7	99.7	
				100.00 ~ 200.00	100.0	99.8	
				200.00 ~ 301.00	100.0	99.9	
Length drilled	301.00m	Core recovery	%				
			99.9				
Working hours	h	%	%	Drilling			
210° 20'	70.8	53.4		Efficiency of Drilling			
Other working	86° 40'	29.2	22.0	Total m/work period(m/day)	301.00m/12 days (25.08m/day)		
Recovering				Total m/work shift (m/shift)	301.00m/36 shifts (8.36m/shift)		
Total	297° 00'	100.0	75.4	Drilling length/bit(each sized bit)			
Reassemblage	42° 00'		10.6	Bit size	HX	NQ	BQ
Dismantlement	7° 00'		1.8	Drilled length	5.10m	145.10m	150.80m
Water transportation				Core length	-	142.90m	150.80m
Road construction and transportation	48° 00'		12.2				
G. Total	394° 00'		100.0				
Casing pipe inserted	Meterage drilling × 100 length		Recovery				
Size	Meterage (m)	(%)	(%)				
H W	5.10	1.7	100				
N W	15.10	5.0	100				
B W	150.20	49.9	100				

Table 2-3-2 Summary of the Drilling Operation on MJF-6

Operation	Survey Period				Total Men		
	Period	Days	Work day	Off day	Engineer	Worker	
Preparation	06. 11. 1992~09. 11. 1992	4	4	0	16	50	
Drilling	10. 11. 1992~22. 11. 1992	13	Drilling	13	0	52	156
			Recovering	0	0	-	-
Removing	23. 11. 1992	1	1	0	4	9	
Total	06. 11. 1992~23. 11. 1992	18	18	0	72	215	
Drilling length	Core recovery of 100 m hole						
Length planned	300.00m	Overburden	15.00m	Depth of hole (m)	Core recovery (%)	Core recovery cumulated (%)	
Increase or Decrease in length	-m	Core length	277.10m	0.00 ~ 100.00	89.6	89.6	
				100.00 ~ 200.00	100.0	95.2	
				200.00 ~ 300.90	100.0	96.9	
Length drilled	300.90m	Core recovery	96.9 %				
Working hours	h	%	%	Drilling			
207° 10'	66.4	58.2		Efficiency of Drilling			
Other working	97° 50'	31.4	27.5	Total m/work period(m/day)	300.90m/13 days (23.15m/day)		
Recovering	7° 00'	2.2	2.0	Total m/work shift (m/shift)	300.90m/39 shifts (7.72m/shift)		
Total	312° 00'	100.0	87.7	Drilling length/bit(each sized bit)			
Reassemblage	35° 00'		9.8	Bit size	HX	NQ	
Dismantlement	9° 00'		2.5	Drilled length	12.10m	138.10m	
Water transportation				Core length	-	126.40m	
Road construction and transportation						150.70m	
G. Total	356° 00'		100.0				
Casing pipe inserted		Meterage drilling × 100 length	Recovery				
Size	Meterage (m)	(%)	(%)				
H W	10.10	3.4	100				
N W	39.10	13.0	100				
B W	150.20	49.9	100				

Table 2-3-3 Summary of the Drilling Operation on MJF-7

Operation	Survey Period				Total Men		
	Period	Days	Work day	Off day	Engineer	Worker	
Preparation	24. 11. 1992~25. 11. 1992	2	2	0	8	24	
Drilling	26. 11. 1992~08. 12. 1992	13	Drilling	0	52	152	
			Recovering	0	0	-	-
Removing	09. 12. 1992~19. 12. 1992	11	10	1	40	94	
Total	24. 11. 1992~19. 12. 1992	26	25	1	100	270	
Drilling length	300.00m Overburden		8.10m	Core recovery of 100 m hole			
Length planned	-m	Core length	285.80m	Depth of hole	Core recovery	Core recovery cumulated	
Increase or Decrease in length				(m)	(%)	(%)	
				0.00 ~ 100.00	92.2	92.2	
				100.00 ~ 200.00	100.0	96.3	
Length drilled	301.00m	Core recovery	97.5				
Working hours	h	%	%	Efficiency of Drilling			
Drilling	217° 40'	73.5	54.6	Total m/work period(m/day)		301.00m/13 days (23.15m/day)	
Other working	78° 20'	26.5	19.6	Total m/work shift (m/shift)		301.00m/37 shifts (8.14m/shift)	
Recovering				Drilling length/bit(each sized bit)			
Total	296° 00'	100.0	74.2	Bit size	HX	NQ	BQ
Reassemblage	18° 00'		4.5	Drilled length	11.10m	139.10m	150.80m
Dismantlement	8° 00'		2.0	Core length	-m	135.00m	150.80m
Water transportation							
Road construction and transportation	77° 00'		19.3				
G. Total	399° 00'		100.0				
Casing pipe inserted	Meterage drilling × 100 length		Recovery				
Size	Meterage (m)	(%)	(%)				
H W	10.10	3.4	100.0				
N W	19.10	6.3	100.0				
B W	150.20	49.0	100.0				

Table 2-3-4 Record of the Drilling Operation on MJF-5

	Drilling length			Total		Shift		Working Men	
	shift 1	shift 2	shift 3	Drilling	Core length	Drilling	Total	Engineer	Worker
	m	m	m	m	m	shift	shift	men	men
October									
11	Holiday								
12	Road con								
13	Road con								
14	Road con								
15	Road-Tra								
16	Road-Tra								
17	Road-Tra						6	24	45
18	Holiday								
19	Road con								
20	Tra-Reas								
21	Tra-Reas								
22	Reassenb								
23	Reassenb								
24	12.10	5.50	11.70	29.30	22.00	3	8	24	72
25	8.30	9.10	8.80	26.20	26.20				
26	9.00	9.00	9.00	27.00	27.00				
27	7.00	8.00	7.50	22.50	22.50				
28	7.50	7.90	10.10	25.50	25.50				
29	9.00	6.00	4.70	19.70	19.70				
30	9.00	9.60	9.30	27.90	27.90				
31	9.30	9.00	6.00	24.30	24.30	21	21	28	84
November									
1	8.00	7.00	9.00	24.00	24.00				
2	9.00	7.30	9.20	25.50	25.50				
3	9.30	7.20	8.30	24.80	24.80				
4	8.70	8.80	6.80	24.30	24.30				
5	Reassub					12	14	20	60
Total	106.20	94.40	100.40	301.00	293.70	36	49	96	261

Table 2-3-5 Record of the Drilling Operation on MJF-6

	Drilling length			Total		Shift		Working Men	
	shift 1	shift 2	shift 3	Drilling	Core length	Drilling	Total	Engineer	Worker
November	m	m	m	m	m	shift	shift	men	men
6	Tra-Reas								
7	Tra-Reas						2	8	26
8	Tra-Reas								
9	Reassmb								
10	12.10	10.30	6.40	28.80	8.50				
11	5.90	5.70	8.30	19.90	16.40				
12	9.20	9.50	7.30	26.00	26.00				
13	7.70	9.00	7.50	24.20	24.20				
14	7.50	8.30	9.10	24.90	24.90	15	17	28	84
15	9.30	9.30	7.80	26.40	26.40				
16	4.90	8.20	9.00	22.10	22.10				
17	9.00	8.40	6.60	24.00	24.00				
18	9.00	7.50	8.00	24.50	24.50				
19	5.00	7.50	6.50	19.00	19.00				
20	6.20	8.30	6.80	21.30	21.30				
21	7.20	7.20	6.50	20.90	20.90	21	21	28	84
22	6.20	7.80	4.90	18.90	18.90				
23	Dismant					3	4	8	21
Total	99.20	107.00	94.70	300.90	277.10	39	44	72	215

Table 2-3-6 Record of the Drilling Operation on MJF-7

	Drilling length			Total		Shift		Working Men	
	shift 1	shift 2	shift 3	Core Drilling	length	Drilling shift	Total shift	Engineer men	Worker men
November	m	m	m	m	m				
24	Reassemb								
25	Reassemb								
26	11.10	8.00	9.20	28.30	13.10				
27	9.10	10.50	7.50	27.10	27.10				
28	10.00	8.00	7.50	25.50	25.50	9	11	20	60
29	10.50	9.00	9.00	28.50	28.50				
30	9.00	9.00	7.40	25.40	25.40				
December			(Ins-C.P)						
1	7.60	7.80	1.10	16.50	16.50				
2	9.00	7.30	7.60	23.90	23.90				
3	9.10	9.00	9.00	27.10	27.10				
4	9.00	8.10	7.70	24.80	24.80				
5	8.30	5.50	8.20	22.00	22.00	21	21	28	84
6	8.70	8.20	8.10	25.00	25.00				
7	7.30	7.90	8.70	23.90	23.90				
8	3.00			3.00	3.00				
9	Dismant								
10	With-cyc								
11	With-cyc								
12	With-cyc					7	11	28	62
13	Holiday								
14	Repair								
15	Trans								
16	Tra-pack								
17	Tra-pack								
18	Tra-pack								
19	Tra-pack					-	6	24	64
Total	111.70	98.30	91.00	301.00	285.80	37	49	100	270

【MJF-7】

表土、風化岩帯をHXシングルビットで深度 11.10mまで掘進し、HXケーシングメタルシューで 10.10mまで掘削した後、HXケーシングパイプを挿入設置した。その後は、NQワイヤーライン工法でベントナイトBX泥水を使用して掘進した。掘進と併行してNXケーシングダイヤシューによる掘削延長を行い、深度 19.10mにNXケーシングパイプを設置した。深度 150.20mまで掘進し、BXケーシングパイプを挿入設置した。以降は、BQワイヤーライン工法でベントナイト泥水にマッドオイルを併用して掘進した。掘進中は頻繁に逸水を生じたが、逸水防止を行いながら深度 301.00mまで掘進して終了した（Fig. 2-3-4, Table 2-3-3, Table 2-3-6）。

3-4 ボーリング孔の地質及び鉱化・変質作用

【MJF-5】（巻末柱状図, Table 2-3-7, Table 2-3-10~2-3-11, Table 2-3-13, Photo 3）

① 地質

本孔は、サンベト火山岩類に属する安山岩溶岩・同質火砕岩（凝灰角礫岩、火山礫凝灰岩、凝灰岩、細粒凝灰岩）の互層及び玄武岩岩脈からなる。

本孔には、緩傾斜の層理が発達した細粒の火砕岩類の挟みが多い。安山岩溶岩は凝灰角礫岩様を呈するハイアロクラスタイトである。また、玄武岩岩脈は小岩体が1本存在するのみである。このように、本孔では、堅固な緻密質岩石の発達が悪い。

② 変質及び鉱化

本孔では多数の鉱脈が確認されたが、その多くは細脈（幅 0.5~10cm）である。鉱脈は方解石脈、石英-方解石脈、粘土-黄鉄鉱脈からなる。鉱脈中の黄鉄鉱の量は非常に少ない。また、脈際には狭い（幅数cm）黄鉄鉱弱鉱染帯が存在することがある。これらの鉱化帯の内、金品位が 0.05 g/t 以上の着鉱は次のとおりである。

深度 m	採取幅 m	Au g/t	鉱石の性状
278.7~279.1	0.4	0.114	方解石-石英網状脈

鉱脈は XRD の結果、石英、スメクタイト、緑泥石、方解石が普通に認められ、セリサイト、黄鉄鉱が伴われることがある。染色法により、鉱脈中に微量のカリ長石が確認された（深度75.6m）。

鉱脈の脈際には、しばしば Bleached Zone（幅数cm~4.5m）が認められ、XRD により、石英、緑泥石、セリサイト、方解石、スメクタイトが普通に認められた。

本孔の母岩は全般に強いプロピライト化変質を受け、XRD の結果、石英、緑泥石、方解

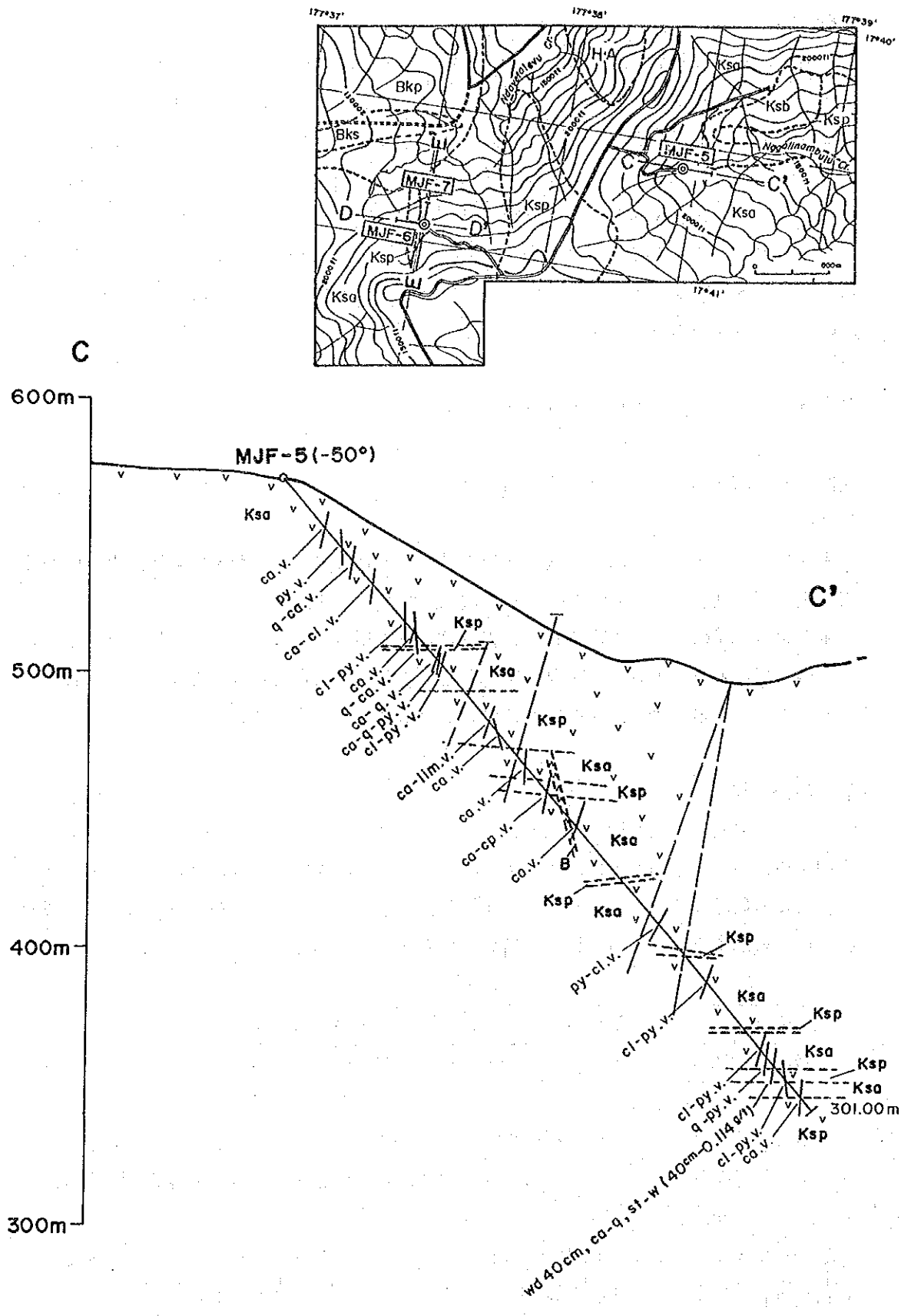


Fig. 2-3-5 Geological Profile of Drilling Hole (MJF-5)

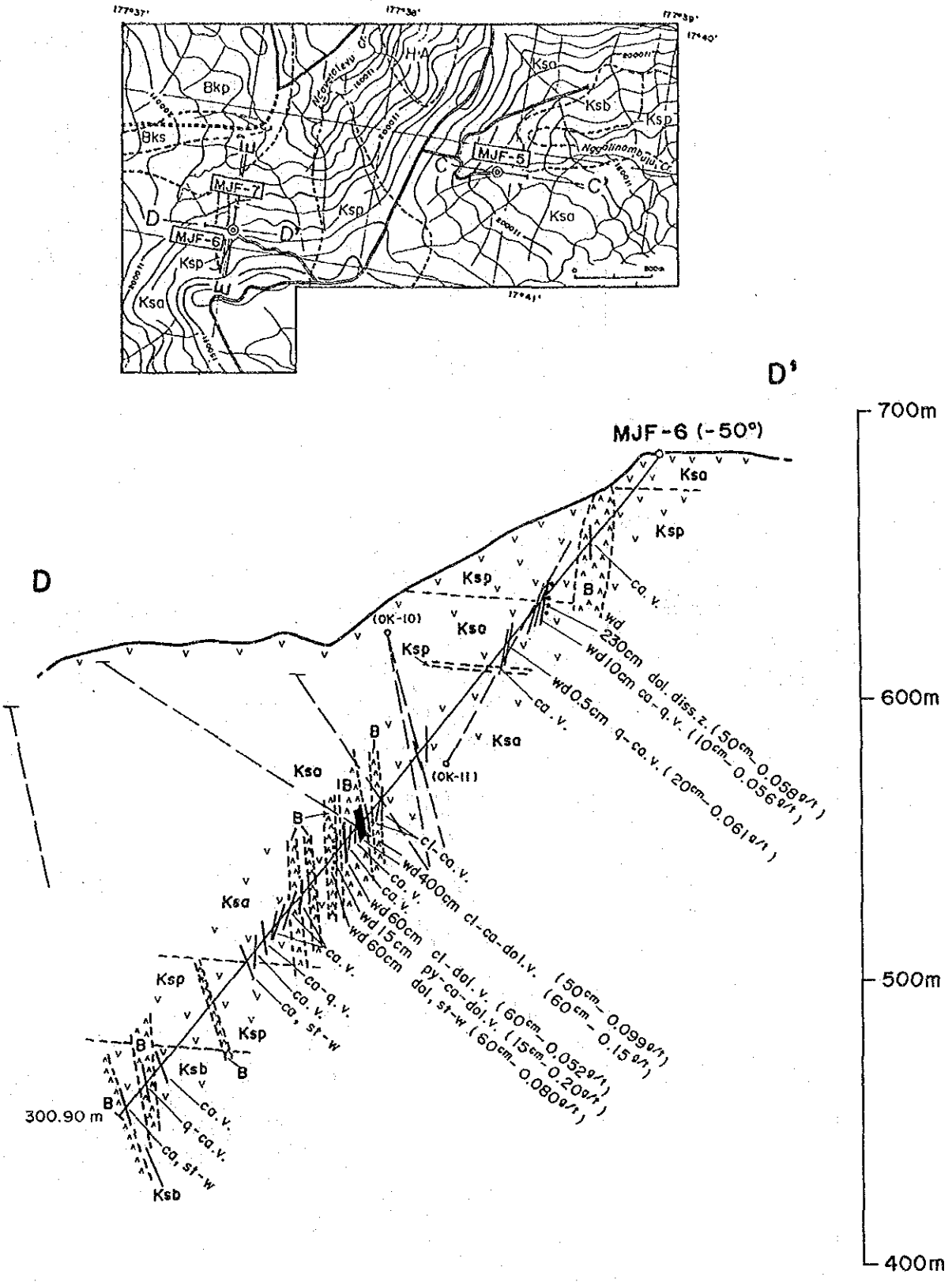


Fig. 2-3-6 Geological Profile of Drilling Hole (MJF-6)

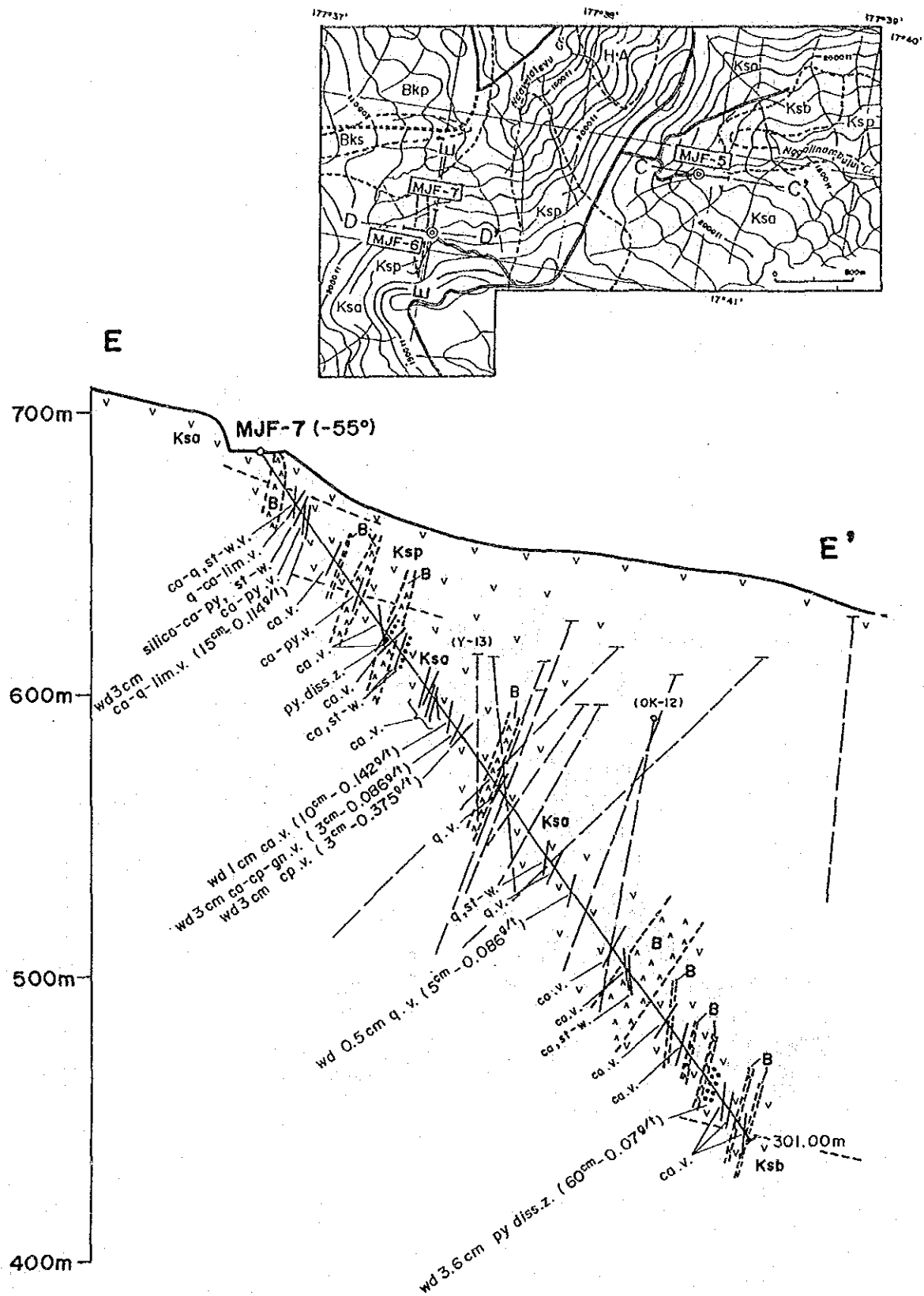


Fig. 2-3-7 Geological Profile of Drilling Hole (MJF-7)

石、スメクタイトが普通に認められ、約200m以深ではセリサイトが伴われる。

【MJF-6】（巻末柱状図, Table 2-3-7~2-3-8, Table 2-3-10~2-3-11, Table 2-3-13, Photo 2, 3)

① 地質

本孔は、サンベト火山岩類に属する安山岩溶岩・同質火砕岩類（凝灰角礫岩、火山礫凝灰岩、凝灰岩）の互層（深度0~269.9m）、玄武岩溶岩（深度269.9~300.9m）及び玄武岩岩脈からなる。

安山岩溶岩はハイアロクラスタイトである。安山岩質火砕岩類は主として凝灰角礫岩からなり、火山礫凝灰岩及び凝灰岩薄層を挟む。

玄武岩岩脈は多数存在し、主に、緻密で硬質なアルカリ玄武岩からなる。

② 変質及び鉱化

本孔では多数の鉱脈が確認された。脈幅は、0.5~400cm であるが、深度163.93~181.9 m間には比較的幅の広い(15~400cm)ものが分布している。鉱脈は、方解石脈、石英-方解石脈、粘土-方解石-ドロマイト脈、黄鉄鉱-方解石-ドロマイト脈及びドロマイト-黄銅鉱網状脈からなる。脈際には狭い(幅数cm~2.3m)黄鉄鉱弱鉱染帯が存在することがある。これらの鉱化帯の内、金品位が 0.05 g/t 以上の着鉱は次のとおりである。

深度 m	採取幅 m	Au g/t	鉱石の性状
63.7~ 64.1	0.6	0.058	方解石-石英脈, 黄鉄鉱鉱染帯
86.2~ 86.4	0.2	0.061	方解石脈
154.7~155.0	0.3	0.072	方解石脈
156.0~157.0	1.0	0.086	方解石細脈群
165.0~169.0	4.0	0.055	粘土-方解石-ドロマイト脈
175.6~176.2	0.6	0.052	粘土脈
180.4~180.55	0.15	0.20	黄鉄鉱-方解石-ドロマイト脈
181.3~181.9	0.6	0.080	ドロマイト-黄銅鉱網状脈
195.3~195.35	0.05	0.059	石英-方解石脈

鉱脈は XRD の結果、石英、アデュラリア、黄鉄鉱が普通に認められ、緑泥石、セリサイト、スメクタイト、ドロマイト、方解石が伴われることがある。染色法により、鉱脈中にカリ長石が確認された（深度166.0, 219.4m）。また、鉱脈の研磨片検鏡の結果、鉱石鉱物として黄鉄鉱及び黄銅鉱が普通に認められ、磁鉄鉱、輝水鉛鉱が伴われることがある。

鉱脈の脈際には、しばしば Bleached Zone (幅数cm~2.5m) が認められ、XRD により、

石英、スメクタイト、アデュラリアが普通に認められ、緑泥石、方解石、黄鉄鉱が伴われることがある。

本孔の母岩は全般に強いプロピライト化変質を受け、XRDの結果、石英、セリサイト、アデュラリア、方解石、スメクタイトが普通に認められ、緑泥石、黄鉄鉱が伴われることがある。

【MJF-7】（巻末柱状図、Table 2-3-7~2-3-8、Table 2-3-10~2-3-11、Table 2-3-13、Photo 2、3）

① 地質

本孔は、サンベト火山岩類に属する安山岩溶岩（深度67.4~291.3m）、同質凝灰角礫岩（深度16.0~57.8m）、玄武岩溶岩（深度293.4~301.0m）及び玄武岩岩脈からなる。

安山岩溶岩及び玄武岩溶岩は凝灰角礫岩様を呈するハイアロクラスタイトである。

玄武岩岩脈は多数存在し、緻密で硬質な変質玄武岩からなる。

② 変質及び鉱化

本孔では多数の鉱脈が確認された。脈幅は、0.5~25cmと狭い。鉱脈は、方解石脈、方解石-石英脈、石英脈が多く、稀に方解石-黄銅鉱-方鉛鉱脈及び黄銅鉱脈が認められる。また、黄鉄鉱弱鉱染帯が少数存在する。これらの鉱化帯の内、金品位が0.05 g/t以上の着鉱は次のとおりである。

深度 m	採取幅m	Au g/t	Ag g/t	Cu%	鉱石の性状
29.1~29.25	0.15	0.114	<2	0.02	方解石-石英-褐鉄鉱脈
121.0~121.1	0.1	0.142	14	0.25	方解石脈
121.93~121.96	0.03	0.086	22	0.40	方解石-黄銅鉱-方鉛鉱脈
123.50~123.53	0.03	0.375	880	6.76	黄銅鉱脈
191.4~191.45	0.05	0.086	<2	0.07	石英脈
277.0~277.6	0.6	0.071	<2	0.02	黄鉄鉱鉱染帯

鉱脈はXRDの結果、緑泥石が普通に認められ、セリサイト、ドロマイト、アデュラリア、方解石、白鉄鉱、黄鉄鉱が伴われることがある。染色法により、鉱脈中にカリ長石が確認された（深度26.8、82.35、275.7m）。また、鉱脈の研磨片検鏡の結果、鉱石鉱物として黄銅鉱が普通に認められ、黄鉄鉱、斑銅鉱、方鉛鉱、輝銅銀鉱が伴われることがある。

鉱脈の脈際には、しばしば Bleached Zone（幅数cm~2m）が認められ、XRDにより、石英、緑泥石、アデュラリア、方解石が普通に認められ、スメクタイトが伴われることがある。本孔の母岩は全般に強いプロピライト化変質を受け、XRDの結果、石英、緑泥石、

方解石が普通に認められ、スメクタイト、アデュラリア、ドロマイトが伴われることがある。

3-5 考察

本地域で実施された3本のボーリングの中で、MJF-5は脈数、脈幅、鉱石品位とも最も劣勢である。MJF-5が実施された地域の地質は、火砕岩と破碎質溶岩からなり緻密硬質な岩脈がほとんど発達しない。一方、本地域で、脈幅の広い鉱脈が最も集中しているゾーンはMJF-6の深度163.93~181.9m間であるが、このゾーン内及びその付近には岩脈が集中している。このことから、ナロタワ変質帯と同様、本地区でも、岩脈の発達程度と鉱脈の優劣の間には密接な関係が存在すると考えられる。

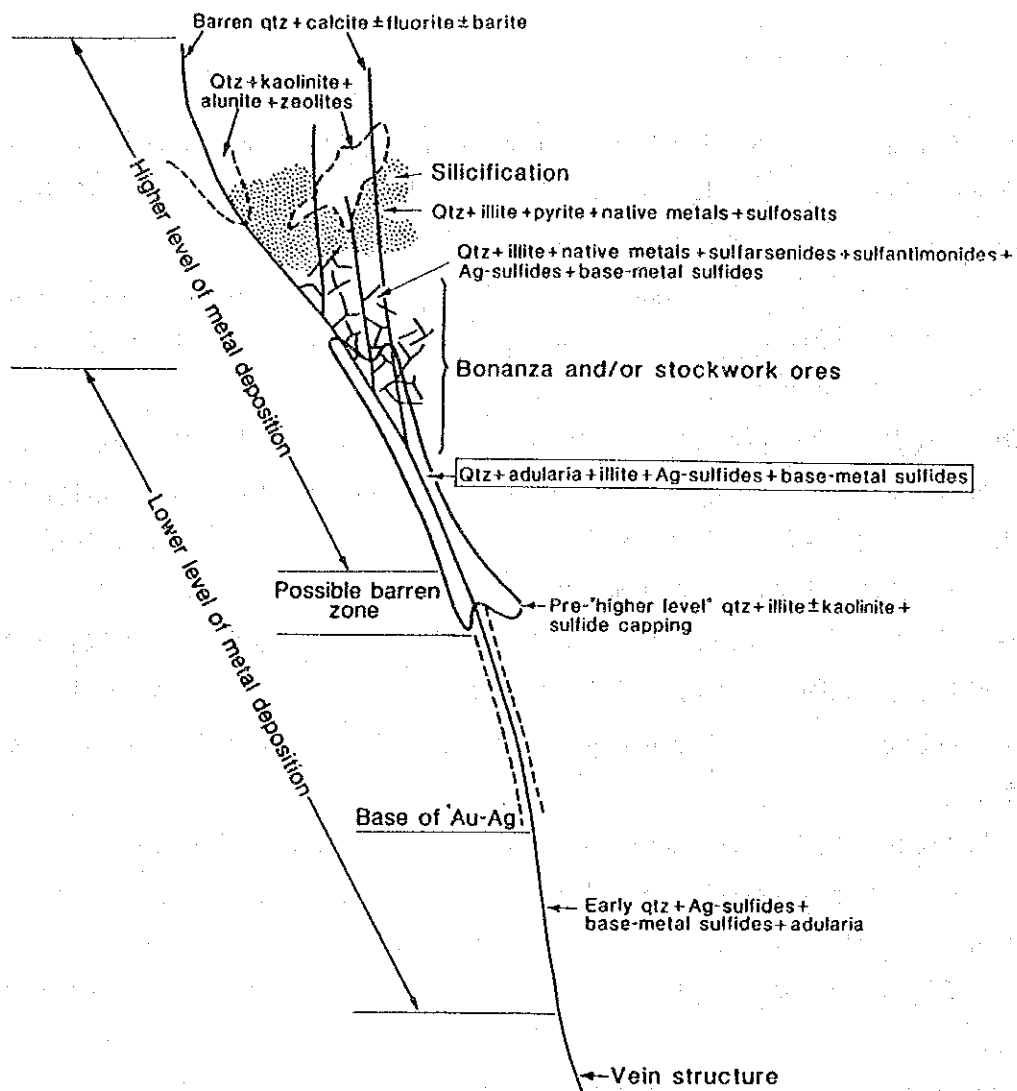
本地域の鉱脈の鉱石鉱物として、黄銅鉱及び黄鉄鉱が普通に存在し、稀に輝水鉛鉱、斑銅鉱、方鉛鉱及び輝銅銀鉱が存在する。輝水鉛鉱は、通常、中熱水ないし深熱水性鉱床から産出し、典型的な浅熱水性鉱床では産出しない。しかし、プロピライト中のAu-Ag-Te鉱脈鉱床で、浅熱水性或いはサブボルカニック鉱床とされるCripple Creek鉱床(米国、コロラド州)からは、輝水鉛鉱の産出が報告されている。輝銅銀鉱は、浅熱水性鉱床のGoldfield鉱床(米国、ネバダ州)から産出が報告されている。このような産出例から、上記の鉱石鉱物組合せは、生成深度の比較的深い浅熱水性鉱床のそれに相当するものと考えられる。

本地域の鉱脈の主要脈石鉱物組合せは、東部(MJF-5)と西部(MJF-6,7)で異なる。両者に認められる鉱物は、石英、スメクタイト、緑泥石、セリサイト、方解石、アデュラリアであり、後者には、さらに、ドロマイトが認められる。東部では石英-スメクタイト-緑泥石-方解石を主要組合せとするのに対し、西部では石英-アデュラリアを主要組合せとする。

本地域の鉱脈の脈際変質の主要変質鉱物組合せも、脈石と同様に、東部(MJF-5)と西部(MJF-6,7)で異なる。両者に共通の組合せは、石英-緑泥石-方解石-スメクタイトであるが、前者にはセリサイトが、後者にはアデュラリアが加わる。

本地域の鉱脈の脈石及び脈際変質の鉱物組合せは、低酸化硫黄系の浅熱水性鉱脈鉱床にみられる鉱物組合せに最も近いが、西部の方が、より高温の生成環境にあったと考えられる。

本地域のボーリングにより捕捉された鉱脈の産状は、Berger and Eimon (1983)による低酸化硫黄系(石英-アデュラリア型)の浅熱水性鉱脈鉱床モデルにおける石英+アデュラリア+イライト+Ag硫化物+ベイスメタル硫化物ゾーンに相当すると考えられる(Fig. 2-3-8)。



Schematic cross section of quartz-adularia or low sulfur bonanza deposit, Bonanza-IA model, showing alteration mineralogy and two zones of mineralization from the "closed cell convection" model of Berger and Eimon (1983).

Fig. 2-3-8 Schematic Cross Section of Low Sulfur Bonanza Deposit

Table 2-3-8 Results of Microscopic Observation of Polished Section (Drilling Cores)

No.	Location	Description	Cp	Bo	Po	Py	Mg	Il	Goe	Hem	Sph	Gn	Mo	Str	Remarks (*)
P4-1	MJF-4 51.0m	Qtz-Cal-Py vein				○									
P4-2	100.5	Clay-Py network				○									
P4-3	117.0	Clay-Cal-Py network				*○		△							partly replaced by Goe
P4-4	119.4	Clay-Cal-Py network				*○		△							partly replaced by Goe
P4-5	144.9	Cal vein				○									
P4-6	146.0	Py-Cp dis rock	▲			○	○								
P4-7	163.4	Silica-Cal-Py vein with black band	△			○	○	△							
P4-8	196.5	Reddish gray mineral dis rock			*△	◎	△	△							only inclusions in Py
P4-9	250.0	Cal-Py-Clay vein				*○		△							partly replaced by Goe
P4-10	349.0	Cal-Py-Lim vein				○	△	△							
P6-1	MJF-6 180.5m	Py vein	△			◎									
P6-2	181.8	Cal-Cp vein (network)	○			△	△					△			
P7-1	MJF-7 121.95m	Cal-Cp-Gn vein (network)	◎	△		△						○		▲	
P7-2	123.5	Cp dis massive ore	◎											▲	
P7-3	276.2	Py dis alt. rock	△			◎									

Abbreviations:

◎: Abundant ○: Common △: Few ▲: Rare

Cp: Chalcopyrite, Bo: Bornite, Po: Pyrrhohite, Py: Pyrite, Mg: Magnetite, Il: Ilmenite, Goe: Goethite, Hem: Hematite, Sph: Sphalerite,

Gn: Galena, Mo: Molybdenite, Str: Stromeyerite

Qtz: Quartz, Lim: Limonite, Cal: Calcite, dis: disseminated, alt.: altered

Table 2-3-9 Results of X-ray Diffraction Analysis (Outcrops)

Location : Yaloku

Sample No.	Clay minerals										Silica n.		Sulfates		Carbon.		Oxides, Hydroxides			Sulfides		Others																
	SME	CHL	SER	KAC	HA	PYP	TAL	S/M	C/M	K/M	ZEO	QTZ	ACR	TRI	PLA	KFL	ALU	JAR	GYP	CAL	DOL	DIA	GB	GOE	HEM	MAG	MAR	PYE	SPE	OLI	AMP	PX						
	○	▲	△	△	△	△	△	△	△	△	△	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
YX-1	○	▲										○			○	△ ^A					△														▲?			
YX-2												○				○ ^A																				▲		
YX-3												○				○ ^A						○																
RX-3	○											○				○					○																	
RX-6												○				○					△																	

Location : Nalotawa

Sample No.	Clay minerals										Silica n.		Sulfates		Carbon.		Oxides, Hydroxides			Sulfides		Others																
	SME	CHL	SER	KAC	HA	PYP	TAL	S/M	C/M	K/M	ZEO	QTZ	ACR	TRI	PLA	KFL	ALU	JAR	GYP	CAL	DOL	DIA	GB	GOE	HEM	MAG	MAR	PYE	SPE	OLI	AMP	PX						
	○	○	○	▲	○	○	○	○	○	○	○	○	◎	○	△	△	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
SM401	○											○	◎			△																				○		
SM415-1	○											○				△																					○	

Abbreviations: ◎: Abundant ○: Common △: Few ▲: Rare

SME: Smectite, CHL: Chlorite, SER: Sericite, KAO: Kaolinite, HA: Halloysite, PYP: Pyrophyllite, TAL: Talc, Mon: Montmorillonite, S/M: Ser/Mon mixed layer mineral, C/M: Chl/Mon mixed layer mineral, K/M: Kao/Mon mixed layer mineral, ZEO: Zeolite, QTZ: Quartz, ACR: α-Cristobalite, TRI: Tridymite, PLA: Plagioclase, KFL: Potassium feldspar, ALU: Alunite, JAR: Jarosite, GYP: Gypsum, CAL: Calcite, DOL: Dolomite, DIA: Diaspore, GB: Gibbsite, GOE: Goethite, HEM: Hematite, MAG: Magnetite, MAR: Marcasite, PYR: Pyrite, SFH: Sphalerite, OLI: Olivine, AMP: Amphibole, PX: Pyroxene A: Adularia

Table 2-3-10 Results of X-Ray Diffraction Analysis (Drilling Cores)

Sample No.	Location	Clay minerals								Silica		Feldspar		Carbon.		Oxides		Sulfides		Others			
		SME	CHL	SER	KAO	HLS	TC	C/M	S/M	QTZ	TRI	PLA	KFL	CAL	DOL	MAG	CRM	PYR	MCS	AMP	BIO	ZEO	GYP
X3-1	MJF-3, 61.4m	○											◎										
X3-2	195.0	○		△?			△?			○	○												△?
X4-1	MJF-4, 28.0m					○				○		△A							○				
X4-2	50.2	○					○			○			○					○					
X4-3	51.0									◎								○					
X4-4	70.0	△				△				○			△			○?		△		▲?	△?		
X4-5	100.5	○		△					○?	◎								○					
X4-6	117.5	○		○						◎								○					
X4-7	136.8	○								○		◎	○					△					
X4-8	160.0	○	▲?				▲?			○		◎	△					△			▲		
X4-9	190.0	○	▲				△			○		◎	△					△					
X4-10	228.0	△	△							◎		◎	△					△					
X4-11	250.0			○						◎								○					
X4-12	285.0	○	△?	▲?						◎		◎						△					
X4-13	315.0	△	▲							○		◎	△A					△					
X4-14	355.0	○								○		◎						○					
X4-15	391.0	△					△			○		◎	○?					△?					
X4-16	396.3	△	▲?							○				◎	◎								◎
X5-1	MJF-5, 24.0m	△	△					△?		○		○											
X5-2	39.7	△	○						○?	○		○							▲?				
X5-3	75.55	○	○	△?					○?	◎		○							▲				
X5-4	75.6	○	△?							◎									▲				
X5-5	120.5	△	△							○		○						○					
X5-6	173.4		△							◎		○											
X5-7	211.2	△	△	○						○		△						◎					
X5-8	219.0	○	△	△						○		○						○					
X5-9	249.0		△	△						◎		○						◎					
X5-10	278.9	○	△	▲						◎		○						○					
X5-11	285.0	◎	▲	△						◎		○						○					
X5-12	294.0		△	▲						◎		○						○					
X5-13	299.6		△	△						◎		○						○					
X6-1	MJF-6, 50.0m			△						○		△A		△									
X6-2	64.0		▲							◎		△		◎					▲				
X6-3	65.5	△		▲	△?					○		○A							△				
X6-4	137.4	△	△							○		△A		○									
X6-5	166.0		▲	○						◎		○A						○					
X6-6	168.7	○		△?	△					○		○A		△	○								
X6-7	176.0		△	△						○		△	○A		○				△				
X6-8	180.5		▲	▲						○		○A		○	○				△				
X6-9	181.4		▲	○						○		○A		○	○				△				
X6-10	228.0		△	△						○		○A		○	○				△				
X6-11	285.3	△	△	▲?						○		○A		◎					△				
X6-12	298.3	△	△	△						○		○A		○				○					
X7-1	MJF-7, 28.1m		▲	○						◎				○									
X7-2	50.4	○	△	▲?						○		○A		○	○					○?			
X7-3	82.9		△	△						○		○A		○	○		△			○			
X7-4	104.1		△							○		○A		◎									
X7-5	123.4	○	△							○		○A		○									
X7-6	176.2		○							○		○A		△					○				
X7-7	275.0		△	△?						○		○	△						△				
X7-8	297.0		△							○		○		◎									

Abbreviations: ◎:Abundant ○:Common △:Few ▲:Rare

SME:Smectite, CHL:Chlorite, SER:Sericite, KAO:Kaolinite, HLS:Halloysite, TC:Talc,
 C/M:CHL/SME mixed layer mineral, S/M:SER/SME mixed layer mineral, QTZ:Quartz, TRI:Tridymite,
 PLA:Plagioclase, KFL:Potassium feldspar, CAL:Calcite, DOL:Dolomite, MAG:Magnetite, CRM:Corundum,
 PYR:Pyrite, MCS:Marcasite, AMP:Amphibole, BIO:Biotite, ZEO:Zeolite, GYP:Gypsum A:Adularia

Table 2-3-11 Assemblage of Ore, Gangue and Alteration Minerals

Area	Nayanggali		Nalotawa		Eastern part* of Yaloku		Western part of Yaloku	
	MJF-3	Outcrops	MJF-4	Outcrops	MJF-5	Outcrops	MJF-6	MJF-7
Host Rock	Ol-Bs Sm-Tri-Cal	Bs K/M-S/M-Ser -Sm	Hb-Ad, Bs Qz-Sm-Py- Cal>(Chl)- (Adul)	Ad Qz-Chl-Ser- (Sm)-Cal	Ad Qz-Chl-Cal> (Sm)U.- (Ser)L.	Ad, Bs Qz-Ser-Adul- Cal>Sm-(Chl) -(Py)	Ad, Bs Qz-Chl-Cal >(Sm)-(Adul) -(Dol)	Ad, Bs
Ore Mineral	-	Py	Py-(Mg)-(Il)- (Goe)-(Cp)- (Sph)	Cp-Py	(Py)	Py	Py-Cp-(Mg)- (Mo)	Cp-(Py)-(Bo)- (Gn)-(Str)
Vein Mineral	-	Qz-Sm-Kao	Qz-Cal>Sm-Ser >(Dol)-(Gyp) -(Kf)	Qz-Chl-Ser- Cal	Qz-Sm-Chl- Cal>(Ser)> (Kf)	Qz-Adul	Qz-Adul-(Chl) -(Ser)-(Sm)- (Dol)-(Cal)	Qz>Adul-Chl- (Ser)-(Dol)- (Cal)
Adjacent to Quartz Vein (Bleached Zone)	-		Qz-Sm-Cal- Adul Py-Tc	Qz-Sm-Chl- Ser-Cal	Qz-Chl-Ser- Cal>(Sm)	Qz-Sm-Cal- Adul>Chl	Qz-Sm-Adul- (Chl)-(Cal)- (Py)	Qz-Chl-Adul- Cal>(Sm)

Abbreviations:

Ol-Bs: Olivine-Basalt, Hb-Ad: Hornblende-Andesite, Bs: Basalt
 Sm: Smectite, Tri: Tridymite, Kf: Potassium feldspar, Qz: Quartz, Chl: Chlorite, Cal: Calcite, Ser: Sericite, Dol: Dolomite,
 Gyp: Gypsum, Adul: Adularia, Tc: Talc, Mon: Montmorillonite, K/M: Kao/Mon mixed layer mineral, S/M: Ser/Mon mixed layer
 mineral, Py: Pyrite, Cp: Chalcopyrite, Bo: Bornite, Gn: Galena, Str: Stromeyerite, Mg: Magnetite, Mo: Molybdenite,
 Il: Ilmenite, Goe: Goethite, Sph: Sphalerite
 U.: upper part, L.: lower part, (): local, < >: rare
 *: Rara village area

Table 2-3-12 Results of Chemical Analysis of Ore Samples (Outcrops)

Sample No.	Location	Description	Dip-strike	Width (cm)	Ore Grade						
					Au g/t	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
SM401	Nalotawa	Py-Sil vein	N42°W, 90°	40	<0.005	<2	90	10	80	1.0	
SM402	Nalotawa	Clay-Py vein	N 1°W, 80°W	20	0.005	<2	120	<5	115	0.2	
SM403	Nalotawa	Py-Clay alt. r.	—	100	<0.005	<2	105	10	115	0.1	
SM404	Nalotawa	Py-Clay alt. r.	—	300	<0.005	<2	75	15	55	1.4	
SM405	Nalotawa	Py-Clay alt. r.	—	300	<0.005	<2	95	15	90	0.6	
SM406	Nalotawa	Py-Clay alt. r.	—	300	0.022	<2	90	10	100	0.3	
SM407	Nalotawa	Clay-Py vein	N42°W, 90°	30	<0.005	<2	35	40	35	1.4	
SM409	Nalotawa	Clay-Limo vein	N13°E, 85°W	40	<0.005	<2	80	<5	135	<0.1	
SM411	Nalotawa	Clay-Py vein	N23°E, 80°E	60	<0.005	<2	55	10	60	<0.1	
SM412	Nalotawa	Py-Clay vein	N 7°W, 80°W	20	<0.005	<2	65	10	85	<0.1	
SM413	Nalotawa	Clay-Py vein	N18°E, 75°E	50	0.009	<2	120	15	75	<0.1	
SM414	Nalotawa	Clay-Py vein	N36°E, 65°E	40	0.016	<2	80	10	35	1.8	
SM415-1	Nalotawa	Clay-Py vein	N13°E, 85°E	100	0.007	<2	95	30	85	1.2	
SM415-2	Nalotawa	Clay-Py vein	N28°E, 70°W	100	0.006	<2	120	20	100	0.8	
SM416	Nalotawa	Clay-Py vein	N50°W, 85°S	5	0.024	<2	135	15	280	<0.1	
SM418	Nalotawa	Clay-Py vein	N11°W, 85°W	30	<0.005	<2	55	15	55	<0.1	
SM419	Nalotawa	Clay-Py vein	N71°E, 85°S	80	<0.005	<2	45	10	60	<0.1	
SM420	Nalotawa	Clay-Py vein	N58°E, 75°N	30	<0.005	<2	80	10	90	0.5	
SM422	Nalotawa	Clay-Py vein	N43°W, 80°E	100	<0.005	<2	45	10	125	0.4	
SM-7	Nalotawa	Limo network	N25°E, 50°W	100	<0.005	<2	30	10	75	1.7	
Y-4A	Yaloku	Qtz vein float (wh. p.)	—	—	0.005	<2	—	—	—	—	
Y-4B	Yaloku	ditto (bl. banded p.)	—	—	0.005	<2	—	—	—	—	
Y-5	Yaloku	Silicified rock float	—	—	<0.005	<2	—	—	—	—	
Y-9	Yaloku	Qtz-Limo-Py vein	N83°E, 55°S	8	0.022	<2	130	9	210	1.9	
Y-10	Yaloku	Qtz-Limo-Clay vein	N87°E, 30°S	15	0.011	<2	120	<5	400	5.0	
Y-12	Yaloku	Qtz-Py vein	N58°E, 50°S	3	0.041	<2	270	330	900	3.9	
Y-13	Yaloku	Qtz vein	N73°E, 90°	3	0.020	<2	270	450	120	3.1	
Y-14	Yaloku	Clay-Py vein	N33°W, 60°N	10	0.030	<2	180	23	49	3.1	
Y-15	Yaloku	Qtz vein	N87°E, 75°S	3	0.021	<2	210	17	70	6.0	
Y-16	Yaloku	Qtz vein	N13°E, 80°E	20	0.186	<2	270	40	2000	10	
Y-17	Yaloku	Qtz vein	N87°W, 60°S	3	0.104	<2	160	20	71	3.8	
Y-203	Yaloku	Qtz vein	N63°E, 85°S	5	0.047	<2	190	12	39	4.6	
RA-4	Yaloku	Qtz vein	N57-80°W, 70°S	2	0.008	<2	44	8	46	5.0	
RA-5	Yaloku	Qtz vein	N27°W, 90°	3	0.006	<2	250	6	88	4.5	
SM12	Yaloku	Qtz-Limo vein	N 7°W, 60°W	5	<0.07	0.4	200	600	<100	<10	<10
OK3	Yaloku	Qtz-Limo vein	E-W, 60°S	25	<0.07	1.0	300	200	<100	<10	<10
OK5	Yaloku	Qtz-Limo vein	N45°E, 90°	5	<0.07	1.0	500	200	<100	<10	<10
OK6	Yaloku	Qtz vein	N25°E, 85°E	3	<0.07	<0.3	500	100	<100	<10	<10
OK8	Yaloku	Cal vein	N42°W, 50°W	5	<0.07	0.8	500	100	<100	<10	<10
OK9	Yaloku	Py-Clay vein	N53°E, 60°S	15	<0.07	<0.3	100	100	<100	<10	<10
OK11	Yaloku	Qtz vein	N63°W, 75°S	5	0.14	2.7	400	500	<100	<10	<10
OK13	Yaloku	Qtz-Limo vein	N52°W, 60°S	5	<0.07	<0.3	<100	100	<100	<10	20
OK14	Yaloku	Qtz-Cal vein	N57°W, 50°S	2	<0.07	0.3	900	100	<100	<10	<10
OK15	Yaloku	Qtz vein	N22°W, 75°W	2	<0.07	<0.3	100	<100	<100	<10	<10
OK17	Yaloku	Qtz-Cal vein	N63°E, 70°S	3	<0.07	<0.3	<100	<100	<100	<10	<10
KK6	Yaloku	Qtz vein	N-S, 84°W	1	<0.07	<0.3	200	100	<100	<10	<10
KK8	Yaloku	Silicified rock	—	10	<0.07	<0.3	100	200	<100	<10	<10

Abbreviation Qtz:Quartz, Py:Pyrite, Cal:Calcite, Limo:Limonite, Sil:Silicification, alt.r.:altered rock, wh.:white, bl.:black, p.:part

Table 2-3-13 Results of Chemical Analysis of Ore Samples (Drilling Cores, 1 of 3)

Sample No.	Depth		Width m	Ore Grade						
	m	m		Au g/t	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
MJF-3 DC3-1	174.6	~174.9	0.3	0.026	<2	190	<5	110	3.6	
MJF-4 DC4-3	48.5	~48.55	0.05	0.043	<2	115	10	10	10.0	
DC4-27	50.3	~50.9	0.6	0.040	<2	115	5	30	4.0	
DC4-1	50.9	~51.4	0.5	0.116	<2	245	10	10	1.8	
DC4-28	51.4	~52.4	1.0	0.082	<2	195	5	20	3.0	
DC4-4	60.1	~60.25	0.15	0.009	<2	35	15	10	4.4	
DC4-29	60.25	~60.9	0.65	0.032	<2	85	10	30	2.0	
DC4-5	60.9	~60.95	0.05	0.011	<2	55	20	30	5.2	
DC4-30	60.95	~62.1	1.15	0.029	<2	145	5	35	2.2	
DC4-6	64.5	~64.53	0.03	0.033	<2	65	10	10	17	
DC4-7	100.2	~101.2	1.0	0.163	<2	520	10	50	2.6	
DC4-8	101.2	~102.2	1.0	0.125	<2	500	20	135	1.7	
DC4-9	102.2	~103.4	1.2	0.160	<2	635	10	105	1.9	
DC4-31	115.6	~116.6	1.0	0.318	<2	345	5	120	1.4	
DC4-32	116.6	~117.6	1.0	0.520	<2	485	5	225	2.4	
DC4-33	117.6	~118.6	1.0	0.241	<2	760	10	155	1.8	
DC4-34	118.6	~119.6	1.0	0.394	<2	820	10	110	2.1	
DC4-35	119.6	~120.6	1.0	0.178	<2	500	5	135	1.1	
DC4-36	120.6	~121.6	1.0	0.189	<2	440	15	100	1.2	
DC4-37	121.6	~122.6	1.0	0.126	<2	345	10	110	1.2	
DC4-38	122.6	~123.6	1.0	0.104	<2	275	20	90	1.4	
DC4-39	123.6	~124.6	1.0	0.143	<2	395	10	95	2.0	
DC4-40	124.6	~125.6	1.0	0.095	<2	310	10	90	1.6	
DC4-41	125.6	~126.6	1.0	0.220	<2	600	10	90	1.3	
DC4-42	126.6	~127.6	1.0	0.160	<2	435	10	75	2.0	
DC4-43	127.6	~128.6	1.0	0.093	<2	335	15	85	1.5	
DC4-44	128.6	~129.6	1.0	0.083	<2	305	10	80	1.2	
DC4-45	129.6	~130.6	1.0	0.085	<2	365	10	105	1.1	
DC4-46	130.6	~131.6	1.0	0.079	<2	395	10	90	1.0	
DC4-47	131.6	~132.6	1.0	0.077	<2	345	5	100	1.1	
DC4-48	132.6	~133.7	1.1	0.081	<2	370	5	90	1.5	
DC4-10	144.8	~145.0	0.2	0.091	<2	400	10	110	0.6	
DC4-49	145.0	~146.0	1.0	0.057	<2	190	5	80	1.0	
DC4-11	158.1	~158.11	0.01	0.052	<2	210	15	155	0.4	
DC4-2	159.4	~159.45	0.05	0.027	<2	180	10	785	<0.1	
DC4-12	163.4	~163.43	0.03	0.032	<2	205	15	255	<0.1	
DC4-13	168.0	~168.2	0.2	0.019	<2	200	20	250	<0.1	
DC4-14	168.4	~168.42	0.02	0.025	<2	245	25	185	0.5	
DC4-50	196.5	~196.8	0.3	<0.005	<2	155	10	260	0.2	
DC4-51	213.0	~213.2	0.2	0.017	<2	75	50	205	0.2	
DC4-52	214.0	~214.5	0.5	0.030	<2	110	5	80	0.2	
DC4-15	249.9	~250.3	0.4	0.015	<2	95	15	40	1.2	
DC4-53	270.2	~271.2	1.0	<0.005	<2	75	<5	115	0.4	
DC4-16	290.6	~290.63	0.03	0.005	<2	40	5	155	<0.1	
DC4-17	292.0	~292.2	0.2	0.008	<2	55	15	155	0.4	
DC4-18	293.6	~293.8	0.2	0.007	<2	45	45	330	<0.1	
DC4-19	297.7	~298.3	0.6	0.008	<2	60	30	180	1.1	
DC4-54	302.7	~303.5	0.8	<0.005	<2	45	<5	135	0.2	
DC4-55	318.9	~319.3	0.4	0.009	<2	35	<5	115	1.3	
DC4-56	332.6	~332.8	0.2	0.019	<2	65	<5	90	2.4	
DC4-20	335.0	~335.01	0.01	0.008	<2	60	15	120	2.8	
DC4-21	349.0	~349.01	0.01	0.043	<2	55	5	155	0.6	
DC4-22	349.7	~350.1	0.4	0.016	<2	70	5	75	0.8	
DC4-57	354.8	~355.8	1.0	0.013	<2	65	<5	65	1.1	
DC4-58	355.8	~356.8	1.0	<0.005	<2	60	<5	75	1.0	

Table 2-3-13 Results of Chemical Analysis of Ore Samples (Drilling Cores, 2 of 3)

Sample No.	Depth		Width	Ore Grade						
	m	m		Au g/t	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
MJF-4 DC4-59	372.1	~373.1	1.0	0.016	<2	60	<5	105	2.0	
DC4-23	377.3	~377.31	0.01	0.023	<2	70	10	40	0.8	
DC4-60	379.2	~380.2	1.0	0.010	<2	70	<5	60	0.2	
DC4-24	382.8	~382.83	0.03	0.016	<2	75	15	35	0.6	
DC4-25	395.6	~395.62	0.02	0.009	<2	40	<5	70	<0.1	
DC4-26	396.3	~396.5	0.2	<0.005	<2	35	<5	60	<0.1	
MJF-5 DC5-1	24.37	~24.44	0.07	0.021	<2	140	7	44	1.9	
DC5-2	33.35	~33.45	0.1	0.011	<2	120	9	370	5.3	
DC5-3	39.65	~39.75	0.1	<0.005	<2	59	6	211	3.4	
DC5-4	44.76	~44.84	0.08	0.005	<2	200	8	480	5.9	
DC5-5	51.45	~51.55	0.1	0.014	<2	66	8	180	2.9	
DC5-6	69.45	~69.55	0.1	0.018	<2	57	6	79	4.2	
DC5-7	73.6	~73.7	0.1	0.005	<2	110	<5	75	1.0	
DC5-8	75.5	~75.6	0.1	0.017	<2	56	<5	62	2.6	
DC5-9	75.6	~75.7	0.1	<0.005	<2	82	<5	8	0.4	
DC5-10	75.7	~75.8	0.1	0.005	<2	520	6	64	2.8	
DC5-11	80.3	~80.33	0.03	0.013	<2	2400	6	67	3.1	
DC5-12	86.98	~87.03	0.05	<0.005	<2	230	5	110	16.5	
DC5-13	88.25	~88.35	0.1	0.021	<2	150	7	240	4.7	
DC5-14	89.3	~89.5	0.2	0.013	<2	240	6	92	1.6	
DC5-15	116.2	~116.3	0.1	0.014	<2	100	9	88	2.1	
DC5-16	120.45	~120.55	0.1	0.015	<2	450	8	64	3.4	
DC5-17	137.4	~137.53	0.13	0.006	<2	55	6	150	1.9	
DC5-18	149.28	~149.33	0.05	0.023	<2	6400	7	110	3.6	
DC5-19	165.2	~165.3	0.1	0.038	<2	460	12	290	4.3	
DC5-20	165.5	~165.9	0.4	0.010	<2	57	<5	76	2.3	
DC5-21	211.5	~212.0	0.5	0.008	<2	89	14	480	4.8	
DC5-22	239.2	~239.4	0.2	0.027	<2	67	12	290	3.9	
DC5-23	271.05	~271.12	0.07	0.070	<2	170	12	74	2.7	
DC5-24	274.55	~274.65	0.1	0.037	<2	140	7	220	3.9	
DC5-25	278.7	~279.1	0.4	0.114	<2	95	6	90	1.3	
DC5-26	284.8	~285.7	0.9	0.013	<2	58	28	81	2.2	
DC5-27	293.88	~293.93	0.05	0.028	<2	240	7	71	3.2	
MJF-6 DC6-1	63.5	~64.0	0.5	0.058	<2	98	7	440	1.5	
DC6-2	64.0	~64.1	0.1	0.056	<2	38	11	54	0.4	
DC6-3	64.1	~64.6	0.5	0.028	<2	110	11	1350	3.9	
DC6-4	64.6	~65.8	1.2	0.046	<2	81	8	300	1.5	
DC6-5	86.2	~86.4	0.2	0.061	<2	330	5	85	2.1	
DC6-6	135.4	~135.55	0.15	0.036	<2	79	7	1230	5.2	
DC6-7	154.7	~155.0	0.3	0.072	<2	300	310	110	3.3	
DC6-8	156.0	~157.0	1.0	0.086	<2	240	20	86	7.2	
DC6-9	157.0	~158.0	1.0	0.014	<2	220	17	1980	8.3	
DC6-10	163.93	~164.1	0.17	0.036	<2	160	11	45	2.8	<5
DC6-11	164.1	~165.0	0.9	0.037	<2	190	10	1780	9.5	8
DC6-12	165.0	~165.5	0.5	0.099	3	170	35	850	5.4	<5
DC6-13	165.5	~166.3	0.8	0.016	3	210	19	47	4.0	5
DC6-14	166.3	~167.3	1.0	0.025	<2	220	14	1260	7.2	<5
DC6-15	167.3	~168.0	0.7	0.047	<2	230	12	1100	6.1	<5
DC6-16	168.0	~168.6	0.6	0.15	<2	200	13	1050	3.1	<5
DC6-17	168.6	~169.0	0.4	0.025	<2	190	10	85	2.9	7
DC6-18	175.35	~175.6	0.25	0.014	<2	210	12	120	4.5	<5
DC6-19	175.6	~176.2	0.6	0.052	<2	180	11	54	3.0	6
DC6-20	176.2	~177.3	1.1	0.015	<2	180	13	360	4.5	<5
DC6-21	177.3	~177.5	0.2	0.048	<2	190	15	1100	7.1	<5
DC6-22	177.5	~178.5	1.0	0.031	<2	190	18	1300	6.8	<5

Table 2-3-13 Results of Chemical Analysis of Ore Samples (Drilling Cores, 3 of 3)

Sample No.	Depth		Width	Ore Grade						
	m	m		Au g/t	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
MJF-6 DC6-23	178.5	~179.2	0.7	0.027	<2	190	19	110	4.4	<5
DC6-24	179.2	~180.4	1.2	0.036	<2	270	17	63	2.8	<5
DC6-25	180.4	~180.55	0.15	0.20	4	640	78	56	1.0	6
DC6-26	180.55	~181.3	0.75	0.045	<2	630	470	78	3.1	<5
DC6-27	181.3	~181.9	0.6	0.080	<2	770	650	2180	3.0	<5
DC6-28	190.85	~190.95	0.1	0.025	<2	140	22	1100	4.3	
DC6-29	195.3	~195.35	0.05	0.059	<2	72	9	74	1.0	
DC6-30	195.35	~196.7	1.35	0.036	<2	190	12	120	3.0	
DC6-31	201.8	~202.1	0.3	0.039	<2	250	14	130	2.8	
DC6-32	212.6	~212.85	0.25	0.028	<2	160	8	99	3.8	
DC6-33	219.35	~219.41	0.06	0.007	<2	160	8	87	2.3	
DC6-34	223.45	~223.6	0.15	0.043	<2	92	7	740	4.0	
DC6-35	224.7	~224.9	0.2	0.045	<2	230	12	1890	2.4	
DC6-36	227.7	~228.4	0.7	0.026	<2	230	10	80	3.0	
DC6-37	229.5	~229.8	0.3	0.023	<2	270	9	1550	6.6	
DC6-38	277.7	~277.8	0.1	0.031	<2	250	31	1400	2.9	
DC6-39	285.3	~285.36	0.06	0.015	<2	240	10	49	2.4	
DC6-40	296.7	~297.2	0.5	0.015	<2	210	11	660	3.2	
MJF-7 DC7-1	21.65	~21.9	0.25	0.013	<2	150	7	79	3.6	
DC7-2	22.15	~22.25	0.1	0.013	<2	450	<5	68	3.2	
DC7-3	25.2	~25.4	0.2	0.037	<2	140	8	59	2.0	
DC7-4	26.8	~26.85	0.05	0.015	<2	120	10	1200	5.9	
DC7-5	28.1	~28.4	0.3	0.010	<2	160	11	2100	7.8	
DC7-6	29.1	~29.25	0.15	0.114	<2	170	8	2400	1.5	
DC7-7	76.9	~77.15	0.25	0.014	<2	120	45	120	2.9	
DC7-8	77.8	~78.8	1.0	<0.005	<2	180	13	94	4.9	
DC7-9	82.35	~82.38	0.03	0.040	<2	340	900	850	4.3	
DC7-10	85.9	~86.0	0.1	0.009	<2	180	29	2200	4.1	
DC7-11	86.5	~86.7	0.2	0.012	<2	150	17	94	9.2	
DC7-12	102.1	~102.13	0.03	0.013	<2	530	177	82	6.2	
DC7-13	104.1	~104.45	0.35	0.006	<2	210	38	110	7.0	
DC7-14	108.0	~108.15	0.15	<0.005	<2	150	12	82	4.2	
DC7-15	117.4	~117.43	0.03	0.014	<2	160	13	560	10	
DC7-16	121.0	~121.1	0.1	0.142	14	2500	19	2100	9.3	<5
DC7-17	121.93	~121.96	0.03	0.086	22	4000	2100	56	1.6	<5
DC7-18	122.8	~123.3	0.5	0.005	<2	85	21	370	3.8	<5
DC7-19	123.5	~123.53	0.03	0.375	880	67600	17	760	4.0	<5
DC7-20	176.1	~176.3	0.2	0.021	<2	600	27	1400	9.1	
DC7-21	180.5	~180.53	0.03	0.027	<2	420	13	88	3.3	
DC7-22	191.4	~191.45	0.05	0.086	<2	700	36	2300	6.8	
DC7-23	224.5	~224.6	0.1	0.007	<2	88	12	1600	10	
DC7-24	246.7	~247.2	0.5	0.018	<2	210	8	450	3.5	
DC7-25	274.0	~275.0	1.0	0.016	<2	210	21	2100	11	
DC7-26	275.0	~276.0	1.0	0.017	<2	190	12	2000	9.4	
DC7-27	276.0	~277.0	1.0	0.015	<2	210	8	83	3.4	
DC7-28	277.0	~277.6	0.6	0.071	<2	230	10	79	3.2	
DC7-29	282.0	~282.05	0.05	0.011	<2	170	9	78	7.2	
DC7-30	292.7	~293.1	0.4	0.005	<2	190	9	73	6.7	
DC7-31	296.7	~297.1	0.4	0.025	<2	141	6	77	1.6	

第Ⅲ部 結論及び提言

第Ⅲ部 結論及び提言

第1章 結論

ヴィチレブ地域における第3年次調査として、バ西地区内の3箇所で地質調査及びボーリング調査が実施され、以下の結論が得られた。

1. ナヤンガリ・クリーク地化学異常帯

本地域の地表地質は、新第三系鮮新統のパ火山岩類層群ナモサウ火山岩類に属する玄武岩溶岩からなり、ボーリング地質は、同層群サル層に属する玄武岩溶岩・同質火砕岩類・堆積岩類、ナモサウ火山岩類に属する玄武岩溶岩・同質火砕岩類及び玄武岩岩脈からなる。

本地域の地表及びボーリング (MJF-3) には、注目すべき鉱徴及び変質帯が認められない。本地域には火山活動の中心部が存在した可能性があり、本地区の地下深部に NE-SW 方向の断裂が存在したと推定される。本地域に分布する Au, As, Hg の地化学異常は、後火山活動としての小規模熱水が NE-SW 方向の断裂を上昇したことによって形成されたと推定される。本地域の地下に金鉱化帯が存在したとしても、その規模は小さいと予想される。

2. ナロタワ変質帯

本地域の地表地質は、新第三系鮮新統のパ火山岩類層群コロヤニツ火山噴出物に属する玄武岩溶岩及び岩脈類 (玄武岩, 普通角閃石安山岩) からなり、ボーリング地質は、コロヤニツ火山噴出物に属する玄武岩溶岩・同質火砕岩類及び貫入岩類 (玄武岩, 普通角閃石安山岩, 変質安山岩) からなる。

本地域の地表には、多くの粘土-黄鉄鉱脈が分布するが、含金鉱徴は認められない。

一方、本地域のボーリング (MJF-4) には、石英-方解石脈, 方解石脈及び粘土-黄鉄鉱- (方解石) 網状脈等からなる含金鉱徴が存在し、最も優勢な部分は、着鉱幅 18.10m, Au 0.176g/t (Au 0.52 g/t-幅 1 mを含む) である。

本地域の鉱脈の主要脈石鉱物組合せ (石英, 方解石, カリ長石, スメクタイト, セリサイト) 及び脈際変質の主要変質鉱物組合せ (石英, 方解石, 黄鉄鉱, スメクタイト, アデュラリア) は、低酸化硫黄系の浅熱水性鉱脈鉱床にみられる鉱物組合せに最も近い。

本地域の地下深部における金鉱脈賦存のポテンシャルは高いと考えられる。

3. ヤロク変質帯

本地域の地表地質は、新第三系中新一鮮新統のコロイマブア火山岩類層群サンベト火山岩類に属する安山岩溶岩・同質火砕岩類及び岩脈類 (玄武岩, 安山岩) からなり、ボーリング地質は、サンベト火山岩類に属する安山岩溶岩・同質火砕岩類・玄武岩溶岩及び玄武

岩脈からなる。

本地域の地表には、西部及び東部に、石英脈、粘土-黄鉄鉱脈及び方解石脈からなる鉱脈群が分布する。両鉱脈群は含金石英脈を伴っており、最高金品位は、西部で 12.10 g/t (脈幅 15cm)、東部で 4.52 g/t (脈幅 3cm) である。

本地域東部のボーリング (MJF-5) は、Au 0.114 g/t (採取幅 40cm) の方解石-石英網状脈を捕捉したが、全般に脈の発達が悪い。地表の含金石英脈の下部延長部は劣化している。同ボーリング地域における金鉱脈賦存のポテンシャルは低いと考えられる。

本地域西部のボーリングは、低品位ではあるが、多くの含金鉱脈を捕捉した。N-S 系鉱脈の探鉱ボーリング (MJF-6) では、地表の含金石英脈 (Au 12.10 g/t) の下部延長部から少しずれた位置に比較的幅の広い脈からなる含金鉱脈群 (Au 0.055 g/t-採取幅 400cm : 粘土-方解石-ドロマイト脈, Au 0.20 g/t-採取幅 15cm : 黄鉄鉱-方解石-ドロマイト脈, 他) が捕捉された。また、ENE-WSW~E-W 系鉱脈の探鉱ボーリング (MJF-7) では、地表の含金石英脈 (Au 2.19 g/t-脈幅 10cm) の下部延長部は劣化しているが、別の含金鉱脈群 (Au 0.375 g/t-Ag 880 g/t-Cu 6.76%-採取幅 3cm : 黄銅鉱脈, 他) が捕捉された。

本地域の鉱脈は、鉱石鉱物として、黄銅鉱及び黄鉄鉱を普通に含み、西部では稀に輝水鉛鉱、斑銅鉱、方鉛鉱及び輝銅銀鉱を含有する。このような鉱石鉱物組合せは、生成深度が比較的深く、生成温度が高い浅熱水性鉱床のそれに相当するものと考えられる。

本地域の鉱脈の脈石は、東部では石英-スメクタイト-緑泥石-方解石を主要組合せとするのに対し、西部では石英-アデュラリアを主要組合せとする。

本地域の鉱脈の脈際変質の主要変質鉱物組合せも、脈石と同様に、東部と西部で異なる。両者に共通の組合せは、石英-緑泥石-方解石-スメクタイトであるが、前者にはセリサイトが、後者にはアデュラリアが加わる。

本地域の鉱脈の脈石及び脈際変質の鉱物組合せは、低酸化硫黄系の浅熱水性鉱脈鉱床にみられる鉱物組合せに最も近いが、西部の方が、より高温の生成環境にあったと考えられる。

本地域のボーリングにより捕捉された鉱脈の産状は、Berger and Eimon (1983) による低酸化硫黄系 (石英-アデュラリア型) の浅熱水性鉱脈鉱床モデルにおける石英+アデュラリア+イライト+Ag 硫化物+ベイスメタル硫化物ゾーンに相当すると考えられる。

本地域西部では、ボーリングで捕捉された鉱徴と地表との間には、約70mの距離しかない。従って、鉱脈賦存のポテンシャルは、本地域の地形とポナンザの落としの方向によって規制される。現時点では、落としが推定できるほどのデータはない。

第2章 将来への提言

第3年次調査の結論から、以下の調査を実施することを提言する。

1. ナロク変質帯において、MJF-4 により捕捉された NNE-SSW 系と推定される合金鉱脈の鉱況を確認するため、MJF-4 の東側から西向きに2本の傾斜ボーリングを実施する。また、同変質帯に存在する NW-SE 系鉱脈の下部探鉱のために MJF-4 の位置から南西向きに1本の傾斜ボーリングを実施する。
2. ヤロク変質帯西部において、MJF-6 及び MJF-7 により捕捉された合金鉱脈の鉱況を確認するため、MJF-6 の南部で N-S 系鉱脈の探鉱として西向きに1本の傾斜ボーリング、また、MJF-7 の東部及び西部で ENE-WSW~E-W 系鉱脈の探鉱として北向きにそれぞれ1本の傾斜ボーリング、計3本のボーリングを実施する。

参 考 文 献

REFERENCES

- Ahmad M., Solomon M. and Walshe J.L. (1987): Mineralogical and studies of the Emperor gold telluride deposit, Fiji: *Econ. Geol.*, **82**, 345-370.
- Anderson W.B. and Eaton P. (1989): Gold mineralization at the Emperor Mine, Vatukoula, Fiji: *Journal of Geochemical Exploration*, **36**(1990), 267-296.
- Band R.B., B.Sc., A.R.S.M (1968): *The Geology of Southern Viti Levu and Mbengga*: Ministry of Natural Resources, Department of Geological Surveys.
- Berger B.R. and Eimon P.I. (1983): Conceptual models of epithermal precious-metals deposits; in Sanks, W.C. (ed.), *Cameron Volume on Unconventional Mineral Deposits*, Society of Mining Engineers p.191-205.
- Colley H. (1976): *Mineral Deposits of Fiji (metallic deposits)*: Mem. Miner. Resour. Div. Fiji, Legts. Counc. Pap. 1910(19).
- Colley H. and Greenbaum D. (1980): *The Mineral Deposits and Metallogenesis of the Fiji Platform*: MRD, *Econ. Geol.*, **75**, 807-829.
- Colley H. (1986): Epithermal Gold Mineralization associated with Mio-Pliocene Volcanism in Fiji: *International Geological Congress, 1986, Proceedings of Symposium 5* p.29-35.
- Drake R.E., Kollman E., Whelan P.M. and Gill J.B. (1985): Radiometric Dating of Magmatic Stages in Fiji: *Economic Geology*, p.415-440.
- Gill J.B. and Stork A.L. (1979): Miocene Low-K Dacites and trondhjemites of Fiji: *Trondhjemites, Dacites, and Related Rock* (ed F.Barker), Elsevier, p.629-650.
- Gill J.B. (1987): Early Geochemical Evolution of an Oceanic Island Arc and Backarc, Fiji and the South Fiji Basin. *Journal of Geology*, **95**, 589-615.
- Gill J. and Whelan P. (1989): Early Rifting of an Oceanic Island Arc (Fiji) Produced Shoshonitic to Tholeiitic Basalts: *Journal of Geophysical Research*, **94**(B4), 4561-4578.
- Gill J. and Whelan P. (1989): Postsubduction Ocean Island Alkali Basalts in Fiji: *Journal of Geophysical Research*, Vol.94, No.B4, p.4579-4588

- Gill J.B.: Sr-Pb-Nd Isotopic Evidence that Both MORB and OIB Sources Contribute to oceanic island arc magmas in Fiji.
- Hirst J.A.(1965): Geology of east and north-east Viti Levu: Bull. Geol. Surv. Fiji, 12.
- Ibbotson P., B.Sc., Ph.D., A.R.C.S., F.G.S.(1967): Petrology of the Tertiary Caldera, Tavua Goldfield: Geological Survey Department.
- Ishihara S. and Urabe T.(1989): Gold mineralization of immature island arcs, Fiji: Chishitsu News, No.415, p.18-31 (in Japanese).
- JICA and MMAJ (1991): Report on the Cooperative Mineral Exploration in the Viti Levu Area, the Republic of Fiji, Phase I.
- JICA and MMAJ (1992): Report on the Cooperative Mineral Exploration in the Viti Levu Area, the Republic of Fiji, Phase II.
- Kwak T.A.P.(1989): Geochemical and temperature controls on ore mineralization at the Emperor gold mine, Vatukoula, Fiji: Journal of Geochemical Exploration, 36(1990), 297-337.
- Lawrence J.L. and Savage E.N.(1976): Ore Genesis in the Wainivesi Area, Fiji, and some Exploration Implications, p.59-68.
- Mallick D.I.J. and Habgood F.(1987): Interpretation of SLAR imagery of the main islands in Fiji: British Geological Survey, p.1-9.
- MMAJ (1986): Gold Deposits of the World, Information Center of Metal Mining Agency of Japan, p.4-122 (in Japanese).
- Okuda Y.(1989): Geology of Fiji: Chishitsu News, No.415, p.6-17 (in Japanese).
- Rodda P. and Duberal, R.(1966): Specific gravity of Viti Levu rocks. G.S. Note:23/66, Geological Survey Department.
- Rodda P.(1967): Radiometric Age Data on Rocks from Viti Levu, Fiji: Geological Survey of Fiji, p.1249-1259.
- Rodda P. B.Sc.(1969): Analysis of Rocks from Fiji: Ministry of Natural Resources, Department of Geological Surveys.

Rodda P.(1976): Geology of northern and central Viti Levu: Bull. Miner. Resour. Div. Fiji, 3.

Rodda P.(1989): Geology of Fiji: MRD.

Rugless C.S.(1983): Lithogeochemistry of Wainaleka Cu-Zn Volcanogenic Deposit Viti Levu, Fiji, and Possible Applications for Exploration in Tropical Terrains: Journal of Geochemical Exploration, p.563-586.

Setterfield T.N.(1990): The Tavua Caldera, Fiji: A Complex Shosonitic Caldera formed by concurrent faulting and downsagging: p.1-43.

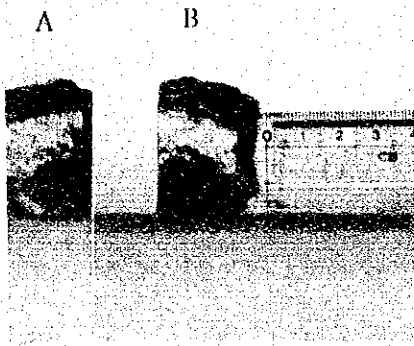
Silberman M.L. and Berger B.R.(1985): Relationship of trace-element patterns to alteration and morphology in epithermal precious-metal deposits: Reviews in Economic Geology, 2, 203-232.

Stephen T.(1986): Fluid Inclusion, Alteration and Ore Mineral Studies of an Epithermal Vein System, Mount Kasi, Vanua Levu, Fiji: International Geological Congress, 1986, Proceedings of Symposium 5, p.87-94.

Thomas G.and Jones D.G.(1989): South Pacific Deposits: The Geology Department & University Extension, The University of Western Australia Publication, No.17, p.1-32.

Yokoyama I.(1963): Structure of caldera and gravity anomaly: Bull. Volcanol., 26, 67-72.

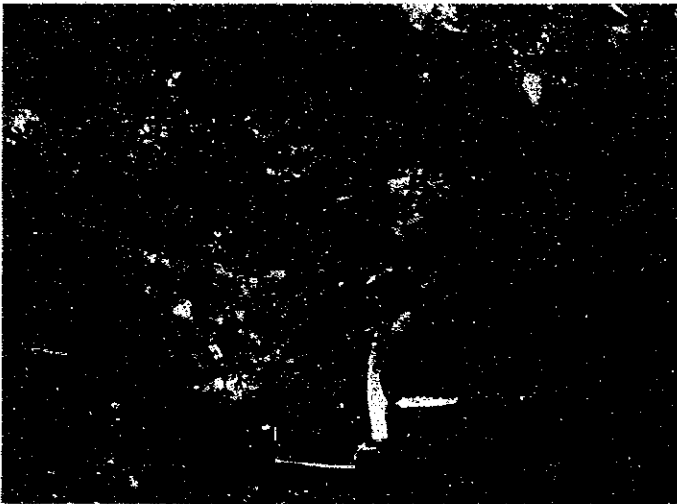
写 真



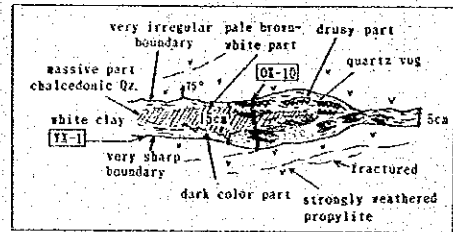
A ; quatz vein untried staining test

B ; quartz vein containing potash feldspar
(yellow color) stained by
sodium cobaltinitrite

Quartz vein (DC7-9, MJF-7drilling core)

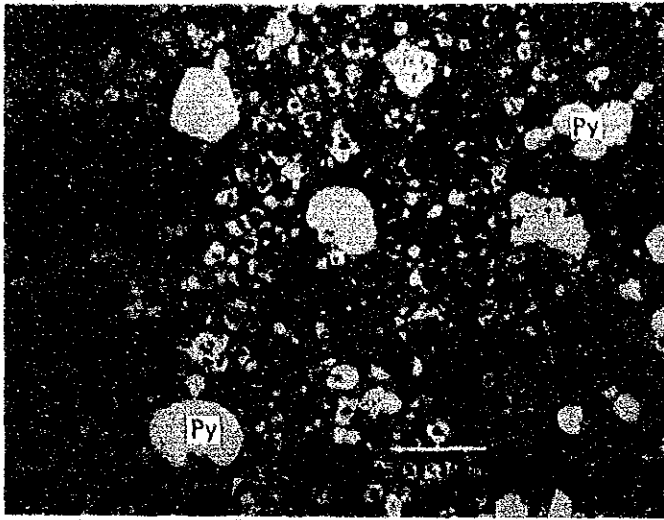


Outcrop of auriferous quartz vein (OK-10, Nasala Cr., Yaloku)



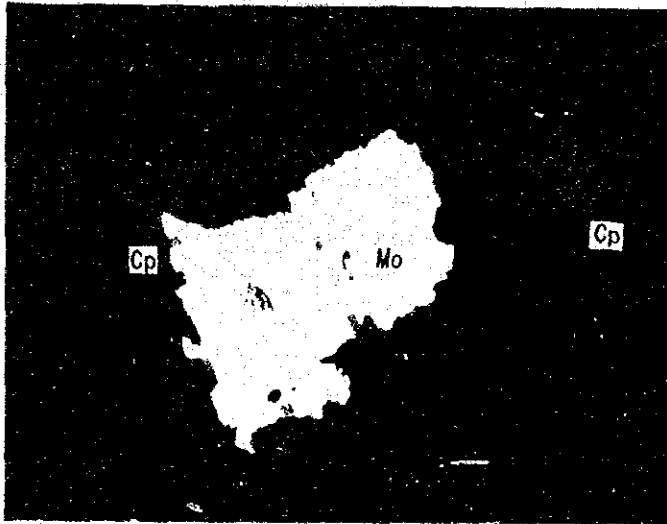
Brecciated structure of auriferous quartz vein (OK-10)

Photo 1 Quartz Veins of Yaloku Alteration Zone



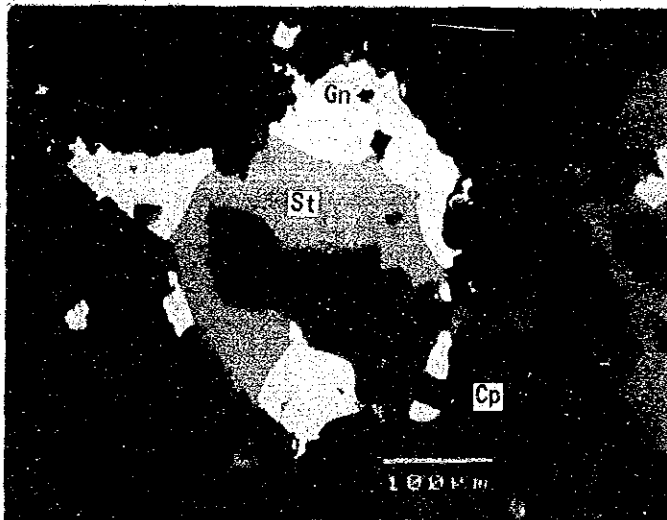
Sample No. : P4-3
 Locality: MJF-4, 117.0 m
 Description:
 Clay-Calcite-Py network

Py: Pyrite



Sample No. : P6-2
 Locality: MJF-6, 181.8 m
 Description:
 Calcite-Cp vein

Mo: Molybdenite
 Cp: Chalcopyrite

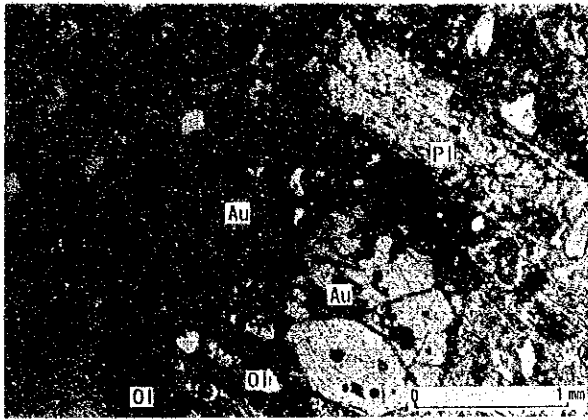


Sample No. : P7-1
 Locality: MJF-7, 121.95 m
 Description:
 Calcite-Cp-Gn vein

Bo: Bornite
 St: Stromeyerite
 Cp: Chalcopyrite
 Gn: Galena

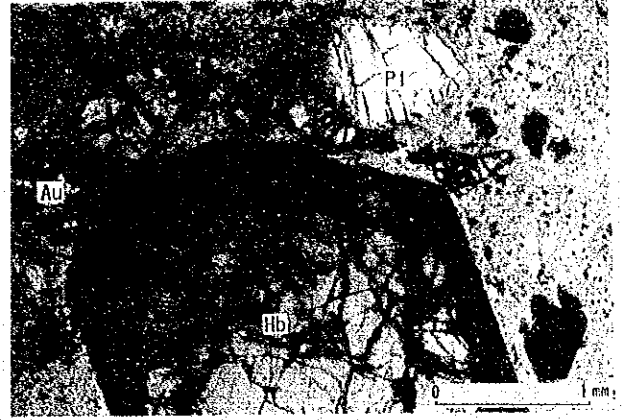
Photo 2 Microscopic Photograph of Polished Section

Open



Sample No. : S3-2 Locality : MJF-3, 133.6 m
 Rock name : Tuff Breccia (Olivine Basalt)
 Formation : Bsp

Open



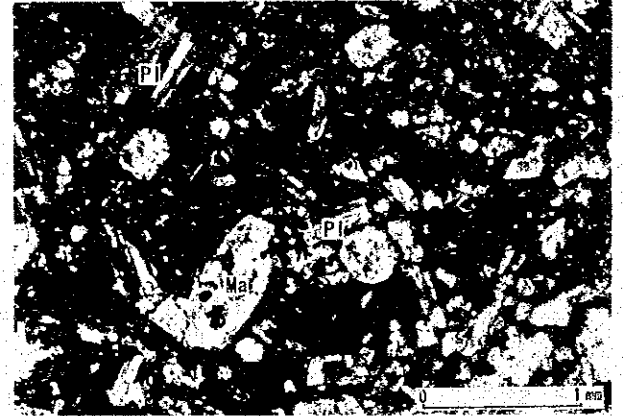
Sample No. : S4-3 Locality : MJF-4, 79.1 m
 Rock name : Hornblende Andesite
 Formation : Dike (HA)

Cross



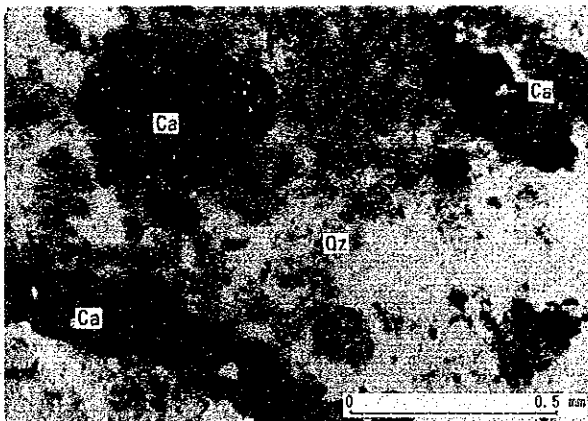
Sample No. : S4-9 Locality : MJF-4, 391.0 m
 Rock name : Basalt
 Formation : Bkb

Cross



Sample No. : S5-2 Locality : MJF-5, 236.6 m
 Rock name : Tuff Breccia (Altered Andesite)
 Formation : Ksp

Open

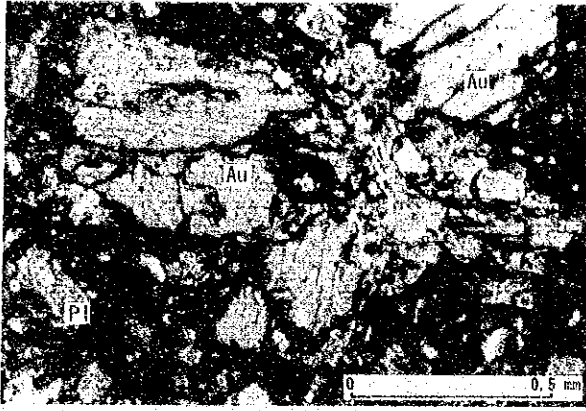


Sample No. : S6-2 Locality : MJF-6, 64.0 m
 Rock name : Calcite-Quartz vein

- Pl : Plagioclase
- Au : Augite
- Ol : Olivine
- Hb : Hornblende
- Qz : Quartz
- Ca : Calcite
- Ma : Mafic mineral (pseudomorph)

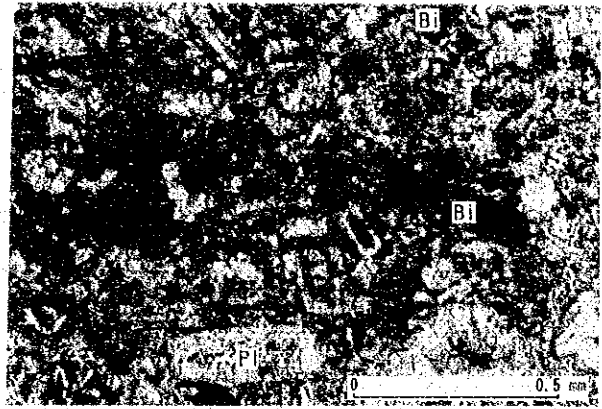
Photo 3 Microscopic Photograph of Thin Section (1)

Open



Sample No. : S6-3 Locality : MJF-6, 141.8 m
 Rock name : Andesite
 Formation : Ksa

Open



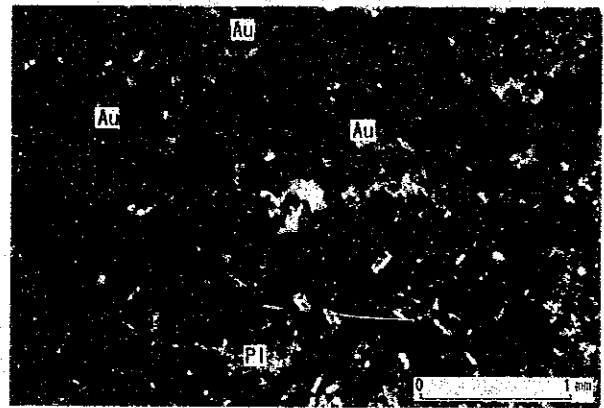
Sample No. : S6-4 Locality : MJF-6, 281.9 m
 Rock name : Alkali Basalt
 Formation : Dyke (B)

Open



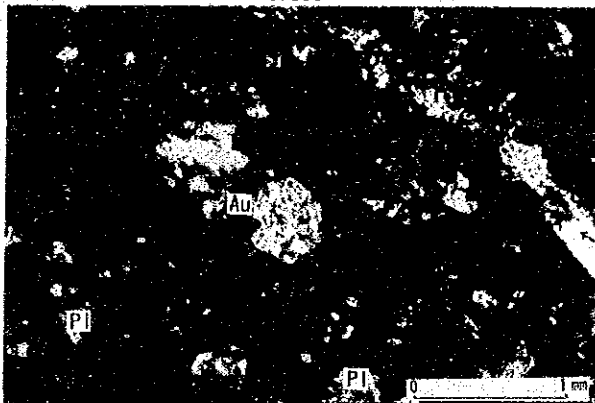
Sample No. : S6-5 Locality : MJF-6, 299.2 m
 Rock name : Basalt
 Formation : Dyke (B)

Cross



Sample No. : S7-1 Locality : MJF-7, 50.4 m
 Rock name : Altered Basalt
 Formation : Dyke (B)

Cross



Sample No. : S7-3 Locality : MJF-7, 299.9 m
 Rock name : Tuff Breccia (Altered Basalt)
 Formation : Ksb

Pl : Plagioclase
 Au : Augite
 Bi : Biotite

Calcite-Quartz vein

Photo 3 Microscopic Photograph of Thin Section (2)

卷末資料

Geologic Log of MJF-3~MJF-7

Abbreviations

Rocks

Ad. : andesite
 Adtic. : andesitic
 br.- : brecciated
 Bs. : basalt
 Bstic. : basaltic
 f-tf. : fine tuff
 Hyal. : hyaloclastite
 Lap-tf. : lapilli tuff
 porph. : porphyritic
 prop. : propylitic/propylite
 silts. : siltstone
 s. s. : sandstone
 tf-br. : tuff breccia
 tfa. : tuffaceous
 vol-br. : volcanic breccia

Mineralization

diss. : dissemination
 vlt. : veinlet
 vlts. : veinlets

Minerals

Adul. : adularia
 Alu. : alunite
 Aug. : augite
 Bio. : biotite
 Cal. : calcite
 Chl. : chlorite
 Cp. : chalcopryrite
 Gn. : galena
 Gyp. : gypsum
 Kao. : kaolinite
 Mo. : molybdenite
 Ol. : olivine
 Pl. : plagioclase
 Py. : pyrite
 Qz. : quartz
 Ser. : sericite
 Sme. : smectite
 Sp. : sphalerite
 Zeo. : zeolite

Alteration

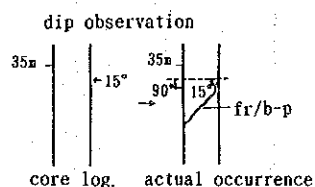
argil. : argillisation
 Alt. : alteration
 carb. : carbonate/carbonitisation
 cryst. : crystal/crystalisation
 mont. : montmorillonitisation
 oxi. : oxidized/oxidation
 prop. : propylisation
 Sili. : silicification
 w.- : weak
 m.- : moderate
 str.- : strong

Colour

dk. : dark
 grn. : green
 gry. : grey
 bk. : black
 whi. : white

Others

altn. : alternation
 b-p. : bedding plane
 ch-m. : chilled margin
 cos. : coarse
 ess. : essential
 fr. : fractured/fracturing
 inc. : included
 irreg. : irregular
 mass. : massive
 m-hd. : moderately hard
 mdy. : muddy
 sdy. : sandy
 r. : rock
 v. : very
 z. : zone



Drill hole No. : MJF-3(1)

Direction : — (true north)

Inclination : -9 0°

Latitude : S 17° 33. 28'

Longitude : E 117° 33. 83'

Elevation : 120 m

(1)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
0m	~	red-brown, soft str. weathered rock (surface soil)			50								
5m	~		str. weathering										
10m	2 Δ	brown, soft str. weathered tf-br. subangular br. (φ<10cm)											
15m	Δ v v	bad sorting gry. soft, massive str. weathered andesitic? r. block?											
20m	Δ	brown, moderately hd. str. weathered compact, massive tf-br. (φ<3cm) bad sorting											
25m	6 Δ Δ v	brown, weathered f-tf. with Bs. br.											
30m	Δ v	brown mix. w-hard dark grn. br. br.-Bs. (lava) mix. oxidized subangular br. (φ<10cm)	yellow clay patch included										
35m	Δ	v. comp. hd. fresh 55° Ol-Aug Bs. Aug: 2-6mm with oxidized cracks	yellow-white clay in cracks										
40m	Δ	20°											
45m	Δ	25°											
50m	Δ	50°											
50m	Δ	25°											

Drill hole No. : MJF-3(2)

Direction : (true north)

Inclination : -90°

Latitude : S

Longitude : E

Elevation :

(2)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
					0-100%								
50m	▲	bk. comp. hard (Q ₂)-Aug. Bs			50								
	▲	Aug: 2-6mm											
	▲	+45°											
55m	▲		w-chl??										
	▲												
	▲												
60m	▲	brown-dk. grn. -bk brecciated Bs (lava)											
	▲	bk. m-hard	61.4 yellow clay-Zeo. patches										
	▲	sandy hyaloclastite graded(lapilli-s. s.)											
	▲	5° brown-bk.											
65m	▲	5° (b-p.) siltst. -s. s. altn. interval: 5mm											
	▲	load cast	65.9 yellow clay patch										
	▲	brown, m-hard massive siltst.											
	▲	brown, m-hard cos. tfa. s. s											
70m	▲	reworked pebble of siltst. included br. included partly											
	▲	brown, tf-br. with s. s. layer											
	▲	brown, tf. br. oxi.											
75m	▲	graded br. (#10-1cm)											
	▲	Bstic. subangular br.											
	▲	25° brown, oxi.											
	▲	siltst. -s. s. altn. 15°(b-p.)											
	▲	brown-dk. grn. mass. comp. m-hard											
80m	▲	Bstic. tf-br.	yellow clay patches										
	▲	bad sorting(#10cm±)											
	▲	subangular br.											
	▲	30° brownish gry. [fine part											
	▲	brown-dk. grn. oxi.											
	▲	unclearly br-Bs											
85m	▲	v. comp. hard mass. gradual											
	▲	hyaloclastite like tf-br.											
	▲	(#10-20cm)											
	▲	porous Bs. br. included											
90m	▲	br. (#5cm±, irreg.) with chilled margin											
	▲	bad sorting											
	▲												
95m	▲												
	▲		Carb/Zeo in pore										
	▲	porous Aug-Bs br. subangular~subrounded											
100m	▲												

Drill hole No. : MJF-3(3)

Direction : (true north)

Inclination : -90°

Latitude : S

Longitude : E

Elevation :

(3)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp.	Au	Ag	Cu	Pb	Zn	Te	Mo
					0-100%	No.	ppm	ppm	ppm	ppm	ppm	ppm	ppm
100m	^ v	brown dk. grn. v. comp. hard hyaloclastite bad sorting(±10cm±)			50								
105m	^ v	v. porous Aug. Bs. br. included											
	^ v	brown lapilli tf. cos. tfa. s. s. with siltst. layer											
110m	^	brown m-hard tf-br, Bstic(hyaloclastite) comp. bad sorting(±3-10cm)											
115m	^	bad sorting(±20-3cm)											
	^	with porous Bs br. (±3cm±)											
120m	^ v	←20° brown lapilli tf. ←15° (b) cos. tfa. s. s. brown crystal tf. altn. Aug. rich with thin silty layer brown v-cos. crystal tf. Aug. rich brown oxi. tfa. s. s. with silty f-tf. layer	Zeo. patches										
125m	^	dk. grn. ~dk. gry. comp. m-hard lap-tf large Bs. br. (±5-20cm subangular) included partly	w-altered grnish.										
130m	^	gradual tf-br. irreg. form of large br. (±10-20cm, grnish gry porous Bs) included partly	grn. mineral in pore of bre. (Mont/Chl)										
135m	^	Aug-Bs block v. porous											
140m	^	tf-br.											
	^	oxi. brown comp. m-hd. Bstic tf-br. fine part (flat)											
145m	^	tf-br. mt. dominant Aug. crystal rich											
150m	^												

Drill hole No. : MJF-3(4)

Direction : (true north)

Inclination : -90°

Latitude : S

Longitude : E

Elevation :

(4)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
150m	▲	brown, oxidized tf-br. Bstic. ntx. dominant			50								
155m	▲	gradual											
160m	▲	vol-br. dk. gry. Aug-Bs. br. (porous, irreg. subangular)	w-altered (Mont?-glass)										
165m	▲	dominant comp. hard											
170m.5	▲	oxidized 45° Aug-Bs. dk. gry. comp. v. hard Aug: 1-2mm 70° dyke? sheared fractures with slickenside	w-altered (Chl?)										
175m	▲	50° gradual brown, oxi. lap-tf. Bstic. Aug. rich essential fine part (sdy-tf. 0.1m)	174.6-174.9 yellow clay in cracks Zeo patches		174.6-174.9	1	0.026	<2	190	<5	110	3.6	
180m	▲	brown oxi. tf-br. Aug rich subrounded ess. br.											
185m.7	▲	dk gry. (partly brown) tf-br. comp. hard bad sorting, inc. blocks irreg. subrounded br. (Bs.) large blocks incl. 179.9-181.5, 183.4-187.8 v. comp. hard Aug-Bs blocks large blocks (#30cnt) dominant											
190m	▲	dk. gry. -dk. grn. -brownish tf-br. Bstic br. #45-30cm Aug-Bs. Aug: 2-3mm br. #3cnt	prop. (w-a)										
195m	▲	with oxidized Bs br. (subangular, irreg. br.)	mafic a. - Chl.										
200m	▲												

201.00 m

Drill hole No. : MJF-4(1)

Direction : 135° (true north)

Inclination : -40°

Latitude : S 17° 37. 61'

Longitude : E 117° 37. 21'

Elevation : 442 m

(1)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
0m	~	white clayey rock soft, not viscous (dry & rough)	str. weathering		50								
	~	surface soil											
5m	~	brown clay soft, str. viscous											
10m	~												
15m	~												
20m	~												
25m	~												
30m	~	gray clayey, soft propylite	propylization (M-str.) white argil.	fine pyrite diss.									
35m	~	brown soft argili. Bstic. r.	str. weathering										
40m	~	gray propylite m-hd.											
40m	△	gnish, gray, comp. hd. tf-br. (essential, Bstic.)	W-alt. white clay prop. carb.										
40m	△	bad sorting (irreg. Bs. br.) fresh Aug. megacryst. (1cm±)		Py slightly diss.									
40m	△	35° fine Ad. dyke with chilled margin											
40m	△	tf-br.											
45m	△	50° sheared crack											
45m	△			fine Py. diss. (several %:S) w-sil									
45m	△			fracture with Cal.									
45m	△	10-30°											
50m	△	brecciated sheared zone (0.1m)	W-alt.	48.5m Cal-Py. vein (0.05m) she. fr. - Py. diss.		48.5-3 48.55	0.043	<2	115	10	10	>10.0	

Drill hole No. : MJF-4(2)

Direction : (true north)

Inclination : -40°

Latitude : S

Longitude : E

Elevation :

(2)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au	Ag	Cu	Pb	Zn	Te	Mo
							ppm	ppm	ppm	ppm	ppm	ppm	ppm
50m	3 4 5 6 7	dk. gry. sheared zone vein 55° gry. alt. tf-br. fr.	prop. (m-str) carb. whi. clayey(w-m) mafic m, Pl:alt. Py. diss.	50.9-51.4m silica(Qz)-Cal-Py. drusy vein, comp. hd.		50.3-27 50.9 1 51.4 28 52.4	0.040 0.116 0.082	<2 <2 <2	115 245 195	5 10 5	30 10 20	4.0 1.8 3.0	
55m	8 9 10 11	75° dk. gry. alt. (M) m-hd. Bstic. tf. she. fr.		Cal-Py. vlt. Py. diss.									
60m	12 13 14 15 16 17 18 19 20	60° dk. gry. alt. tf-br. m-hd. { mega Aug. Ad. (dyke ch-m, (0.1m)) 50° 50° she. z. 60° she. z.	mafic m: fresh-w-alt. Cal. net M. alt. Cal. films Py. diss	whi-clay-Cal-Py. vlt. Cal>silica-Py veins 60.1m-0.15m wd. 60.9m-0.05m wd. 64.5m-0.03m wd.		60.1-4 60.25 60.9 5 60.95 62.1 30	0.009 0.032 0.011 0.029	<2 <2 <2 <2	35 85 55 145	15 10 20 5	10 30 30 35	4.4 2.0 5.2 2.2	
65m	21 22 23 24	70° mega Aug. tf-br. small irreg. dyke(Ad) ch-m.	W-alt.	Cal>silica-Py vlt. (wd. 3cm)		64.5-6 64.53	0.033	<2	65	10	10	17	
70m	25 26 27	50° Ad. sheet 80° fr.	prop. (M)	Py. v. slight Cal. films Cal. fill vesicular									
75m	28 29 30 31	tf-br. she. z. (0.1m) / 60° 40° fr.-Cal.											
80m	32 33 34 35 36 37 38	dk. gry. comp. hd. mass. mega Aug. Ad. 50° sheared, fractures dk. grn. argil.	Aug:W-alt.										
85m	39 40 41 42	she. fr. / 40° irreg. fine r. part 50° inc. (0.1m) comp. hd.	w-prop.	Cal-Py films / 60° Cal. whi. clay vlt. Py-w. diss.									
90m	43 44 45 46	50° fr-Cal.											
95m	47 48 49	40° dk gry. she. clay inc. mega Aug. (2cm)		Py. diss. in she. z.									
100m	50 51	80° 50° she. z.											

Drill hole No. : MJF--4(3)

Direction : (true north)

Inclination : - 4 0°

Latitude : S

Longitude : E

Elevation :

(3)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au	Ag	Cu	Pb	Zn	Te	Mo
							ppm	ppm	ppm	ppm	ppm	ppm	ppm
100m-2		65° dk gry~bk. alt. Ad.	whi. clay prop. (M-str.)	100.2-103.4m whi. clay-Py.network Py. diss.	50	100.2-7	0.163	<2	520	10	50	2.6	
						101.2	8	<2	500	20	135	1.7	
		dk. gry. clay she. z.				102.2	9	<2	635	10	105	1.9	
						103.4							
105m				Cal-Py. film net									
		30°											
		60°											
110m		bk. alt. Ad.dyke comp. hd. alt. vesicular	Cal. fill vesicular	Py. v. slight									
		85°											
115m		Aug- Ad. alt.	prop. -carb.	Cal. -Py. network									
		she. fr.				115.6-	31	<2	345	5	120	1.4	
		70°				116.6	32	<2	485	5	225	2.4	
		dk gry. alt. Ad. she. fr. n-hd.		Py. diss. (str-W)		117.6	33	<2	760	10	155	1.8	
						118.6	34	<2	820	10	110	2.1	
120m		she fr.	ring structure by whi. clay-Cal-Py network prop. (m)			119.6	35	<2	500	5	135	1.1	
				122.4m Py. str. diss. w-sil-carb.		120.6	36	<2	440	15	100	1.2	
						121.6	37	<2	345	10	110	1.2	
						122.6	38	<2	275	20	90	1.4	
125m						123.6	39	<2	395	10	95	2.0	
						124.6	40	<2	310	10	90	1.6	
						125.6	41	<2	600	10	90	1.3	
						126.6	42	<2	435	10	75	2.0	
						127.6	43	<2	335	15	85	1.5	
130m				129.3m Py. str. diss.		128.6	44	<2	305	10	80	1.2	
						129.6	45	<2	365	10	105	1.1	
						130.6	46	<2	395	10	90	1.0	
						131.6	47	<2	345	5	100	1.1	
135m		dk gry. comp. hd. mass. alt. Aug- Ad.	prop. (W)	Py. diss. Cal Py-films		132.6	48	<2	370	5	90	1.5	
						133.7							
140m													
		85°		Cal-Py-films									
		70°											
		70°											
145m		bk-dk gry. alt. Ad.		whi. clay-Cal-Py vlt.		144.8-	10	<2	400	10	110	0.6	
		70°		144.8-145.0m drusy Cal vlt.		145.0	49	<2	190	5	80	1.0	
		gry. porphyritic Ho-Aug-Ad. inc. elongated Pyxn. inc. fine ~ cos. part		Py-Cp? diss.		146.0							
		0.2m											
		50° fine part(tf)											
150m		50° grn-gry. comp. hd. mega Aug- Ad.	prop. (W)	Py. diss.									

Drill hole No. : MJF-4(4)

Direction : (true north)

Inclination : - 4 0°

Latitude : S

Longitude : E

Elevation :

(4)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp.	Au	Ag	Cu	Pb	Zn	Te	Mo
					0-100%	No.	ppm	ppm	ppm	ppm	ppm	ppm	ppm
150m	v	grnish. gry. comp. hd. Aug-Ad.	w- prop.	Py. w-diss.									
155m	v			155.2m Py-Cp? w-diss.									
160m	v	inc. irreg. fine part		silica(Qz)-Cal-vlts. drusy		158.1-11	0.052	<2	210	15	155	0.4	
	v	inc. mega. Aug. pheno		{ 158.1m-0.01m wd. 159.4m-0.05m wd. 163.4m-0.03m wd. (bk. band)		158.11 159.4-2 159.45	0.027	<2	180	10	785	<0.1	
	v	inc. autolith(?) of Aug. cryst. accumul.				163.4-12 163.43	0.032	<2	205	15	255	<0.1	
165m	v			silica-Py vlt. (wd. 1.0cm±)									
	v			Cal. films									
	v		whi-clayey	Py. diss.		168.0-13 168.2	0.019	<2	200	20	250	<0.1	
170m	v	Aug-Ad.				168.4-14 168.42	0.025	<2	245	25	185	0.5	
	v		mega. Aug. - Chl	fr-Cal. open crack with Cal.									
175m	v												
	v			Cal. film-Py. diss.									
	v			drusy Cal. films									
180m	v			Py. w-diss.									
	v												
	v												
185m	v	fine alt. Ad. dyke with ch-m. whi. alt. P. porph.	prop. (m)	no Py.									
	v												
	v	dk. grn. alt. Ad. (prop) comp. hd. ~ n-hd.	prop. (M-str.)	Py. v. slight									
	v	Aug: 3mm±		Cal-Py. vlt.									
190m	v												
	v												
	v												
195m	v			193.6m gry. silicified vlt. (1cm)									
	v												
	v												
	v												
	v												
	v												
200m	v		str. prop.	196.5a Sp? diss. Cal. drusy films 196.9a clear Qz. druse (4cm)		196.5-50 196.8	<0.005	<2	155	10	260	0.2	

Drill hole No. : MJF-4(5)

Direction : (true north)

Inclination : - 4 0°

Latitude : S

Longitude : E

Elevation :

(5)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
200m	v	70° dk. grn. prop. (Ad.) comp. hd.	prop. (str.)		50								
	v												
	v v	dk. brown bre. prop. (Ad.)	carb(str. prop.)	Py. slight									
205m	v v												
	v v												
	v v												
210m	v v	60° she. br. argil.	210.5m whi. clayey (0.1m)										
	v v	dk. brown br. alt. Ad.											
	v v	she. whi. argil.				213.0-51	0.017	<2	75	50	205	0.2	
215m	Δ	70° grn-whish. tf-br.		Cal-silica in 214.3m open frs. silica-Cal. fila net Py. diss.		213.2							
	Δ	inc. basic autolith (pyrox. rich)				214.0-52	0.030	<2	110	5	80	0.2	
	Δ	whi-brown comp. alt. r. (Ad.)				214.5							
	Δ	tf-br.											
220m	v v	whish-(dk. gry.) br. prop. (Ad.)		Py. w-diss.									
	v v												
	v												
225m	v												
	v												
	Δ	50° grn. tf-br.	prop. (a.~str.)										
	Δ												
230m	Δ v	grnish gry. prop. brecciated laba (Bs) comp. hd.											
	Δ v	she-gry. argil.											
	Δ v												
	Δ v												
235m.4	Δ	grnish. tf-br. comp. hd.	w- prop. (Aug-fresh relatively)	Py. w-diss.									
	Δ	inc. Ho-Ad. br. whi-gry.											
	Δ	inc. autolith of Aug. cryst. accumul. (±1-3cm)	irreg. open crack (imm?)										
240m	Δ												
	v	gry-dk gry. comp. hd.	whi. w- alt.										
	v	55° Ad. (?) inc. Ho?											
	Δ												
245m.5	Δ	r. thin Ad. dyke (0.1m)	drusy Cal. films	Py. diss. (a)									
	Δ	whi-gry. comp. hd. tf-br.	prop. (w) carb.										
	Δ	inc. autolith of 50° Aug-cryst accumul. (±2-10cm)	frs.- Cal.										
	Δ												
250m.9	Δ	70° propylitic Bs. she. z.-vein				249.9-15	0.015	<2	95	15	40	1.2	
	Δ					250.3							

Drill hole No. : MJF-4(6)

Direction : (true north)

Inclination : - 4 0°

Latitude : S

Longitude : E

Elevation :

(6)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
250m	3	vein. propylitic Aug-Bs. 50-40° comp. hd. frs. Aug: 2mm±	prop. (w-s)	249.9-250.3m Cal-Py whi. clay vein in she. z. Py. w-diss.									
255m		60°											
		80° she-fr.											
260m		60° she-fr. 15° she. boundary chilled-margin 25° Ho-Aug Andesite? Ho?: 2cm mega Aug. poor											
265m		70°											
		40°											
270m	.2	pinkish gry alt. Bs.	carb. w-sil?	Cal. open frs. drusy Zeo? vlt. Py. diss. (m)		270.2-53 271.2	<0.005	<2	75	<5	115	0.4	
	.6	55°											
275m		gry. alt. Bs. grn-gry. Bs. Aug: 3mm± 80° open frac. (1mm)	{prop. (s) carb. prop. (s)										
280m		tf-br. grnish gry. comp. hd. inc. subangular br. 60°	prop. (w)	Py. w-diss.									
	.6	whi-gry-brownish alt. r. (Bs) 45°	↑ str. carb. (prop.) ↓										
285m		she. z. (0.3m) gry. argil. grnish. prop-Bs.	prop. (s)										
290m	.6	40° irreg. fine w-sil vlt.		290.6m Cal-Py-whi. clay vlt. (0.03m) Py. w-diss.		290.6-16 290.63 292.0-17 292.2 293.6-18 293.8	0.005	<2	40	5	155	<0.1	
	.2	she. fr. whi. argil.	whi. clay										
	.6	80° she. boundary alt. Ad. dyke ch-m. comp. hd.	whi. clay-Cal prop. (s)	Py. diss.- no Py.			0.008	<2	55	15	155	0.4	
295m	.7	70° gry. alt. Bs.	prop. (s) {gry-whi. clayey	Py. diss. (m)			0.007	<2	45	45	330	<0.1	
	.7	she. z. gry-whish	gry. clay	Py. diss.		297.7-19 298.3	0.008	<2	60	30	180	1.1	
300m		comp. hd. alt. r. (Bs)	str. carb.										

Drill hole No. : MJF-4(7)

Direction : (true north)

Inclination : - 4 0°

Latitude : S

Longitude : E

Elevation :

(7)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D. 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
300m	1	whi-pale brown comp. hd. mass. alt. r.	carb(str.) (prop.)	Py. w-diss.	50								
		she-frs-Cal.				302.7-54 303.5	<0.005	<2	45	<5	135	0.2	
305m		50-60° frs.-Cal.		Cal. films									
310m		35° grn. alt. Ad. 40° ch-m. dyke											
315m		grnish. propylite v. comp. hd.	str. prop.	Py. diss. (m)									
		55° she. fr.				318.9-55 319.3	0.009	<2	35	<5	115	1.3	
320m		she-frs-Cal. 40° she-whi. clay-Cal.											
		50° fr-Chl-Cal.											
325m		prop. (Bs)											
330m		65° gry. fine part (3cm) she. z. argil.		Cal-Py-Lim. vlt		332.6-56 332.8	0.019	<2	65	<5	90	2.4	
335m		60° 70°				335.0-20 335.01	0.008	<2	60	15	120	2.8	
				335.0a Qz-Cal-Lim-Py vlt. (0.005m)									
340m		40° she-Chl. argil.	Chl. (Aug.) 2-3mm	Py. diss. (m)									
		60°		Cal. films									
345m		grnish. whi. br--r. (tf-br.?) bedding? / 50°	whi. clayey	Py. diss. (m)									
		grn-gry-dk. grn. comp. hd. prop. (Bs) she. fr.	str.-prop.			349.0-21 349.01 349.7-22	0.043	<2	55	5	155	0.6	
350m		60° she. z.	349.7-350.1a whi. clay-Cal-Py	349.0a Cal-Py-Lim. vlt Py. diss. (0.005m)		350.1	0.016	<2	70	5	75	0.8	

Drill hole No. : MJF-4(8)

Direction : (true north)

Inclination : - 40°

Latitude : S

Longitude : E

Elevation :

(8)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
350m	▽ ^	brecciated uncleanly prop. comp. massive	prop. (n-str. Chl. (Aug. 2mm±)										
355m	2	70° gry. alt. r. 75° she. fr.	whi-clayey w-sil?	Py. str. diss.		354.8-57 355.8-58 356.8	0.013 <0.005	<2 <2	65 60	<5 <5	65 75	1.1 1.0	
360m	^	dk. grn. comp. hd. propylitic Bs.	prop. (m)	Py. w-diss									
	^	65°		open fr. Cal. (1mm±)									
365m	7	gry-whish. alt. prop.	whi. clayey (w-a) str. prop.	Py. diss. (m)									
	^	75°		open fr-Cal. (1mm±) Cal. films									
370m	^	50° 75°		Cal. films Cal. films									
	^	65° she. fr. 50-55° she-frs-Cal.		Py. diss. (n-str.)		372.1-59 373.1	0.016	<2	60	<5	105	2.0	
375m	^	60° dk. grn. prop. she-fr.	prop. (m)										
	^	60-65°		377.3m Qz-Cal-Py. vlt. (1cm) with bleached z. (2-5cm)		377.3-23 377.31	0.023	<2	70	10	40	0.8	
380m	^	65° she-fr-w. sil. frs.-Cal. / 60°				379.2-60 380.2	0.010	<2	70	<5	60	0.2	
	^	dk. gry.-grn. alt. Bs. (prop.) 55° dk gry. she. argil. fine ch-a. argil.		382.8m Cal. vlt. in she. z. (3cm)		382.8-24 382.83	0.016	<2	75	15	35	0.6	
385m	4	alt. Ad. dyke dark grn. w-hd. v. hd. comp. prop. (Aug.-prop.)	prop. (n-str.)	Py. v. slight									
	^	70-80° frs.	carb. (w-a)										
390m	^	65° fr. 80° fr.	w-prop.										
	^	70° 45-60° frs.		open fr. (1mm±) grn. clay-Cal-Py.									
395m	6	60° 75°		395.6m dk. gry. w-silicified vlt. (0.02m) 396.3m Cal-Gyp. vein (0.2m)		395.6-25 395.62 396.3-26 396.5	0.009 <0.005	<2 <2	40 35	<5 <5	70 60	<0.1 <0.1	
400m	^	50°	Aug. pheno. v. w. alt. - fresh	Py. v. slight									
401.00m	^												

Drill hole No. : MJF-5(1)

Direction : 90° (true north)

Inclination : - 5 0°

Latitude : S 17°40.58'

Longitude : E 117°38.44'

Elevation : 570m

(1)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppa	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
0m													
5m	N/C	surface soil											
10m		dk. brown-gruish tuff tf-br. /Hyal. comp. M-hd. with grn. prop. br. brown oxi. stx. angular br.	↑ weathering (N) (Prop.)	Cal. film									
15m		←20° Cal. #20-30cm blocks inc. ←55° fr. ←35° fr. ←70° fr.											
20m		←45° b-p. fine part sorted grn. ←40° she-fr. argil. dk. purple ←55° grn. (purple) ←30° essential tf-br. /Hyal. comp. hd. grn. ess. lap-tf. comp. hd. ←30° fr. -Cal.	↓ prop. (str.) ↓ weathered	24.2-24.7m Py. w-diss. 24.4m Cal. vlt. (wd. 1cm) 24.7m Cal. vlt. (wd. 0.5cm)		24.37-24.44	0.021	<2	140	7	44	1.9	
25m		←55° fr. purplish stx. grn. prop. br. rounded ←45-65° she.-fr. ←50° she.-fr.	grn. clayey alt.	Cal films									
30m		purple tuff grn. Ad. br. predominant irreg. ess. form ←45° fr.											
35m		←45°	prop. (str.)	33.4m she.-fr. Py. diss. oxidized (wd. 1cm)		33.35-33.45	0.011	<2	120	9	370	5.3	
40m		←55°		39.5-39.9m Py. w-diss. 39.7m Qz-Cal-Py. vlt. (wd. 1-2cm)		39.65-39.75	<0.005	<2	59	6	211	3.4	
45m		inc. prop. block		44.8m Qz-Cal-Lim film		44.76-44.84	0.005	<2	200	8	480	5.9	
50m													

Drill hole No. : MJF-5(2)

Direction : (true north)

Inclination : -5 0°

Latitude : S

Longitude : E

Elevation :

(2)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppa	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
50m	Δ v	grn-purple tf-br./Hyal. comp. hd.	prop. (str.)	51.0-51.8m oxi. frs. v. fine Py. w-diss. 51.5m Cal-gry. clay vlt. (wd. 1cm)		51.45-51.55	0.014	<2	66	8	180	2.9	
55m	v Δ	50° fr.		Cal. patches									
	Δ v	inc. prop. block (#50cm)											
	v Δ	50° fr.											
60m	Δ v	45° fr.-Cal.											
	v Δ												
	Δ v												
	v Δ	45° b-p. fine part											
	Δ v	tf.											
65m	v Δ												
	Δ v												
	v Δ	75° fr.											
	Δ v	45° b-p. bk.											
70m	v Δ	40° fine part		69.5m grn. clay-Py. w-diss. vlt. (wd. 1cm)		69.45-69.55	0.018	<2	57	6	79	4.2	
	Δ v	tf. dk. grn. v. comp. hd.		drusy Cal. films									
	v Δ												
	Δ v	35° crystal tf. comp.		73.7m Cal. vlt. (wd. 0.5cm)		73.6-73.7	0.005	<2	110	<5	75	1.0	
75m	v Δ	40° fr.		75.5m Qz>Cal-Py. vein (wd. 10cm)		75.5-75.6	0.017	<2	56	<5	62	2.6	
	Δ v	55° grn. (purple)ess. tf-br.		brecciated vein		75.6-75.7	<0.005	<2	82	<5	8	0.4	
	v Δ					75.7-75.8	0.005	<2	520	6	64	2.8	
	Δ v												
80m	v Δ	40° bedded tf. purple-bk. fine		80.3m native Cu? irreg. patch		80.3-80.33	0.013	<2	2400	6	67	3.1	
	Δ v	purplish-grnish ess. tf-br./Hyal. comp.											
85m	v Δ	45° fr.											
	Δ v												
	v Δ	30°		87.0m Cal>Qz. vlt. Py. w-diss. (wd. 0.5cm)		86.98-87.03	<0.005	<2	230	5	110	16.5	
	Δ v	35°		88.3m Qz<Cal-Py. vlt. (wd. 1cm)		88.25-88.35	0.021	<2	150	7	240	4.7	
90m	v Δ	30°		87.9-89.5m Py. w-diss.		88.3-89.3	0.013	<2	240	6	92	1.6	
	Δ v			89.3-89.5m grn. clay-Py. w-diss.		89.3-89.5							
	v Δ												
	Δ v												
95m	v Δ												
	Δ v												
	v Δ												
100m	Δ v												

Drill hole No. : MJF-5(3)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(3)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Ko ppm
100m	△	essential tf-br. ~ /Hyal. ~ lap-tf.	prop. (str.) grn. clayey		50								
105m	△	35° fr. 40° b-p. tuff dk. purple bedded inc. lapilli		102.0-102.1m Py. w-diss.									
110m	△	inc. bk. sdy. f-tf.											
115m	△	tf. purplish grnish. gry bedded 40° 40° fr. cos-fine grn. prop. pebble purple mix. volcanic Cgl. #10-40cm v. comp. hd.											
120m	△	tf. 30-40° 45° tf-br. ess. rounded brec. mtx. oxl. brown 45° b-p bedded tuff grn. 80° bottom slumped 70° fr. in tf. rounded brec. ess. tf-br. comp. hd.	str. -prop.	116.2m Cal-Lim vlt. (0.5cm) 116.1-116.4m Py. w-diss. bleached, Cal films 120.5m drusy Cal. vlt. (2cm) 120.3-120.8m bleach-w. Py. diss.		116.2-116.3 15 116.3 120.45-120.55 16 120.55	0.014 0.015	<2 <2	100 450	9 8	88 64	2.1 3.4	
125m	△	65° fr-Lim. tf-br. lap-tf. tf. bedded /40° cos. tf. (partly lap-tf.) fine tf. (0.1m)											
130m	△	tf-br. b-p. /40° grn. ess. tf-br. /Hyal. 60° fr. incalate 45° b-p. partly tf-lap-tf. 45° Cal.		137.40-137.53m Cal. films (0.5cm) 137.90m Cal. films Cal. patches		137.4-137.53 17 137.53	0.006	<2	55	6	150	1.9	
140m	△	purple-grn. tf-br. inc. blocks 45°											
145m	△	60° Cal-fr. lap-tf. grn-purple v. comp. hd. 45° b-p. 35° 40° b-p.	prop. (str.)	149.3m Cal-Cp. film (0.5cm)		149.28-149.33 18 149.33	0.023	<2	6400	7	110	3.6	

Drill hole No. : MJF-5(4)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(4)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
150m	Δ v	lap-tf. v. comp. hd. grn.	prop. (str.)		50								
155m	Δ v	tf-br. ess./Hyal. grn~ (purple) oxi. partly margin of breccia.											
160m	Δ v	65° fr-Cal. 40° Bs. dyke-sheet v. comp. hd. with oxi. margin											
165m	Δ v	20° dk. grn. alt. Bs. dyke ~ sheet with oxi. margin											
165.2m	Δ v	25° she-clay		165.2m dk. grn. clay		165.2-19	0.038	<2	460	12	290	4.3	
165.3m	Δ v	35° grnish purple tf-br./Hyal.		-Py. diss. (wd. 0.5cm)		165.3							
165.5m	Δ v			165.9m Cal. films		165.5-20	0.010	<2	57	<5	76	2.3	
165.9m	Δ v			164.7-165.9m Cal. films		165.9							
170m	Δ v	compaction good											
175m	Δ v		↑ bleached slightly ↓										
180m	Δ v	35° b-p. tf. (0.2m)											
185m	Δ v												
190m	Δ v	35° b-p. incalate tf. (0.1m) tf-br./Hyal. rounded br.											
195m	Δ v	lap-tf.											
200m	Δ v	grn. tf-br./Hyal. purple compact	prop. (str.)										

Drill hole No. : MJF--5 (5)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(5)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
200m	Δ v	grn-purple tf-br. ess. /Hyal. irreg. form br. v. comp. hd.	prop. (str.)		50								
205m	v Δ	40° b-p. tf. (0.2m) -ndy. f-tf.	whitish grnish.										
210m	v Δ	20° she. fr. clay 30° fr-Cal. tf. grn. b-p. /35°	grn. clayey prop. (str.) (Cal.)	211.2m Py. w-diss. 211.5-212.0m (0.5cm) Py. w-diss. (5cm) Cal. filus		211.5-21 212.0	0.008	<2	89	14	480	4.8	
215m	v Δ	grn. ess. irreg form br. tf-br. /Hyal. mtx. purple											
220m	v Δ	55° fr. grn. ess. tf-br. /Hyal.											
225m	v Δ	50° grn. v. comp. hd. 50° b-p. tf. crystal (Ad-Bstic.) 40° b-p.											
230m	v Δ	tf-br. /Hyal. grn. purple (brec.) v. comp. hd. ess. br - Ad ?											
235m	v Δ	40° f-tf. (1cm) dk. gry. Ad. br. included	str. prop. grnish whitish-gry.										
240m	v Δ	she-fr-clay /20° 35° fr-Cal. 45° fr-grn. clay Hyal./ grn. ess. br. mainly purple-dk. gry. basic br. poor v. comp. hd.		239.4m Py. w-diss grn. clay (0.5cm) 239.2-239.4m bleached argil. -Py. w-diss.		239.2-22 239.4	0.027	<2	67	12	290	3.9	
245m	v Δ												
250m	v Δ												

Drill hole No. : MJF-5(6)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(6)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp.	Au	Ag	Cu	Pb	Zn	Te	Mo
					0-100%	No.	ppm	ppm	ppm	ppm	ppm	ppm	
250m	Δ v	grn. v. comp. hd. mass. tf-br. /Hyal.	str. prop.										
	v Δ	grn. ess. br. (main)											
	Δ v	dk. gry. accessory br. (poor) Ad/Bs.											
255m	v Δ												
	Δ v												
	v Δ												
	Δ v												
260m	Δ v												
	v Δ												
	Δ v	40° b-p. bedded tf.											
	v Δ	grn. tf. cos-lap-tf.											
265m	Δ v	grn. ess. tf-br./Hyal. lap-tf.											
	v Δ	grn-dk. gry.											
	Δ v		whitish										
	v Δ		↑										
	Δ v		↓										
270m	Δ v		grnish										
	v Δ	30° grn. clay		271.05-271.12m bleached	271.05-23	0.070	<2	170	12	74	2.7		
	Δ v	45° Cal. film		Py. w-diss. grn-argil. Cal. patches	271.12								
275m	Δ v	Qz. drusy film		274.6m Qz. drusy films Py. w-diss. (0.5cm)	274.55-24	0.037	<2	140	7	220	3.9		
	v Δ				274.55								
	Δ v			278.7-279.1m bleached zone grn.	278.7-25	0.114	<2	95	6	90	1.3		
280m	v Δ	blackish basic tf. dk. grn.	gry.	Cal-Qz. film net Py. w-diss. bleached	279.1								
	Δ v	40° b-p.											
	v Δ	inc. grn. prop. br.		284.8-285.7m v. argil. she-z. Py. slightly diss.	284.8-26	0.013	<2	58	28	81	2.2		
285m	Δ v	she-argil, Cal. films fractured grn.sdy.tf.	285.5-286.5m bleached		285.7								
	v Δ	70° Cal. fr.											
	Δ v	dk. grn. tf-br./Hyal.											
	v Δ	75° fr.											
290m	Δ v			292.0-296.5m bleached									
	v Δ	dk. gry. br. dominant	grn. gry.										
	Δ v	45° Cal. (0.5cm)		293.9m Cal. drusy-(Cp) (0.5cm)	293.88-27	0.028	<2	240	7	71	3.2		
295m	v Δ	40° b-p. bedded grnish gry. sdy. tf. ~cos. tf. gry.sdy. f-tf. layer laminated,grn. sdy.tf.		295.6m Cal. films 35°-40° Py. slightly diss.	293.93								
	Δ v	40° b-p. f-tf. 65° Cal-fr. small reworked patches											
	v Δ	45° frs.		300.3m frs-Cal. film									
300m	Δ v	v. comp. hd.											
301.00m	v Δ	35° laminated gry f-tf. ~grn. sdy. tf. 1-2cm interval											

Drill hole No. : MJF-G (1)

Direction : 270° (true north)

Inclination : - 5 0°

Latitude : S 17° 40. 94'

Longitude : E 117° 37. 51'

Elevation : 686m

(1)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
0m													
5m													
10m													
15m	N/C	surface soil											
17.5m	▲	brown soft brecciated rock fragmental pyroclastic rock?	str. weathering argil.										
18.5m	▲												
19.5m	▲												
20.5m	▲												
25m	▲	gry. (partly brown) soft, brittle(m-hd.) altered propylite (Bs)	N-str. weathering mafic m. (Aug. Bio.) remain Pz:white argil.										
26m	▲												
27m	▲												
28m	▲												
30m	▲	gry. comp. hd.	W. prop. fresh mafic m. remain partly	Cal. films									
31m	▲												
32m	▲												
33m	▲												
35m	▲	50° - Cal. 55° Bio-Aug. Bs. (prop.) 65° Cal.	W. prop. fresh mafic m. remain partly	Cal. films 39.9m Cal. vlt. wd. 0.5cm									
36m	▲												
37m	▲												
38m	▲												
40m	▲	60° she. dk. gry. argil. grn. tf-br. rounded fragment inc. bad sorting essential flow	W. prop.	Cal. films									
41m	▲												
42m	▲												
43m	▲												
45m	▲	subangular brec.											
46m	▲												
50m	▲												

Drill hole No. : MJF-6(2)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(2)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au	Ag	Cu	Pb	Zn	Te	Mo
							ppm	ppm	ppm	ppm	ppm	ppm	ppm
50m	▲	tf-br. ess. pyroclastics	M-prop.										
53m	▲	35°	52.3m brown weathered frs.										
55m	▲	grn. comp. hd. accidental tf-br. angular-subangular											
58m	▲	br.s. { prop. grn-gry f-tf. bedded sdy.tf.											
60m	▲												
63.5m	▲	60° Cal-Qz. dk. grn. she. basic		63.5-65.8m Ca. films Py. w-diss. w. sil. argil.		63.5-1	0.058	<2	98	7	440	1.5	
64.0m	▲	60° prop. (Bs)	pale grn. bleached Py. w-diss.			64.0-2	0.056	<2	38	11	54	0.4	
64.1m	▲	65° ess. tf-br. (Hyal.)		64.0-64.1m Cal-Qz-Adul?-Py(w) vlt. (film net)		64.1-3	0.028	<2	110	11	1350	3.9	
64.6m	▲	60° Cal. she. argil. fr-Qz-Cal.	M-str. prop.			64.6-4	0.046	<2	81	8	300	1.5	
65.3m	▲	70° Cal. grn. comp. hd. rounded br.	grn. alt. purple alt.	65.1m Qz-Cal. film		65.3							
70m	▲	dk. grn-purple Hyal. br. #20-5cm	str. prop.										
75m	▲												
80m	▲												
85m	▲												
85.3m	▲	65°	85.3-85.6m pale grn. bleached	85.3-85.4m Qz-Cal. vlt. wd. 0.5cm		85.3-5	0.061	<2	330	5	85	2.1	
85.4m	▲	65°		86.3m Cal. vlt. wd. 0.5cm		85.4							
90m	▲	dk. grn. finely fragmental #5-1cm br.											
95m	▲	35° she. fr. argil. grn. comp. hd. tf.											
95.4m	▲	35° she. z. argil. Cal. film		Cal. films									
100m	▲	dk. grn-purple massive comp. m-hd. angular-subangular br. (prop.), Hyal.		Cal. patches									

Drill hole No. : MJF-G(3)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(3)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
100m	Δ v	dk. grn-purple Hyal.	str. prop.		50								
105m	v Δ	tf-br. size		Cal. patches irreg. form									
	Δ v	vol. br. size	↑ pale grn. bleached										
	v Δ	45°	↓	107.0m Cal. drusy vlt. wd. 0.2cm									
110m	Δ v												
	v Δ												
	Δ v	rounded br. φ20-5cm											
115m	v Δ												
	Δ v												
	v Δ	55° fr.											
120m	Δ v		str. prop. carb.										
	v Δ												
	Δ v												
125m	v Δ												
	Δ v												
	v Δ												
130m	Δ v	50° Cal.	129.9t-131m slightly bleached	Cal. vlt. wd. 0.5cm									
	v Δ												
	Δ v	25° she. fr.											
	v Δ												
135m.5	Δ v	40° fr.				135.4-6	0.036	<2	79	7	1230	5.2	
	v Δ	30-40° Cal.	w-bleached along Cal. films	135.5m. 135.6m Cal. vlt. wd. 0.2cm		135.55							
	Δ v	70° Cal.		136.4m Cal. vlt. wd. 0.5cm									
	v Δ	55° Cal.		137.2m Cal. vlt. wd. 0.2cm									
	Δ v	50° Cal.		138.6m Cal. vlt. wd. 0.2-0.5cm									
140m	v Δ												
	Δ v												
	v Δ	50° she. frs. (5cm) with slickenside	str. prop. (carb.)										
	Δ v	25° she. frs.											
145m.4	v Δ												
	Δ v	dk. grn. v. comp. hd. Hyal.											
	v Δ												
	Δ v												
150m.8	v Δ	40° fr.											

Drill hole No. : MJF-6(4)

Direction : (true north)

Inclination : ~ 5 0°

Latitude : S

Longitude : E

Elevation :

(4)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
150m	Δ v	dk. grn. Hyal.	str. prop.		50								
155m	0.9 1 2 7 9 4 9 6	30-40° Cal. 35° fr. 60° Cal. 60° Cal. 45° Cal. grn. comp. 30° Cal. fine prop. 50° Cal. (Bs) 65° Cal. 70° Cal. 55° Cal.	153.3-153.6m brown oxi. zone 153.6-154.0m pale grn. bleached 154.6-159.3m palegrn-whi. bleached	154.7m Cal. vlt. wd. 0.5cm 154.8m Cal. vlt. wd. 0.2cm 154.9m Cal. 0.2cm 156.0m Cal. 0.5cm 156.4m Cal. 0.3cm 156.9m Cal. 0.2cm		154.7-7 155.0 156.0-8 157.0-9 158.0	0.072 0.086 0.014	<2	300 240 220	310 20 17	110 86 1980	3.3 7.2 8.3	
160m	4	20° dk. grn. Hyal. comp. hd.		155.0-158.3m Cal. films network									
165m	1 3 4 6	35° Cal. 35° dk. grn-whi. porph. prop. dyke (Bs) with ch-m 35° she. br. whi. clayey Cal. Z. broken Qz. vlt. inc. 55° whi. alt. mass. r. w-sil. z. 35° whi. mass. clay she.	162.0-165.1m pale grn. bleached whi. completely alt. zone 166.3m iron m. replace mafic m. whi. clayey-Cal. films whi. clay partly sil.	163.93-164.10m whi. clay-Cal-w-sil. 164.0m Cal. vlt. (2cm) 164.1m black m. ?fill between brec. 165.0-166.3m whi. clay>Cal-Qz. slightly Py. diss. 168.0-168.6m w-sil. Py. diss. Cal. films		163.93-10 164.1-11 165.0-12 165.5-13 166.3-14 167.3-15 168.0-16 168.6-17 169.0	0.036 0.037 0.099 0.016 0.025 0.047 0.15 0.025	<2	160 190 170 210 220 230 200 190	11 10 35 19 14 12 13 10	45 1780 850 47 1260 1100 1050 85	2.8 9.5 5.4 4.0 7.2 6.1 3.1 2.9	<5 8 <5 5 <5 <5 <5 7
170m	5	65° Cal. films dk. gry. comp. mass. hd. Bs. (prop.)	170.0-171.3m whish. bleached inc. Cal. net	170.5m Cal. vlt. wd. 1cm									
175m	2 3 6 2 4 8	55° dk. grn. Bs. (prop.) 45° Cal. 45° whi. alt. r. 45° br. mechanically alt. tf-br. 50° grn. whi. alt.	175.35-177.60m whi. bleached Cal. film 177.3-177.5m whi. w-sil, str. bleached	173.2m Cal. vlt. (wd. 0.5cm) 175.6-176.2m whi. clay-w. silica Py. slightly diss. 177.4m Cal. drusy vlt. wd. 1-2cm		173.2 175.35-18 175.6-19 176.2-20 177.3-21 177.5-22 178.5-23 179.2-24 180.4-25 180.55-26 181.3-27 181.9	0.014 0.052 0.015 0.048 0.031 0.027 0.036 0.20 0.045 0.080	<2	210 180 180 190 190 190 270 640 630 770	12 11 13 15 18 19 17 78 470 650	120 54 360 1100 1300 110 63 56 78 2180	4.5 3.0 4.5 7.1 6.8 4.4 2.8 1.0 3.1 3.0	<5 6 <5 <5 <5 <5 <5 6 <5 <5
180m	4 5 9 1	50° grn. whi. alt. dk. grn. comp. hd. fine Bs. prop. 50° she. fr. with oxi. margin dk. grn-gry. comp. mass. ess. tf-br.	179.2m pinkish w-oxi. 180.4-180.55m dk. grn. clay str. prop. 184.6m pale grn. bleached	180.4-180.55m vlt. mdy. fine Py-Cal. film net 180.55-181.90m Cal. films include Mo?-Cp. (network)		179.2 180.4 180.55 181.3 181.9	0.031 0.027 0.036 0.20 0.045 0.080	<2	190 190 270 640 630 770	18 19 17 78 470 650	1300 110 63 56 78 2180	6.8 4.4 2.8 1.0 3.1 3.0	<5 <5 <5 6 <5 <5
185m	5	50° she. fr. with oxi. margin dk. grn-gry. comp. mass. ess. tf-br.	str. prop.	Cal. films									
190m	85 8	35-60° Cal 30° ch-m. (oxi.) dk. grn-gry. fine prop. (Bs.) v. comp. hd. (dyke)		190.85m Cal. films wd. 10cm									
195m	3 3 3	45° Qz-Cal. dk. grn-purple comp. hd. ess. tf-br. 40° bk. ch-m. dk. grn. fine Bs.-prop.	Pf. -> Cal. str. prop.	195.3m Qz-Cal. vlt. wd. 5cm 195.35-196.70m Cal. film net		195.3-29 195.35-30 196.7	0.059 0.036	<2	72 190	9 12	74 120	1.0 3.0	
200m	8	55°	197.9-203.1m bleached	199.8m Cal. vlt. wd. 0.5cm									

Drill hole No. : MJF-G(5)
 Latitude : S

Direction : (true north)
 Longitude : E

Inclination : - 5 0°
 Elevation :

(5)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
200m		Bs.-prop.	pale grn. bleached										
0.8	45° Cal.			201.8m		201.8-31	0.039	<2	250	14	130	2.8	
1.1	70° she. fr.			irreg. Cal. vlt. (1cm)		202.1							
0.9	30°			202.1m									
205m		dk. grn. v. comp. mass. ess. tf-br.	205.4m v. w-bleached	Cal. vlt. wd. (1cm)									
0.4	70°			205.4m									
0.3	60°	rounded irreg. brecc.		Cal. vlt. wd. 0.5cm									
210m		dk. grn. comp. hd. prop.	w-bleached along Cal. films										
1.1	45°												
0.7	35°												
215m		35° she. frs-Cal.	212.2-215.0m pale grn. bleached	212.7m		212.6-32	0.028	<2	160	8	99	3.8	
0.3	70° Cal.			Cal. vlt. wd. 0.5cm		212.85							
215m		55°	214.4m bleached(5cm)	214.6m									
0.6				Cal. vlt. wd. 0.3cm									
0.9	45°	grn. comp. hd. tf-br.		Cal. films									
220m		50°											
0.4	40°			219.4m		219.35-33	0.007	<2	160	8	87	2.3	
0.6	35° she. fr. Cal.			Cal-Qz. vlt. (wd. 1cm)		219.41							
0.5	25° Cal.	film brecc.											
0.7	45° she. fr. grn.												
225m		dk. grn. ess. argil. tf-br. comp. hd.	iron s. ? diss.	Cal. films									
0.5	60° Cal.			224.9m		223.45-34	0.043	<2	92	7	740	4.0	
225m		55° Cal.	224.9m bleached(20cm)	224.9m		223.6							
0.9	45° Cal.	Bs-prop.		Cal. vlt. wd. 0.5cm		224.7-35	0.045	<2	230	12	1890	2.4	
0.1	50°		bleached along Cal. films	Cal. films		224.9							
230m		40°	227.5-228.9m bleached, Cal. patches	227.7-228.4m		227.7-36	0.026	<2	230	10	80	3.0	
0.4				Cal. net		228.4							
230m		35°		229.5-229.8m		229.5-37	0.023	<2	270	9	1550	6.6	
0.8	30° Cal.		str. prop.	Cal. net		229.8							
235m		bright grn. comp. mass. ess. lap-tf.											
240m		ess. tf-br. basic prop. brs.											
245m		30° Cal.											
0.6	55° Cal.												
0.4	35° she. fr.												
250m		ess. irreg. brs. inc.											
255m		25°	carb. Zeo. dots-patches										
0.5	dk. grn. fine basic prop. br. mechanically												
0.3	20° she. fr.		str. prop.										
255m		50° ch-n. fine basic prop. dyke	zeo. patches-dots										

Drill hole No. : MJF-G (6)

Direction : (true north)

Inclination : - 5 0°

Latitude : S

Longitude : E

Elevation :

(6)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
250m	1	35° fr. dk. grn. comp. hd. ess. tf-br. mosaic gradual (mtx. poor) lapilli size dominant	str. prop.		0-100%								
255m	Δ	tf-br. bad sorting mtx. rich irreg. blocks (≠20cm)											
260m	Δ	20° grn. clay-Py. diss. dk. grn. partly whitish with accidental fragments (Bs, whi. sil-Py. r.)	257.4-257.6m slightly bleached	Py. v. diss.									
265m	Δ	20° dk. grn-gry. v. comp. hd. fine prop. 30° purple prop. br. inc. bad sorting (≠1-10cm)											
270m	9	40° grn-purple autobs. prop. (Bs)	carb. dot										
275m	Δ	50° she. fr-Cal.											
280m	Δ	30° grn. cos. tf. Cal. br-prop. grn. basic?	str. prop.	277.7m irreg. Cal. films wd. 10cm Cal. films-patches		277.7-38 277.8	0.031	<2	250	31	1400	2.9	
285m	Δ	50° 40-50° frs. grnish. gry. v. comp. hd. Bio. Bs. (prop.)											
290m	Δ	40° Qz-Cal. 20° frs. fr. 25° ±		285.3m vlt. (wd. 6cm) Qz-Cal- Py. (ac?) Py: large crystal film net form		285.3-39 285.36	0.015	<2	240	10	49	2.4	
295m	Δ	grn-purple br-prop. 45° fr. 50° 45-60° Cal.		Cal. films									
300m	Δ	55° br-prop. ch-m. f. prop. 30° ch-m. (oxi.)	str. prop.										
305m	Δ	20-40° Cal. dk. grn. fine prop.	299.8-300.6m v-bleached	Cal. films-patches		296.7-40 297.2	0.015	<2	210	11	660	3.2	
300m	Δ	30° fr. basic prop. vesicular	Cal. fill vesicles	Cal films 40°									
300.90m													

Drill hole No. : MJF-7(1)
 Latitude : S 17°40.94'

Direction : 0° (true north)
 Longitude : E 117°37.51'

Inclination : -5.5°
 Elevation : 686m

(1)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
					0-100%								
0m		surface soil			50								
5m													
10m	N/C	brown weathered prop. soft comp. mass.	brown str. weathering										
15m													
17.9m		whi. brown soft tf-br.		17.9m silica film									
19.0m		55° grn. tf-br. comp. mass.	str. prop.	19.0m Cal. films									
20m		fine basic prop. br. inc.	17.9-18.1m } weathered br. 19.0m }										
21.65m		bad sorting		21.65-21.90m Cal-Limo vlt.		1	0.013	<2	150	7	79	3.6	
22.15m		50°		22.15m Qz. film net		2	0.013	<2	450	<5	68	3.2	
22.25m		25°	23.1m } frs. / 45-50° 23.4m } weathered brown	22.25m Qz-Cal-Limo vlt. (1cm)		2							
25.2m		20-40°	~30.0m bleached z.	25.2-25.4m pink silica-Cal-Py. film net		3	0.037	<2	140	8	59	2.0	
26.8m		25° Cal.	27.3-27.5m Limo. film net	27.1m Cal(whi-pink) w-silica-Py.vlt. drusy(2cm)		4	0.015	<2	120	10	1200	5.9	
28.1m		40° f-tf, grn, bedded	29.4-29.6m Limo-Cal. film net	28.1-28.4m w-silica-Py.vlt. drusy(2cm)		5	0.010	<2	160	11	2100	7.8	
28.4m		45° Qz-Cal.	bleached z. argil.	28.1m Qz-Cal. drusy (1cm)		6	0.114	<2	170	8	2400	1.5	
29.1m		50°-20°		28.4m Cal-w. silica irreg. films									
29.25m		60° Cal. film, pink		29.1-29.25m Cal-Qz-Limo. drusy films (0.1-3cm)									
30m				Qz. later stage in druse									
35m		prop. (carb.) block (#10-40cm) inc.		29.8m pink Cal. 0.5cm drusy									
40m		60° Cal. film		Cal. films									
45m		70° Cal. film											
46.0m		dk. grn-gry. purplish											
50m		v. comp. hd. tf-br.	str. prop. (carb.)	46.0m Cal. vlt. (1cm)									
50m		block?											

Drill hole No. : MJF-7(2)

Direction : (true north)

Inclination : -5.5°

Latitude : S

Longitude : E

Elevation :

(2)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp. No.	Au	Ag	Cu	Pb	Zn	Te	Mo
					0-100%		ppm	ppm	ppm	ppm	ppm	ppm	
50m	5	dk. grn-purple v. comp. hd. tf-br /Hyal.	str. prop.		50								
55m	20°	Cal. film											
60m	irreg boundary	pale grn. v. comp. hd. Ad/Bs. fine prop.	str. prop. w-bleached	Cal. film irreg. inc. pink Cal.									
65m	50°	Cal. film											
65m	40°	slightly br. 20-30° Cal. films 20° Cal. film		62.4m Cal film Py. diss. (5cm)									
65m	65°	Cal. film											
65m	45°	dk. grn. fine basic prop.											
65m	65°	dyke? Py. diss. she-fr. argil. grn. comp. br. - prop. /Hyal.											
70m	65°	Cal. film											
75m	25°	Cal. films	carb. dot										
75m	65°	Cal. films											
75m	40°												
75m	50°	irreg. Cal. film											
80m	60°			76.4m w-net Cal. (2cm)	76.9-76.95m	7	0.014	<2	120	45	120	2.9	
80m	40°			Cal. vlt.	77.15-77.8m	8	<0.005	<2	180	13	94	4.9	
80m	10°	dk. grn. v. comp. hd. fine basic prop.		78.8m Cal. vlt. (1cm)	78.8								
80m	25°	br. mechanically she. fr.		79.05m Cal. vlt. (0.5cm)									
80m	30°			79.7m Py. w-diss grn. argil. (3cm)									
85m	10°		81.1m bleached pale grn. inc. pink Cal. patch-film		82.35-82.38m	9	0.040	<2	340	900	850	4.3	
85m	25°	Cal. film		77.8-80.0m str. Cal. network									
85m	75°	Cal. film		80.0m w-Cal. net									
85m	br. prop.			82.35m hd. Cal. vlt. (2cm) Cal. films pink parallel to core	85.9-86.0m	10	0.009	<2	180	29	2200	4.1	
85m	dk. grn-purple comp.		-86.4m bleached pale grn.		86.5-86.7m	11	0.012	<2	150	17	94	9.2	
85m	dk. grn. fine basic prop.												
90m	35°												
90m	dk. grn-purple br. - prop.			85.9m Cal. net (10cm)									
90m	45°	Cal. films		86.6m Cal. net (20cm) grn. argil.									
90m	20°												
90m	Hyal. ess. irreg. br.												
90m	20°	Cal. film											
95m	50°	Cal. film											
95m	20°	irreg. Cal. film	carb. dot films										
100m	50°	irreg. Cal. film	carb. dot										

Drill hole No. : MJF-7(3)

Direction : (true north)

Inclination : - 5 5°

Latitude : S

Longitude : E

Elevation :

(3)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D	Samp.	Au	Ag	Cu	Pb	Zn	Te	Mo
					0-100%	No.	ppm	ppm	ppm	ppm	ppm	ppm	
100m	▽▽	purple-dk. grn. comp. br-prop. /Hyal.		102.1m hd. Cal. vlt.(1-2cm)	50								
	▽▽	←40°				102.1-12	0.013	<2	530	177	82	6.2	
105m	▽▽	←40°	bleached along Cal. vlt.	104.1m Cal. films		102.13							
	▽▽	←30°		104.4m Cal. films		104.1-13	0.006	<2	210	38	110	7.0	
	▽▽	←45°		105.8m Cal. vlt. (0.5cm)		104.45							
	▽▽	mtx. poor		108.0-108.15m Cal. vlt. (0.5cm)		108.0-14	<0.005	<2	150	12	82	4.2	
110m	▽▽	45° dk. grn. basic br-prop.		109.4m Cal. vlt. (0.5cm)		108.15							
	▽▽	←65°		116.6m Cal. vlt. (0.5cm)									
	▽▽	←20°		117.4m drusy Cal. (2cm)		117.4-15	0.014	<2	160	13	560	10	
	▽▽	←25°	117.4m bleached weak pale grn.			117.43							
115m	▽▽	←50° she. fr.		121.0-121.1m Cal. vlt. (0.5-1cm)									
	▽▽	←60°		121.93-121.96m Cal-Cp-Gn?net (3cm)		121.0-16	0.142	14	2500	19	2100	9.3	<5
	▽▽	←55°		122.8-123.3m Cal. net		121.1-17	0.086	22	4000	2100	56	1.6	<5
120m	▽▽	←25° Cal. film		123.50-123.53m Cp. diss. mass. ore in grn. w-argil. r. (3cm)		121.93-17							
	▽▽	←20-15°				121.96-18	0.005	<2	85	21	370	3.8	<5
	▽▽	←20° grn. clay-Cal.				122.8-19	0.375	880	67600	17	760	4.0	<5
	▽▽	←25-40° Cal. net	str. prop.			123.5-19							
	▽▽	←0-5° Cp. Cal. films				123.53							
125m	▽▽	finely br. grn. - purple comp. mass. hd. irreg. ess. brecc. /Hyal.											
130m	▽▽	br-prop. purple											
135m	▽▽	420cm blocks inc.											
140m	▽▽	35° Cal. film weatherd frs.	purple	138.9-139.1m weathered pale brown									
	▽▽	35° Cal. film grn. v. comp. hd. f-prop. (Bs)	grnish.	141.7-141.5m Cal. films net									
	▽▽	br-prop. irreg. br. grn.		143.1m Cal. patches									
145m	▽▽	55° ch-m(oxi.) grnish-gry. v. comp. hd. porph. prop.	str. prop.	143.9m Cal. film									
	▽▽	25° Cal. film		144.4m Cal. film									
	▽▽	75° Cal. film		146m Qz. film 0.5cm									
150m	▽▽												

Drill hole No. : MJF-7(4)

Direction : (true north)

Inclination : - 5 5°

Latitude : S

Longitude : E

Elevation :

(4)

Depth (m)	Core Log.	Lithology	Alteration	Mineralization	R. Q. D. 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
150m	v Δ		str. prop. slightly bleached		50								
152m	← 85° v Δ	Cal. film irregular-subangular ess. br.		Cal. films									
154m	← 45° v Δ	Cal. film											
155m	v Δ	purple ess-tf-br.											
160m	Δ v	argil.	pale grn. clayey bleached	Py. slightly diss. in part									
162m	Δ v	rounded br.		Cal. films irreg.									
165m	v Δ												
170m	← 15-20° v Δ	dk. purple ady. thin layers (1cm-)											
172m	← 55° v Δ	Cal. film											
175m	v Δ			Cal. films									
176m	Δ v				176.1-176.3	176.1-20	0.021	<2	600	27	1400	9.1	
178m	← 40-50° v Δ	Qz. ess. tf-br./Hyal.	176.0-176.3m pale grn. bleached	176.1-176.3m whi. Qz. net 0.5cat Py. w-diss.									
180m	← 40° v Δ	fr. Qz. films			180.5-180.53	180.5-21	0.027	<2	420	13	88	3.3	
182m	← 30° v Δ		pale grn. bleached along Qz. film	180.5m Qz. (large grain) vlt. (0.5cm)									
184m	← 30° v Δ			181.15m Qz. (large grain) film									
185m	← 50° v Δ		str. prop. carb.										
190m	Δ v												
192m	← 40° v Δ	Qz.			191.4-191.45	191.4-22	0.086	<2	700	36	2300	6.8	
194m	← 20° v Δ	Cal. bedded irreg. laminated mtx. (load struc.)		191.4m Qz. vlt. (0.5cm)									
195m	Δ v	tf.											
200m	← 40° v Δ	Cal. film		Cal. films									

Drill hole No. : MJF-7(5)

Direction : (true north)

Inclination : -5.5°

Latitude : S

Longitude : E

Elevation :

(5)

Depth (m)	Core Log	Lithology	Alteration	Mineralization	R. Q. D 0-100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Fe ppm	Mo ppm
200m-3	60° she. fr. dk. grn~purple comp. hd. ess. fr-br.		str. prop.	Cal. filus	50								
	40° fine part												
205m	rounded-subangular brecc.												
210m-8	50° 70° 50° Cal. film			Cal. filus									
215m	25° Cal.			216.2m Cal. vlt.(0.5cm)									
220m-1	25° Cal. film												
	50° she. fr.												
	50° she. fr-Cal.			Cal. filus(w)									
225m	10° 75° grnish gry. v. comp. hd. prop. (Bs) brecciated 50-20° she. fr.		str. prop. (carb.) 224.5-224.6m bleached 226.4-229.7m w-bleached pale grn.	223.7m Cal. vlt.(0.5cm) drusy 224.5m Cal. filus(10cm) Cal. filus		224.5-23 224.6	0.007	<2	88	12	1600	10	
230m	basic prop. fine br-prop. included			Cal. filus(w)									
235m													
240m	20° 45° 35° grn-purple she. fr-Cal. film prop./Byal. Cal. film mtx. poor comp.		carb. dot										
245m	20° 25° 25° 60° Cal. film		246.7-250.0m w-bleached pale grn.	Cal. filus 247.0m Cal. vlt.(0.5cm) Cal. filus		246.7-24 247.2	0.018	<2	210	8	450	3.5	
250m													

Drill hole No. : MJF-7(6)

Direction : (true north)

Inclination : - 5 5°

Latitude : S

Longitude : E

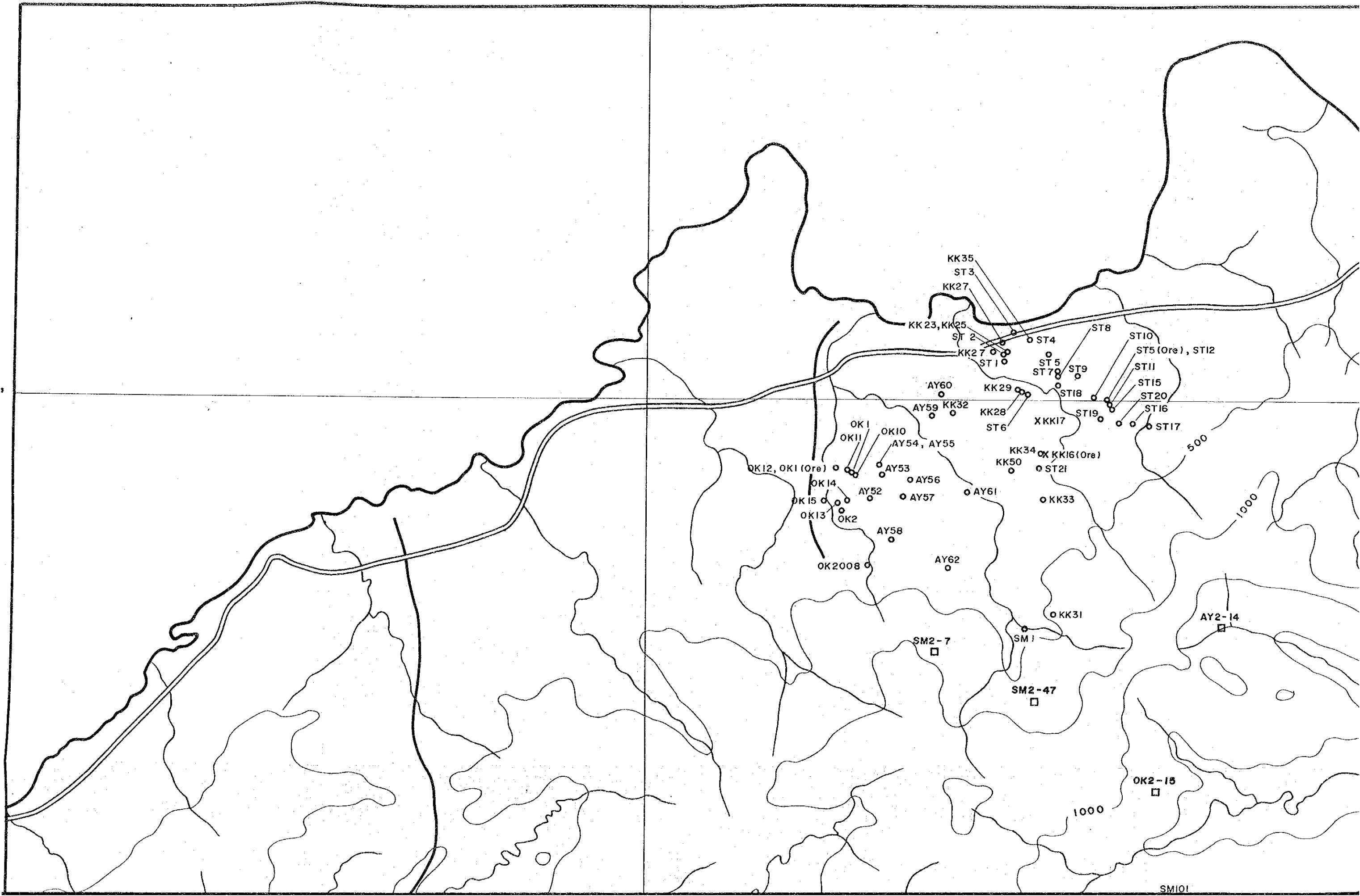
Elevation :

(6)

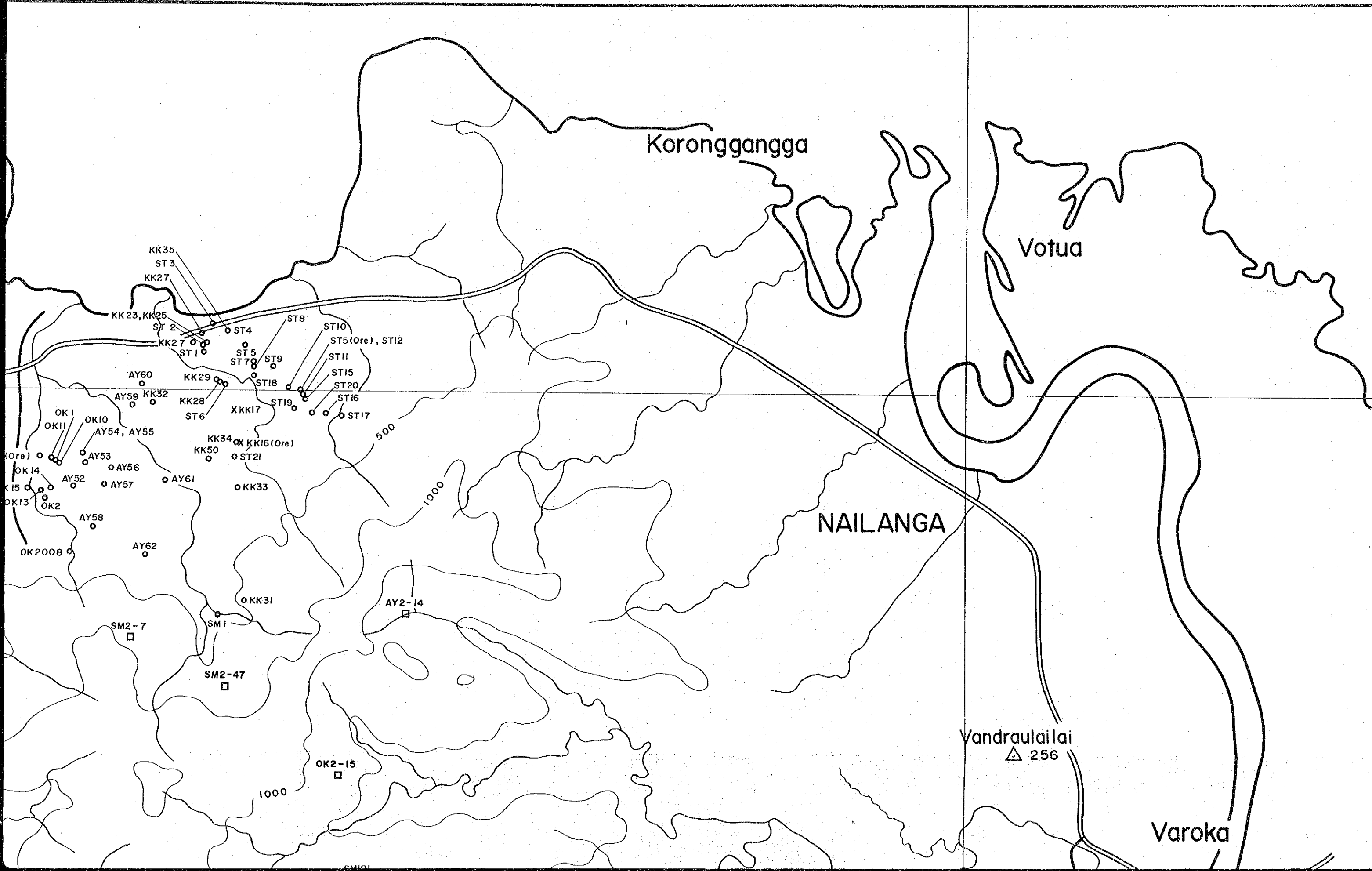
Depth (m)	Core Log	Lithology	Alteration	Mineralization	R. Q. D 0~100%	Samp. No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Te ppm	Mo ppm
250m	▲▲	grn. basic prop. (Bs) comp. hd.	str. prop. (carb.)	Cal. films-dots	50								
	▲	ch-m. 50°											
255m	▲	brec-prop./Hyal. comp. hd. grn-purple											
	▲	blocks 40°		257.5m Cal. vlt. (0.5cm)									
260m	▲	40° dk. grn. basic prop. comp. hd.	str. carb. (dot)										
	▲	55°											
265m	▲	purple br. -prop.											
	▲	mtx. poor oxi. mechanically br.											
	▲	block oxidized											
270m	▲	40° Cal. film											
	▲	30° ch-m. fine basic prop. dk. grn. v. comp. hd.	272.7-278.5m v-bleached										
	▲	30° Cal. film											
	▲	40° Cal. film											
	▲	60° Cal. film											
275m	▲	mtx. poor mechanically br.		274m-277.6m Py. diss. in mtx. Cal. films		274.0-25 275.0 276.0 277.0 277.6	0.016 0.017 0.015 0.071	<2 <2 <2 <2	210 190 210 230	21 12 8 10	2100 2000 83 79	11 9.4 3.4 3.2	
280m	▲	grn. Hyal./ess. tf-br.		281.8m drusy Cal. 282.0m vlt. (0.5cm)		282.0-29 282.95	0.011	<2	170	9	78	7.2	
	▲	60°											
285m	▲	block											
	▲	60° she. fr.		286.9m Cal. vlt. (0.5cm)									
	▲	50° Cal. film											
	▲	45° Cal. film											
290m	▲												
	▲	40°	291.7-293.2m bleached	291.4-293.3m Cal. film net		292.7-30 293.1	0.005	<2	190	9	73	6.7	
	▲	basic prop. (Bs)											
	▲	35°											
295m	▲	65° Cal. film		296.7m Cal. vlt. (2cm)		296.7-31 297.1	0.025	<2	141	6	77	1.6	
	▲	65° Cal. film											
	▲	60° grn. br-prop/ess. tf-br. comp. hd.											
	▲	70° Cal. film											
	▲	40° Bs.											
300m	▲	50° blocks inc.		Cal. films									
	▲	35° Cal. film											
301.00m	▲												

177°35'

17°30'



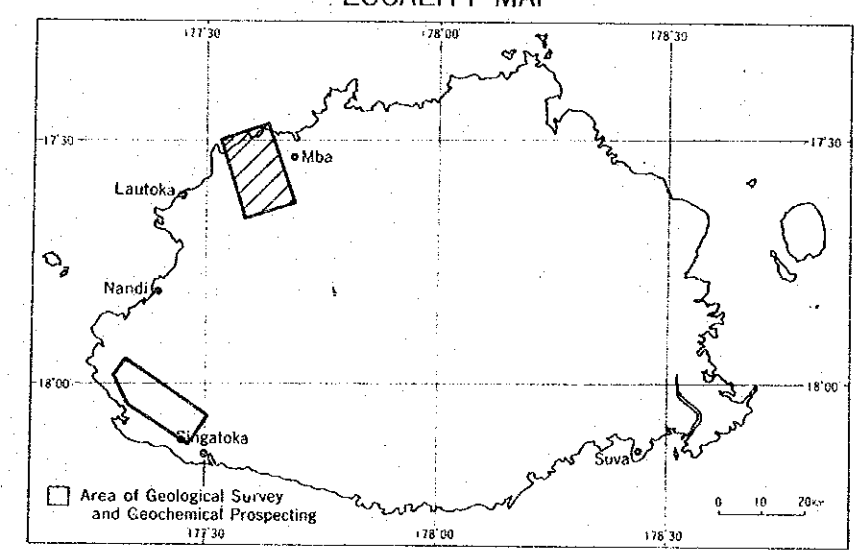
177°40'



REPORT ON THE MINERAL EXPLORATION
IN THE VITI LEVU AREA,
THE REPUBLIC OF FIJI

PHASE III
SAMPLE LOCATION MAP
OF THE MBA-WEST AREA
(THIN SECTION, ORE ASSAY,
X-RAY DIFFRACTION ANALYSIS)

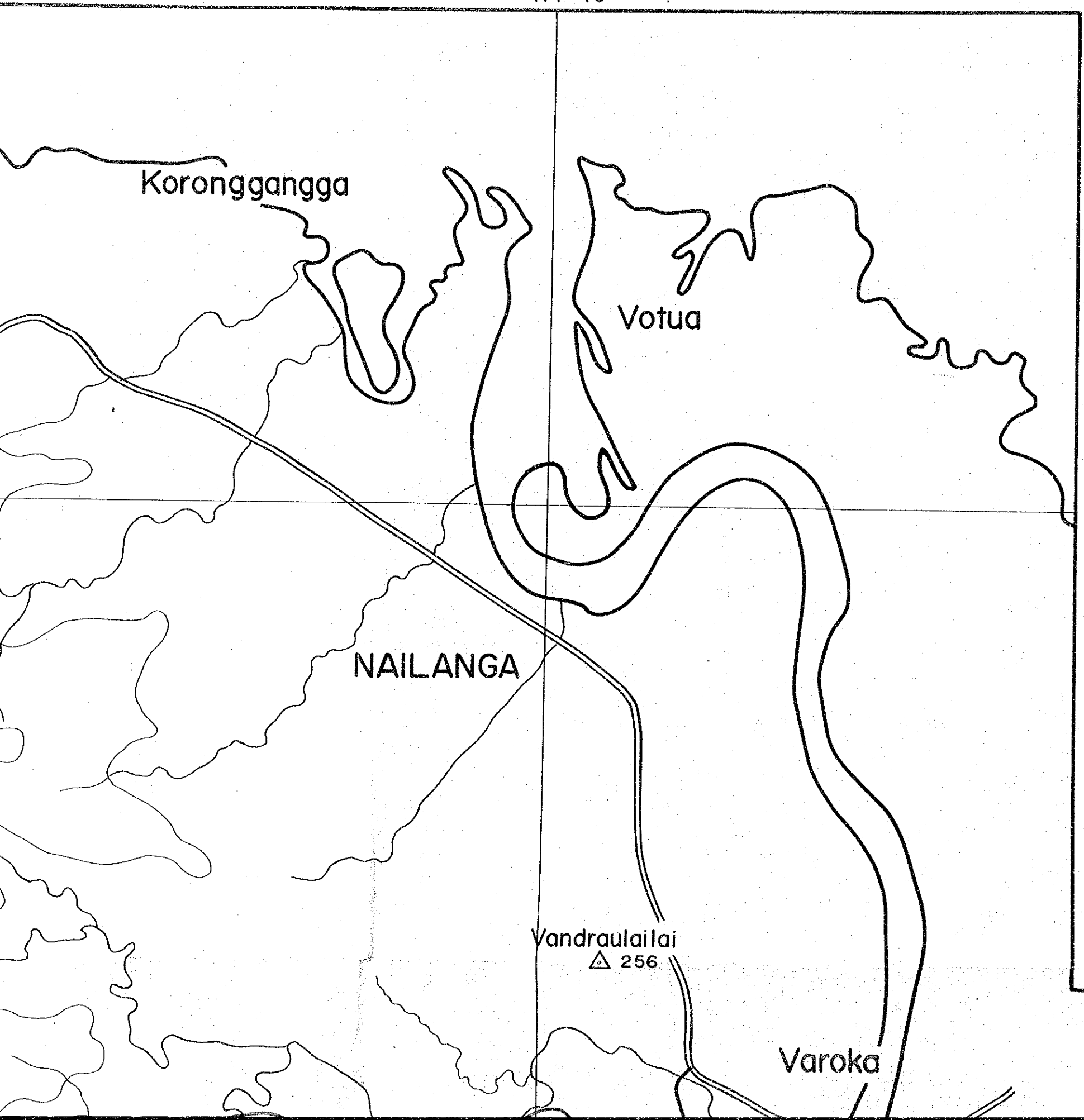
LOCALITY MAP



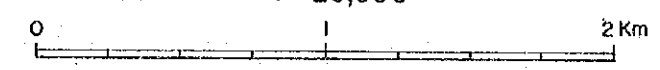
FEBRUARY 1993

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN

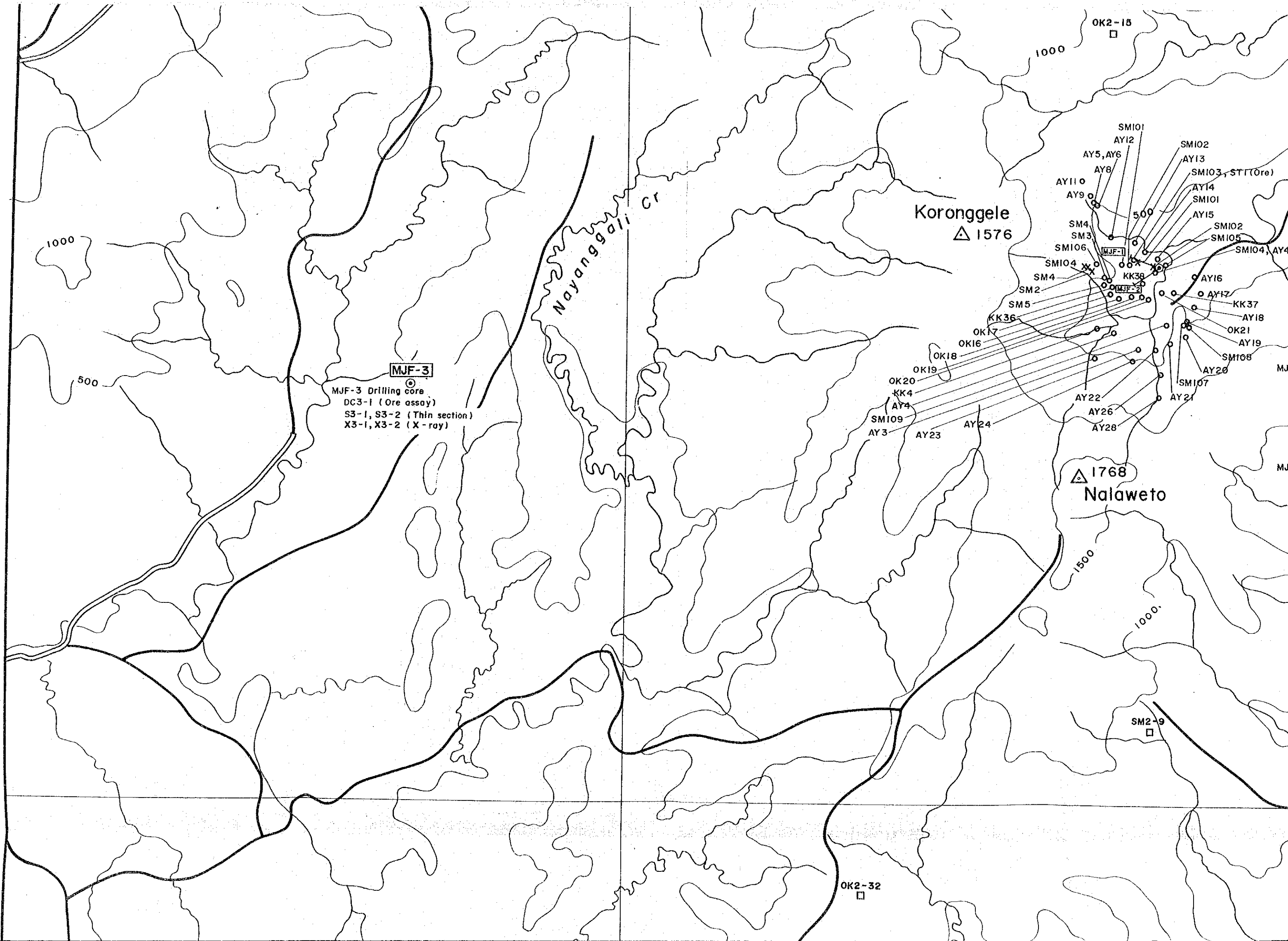
177°40'



1 : 25,000



17°35'S



MJF-3
MJF-3 Drilling core
DC3-1 (Ore assay)
S3-1, S3-2 (Thin section)
X3-1, X3-2 (X-ray)

Koronggele
Δ 1576

Δ 1768
Nalaweto

Nayangali Cr