	Upp	er '	Quae	Yaı)JE			HOL			- 1 (SHEET 6 C	ı F 6 3	
LOC				Right Ab				DE	TH OF HOLE		0 m	COMMENCED		
ELE	VAT	ON		222					PTH OF OVERBURDEN		3 m	COMPLETED		
COO	RDII	VATE	1 <u>682</u>	549 8N 4	90	391	ĮΕ	LE	NGTH OF ROCK DRILLING	96	<u>7</u> m	DRILLED BY		DISA
				ZONTAL			_	то	TAL LENGTH OF CORE	9.8.	.64m	LOGGED BY	Y Fuk	utake
BEA	RING	G OF	ANGL	E HOLE	<u>N8</u>	5°E		СО	RE RECOVERY	96	7_%		·····	
	ΜĒ		RY	۲-۴					RVATION OF CORE		WATER	TABLE	_ _	ž į
DEPTH	ROCK NAME	106	CORE	CEMENTA TION KIND OF BIT CASING	COLDR	ΞÃ	HARD NESS	RETING	DESCRIPTION	İ		PRESSURE TEST	- НТ	ELEVATION
1 - 1	ğ			§ 250	8	WEATHER	HAH	CORE	0100.111	1	LEAKAC	GE OF DRILLING WATE		3
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								1,0	itich), 2 (substick), 3 (piece), 4 (fragment),	5 grain				
		,	N VI	- core loss		į	110	hard)	- 5 (soll)					
			<u> </u>	- AÕĐ		10	fresh)	~ 5 (d	ecomposed)					

,	llnnam	_		V (.00	NO LOG OF DRILL	
	Upper ATION		··········	Right A	_	JE(O R - 2 (SHEET 1 OF 4)
	VATION		<u>Juni</u>		5 0		_	_		Om COMMENCED Mar - 7 - 1979 5 m COMPLETED Mar - 20 - 1979
			582	546.IN 4			_		NGTH OF ROCK DRILLING 67	
				ZONTAL			_			82m LOGGED BY Y Fukutake
BEA	RING (OF A	NGL	E HOLE			_			2_0
	ш	Т		4				OBS	ERVATION OF CORE	. 2
ОЕРТН	POCK NAME	1 g	RECOVER	CEMENTA TION KIND OF BIT CASING	æ	E E	5.5			WATER PRESSURE TEST
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8-3	×	XY	1111	i i				١.		
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8-	Ľ	IW	WII			3	}	{	Cavernous 30me and	7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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<u> </u>		LIL	HAIII		Щ	<u> </u>	1	+	▶ driller's not∌ €	<u> </u>
								1+0	stick) 2(substick), 3(piece), 4(fragment), 5 grain	,
		177	τ . ν.Γ.	_ core loss		ſ			- 5 (soft)	
				- RQD		1 (iresh)	~ 5(d	ecomposed)	

Upper Quae Yaı PROJECT HOLE No R-2 (SHEET 2 OF 4) 70 0 m COMMENCED Mar - 7 - 1979 LOCATION Dom Right Abutment DEPTH OF HOLE COMPLETED Mar - 20 - 1979 **ELEVATION** 2850 m DEPTH OF OVERBURDEN 35 m LENGTH OF ROCK DRILLING 67.5 m DRILLED BY FONDISA COORDINATE 1682 546 I N 490 323 9 E ANGLE FROM HORIZONTAL 90 . Y Fukutake TOTAL LENGTH OF CORE LOGGED BY 63 82 m BEARING OF ANGLE HOLE CORE RECOVERY 912 % OBSERVATION OF CORE WATER TABLE CCLOR WEATHER ING WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON 50(4min) 0 →100 20m 265.0 7 οQ all cracks brn. and О coated by seam or lo d Supply recement lime. o Many Solution holes Lea Kage 4, ٠3 0 and remarkable re. crystaline lime. ۲. CONGLOMERA reddish. 3 4 3 4 Ş - 8 .30 Poor core recovery. all cracks brn and coated 4 brn. by seam.
Cracky 30ne at 30.2-30.7. 3 3 ó Core loss. 32.2 1=77 Leakage -2 No 32.53 4 3 43 SANDSTONE core loss. 33.5 4:3 .R.J.B.-Usq 3 4 34,8 Core £055. 35.0 0 Wethd.and cracky generally 22 4 all cracks brn. Cracky Jone at 35-35.5, 36.5-36.6, 38-390,39.5-403, 3 4 3 41.1-41.33,42-42.2. core loss, 38.6 4 3 4 3 ▶ driller s note 4 I (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain 1 (hard) ~ 5 (soft) t (fresh) ~ 5 (decomposed)

1	lone	٥r	Quae	Yoi	PRO			.00	HOLEN		2 (SHEET 3 OF	4 ì	
roc				Right Al				DE.		0 m	COMMENCED M		_ ?_1979
ELE					5 0			DE	PTH OF OVERBURDEN2	5 m	COMPLETED M		
COO	RDII	TAP	E 1 <u>682</u>	546.IN 4	<u>70 3</u>	23	9 E	LE	NGTH OF ROCK DRILLING 67	<u>_5</u> m	DRILLED BY		DISA
				IZONTAL		90	• -		****	82 _m	LOGGED BY	Y Ful	utake.
BEA	RINC	G OF	ANGL	E HOLE	_					2_%			
-	#ME	_G	_ ₹	¥ z o	ļ	Œ.	_		RVATION OF CORE	WATER	TABLE ——	r	Õ
ьтчэа	OCK NAME	רספ	CORE	CEMENT TION KIND OF BIT CASING	COLOR	WEATHER	HARO	CORE	DESCRIPTION	WATER	PRESSURE TEST	DEPTH	ELEVATION
	ě		<u> </u>	2 2 20	8	¥	¥	52		LEAKAG	E OF DRILLING WATER		
40m			0 → 100 	<u> </u>	<u>.</u>	<u> </u>	<u> </u>			<u> </u> 	LUGEON (9min)	40m	2450 🖫
4		·∑			brn.gry	4	3	4				F	ļ
1-4		∙}_	[4]]]]		p.u	3	ľ		41.3			F:	
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	ŀ	ℹ		1	200	3	۳		· 426 Core loss. 430	'	Supply	Ē.	
3 - 3										1		F 3	
	ĺ			1					Core loss. 43.5	Test	No Leakage	E,	
["		\sim		1			_	-	Core 4055 4436	N0 7		£	
5 -	ŀ	X	WW	}					Core loss. 45.2			Ē.5	
4		()		}	rrig 81.8	4	3	4					
6.4		≉			_	,			45.8 Core loss. 46.0	‡		6	ļ
=		.5	11112		eddish brn		3		all cores gravelly and			_ '	
7릨	2	.∑			35	4	1	5	wethd.			7	
=	5	\leftarrow		1	JQ.	•	4		48.0	1 111	1 1 11 1		
8-3	SANDSTONE	.5			-5				Generally good, but brn.	 	 	E 8	
=	3	ŀΣ											
9 =	જ	:}-	7						cracks remark.			արու	
1, 4	,	.5	7						core length 5~10 cm.	5		50	
507	calcareous	٠Σ							Crachy 30ne (C=4-5)	20.5		E	
E,	Je.	:{-							at 48.5~49, 50.5~51.	1 7			
1	ä	.5	и		gry.		•			17			
2-1	ag	ŀΣ	KKIIIII		1		{	3		1 111	1111	E_2	\ \ \
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5-3		·∑	hillilli						ce e	%		E 5	
-		·}	/		⊢			<u> </u>	55.5	u=2		Ė	
6-3	Ĭ	:5-						۱ ۱	Generally good.	1 17	11111	F 6	ነ ነ
1		٦٠			brn				core length 5~20cm.			Ē.,	
7		-		1					Brn. crachs a few.			F-7	
		\leftarrow			red	Ì		3	Small breccia (recement)			Ē.	
8		.5		Ì	Ι.				at 58.5-58.8, 59.	TI		E 8	
E,		-Σ-			20					1		E-9	
4 5 6 7 8 8 9 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		<u>:</u>			6							E	
60		.5		<u></u>								<u> </u>	225.0
						1	1	\	▶ drillers note 4				
			N M	- core loss			١,,		tick) 2 (substick), 3 (piece), 4 (fragment), 5 grain - 5 (koft)	,			
				- RQO		16			composed)				
											ELECTRICA NAMED BE		m= ee .m.

Upper Quae Yai **PROJECT** HOLE No R - 2 ISHEET 4 OF 4 LOCATION Dam Right Abutment 70 0 m DEPTH OF HOLE COMMENCED Mar - 7 - 1979 **ELEVATION** 2850 m 25 m COMPLETED Mar - 20 - 1979 DEPTH OF OVERBURDEN COORDINATE 1682 546 1 N 490 323 9 E FONDISA LENGTH OF ROCK DRILLING 57 5 m DRILLED BY ANGLE FROM HORIZONTAL __ 90 TOTAL LENGTH OF CORE 63 B2 m LOGGED BY Y Fukutake 912 % BEARING OF ANGLE HOLE CORE RECOVERY OBSERVATION OF CORE ELFVATION RECOVERY ROCK NAME WATER TABLE DEPTH DEPTH COLOR WEATHER WATER PRESSURE 1EST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON SOLUTION) 6 0m 2250 T րումուսիստիում Տ 3 3 3 Supply 61 = N7 61.8 NO Leakage Recemented shd. gone. cracks brn. and coated -3 3 3 brn. by seams. 1 4 4 4 Cracks along Schistosity. Brn Crack few but coated 7.57 by graphite or white clay. gry- brn 3 3 1 E-8 3 70.0 2/5.0 - 6 p driffer a note 4 † (stick) 2 (substick) 3 (piece), 4 (fragment), 5 grain t (hard) - 5 (sell) 1 (fresh) ~ 5 (decomposed)

			0	٧					IC LOG OF DRILL		•		
LOC		_	Quae	Right A		OJE(DE	HOLE N	LO R-	COMMENCED		_
ELE				379	_		•			O w	COMPLETED A		
COC	RDII	VATE	1682 5	318N 49	02	07.4	Ę.		NGTH OF ROCK DRILLING 97		DRILLED BY .	FON	
ANG	LE	FRON	A HORI	ZONTAL		<u>30</u>	•			<u>о</u> п		Y Fuk	utake
BEA	RIN	G OF	ANGL	E HOLE	_		<u>-</u>	CO	RE RECOVERY 96	<u>0</u> %			
	\$ME	ی ا	E SRY	A S O		i ar			ERVATION OF CORE	WATER	TABLE 11	_ _	NO
ОЕРТН	OCK NAME	0 1	CORE	TION TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CORE	DESCRIPTION	WATER	PRESSURE TEST	06 PT	ELFVATION
	æ		- 1	5 220	ö	¥	Ĩ	ŏ		LEAKAC	E OF DRILLING WATER		
Om			0 → 100 11111111		<u> </u>	<u> </u>	<u> </u>			, , ,	LUGEON 50(V/min)	40 Om	379.8 🗘
	0.8.	Δ Δ			brn.				wethd.breccia or talus deposit ? 3.0	7est		ուրուրադուրուրում «	
2 4 2		\bigvee							NO CORE.	0N -	Supply	ց գ 5 ակավաժգակուհո	
9 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					brn.				Fault breccia.		Leckage		
հահահակու					b P.B.	3	2	2	Cracks brn. Solution at 7.4. 9.5			արուդրուրություն 80 80	
ուվուայում և արևանական արևանական հայարարական հայարական հայարական հայարական հայարական հայարական հայարական հայար					brn.	3 : 4	3		Recement shd. 30716. very hard. Many solution cracks 16~164 soft breccia.			հուվոսիակակակակարկուկում 3	
10 4 5 6 7 8 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		XI L L L L L L L L L L L L L L L L L L L			68%.	3	2	3	17.5 Many Solution spaces filled by Soil (19.9, 20.5, 22.0, 23.7). 19.4 Core loss. 19.9	-28.4 ————————————————————————————————————	NO Leakage	րությունուրը 8	359.8
		ļ		- core loss - RQO		1 (1		hard) -	• driller's note 4 tick) 2 (substick) 3 (piece) 4 (fragment), 5 grain • 5 (soft) composed)				

Upper Quae Yaı PROJECT HOLE No R - 3 (SHEET 2 OF 5) LOCATION Dam Right Abutment 100 0 m DEPTH OF HOLE COMMENCED Feb _ II _ ELEVATION 3798 m DEPTH OF OVERBURDEN 30 m COMPLETED Mar - 3 - 1979 COORDINATE 1682 531 8N 490 2074E LENGTH OF ROCK DRILLING 97 0 m DRILLED BY FONDISA ANGLE FROM HORIZONTAL 90 * TOTAL LENGTH OF CORE 96 O m LOGGED BY Y Fukutake BEARING OF ANGLE HOLE CORE RECOVERY 960 . OBSERVATION OF CORE RECOVERY WATER TABLE - W DEPTH COLOR FATHER DEPTH WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON 50(P/min) 40 20m 359.8 T 3 2 3 Core Loss. 22.1 3 2 3 22.5 Core loss 229 2 3 24.0 Many small faults at 24.2, 24.8~24.9, 25.25, 26.2-26.9, 27/-275, Supply 27.85-28, 28.3, 287-29.1, NO Leakage 29.35-2945, 30.15, 30.95-31.1, 31.5~31.65. 3 Solution at 25.2, 25.7, 3 3 31.3, 31.7~32. 4 6 th. 707 32.0 Rock hard, but remark solution. all cracks wethd.and filled by seam. Solution at 32-32.5.35, 35.7, 37.9~ 38.2, 38.9. Shd. 37.25~38.0. 2 6 g 40.0 ▶ driller's note 4 1 (stick) 2 (substick) 3 (piece) 4 (fragment) 5 grain 1 (hard) ~ 5 (soft) 1 (fresh) ~ 5 (decomposed)

Upper Quae Yai **PROJECT** HOLE No R-3 (SHEET 3 OF 5) LOCATION Dam Right Abutment DEPTH OF HOLE 100 0 m COMMENCED Feb _ II _ 1979 ELEVATION 379 8 m DEPTH OF OVERBURDEN _ <u>3 0 m</u> COMPLETED Mar - 3 - 1979 COORDINATE 1682 5318 N 490 2074E LENGTH OF ROCK DRILLING 97 0 m DRILLED BY FONDISA ANGLE FROM HORIZONTAL _ 90 * TOTAL LENGTH OF CORE 96 0 m LOGGED BY Y Fukutake BEARING OF ANGLE HOLE CORE RECOVERY <u>960</u>, OBSERVATION OF CORE RECOVERY CEMENTA TION KIND OF BIT CASING DEPTH WATER TABLE CORE COLOR WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON 50(Planta) 4 Dr 40 4 0m 339.8 🖫 3 2 Ē١ Core loss. Cavernous zone. Remark redeposit fime at 407-4215 40 7-4215 Brecciated at 401, 423 43.0 E-3 wo kedkage Generally good, but Shd. 2 3 at 43.1-435, 44.3-44.5, 6 4 44.9, 46~46.2, 47.7~47.85, 51, 51.8~52,52.1~52.5. Lu=23. Core loss at 43.1-43.2, Solution at 45.2, 46.15. ₽8 IMESTONE. - g *b e e*. - 23. Brecciated at 52.5-52.65. Solution at 52.65 - 54.0. 3 4 54.0 all cracks brn.or coated by graphite. Brecciated SHat 57.6, 594~59.5, 60.5~60.6, 62.4~62.8. 3 2 Cracky at 54 ~ 54.5. 5.0 · g ► driffer's note 4 1 (stick) 2 (substick) 3 (piece), 4 (fragment), 5 grain 1 (hard) ~ 5 (soft)

1 (fresh) - 5 (decamposed)

Upper					СТ	_	HOLE N	O R - 3 (SHEET 4 OF 5)
LOCATION		Right A	butr	nent	<u> </u>	DE	PTH OF HOLE 100	O.O m COMMENCED Feb _ 11 _ 1979
ELEVATION		379			m <u> </u>	DE		Om COMPLETED Mar - 3 - 1979
COORDINAT						LE	NGTH OF ROCK DRILLING 97	Om ORILLED BY FONDISA
ANGLE FRO				90	<u>.</u>			Om LOGGED BY Y Fukutake
BEARING OF	ANGL	E HOLE		_				_Q %
DEPTH POCK NAME	_ <u>}</u>	NO OF	<u> </u>	Toe -			ERVATION OF CORE	WATER TABLE
OEPTH CK NAM	CORE	CEMENTA TION KIND OF BIT CASING	COLOR	불	HARD.	CUTTING	DESCRIPTION	WATER TABLE TO THE WATER PRESSURE TEST
ğ	J	2 × ec	8	WE	I A	[85		LEAKAGE OF DRILLING WATER
60m	D ⇒ 100							LUGEON .gr
20 3 4 militarilarilarilarilarilarilarilarilarilaril			brn. blk.	3	4 1	3 4-5		Supply Supply NO deakage
				5	5	۱۶۱	65 6	5
1 1 PES TON E.			668.	3	2	3	Blk.SH interbedded. all cracks brn. and tilled by seam. Brecciated at 70.9-71.0. Solution at 70.25.	անումյումասիականականականականականականականական 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
		-	+			_	Fault galle. 75.6	
20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		•	brn.	3	3 1 4	1	Brecciated, but recement. all cracks wethd. and filled by Seam.	0.31 = 12.1 8 0 299.8
	i	ore lass QD	į	1 (tre		rd) ~ 5	• drillers note 4 h) 2 (subsirch) 3(piece) 4(fragment) 5 grain (soft) mposed)	

lie		O	V				.00	AIC LOG OF DRILL	
LOCATIO			Yaı	_					10 R-3 (SHEET 5 OF 5)
ELEVATI		Dam	Right A 379			-			Om COMMENCED Feb 11 1979
		1682 5	31 BN 4			1 1 F		PTH OF OVERBURDEN <u>3</u> NGTH OF ROCK DRILLING <u>97</u>	Om COMPLETED Mar - 3 - 1979
ANGLE F					90	_			
BEARING						-			O m LOGGED BY Y, Eukutake
<u> </u>			_		-			RVATION OF CORE	
DEPTH COCK NAME	100	CORE	NO ON	Œ	E.				WATER TABLE — V I O I I I I I I I I I I I I I I I I I
DEPTH DCK NAN	7	ខ្លួ	CEMENT. TION KIND OF BIT CASING	COLOR	WEATHER ING	HARD NESS	CUTTING	DESCRIPTION	WATER TABLE V I OF WATER PRESSURE TEST
 	}	→ 10 <u>0</u>	-	<u> </u>	3	I	02		CENTURE OF DIRECTION WATER
80m		CHIIII)			_		_		LUGEON 408 0m 299.8 T
Juntumungungungungungungungungungungungungungu				brn.	3 4	3 - 4	3	shd. in general, but recement. NO remarkable wethd. material in Cracks.	17 - 17 - 17 - 17 - 17 - 17 - 17 - 17 -
<u>//00 ∃</u>	!/1 /	AMIII			_			F draller s note 4	[]
		18					1 (31	p urnier's note 4 ick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	
	1/2	1 1/1	care lass			1 (1		5(sofi)	
		<u> </u>	RQD		1 (1			composed)	

			Yaı		ROJ		<u> </u>	HOLE	No R-4 (SHEET 1 OF 3)
LOCAT		Dom	Right			<u>t</u>	D		O O m COMMENCED Jan _ 21 _ 1979
ELEVAT		- 1582		16		m		EPTH OF OVERBURDEN	1.7 m COMPLETED Feb - 9 -1979
COORD								ENGTH OF ROCK DRILLING 48	3 m DRILLED BY FONDISA
ANGLE BEARIN					9.0	<u> </u>			86 m LOGGED BY Y Fukutake
	1	ANGL	THOLE			=			.7_2
DEPTH ROCK NAME	9	ZE ZERY	A NO S	<u>.</u> -	19:	+	OB	SERVATION OF CORE	WATER TABLE AA T 6
DEPTH	10	CORE	CEMENT TION KIND OF BIT	1 5	WEATHER	HARD.	CORE	DESCRIPT ON	WATER TABLE
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Om		0 → 100	-	\perp	ļ	\downarrow	\perp		LUGEON 50(Plmin) 40 0m 4/6.7 T
9.	$ \Delta $			ļ		1		overburden.	
0.6									
	4				1			1.7	
2	$\otimes\!\!\!\otimes$			Г	1	T			ւանարհանանում չ
4	$\otimes\!\!\!\otimes$							Fault breccia.	
3_	₩,				1	ĺ		Original rock calc.ss	<u> </u>
1 4 7	XXI							(yellow) and SH alt.	
SH alt	\bowtie]							Supply Line 4
nthun S.H	▓								
	XX	i!!!!!!!			5	5	5		├ - - -
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SS.	XX						l		
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4	XXII				ł	Ì			66
8 3	₩,				<u> </u>	<u> </u>	<u> </u>	Core loss. 80	Leakage
)] 	₩				5	5	5	8.5	
9-4	:			١.	_			Massive calc. ss	
4	<u>,</u>			brn	3	2	3	Remarkable solution.	<u>╶</u> ╎╂╼╬┹╎┆╎┆┋┋╸╏
10-	5#	41111		\vdash				10.0	10
1 4 6	311	ШШ		-				Breccia. 10.5 Core loss. 10.9	
Ludindundundindundin									797 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	3 H			7,2				Core loss 114	
2-4 61	.∑\f			19	3	3	5	wethd and cracky, all cracks filled by soil.	
- 2	\square			Pight brn	4	J	4	wit truens fitted by doing	
S TONE	2	NIN		6				/30	70.92= 172 Luminum 13 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
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1 4 5	\Box				- 1			Brecciated.	
Ladanhamin for	311		Ė	2			\dashv	Core loss 15.8	
4 9 .				light bra.	5	5	5	Brecciated. 168	
77 8	←₩		1	350	3	3	3		12
18 = 1	714	1111	j	7	+	\dashv	-	174	15st
	2		-	\dashv	+		-	Core loss. 18.05 Brocciated 1828	8
	ZIII		ľ		\neg	\neg		CARA PAGE	
9				-	-	\dashv	+	190	
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<u></u>	1/2	IN N		-1		L i	<u></u>	▶ drillers note 4	20 396.7
		73				ĺ	1 (stic	ik). 2 (substick). 3 (piece), 4 (fragment). 5 grain	
	1//	V 1 . co.	e loss		1) 	rd) - (
	Ĺ	- AQ	o		1 (fre	sh)	5 (deco	mposed)	

Un	per	Quae	You	DC				GIC LOG OF DRIL		-				
	LOCATION Dam Right Abutment DEPTH OF HOLE 50 0 m COMMENCED Jan 21 1979 ELEVATION 416 7 m DEPTH OF OVERBURDEN 1 7 m COMPLETED Feb 9 1979													
ELEVA	TION					_								
					127	 _2E		ENGTH OF ROCK DRILLING	48	m 				9 - 1979 DISA
ANGLE	FRO	M HORI	ZONTA	L _	90	•		3T 41 1 51/5 51/4 55 55 55 5		96 m	DRILLE LOGGE		Y Fuk	
BEARI	NG OF	ANGL	E HOLE			_		·		7_2	20001	.0 .01		oldke.
- ¥	J.	È	₹ ,	. [ERVATION OF CORE		•	·			-
DEPTH POCK NAME	0 1	CORE	CEMENTA TIDN KIND OF BIT	COLOR	Ë	HARD	# E				ER TABLE	γ \∸	DEPTH	101
, Š			R 290	8	WEATHER	HAR.	CUTTING	DESCRIPTION			ER PRESSURE AGE OF DRILL		, 1	ELFVATION
2 0m		0 →100							- 	******	LUGEON	O(P/mmn)	200	396.7
I Sarts	\times							Core Loss. 20.6	<u>,</u> Ť	11	Leakage	01-7111-11	10 Z 0	370.7
1-1 8	1.H	ЩШ					4	all cracks filled	-	-	1 190		- ₽	
ar large],	KKI III			3	3	3	by Soil. 21.0 Cracks wethd. 21.7	, [-	1		<u></u> [1]	
2-	$I \cdot \square$	1 44111		668	_	1	_			1	1 111		Ē.	
4 S		иШ		Ľ	5	5	5	Brecciated .	Į	=10.4			Ē-2	
Calc.	15			2				Cataclastic.		17			E ₃	
46				brn	3		2	all cracks wethd.ord fulled by soil. 23.9		77	Sup	ly		
4-1	1-1-	XXIII		\vdash	3	1	Н	Somewhat Shd	0				E-4	
1 12	0 0	741 III		;	3-4			all cracks brn 24.8]		ակայիստիոսիստիստի Տ	1
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KF'	5-11		1	~		4							E,	
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	$\Sigma_{\mathbb{N}}$	KWII	ĺ											
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a Pca	∭₩			انه	- 1			Core loss at 34.9-35.0,		1111		1-1-	F 5	
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7월 [$\sum M$		į	199		۱.	3	Wethd.and cracky. Brecciated at 374-372.		2			E ,	
	字机		Į	reddish brn	4	~	4 6	Core loss at 374-3755.		2,7			E'	
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HOLE No R - 4 (SHEET 3 OF 3 Upper Quae Yai PROJECT COMMENCED Jan _ 21_1979 Dam Right Abutment 50 0 m LOCATION DEPTH OF HOLE COMPLETED Feb - 9-1979 17 m **ELEVATION** 416 7 DEPTH OF OVERBURDEN DRILLED BY FONDISA COORDINATE 1682 518 ON 490 1272E LENGTH OF ROCK DRILLING 48 3 m LOGGED BY Y Fukutake ANGLE FROM HORIZONTAL __ TOTAL LENGTH OF CORE 42.86 m 85 7 2, BEARING OF ANGLE HOLE **CORE RECOVERY** OBSERVATION OF CORE ELEVATION CORE RECOVERY DEPTH WATER PRESSURE FEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON (//min) 40m 376.7 T 4 Da LS. and brn. Calc. SS. Leakinge Many solution cracks at 39.3 . 424 ~ 42.5 . 45-45.7. ٠2 Brecciated at 420-42.2 2 42.9-43.5,44-45.0 Supply 3 ı 3 4 3 Core loss. and 3 4 3 ţ 4 3 47.4 Lu=21. care lass. 48.3 Some What brecciated. 3 Cracks wethd. and filled rea. **-** 9 793 3 by seam. 4 4 <u> 366.</u>7 50.0 50 -3 - 8 9 ▶ driller s note 4 I (stick) 2 (subst-ck) 3 (piece), 4 (fragment), 5 grain 1 (hard) - 5 (soft) 1 (fresh) ~ 5 (decomposed)

Upper Quo	ie Yai I		JECT		SIC LOG OF DRILL							
	Right A						1 or 5	_				
ELEVATION 256 7 m DEPTH OF HOLE 90 0 m COMMENCED Mar 2 0 m COMPLETED APR 2 0 m COMPLETED APR 2 0 m DRILLED BY FOR COMPLETED B												
COORDINATE 1682	618 IN 490	373										
				TC	TAL LEWS-11 05 0			DISA				
BEARING OF ANGL	E HOLE						Y Y Ful	kutake				
¥ >					ERVATION OF CORE	4_%						
DEPTH ROCK NAME LOG CORE	CEMENTA TION KIND OF BIT CASING	G. 17	, g	19		WATERTABLE	\ <u>_</u>	ě				
HE SO TO SO	KING	COLOR	HARD	CORE	DESCRIPTION	WATER PRESSURE TEST	DEPTH	ELFVATION				
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1:00			3	,	all cracks filled by		8	İ				
7.E.				2	Soil and some solution							
7,32,0		-	1 1	2	open spaces roots at	╶╎╏╎╶╎╶╽┍┩╶	- [- /o	i				
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I HOLINANI I C. E. I.	Poddish	3			Small holes made by	4	E-2	ļ				
2 CON	18	2			seepage water.	=21.4		İ				
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	Uppe	r Quae	Yaı		JJE(HOLE N	0 R - 5 (SHEET 2 OF 5)
	TION		Right A	butn	nent		DE	PTH OF HOLE 90	Q m COMMENCED Mar 20 1979
	ATION			6. 7		-			O m COMPLETED Apr - 2 - 1979
			<u>618 IN 49</u> IZONTAL					NGTH OF ROCK DRILLING 88	···
			E HOLE		<u>ań</u>	-			99 m LOGGED BY Y FUNUTURE
		Τ .				_		RVATION OF CORE	
DEPTH	ROCK NAME	CORE	CEMENTA TION KIND OF BIT CASING	œ	¥.,		(1		WATER PRESSURE TEST
ä	ă	CORE	KINE	COLOR	WEATHER	HARD	CORE	DESCRIPTION	WATER PRESSURE TEST
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	0								No Leakage E
3_	٥	пиннин				ŀ			77
4	b							all cracks wethd.	
4-4	0					l		and many small holes.	
4	o							0 - 1-1-1-00 000	
5 = 3	C							Brecciated at 26,27.8	
	0					-		29,3/.6.	
6-1	0			brn	3	3		Strongly wethd.at	
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6-	15						ļ	poor core recovery.	
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					1	†	1.	p-driffers note 4	
		医肠	- core loss			1		itick), 2(substick), 3(piece), 4(fragment), 5 grain - 5(soft)	
		<u> </u>	- RQCI		10			ecomposed)	

Uppe Quae Yai **PROJECT** HOLE No R - 5 (SHEET 3 OF 5) LOCATION Dam Right Abutment DEPTH OF HOLE 900 m COMMENCED Mar _ 20 _ 1979 ELEVATION 256 7 m DEPTH OF OVERBURDEN 20 m COMPLETED APT - 2 - 1979 COORDINATE 1682 618 IN 490 373 8E LENGTH OF ROCK DRILLING 88 0 m DRILLED BY FONDISA ANGLE FROM HORIZONTAL ___90 * TOTAL LENGTH OF CORE 84 99 m LOGGED BY Y Fukutake BEARING OF ANGLE HOLE CORE RECOVERY 944 . OBSERVATION OF CORE RECOVERY ROCK NAMI ОЕРТН WATER TABLE ----WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON O(Hmin) 2167 4 0m Mainly gravelly cores and bm-red by all cores wethd. 4 Core loss at 40~40.6. 41.45 Core loss. Supply 43.2 785T 3 Nalkakaga strongly wethd. 5 and all cracks filled by seam. 411 4 5 6 SANDSTONE 48.0 core length 3-10cm. 3 all cracks wethd. 3 Ó. - g and filled by seam. Core loss. -50 4 4 3 52.0 3 Generally Cracky - 3 and cracks wethd, but less seam. 5 Ġ 4 3 6 57.6 No brn. Cracks 3 but shd.as a whole and remarkable 5 4 White Seam. gravelly core. 196.7 ≱ driller's note 4 1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain 1 (hard) - 5 (sofs) 1 (fresh) 5 (decomposed)

Upper Quae Yai PROJECT HOLE No R-5 (SHEET 4 OF 5 COMMENCED Mar _ 20_1979 LOCATION Dam Right Abutment DEPTH OF HOLE 90 0 m COMPLETED Apr - 2 - 1979 256 7 m 2 0 m **ELEVATION** DEPTH OF OVERBURDEN COORDINATE 1682 618 IN 490 373 BE LENGTH OF ROCK DRILLING BB 0 m FONDISA DRILLED BY ANGLE FROM HORIZONTAL 90 * LOGGED BY Y Fukutake TOTAL LENGTH OF CORE 84 99 m BEARING OF ANGLE HOLE **CORE RECOVERY** 944 % OBSERVATION OF CORE DEPTH CORE COLOR WEATHER ING HARD. NESS WATER PRESSURE 1EST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON (Plmps) 6 0m 196.7 T 34 60.65 shd. zone. NO Leakage all core brecciated With Clay. 4 5 ٠ 9 918. 7.2.0 NO No Wethd. cracks, 3 but some cracks filled by White Seam. 2 2 8 3 77.0 Lu=14. į ı 2 2 176.7 ▶ driller s note ◀ 1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain 1 (hard) ~ 5 (sot) 1 (Iresh) ~ 5 (decomposed)

linne	r Quae	Yai	PRO			OC.	HOLE 1			ı	
LOCATION		Right Al			_	DE		.O_m	COMMENCED		<u> 19</u> 79
ELEVATIO	N	256	5 7	n	<u>1</u>			0 m	COMPLETED	<u>Apr _ 2</u>	-1979
COORDINA	ATE 1682	518 IN 49	0 37	738	E	LE	NGTH OF ROCK DRILLING 88	.0 m	DRILLED BY	FOND	ISA
ANGLE FF				90	•			99 m	LOGGED BY	Y Fuk	utake
BEARING	OF ANGL	E HOLE		-	-			4 _ %		1 -	1
H AME	≛ بيان	A SA	_	Œ			ERVATION OF CORE	WATE	R TABLE	<u>=</u>	ELFVATION
DEPTH ROCK NAME	CORE RECOVER	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CORE	DESCRIPT.ON	WATE	R PRESSURE TEST	4ТӨЗС	LEVA
	0 100	<u> </u>	ō	3	Ì	50		LEAKA	GE OF DRILLING WATE		
80m	יָטוּ = טו נוועאנא כ							•	LUGEON (*/mn)		176.7 🗘
4										1111111	
1-	<u>} </u>						Generally Shd., but		▎▕ ▝ ┼┐┆╵		
-	;						fresh and hard.		Supply	- «	
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	10 10	<u> </u>	<u> </u>	1	+	+	▶ driller s note ◀				
							stick), 2 (substick), 3 (piece), 4 (fragment), 5 gra	מו			
	L	— core loss		1			- 5 (soft) ecomposed)				
		— RQO		.,		5 (0					

ELECTRIC POWER DEVELOPMENT CO., LTD. TOKYO JAPAN

Upper	Quo			OJE			HOLE	E No 1	R - 6 (SHEET 1	of 5	•
LOCATION	<u>Dam</u>	Right A			_	DE		820,			
ELEVATION COORDINATE	1693		8 1		<u>m</u>			10,		Mar - I	7 – 1979
ANGLE FROM				90	_		NGTH OF ROCK DRILLING			FON	DISA
BEARING OF			_	30	-		_	77 32 n		Y Ful	kutake
			_				RE RECOVERY ERVATION OF CORE	96 7 _ ³	·		
DEPTH POCK NAME L O G	COVERY	CEMENTA TION KIND OF BIT CASING	٦	#	,		ERVATION OF CORE	w,	TERTABLE	_	<u>N</u>
DEPTH DCK NAN	CORE	EME TI RAND BET CASE	COLOR	WEATHER	HARD	CORE	DESCRIPTION	W/	ITER PRESSURE TEST	ДЕРТН	FLEVATION
	0 = 100	0	°	<u> </u>	Ì	ပ္မ		LE	AKAGE OF DRILLING WAT	ER .	
	יינותות המחות		_	-		_			LUGEON (4min)	40 Om	338./ 🖫
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		İ					Brecciated 30ne.		'		
2-	1		ļ				Original rock, blk.LS.		<u>. </u>	2	
┦╡╟╢							original rocky some		159	1 F 1	
LIME STONE.			brn.		_		Many Coves filled by		1 1044744	3	
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					ľ		Original rock,		`	🖺	
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│ ╡ ├ ─ ₩		İ		٦			caves.				
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¹ 1 1 1 1 1 1 1 1 1							Siliceous LS.			[E . [Ī
1 ME			انوه	ŀ			Many Caves filled by			ակակակ 2	
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7,00		Ī	7.		3 /	4 3 .	Brecciated.	7 /:	<u>'</u>	-8	
0 (201			eddish brn		3 4		Solution at 18.9. 190		1 1 1 1 1		1
الخ الإن الـــــــ		[.	115	4	T	\prod_{i}	all cracks wether and	7 [[E 9	-
20 25 2			ľga		3 4		filled by seam.			20	3/8./
M	[]			1	1		▶ driller a note ◀				
12	124				'		k), 7 (substick), 3 (piece), 4 (fragment), 5 gra	IN			
1	1	ore loss		J		rd) - 5					
•	R(w		1 (114	3N) ~ 2	(asco	mposed)				

Upper Quae Yai PROJECT HOLE No R - 6 (SHEET 2 OF 5) COMMENCED Jan_ 28_1979 LOCATION Dam Right Abutment 82 0 m DEPTH OF HOLE COMPLETED Mor- 17-1979 **ELEVATION** 338 l m DEPTH OF OVERBURDEN 1 0 m COORDINATE 1682 615,0N 490 2613 E FONDISA LENGTH OF ROCK DRILLING 81 0 m DRILLED BY TOTAL LENGTH OF CORE ANGLE FROM HORIZONTAL Y Fukutake 77.32 m LOGGED BY 967 2 BEARING OF ANGLE HOLE CORE RECOVERY OBSERVATION OF CORE LEVATION WATER TABLE ROCK NAM RECOVERY DEPTH WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER Cuceon (4min) 3/8./ 🖫 40 2 Dm 200 4 3 4 20.5 Cracks wethd. and coated by wethd.material. Cracky at 21.8-22, 3 3 Supply 23~23.9, 26.6, 3 27.9. 2 4 NO LEDKAGE Solution at 23~ 23.9, 25.0. છું 28.7 3 4 . 9 3 3 4 30-Core loss. Cracks brn.and filled by seam. brnSolution Cracks at 30.25, 32.5~327, 34~35.0-₹ 3 3 4 Brecciated at 29.2, 29.5. Core loss. 3 4 3 - 6 Core loss. 36.6 cracks brn. brn3 3 Solution at 38.5, eddish 44.0. - 9 Core loss. ▶ driller's note 4 I (stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain l (hard) - 5(solt) f (fresh) ~ 5 (decomposed)

	Uni	ner	Ouge	. Yai	PRO			-00	AIC LOG OF DRILL		_		~	_	
roc	_		Dom					DE	HOLE N	.0 m					1979
ELE'	VAT	иоі			38		_ <u>D</u>			0 m					7 - 1979
COO	RDI	NAT	1 <u>682 (</u>	615 ON 4	90 2	2613	Ε	LE	NGTH OF ROCK DRILLING 81			ILLED E			DISA
				ZONTAL		90	-	TO	TAL LENGTH OF CORE 77	32 m	LO	GGED E	Y _	Y Ful	kutake
BEA	RING	G OF	ANGL	E HOLE						7_%					
_	KAME	١,	ER.	¥ ≥å o		100	T		ERVATION OF CORE	WAT	ER TABL	E1	 احســــــــــــــــــــــــــــــــــــ	_	NO.
ОЕРТН	POCK N	001	CORE	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER	HARD.	COTTING	DESCRIPTION			SURE TEST	-	DEPTH	ELEVATION
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4		Ź				\vdash		-	Core loss. Cracky at 37~373,	! '	`			<u> </u>	
14		<u>}</u> -			ĺ				38.7~390,39.1~40.0,40.7					-1	
=		;-			١.				~41.0, 42.7~43.1, 4425~					₽ i	
2-		-			brn			<u>ا</u> ا	44.5.	200				E 2 .	
			ИШИ		ı		3	4	core loss at 43.05~43.1.	6				այրուդուր Ա	
3킄			伽州		tis/		ŀ				7			E-3	
1	ŀ		W		reddish	3				1 1		Supp	eg	استأد	
1					`				Bellow 45.0 ^m redrilled					4	
		3			1	İ			(new hole). 450		.	NO LE	а <i>каде</i>	F 4	
չումումումումումումումումումումումումումո		·	2011						Generally good,	7	11	1		E-5	
6-3		\mathcal{H}			919.		_		butall cracks brn.	:				6	
		5	ЖШ		1		2	3	Solution at 45.5~					F	
7 =	. ;	·\	/////////////////////////////////////		brn				45.8 , 46.4 ·	0/				E 7	
-	ا ج	3							confu cone and	1 10	1 1			سانساسط 8	
8-4	STON	5	4						Cracky zone and		3	'		E a	<u> </u>
		汀			_:	۸	,	ا ہ	cracks brn.					F 1	1
8-11	SANO	\mathcal{L}	7		brn.	4	4	5	Solution at 47.7, 49.2,49.7.					9	
	S	\mathcal{H}	XIIIII						47.6,47.7.		,				
50-		$\cdot \square$	7	į					50.5		-	++-	 	£ 50	
[.		\mathcal{H}							Cracks brn., but					Ē.	
]]	S	5	ЯШ						seam not remarkable.]]]		E 1	
2-3	20	$\cdot \square$	ЯЩШ						Solution at 50.6~51.0					2	
	careous	\mathcal{H}			913.			3	529-530	691	<u> </u>			F I	
3-1	ca	34			a			٦	Cracky at 51.2~51.8,		1 1			3	
1	Cal	$\cdot \square$	XXIIII						53,4~53.6.	`	ا ا			Ē.	
4-	٦	\mathcal{A}	(44)						CA 4					4	
		\mathcal{H}							Many cracks and						
5-		\square			reddish brn.	3	3	5	filled by Seam.		++	┩╌┞┖	$\vdash \downarrow$	5	1
4	- [\mathcal{H}		ſ	2	~	٦	١	55.8						' 1
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9 100 100 100 100 100 100 100 100 100 10	-	\Box						4	Seam not SoremarK -able:	t				7	
		\mathbb{H}			Ę.			1	Solution at 57.5,	Toct					
8 7		5			8				58~58.3, 60.6~61.0,	8		††		E-8	
	-	Σ						-	Cracky at 56.6-56.85,		`			E _	
ի Մորով		3-1		l	' <i> </i>	1			57.6~57.9, 60.2~60.5.		1 11			F 9	
60		H					ļ							60	278.1
		E	K. R			1	•	†	> drifters note 4						
		Ł	り切り	Core loss					ick) 2(substick) 3(piece), 4(fragment), 5 grain 5(soft)						
			•	HQO		1 (1			composed)						

			PRO				HOLE N	to R-	6 (SHEET 4	or 5)	
LOCATION	Dam	Right			n†	DE	PTH OF HOLE 82	. o m	COMMENCED	Jan _ 2	<u>8_1979</u>
ELEVATION			38, 1					<u>0</u> m	COMPLETED	<u> Mar - 1</u>	7 - 1979
COORDINATI					_		NGTH OF ROCK DRILLING 81	<u>0</u> m	DRILLED BY	FON	DISA
ANGLE FROM					_			<u>32</u> m	LOGGED BY	Y Fuk	utake
BEARING OF	ANGL	E HOLE	_			-		_7_ %			
DEPTH COCK NAME	E	A NO P	-	95	T 4	085	ERVATION OF CORE	WATER	TABLEAA-		3
DEPTH CK NAI	CORE	SEMENT TION KIND OF BIJ CASING	COLOR	HE	HARD	CUTTING	DESCRIPTION	WATER	PRESSURE TEST	1 06PTH	ELEVATION
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60m	0 ↔ 100		<u></u>		<u> </u>				LUGEON 50(Vmin	40 6 0m	278./ 🖫
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1.4 1.5	24		00				61.0			F	
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4 5			brn.			5					
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14 17	WW				╁	-	63.75			E_4	
	7777J						core loss. 64,75				
5- []	12									5	
			7.					<u> </u>			
164 13			brn.	3	3	5]]]]		Ē-6	
1 4 13							66.75		· I └ - I ·		
1745							Core loss.67.4	'		E,	
1 12/2								🚛		I₽I	
Later reguls SANDSTONE.			- 1				Many Cracks and filled.	7est		E 8	
1 481	2111111						by seam.	1 1	Supply	# I	ŀ
							Brecciated at 6/75-62.0,	100	NO Leakage	9	
취하다		ļ	İ			Ì	89~70.25 (recement).				
70 - } 	4		İ				Solution at 61.5,63.7,			70	
-]	انہ				67.8, 71.2~71.5, 74~74.2,				' I
l 네었던		1	brn.	3	3	5	75.7.			luuluul	
Calcareous			1	J	٦	۲	70,7,		$ \cdot \cdot \cdot $		
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		-	\dashv	2	_	<u> </u>	Core loss.	77		F	
		ŀ		3	3	5	Corn Page			5	
		F	-		-	5	Core loss.				
64 24		-	\dashv		3	2	76.0	╼┼╂┽╌	┸┤╼┤╼┤	- ₽6	[
			\cdot		3		Cracks wethd.,but no seam and no solution.		1 1 1	F-	
7-1 5-17			9.6	3	2	3	Cracky 30ne at 77.5-77.7		11111	-7	
				ļ	۱ ٔ		cracing fame as 1 no 1 mil	0.	1 1 4 1	F. J	j
			\dashv	_	3-2	7	<u>Core 6055.</u> 78 3	9		8	
= }-#			20				Cracks wethd., but no	[4]		Ē.	
9- }-#			brn gry	3	3	4	seam -	7		-9	
[] []		1	brn				Solution at 78.4-790.			F	
80 1 50	1 1/1 1 1/1				1		h drillers mare d			<i>⊧ 8</i> 0.	258./
					1	1 (51)	b driller's note 4 ck) 2 (substick) 3 (piece), 4 (fragment), 5 grain				
12	i κΩ΄	tore loss] 1 (h		5 (soft)				
	<u> </u>	(QD		1 (1	esh)	5 (dec	omposed)				

Upp	er	Quae	Yaı	PRO)JE	СТ			HO PKI						٤.	F 5	
LOCATIO			Right A				DE	PTH OF HOLE			0 ,						<u> </u>
ELEVAT	ION			8				PTH OF OVER			0,						7 -1979
COORDII	NATE	1682	615.0 N 49					NGTH OF ROO						LED			DISA
ANGLE	FROM	M HOR	IZONTAL	_	90	•		TAL LENGTH			32 n					Y Ful	
BEARING	G OF	ANGL	E HOLE			_	CO	RE RECOVERY	•		7_2					-	
_ KE		Α,	5 . u					ERVATION OF CO	RE			-					z
DEPTH ROCK NAME	001	CORE	CEMENTA TION KIND OF BIT CASING	ő	35	ESS	N.						TABLE		, .	i DEPT#	ATIO
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		183			ĺ	Ī	f (ntic	4) Z(substick) 3(pier	e). 4 (fragment). 5	Grain							
	1//	יואו	cora foss			l (ha	rd) ~ 5										
		L #	:00		l (fre	sh) ~ !	5 (deca	mposed)									

	Ha		0	V				.00	AIC LOG OF DRILL		
10	CATI	per		ie Yai Right A						O R-7 (SHEET 1 OF 2	10 1070
	EVAT		<u> </u>			7 n	_			O m COMMENCED Jan 4 m COMPLETED Jan -	
			1682	6627N 49					NGTH OF ROCK DRILLING 34		ONDISA
				IZONTAL		90	_				Fukutake
				E HOLE	_		-		_ 	85 m LOGGED BY Y 6 °	Lakatake
					\equiv				RVATION OF CORE		
ΙΞ	POCK NAME	ي ا	# A	AT NO ON	 -	Œ.			TATION OF CORE	WATER TABLE	<u> </u>
БЕРТН	Š	10	CORE	CEMENT TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CUTTING	DESCRIPTION	WATER PRESSURE TEST	DEPTH
<u> </u>	8		_	5 * 80	ö	ΧE	ž	55		LEAKAGE OF DRILLING WATER	, II
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3-		7-4	KKM I						Remarkable solution	Leakage :	3
3		二		-		1	ł		cracks at 3.7~4.25,		
4									5.0 , 5.5 , 6.0 , 7.0 , 7. <i>1</i> 5,		•
] =		1							7.6~7.7.8.2,10.9~11.1,		
5-									11.5-12.0 , 13.15-13.4 ,	Supply	5
1 -		 							14.6~14.8,170~17.2.		
d-		$-\mathbb{I}$	1114		į	3	2	3			3
-			XXXIII								
7-		<u> </u>			7.					NO Leakage	7
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~~		— <u>II</u>	7 N			1	1	<u>+</u>	▶ driller & note 4	<u>, , , , , , , , , , , , , , , , , , , </u>	. 01 , 00-7
								j 1 (s1	ck) 2 (substick) 3 (piece) 4 (fragment), 5 grain		
		1/	^ <u>\</u>	core loss		Ī	1 (ard) -	5 (satt)		
			<u> </u>	RÇO		1 (fi	esh) -	5 (dec	omposed)		

	Uı	pper	Quae	e Yaı	PRO)JE(HOLE			2)	
LOC			Dam	Right				DEI		5 0 m		_	
ELE	VAT	ION		476	7	п	1	DEI		0_4_m	_	n -14	- 1979
COO	RDII	NATE	1 <u>682 (</u>	627 <u>N.</u> 49	0 0	62 <u>9</u>	Ē	LE.	NGTH OF ROCK DRILLING	4 6 m		FON	DISA
				ZONTAL		90	•	то	TAL LENGTH OF CORE 3	4 8 5 m	LOGGED BY	Y Ful	cutake
BEA	RING	3 OF	ANGL	E HOLE				СО	RE RECOVERY 9	96_%			
	ME		₽.	r F					RVATION OF CORE		TERTABLE 1		ž (
ОЕРТН	ROCK NAME	001	CORE RECOVER	SEMENTATION TION KIND OF BIT CASING	COLOR	ξŞ	ESS	?E	DESCRIPTION	1	TER PRESSURE TEST	рертн	ELEVATION
=	POC.	~	, M	CEN	ខី	WEATHER -ING	HARD	CORE	DESCRIPTION	1	KAGE OF DRILLING WATER	۵	1 I
20m			D → 100							 -		40 20m	2567 🖫
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			ZIIIII			Ì	$\overline{}$					F]
'=		\otimes	/						Fault zone.			Ē'	
Jul		$\otimes $							somewhat recement.	1		F _	
2-7		⋘							24-24.7 reddish 5H.	1		E2	
		\otimes					4			1 1		րումուսիուսիունումունումումումումումումումումումումումումումո	1
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1 🗐	Ę.	\otimes	/ 11111			}				11		Ē	1
5-3	LIMES TONE	∞										F-5	
=	7	XX	ЖШ									E	
6-7	ES	\otimes	WW I									E-6	
1 🗐	3	XX	XXIII						27. <i>0</i>	11	1 1 1 1 1	E	1
7-	7	\propto	144			 		3		\dashv \vdash		E 7	
=			14111						- 00 but		┤╎╬┦		
#4	Dolomitic	T	334						Generally good, but		Supoly	արուրույլ B	
1 4	71.1	, 4	44()			ļ			solution cracks at			E	ļ ļ
9	100		ИИIII						270, 2925, 30.2~304,		No teakage	E-9	
	20	1	WW.						34.5, 35.0.			F	
30-	3		11111						Breccia at 33.3~33.7.			30	
=			////////		gry.				Breccia at 60.0436.7.			_	l l
14						2	2					E-1	i l
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		K	图图	_			ļ		tick) 2 (substick) 3 (piece), 4 (fragmant), 5 gi	ain.			
			ļ .	- core loss		1			5 (ach)				
			ъ	- BÓD		1 {	iresh) -	~ ə(de	composed)				

	Her	or	Quqe	Yaı					NO LOG OF DRILE			_	
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	EVAT		<u> </u>		6 7		- n			_0_ _m _25_m	COMPLETED JO		
			E 1682	7262N 4			_		NGTH OF ROCK DRILLING 43			FOND	
				ZONTAL						35 m		Fuk	
				E HOLE	_		_			.6 %	LOGGED BY		
\Box	W	T	T .		Г				ERVATION OF CORE			1	
	POCK NAME	0.0	CORE	NO S	æ	Œ.,	,	(5)		WATER	TABLE	E	ELEVATION
DEPTH	ž	7	CORE	SEMENT TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CORE	DESCRIPTION	WATER	PRESSURE TEST	DEPTH	. ₹
<u> </u>	¥			3	٥	3	Ì	03		LEAKA	GE OF DRILLING WATER	ļ	
O/n	↓	<u> </u>	0 →100 0 →100			<u> </u>	<u> </u>			<u> </u>	LUGEON 50(4/m(n)	Om.	426.7 🖫
] _	8.	Δ]	Ì				Boulder (CGL) and				
1-3	0.	ΙΔ.		}					overburden. 1.25			<u> </u>	
-		-			_	\vdash	<u> </u>			1 T			
2-		00	144						CGL (gravels; round			E-2	
=		0	<i>[</i> []						to Subangular).			1 2	
3		00								┝╁┥	Supply	3	
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4-		00		· ']		by seam.		Leakage	-4	
5 6 7 8 9 70 1 1 2		0		[ŀ			Matrix wethd and color			rteret Let	
5	1	0 0	4411	Į.					change from red to			-5	
		٥	1111111						yellowish brn.			Ē	
6.		00				İ			•			E 6	
		0	///				! :		Cracky at 4.~4.2, 5.8,			E i	
1 ,]		00	741IIII						6.5~6.9, 7.0~7.25, 7.9~			Ē.,	
"		0	77]]]]]						8.1, 9.0 ~ 9.35, 10.0 ~ 10.35,	1		7 8 8	
ق ا		0 0					•		11.0 ~ 120, 13.9 ~ 14.5, 15-16.0	! 1 1		E.	1
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["]	TE	0 0 0	##		brn	i			17.0~17.1 (\$0ft) 18.9~19.1 (").				
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│ '∄	8	0 0			18				Solution at 18.2~18.4,			<u>uduu</u>	
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		ļ				1	Ī	1 (**	▶ driller's note 4 ick) 2 (substick) 3 (piece) 4 (fragment) 5 grain				
		Ł	य ध्र	Core loss			1 (1		5 (soft)				
			<u> </u>	RQD		1 (1			composed)				

U	per	Qua	e Yaı .	PRC)JE(CT		HOLE I	N	o R	- 8 (s	HEET	2 OF	3 1	_
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ELEVATI	ION		42	6 7		1	DE	PTH OF OVERBURDEN _ 1	1	25 m	COM	PLET:	ED Jo	<u>n - 22</u>	<u>- 1979</u>
COORDIN	NATE	682	726 2 N 4	90	139	Έ	LE	NGTH OF ROCK DRILLING 43	3	75 m		LEDE			ISA
			ZONTAL			-	то	TAL LENGTH OF CORE 44	4	35 m	LOG	GED E	Y	Y Fuk	utake
BEARING	G OF A	NGLI	E HOLE						8	6_ ²,					
NAME	, ای	2	A NO O		a.		,	RVATION OF CORE	4	WATE	RTABLE	1	۸	_	Š
DEPTH CK NAN	c S	RECOVER	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER ING	HARD NESS	CORE	DESCRIPT ON	1	WATE	R PRESSU	RE TEST	•	DEPTH	ELEVATION
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4	o a					ĺ		Matrix not Wethd.		1		1.		գ «	
5 - 1		鄉側						CracKs Wethd.and		-		Leak	1196	E-5	
4	o oil							filled by Seam.				il		Ę. :	,
6-4	o	1111						Shd gone (recement)	١			1		6	
4	0 0	111						at 23.5, 24.0, 26.0 - 26.3,				1		<u> </u>	
7-	o	14411						27.0 ~27.35, 28.5 ~ 28.6,						ահասկասկան 8	
	o oli	111111						43.8~44.2.	I					E-	
8-3	0 ∦							- 4 4 -4 407 000	l		. [_]_]			E-8	1
4	o all	1444						Solution at 28.5-28.6,	'					E	
9-1 4	0 1			~				29 8 , 33.8~34.7 , 37.4 ,	ŀ					E-9	
1 4 1	001	1414		brn				38.6~39.0, 42.7, 43.8~						E	.
30-1	o∦				1			44.2.	ı				1	E-30	
	o d∄	1111		3	3	3	3						11		
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		<u>t</u>	- 800					ecomposed)							

<u> </u>	pper	Qua	e Yaı	PRO)JE	СТ		HOLE	No R - 8 (SHEET 3 OF 3)
LOCATI		Dam	Right		tmer	<u>i</u> t			O m COMMENCED Jon 17 197
ELEVAT		1500	426		70.5				25 m COMPLETED Jan - 22 - 197
			726 2N 4			-		NGTH OF ROCK DRILLING 43	
BEARIN			ZONTAL		90	-			35 m LOGGED BY Y Fukutake
	I I	ANGL	E HOLE						_6_;;
PT H	5	RE	¥Np 5	-	<u>۳</u>			ERVATION OF CORE	WATER TABLE — N I I I I I I I I I I I I I I I I I I
DEPTH ROCK NAM	10	CORE	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CORE	DESCRIPTION	WATER PRESSURE TEST
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400m	ļ <u>.</u>	6 → 100 หนามปั	<u> </u>	<u> </u>		_		· · · · · · · · · · · · · · · · · · ·	LUGEON 50 (4/min) 40 40m 386.7
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o I		ШШ			<u> </u>				
	12	A N			1	1	†	▶ driller ≤ note €	
	P	图》	easa le					ick), 2 (substick), 3 (piece), 4 (fragment), 5 grai	•
		<u> </u>	Core loss		10			5 (soft) composed)	
			RQO				- (00		

Upper	Ouac	Vai					SIC LOG OF DRILL		_		
LOCATION		stock, left			CT				- 1 ISHEET 1 0		<u>.</u>
ELEVATION		403			m			0 0 m			
COORDINAT	E 1682						NGTH OF ROCK DRILLING 13	<u>3.0</u> m			
ANGLE FRO								10 0 m	DRILLED BY	FON	
BEARING O					_			000 m	LOGGED BY	Y Fuki	Take
	_ ≿	< ₁	Γ				ERVATION OF CORE	T		1	
DEPTH ROCK NAME	CORE	CEMENT TION KIND OF BIT CASING	ő	# E	, ,	ı Z		i	ER TABLE	DEPTH	Į.
	1 9€	F 5 5 5	COLOR	WEATHER	HARD	CUTTING	DESCRIPTION		ER PRESSURE TEST		ELEVATION
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i i				İ	1	†	Brown Silty clay with	† TI	50 4 min		<i>403.2</i> ∓
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\ \frac{1}{2}\ \rangle \rangle \rangl			7.				fragments of Calc. SS.			Ē1	- 1
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3.	Щ				<u> </u>			8		E.	Ì
∄ಟ ⊱	ИШШ						all cracks are open cracks]	ամուսիականասիությունունու	
Eareous SANDSTONE. CGL. Colored SANDSTONE	Д.		8				Couted with brown seam.				
1 4 2 2			Bry.		ł		Cracky zone of deep			E'	
5-1 2 2	иш	,	<i>₹</i> 0		ľ		Wethd. Calc. SS. at			Ĕ. 1	- 1
1 3 51			brownish gry				3.6~ 4.0.	†	Supply	F.	
alamuluu alamous Tiriiri	XXXX		nis/			3	4.0 • 4.0 •		Supply	E-6	
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790		-	- [of calc.ss. size 10-60 "".			F	
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			ı				all cracks are open cracks,				
SANDSTONE			ı				Coated With brown Seam		├─╿┠┤╶├─	卡 /이	1
135		ł	وٰ ا	- 1			except for one dissolved				- 1
		1	272	İ			Cracks at 11.75.			السلس	
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careous			- 1		ļ			1=24.6		E ²	
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4-]	/////////////////////////////////////		1	ĺ		2	14.3		'	E-4	ĺ
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▎⁵╡▏Ο∦	WHIII			ı	ļ	-	Cracky zone at 15.8~			Ę. 5	ľ
			-		1		16.1.				
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18800		1	011			-	Deep wethd. at 14.3~	2		E-	ļ
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	1,1		1		1		F driller's note 4			<u> -</u>	
6	1四。	are loss	į		,		(), 2 (substick), 3 (piece), 4 (fragment), 5 grain				
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						•	•				

	line	ner.	Quae	Yai	PRO			.00	HOLE A		-		
LOC				stock, left			Ç.	ne.).O m	1 (SHEET 2 OF		
		ION			3 2		—			0 m	COMMENCED !		
coc	RDI	NAT	1682	3306N 49	90 7		_		NGTH OF ROCK DRILLING 137		DRILLED BY	FONE	
ANG	iLE	FROM	A HORI	ZONTAL		90	•			0 m	LOGGED BY		
BEA	RIN	G OF	ANGL	E HOLE			_			0 %	1000151		
	w		>	-		-			ERVATION OF CORE				
ОЕРТН	NAME	50	CORE	SEMENT, TION KIND OF BIT CASING	Œ	# 13	SS	ű		WATER	TABLE	- ᡓ	ELEVATION
l ac	ğ] -	υ χ Ψ	SEM KRWI BIT CAS	COLOR	WEATHER -ING	HARD	CUTTING	DESCRIPTION		PRESSURE TEST	DEPTH	2
			G +100		-	3	<u> </u>	75	-	LEAKAC	E OF DRILLING WATER		_
2011		 	mini				┢			; 1 	LUGEON (/min)	40 20m	383.2 🖫
[=		00			,				Ordinary Cracks, no brn. Seam at 20.0 ~20.5.				' Î
1-4	.79	0	,			4	4	3	Recemented breccia are deep			Ē. 1	
	Ū	00	#				İ		wethd.from 20.5~21.0. 21.25 ~22.0. 22.0			E	
2-3		-	ЖШ						~22.0. 22.0	(Q		E 2	
հկ.ուկումուսիուկությունակումուսիու		ŀ∑	иШ							=/4.		արագրույրությունը Տ	
3-4		\vdash					ŀ		all cracks are open			<u>E</u> _3	ļ
4		\square							cracks, no brn. seam,				
4-4		1.51	444				ĺ		except for a few dissolved	}	-	14 J	1
4		$ \cdot \square$							Cracks at 36.0-36.2,				
5 = =		건	WIII						38.6~38.9.			<u></u>	
1 4		:	HHIIII	İ			İ		900 90171		14. L. d.)	F	
6-3		15	11) 								Supply	Ē.	
		ŀ∏	WWW						Some open cracks are	'		E	
7 [ഥ	WW						filled with brownish grey	3.3	No Leakage	\$ E 7	1
∄		{-}]	J				clay at 24.52, 25.65 and			<u> </u>	
8-3	u:	\Box							29.75.	77		E a	
4	ANDSTONE	5	ЖЖ		l	ı			Crantu para at 010		1111	<u> </u>	
9-	5	\Box				1			Cracky zone at 31.0~		1111	9	
4	9	$ \cdot $	ИИШ		ł				31.3.				
30-	⋛	3	111111		70				Soluable caves at		╌╂┱┤╌┼╌┼	- E -30	Ì
	S	5		-	974	- 1			<i>35.4</i> ·			<u>E</u> .	Ì
1	ĺ	$ \cdot \Box \rangle$	141411		₹		2		Crystalline Caves at			£,	
=	1	1	HHIII	İ	RIB	3	3	2	·			F	
3 1 1 1	છ	:	ЖЖ	-	04				<i>37.35~37.5.</i>	3.2		ا السلسانية مناسيانية	
- 4	reous	51			×	ļ				h			
3 - 3	7	$\cdot \square$		1	11.5%					77		E_3	
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4-	Calco	\mathcal{H}			brown	İ			i			E-4	
	$^{\sim}$	5						i				E	j
5 - 4	- 1	Δ		ļ		ļ				- 1	- - - -	-E-5	1
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6-4						j						E 6	
4	ĺ	\mathcal{H}							Ī				
7-	ł	\mathcal{H}				ĺ		İ		4		E, 1	
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4		5		ļ			1						_ [
4 o =		Σ¥	MANIT				<u>. l</u>	\perp	40,0			40	363.2
						•	1	†	Defillers note 4				
		1	79 R	core loss			100		ck), 2 (aubstick), 3 (piece), 4 (fragment), 5 grain 5 (soft)				
			1	ROD		1 (1			owbesed)				
									•				

								.OC	IC LOG OF DRILL I			~	
LOCA)ude Pen	stock let		JE(ne:		00 P -	COMMENCED M		
ELE			1 611			п	~			3 O m	COMPLETED J	n ۱0	- 1979
			1682	330,6N 4			-		NGTH OF ROCK DRILLING 137				DISA
				ZONTAL		3 0	_) O m	LOGGED BY	' Fuk	ıtake
BEAR	RING	OF	ANGL	E HOLE			_	СО		0 -			
	ا سِ		>-	∢ "				OBSE	RVATION OF CORE		****** * * * * * * * * * * * * * * * *		ă
ОЕРТН	NAME	0	CORE	ENT POOL SING	OR.	H G	ESS	E ING		WATER	PRESSURE TEST	DEPTH	ELEVATION
8	Š	-	οğ	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CORE	DESCRIPT ON		E OF DRILLING WATER		7.1
4 0m	-	-	0 = 100			5	-	-		 	LUGEON (Umin)	4 Dm	363.2 🕆
2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 0 1 2 3 4 5 6 7 8 9 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Calcareous SANDSTONE.				gry ~ brownish gry.		2	2	Good core. Open cracks are Coated With brown seam at 43.6, 43.9, 44.5 46.64, 46.9, 47.36, 47.7, 49.0, 49.6, 49.8, 55.62, 56.0, 58.0, 58.1, 58.75~60.0. Dissolved crack is coated by brown seam at 58.5. Ordinary cracks. no brown seam, are common, Cavernous zone at 45.3, 46.0, 55.0, 55.3, 58.65, 58.9.	Lu=2.7	Supply M. leakage	ուրաարություրությունությունուրություրությունու	
[<u>20</u> 3		<u>., </u>	N K	1		1	1	+	> dritter's note ◀		· · · · · · · · · · · · · · · · · · ·		
								1+(stick) 2(substick) 3(piece), 4(fragment), 5 grain	đ			
				— care loss		١.			~ 5 (sot()				
				— ROD		1	(usean)	2(0	ecomposed)		the transport was the first		

PROJECT HOLE No P-1 (SHEET 4 OF 7) Upper Quae Yai 140 0 m COMMENCED May - 25 - 1979 Penstock, left bank LOCATION DEPTH OF HOLE 403<u>2</u> m COMPLETED Jun - 10 - 1979 __3.0 m **ELEVATION** DEPTH OF OVERBURDEN FONDISA COORDINATE 1682 330 6N 490 750 0E LENGTH OF ROCK DRILLING 137 0 m DRILLED BY 140 0 m ANGLE FROM HORIZONTAL LOGGED BY Y Fukutake TOTAL LENGTH OF CORE CORE RECOVERY 100 0 % BEARING OF ANGLE HOLE OBSERVATION OF CORE WATER TABLE -₩ RECOVERY DEPTH WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON SO(4min) 40 6 om 343.2 60m Good core. all cracks are open Cracks. Coated With brown Seam, but one open brown clay at 61.5. 3 3 Supply NO LeaKage 68.0 - g 374 Good core. open cracks are coated è With brown Seam at 68.55, 68.87, 69.57, 69.78. 818 70.05. 70.25. 70.33 71.55. 71.7. 71.92. 72.0. 72.52. 72.75. 72.9 , 73.0. 73.27, 73.48. 73.73 73.95. 79.0. brownish - 2 7932.794.79.72.800. Ordinary cracks, no brown seam at 74.0~ 79.0. 2 2 Covernous zone at 73.75~74.3. Calc SS are deep Wethd. at 754~76.0. - a 323.2 80.0 driffer a note 4 I (stick) 2 (substick). 3 (piece). 4 (fragment). 5 grain 1 (hard) - 5 (soft) 1 (fresh) ~ 5 (decomposed)

ilanor	r Duas	Va.				.00	IO LOG OF DRILL				
LOCATION	r Quae	tock, left)JE	<u> </u>	DE		0 m	COMMENCED		_
ELEVATIO			3 2		_				COMPLETED 2	Tun - 10	1 - 1979
COORDINA					_		NGTH OF ROCK DRILLING 137		DRILLED BY .		DISA
ANGLE F				90	_			 Om		Y Fuk	utake
BEARING	OF ANGL	E HOLE			_			20 -			
l w	7 >					OBSE	RVATION OF CORE			1	z
DEPTH ROCK NAME	CORE	CEMENTA TION KIND OF BIT CASING	HC.	ű,	55	<u>2</u>			TABLE	DEPTH	ELEVATION
ä ŏ	7 2 2	E KITTE CAS	COLOR	WEATHER	HARD	COTTING	DESCRIPTION	ľ	PRESSURE TEST		ELE
	0 100			3	-	- 0		LEARA	GE OF DRILLING WATER LUGEON 50(4/min)	40 80m	323.2 ♀
80m	ร ไยเสนก็					-			50(4mn)	# / / / ·	2525 4
1 - 1		1			1		all cracks are open		111111	<u> </u>	1
14 1				ŀ			Cracks, Coated with			անամաս	
-							brown seam, except for	'		Ē	
2-3							a few dissolved cracks	0		E 2	.
alundardundundundundundundundundundundundundund					1		at 89.13, 89.6.	67=	11111	Ē	
3-4		· •						7,		<u>-</u> 3	
4 1							Calc. SS are deep	1		F	
4-				-			Wethd at 85.0~85.72,			E-4	
4	HINNI -				ļ		89.0-90.13, 91.0-91.7.	\	1 111 1	<u>F</u>	1
5-4								 † †	- - - - 	<u>-</u> 5	
										F	
6-4									Supply	E-6	
4				ļ	1			, ; , ,	- {	<u>E</u>	
74 13								15	NO Leakag	e = 7	
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SANDSTONE								l n		E a	
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Sign			gry.							Ē-9	
3 5 5										Ē.	
90 8			4		-	ļ		<u> </u>		_E_90	
[You] ()			215					!#!		E	
1.3 13		<u> </u>	/M	1	1	Ì '		1 [1]		E,]
			brownish					'		փամաս	
Calcareous			7	ŀ			92.0	4		£_2	
								וזאו ו		£'	
a fca				1	1		open cracks are coated	1 -31	.	E _	ነ ነ
				ĺ			With brown seam at 92.38,	<i>n</i> 7		Ē-3	
					-		93.8-94.0, 94.9, 95.32,			E	
4 -				ĺ			95.67-96.1, 978-98.2.	f 1	5 1	F-4	
4 3	(- \t\\)	į į		ļ	ļ		Dissolved cracks are	ļ <u> </u>		<u> </u>	}
5							coated with brown to		┊╸╽╺╽┈╢╍┞╸ ┥	<u>-</u> 5	
5-4 8-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1							reddish brown seam at			F	
6-4							92.73.94.7, 96.8-97.05,			E 8	
4		[l	f		97.58 - 97.78			<u>-</u>	l l
74							Cavernous zone at	2.7		-7	
4 1							94.25-94.50.	[Ē-	
[48	5-10HIII						Calcureous SS are	77		E-8	
4							deep wethd. at 98.3~			1	
[[])	1		100.0.			- 9]
		1		ĺ						<u>.</u>	
100	←HIHIH)				<u></u>	لــا	100.0	<u> </u>		[10 o	3032
	N N			ŧ	ł	t	♦ driller s note 4				
		- core losa			1		tick) 2 (substick), 3 (piece), 4 (frægment), 5 grain				
	Ł			1,,			- 5 (saft) :composed)				
		- RQO		, (116971)	J (di					

ı	وول	er	Quae	Yai		JJE			HOLE N			7,		
LOCA				tock, left				DE		0 m	COMMENCED L		_	
ELEV	ELEVATION 403 2								PTH OF OVERBURDEN 3	COMPLETED Jun - 10 - 1979				
cool	COORDINATE 1682 3306N. 490 7						E	LE	NGTH OF ROCK DRILLING 137. 0		DRILLED BY		DISA	
ANG	ANGLE FROM HORIZONTAL						•		 -	0 m		Y Fukutake		
BEARING OF ANGLE HOLE									CORE RECOVERY 100 0%					
OBSERVATION OF CORE											,			
DEPTH	OCK NAME	00	CORE	CEMENTA TION KIND OF BIT CASING	Œ	WEATHER	83	S Z		WATER	TABLE	DEPTH	ELEVATION	
#	Š	J	S	CEMENT TION KIND D BIT CASING	COLOR	ΙŠΞ	HARD	CORE	DESCRIPTION		PRESSURE TEST		LFV	
	2 100						I	75		LEAKAC	E OF DRILLING WATER	_		
10 om		-	เกเหน้า				<u> </u>			3	LUGEON (Umn)	40 /() Om	303.2	
14		\mathcal{H}												
1 4		Н	1414						Open cracks are coated			ուդուդրուգրու Խ		
1 4		H	YVXII.						With brown seam at	j		ш	. 1	
2-		5				İ		1	100.0~105.0, 108.0~115.0.	9		E-2	İ	
1 4		$\cdot \square$	ИИ						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2.6		Ē,		
2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 /	Ì	긘	HHI						Ordinary cracks. no	<u>u</u> =		Ε,		
		\mathcal{H}		ſ					brown seam at 105.0	7		3		
[ı	\mathcal{H}	HHIII						~108.0.			Ε.	İ	
"]	ļ	5	KKK					ĺ				Ē 4		
1 3	- {	$\cdot \square$		İ					Solualle caves at			عسط		
5	-	Σ	KKK						109.9 ~110.0-		- - - 	E-5	1	
1 1	İ	7					ŀ							
6-3	İ	\mathcal{H}	KIKIMI							- 111	Supply	E-6	.	
=		\mathcal{H}	4411							. 1 1		į.		
7 1	۱۶	5	KKK K				ŀ	ا ٍ ا		0	Vd Leakge	F 7		
= 1.	SANDSTONE	$\sqrt{}$	WW				Į .	2		=2.0		F		
8-3	5	Σ					İ			2		E-8		
1	۵l		44HI	i	818.					7		E		
9-3	≥	\mathcal{H}	YXXIII		8	3	3					E.s		
4	ZI	3	141411			•						<u>E</u> _		
1/0-3		\mathcal{H}	MM)								_	//o		
4		5	WHI	1	ŝ					†		E		
14	5	Σ	ЖЩI	j	72							E 1		
1 4	20	<i>?</i> []			brownish							Ē.		
1 2 3	2	H	ИЩ		ا2							2		
۱ <u> </u>	Calcareous	\mathcal{H}		į						2.0		E *		
]]	ġ.	5]]		= 177		E_3		
, ,		Σ	4444		ļ					7		E,		
]									•			E.		
📆		\mathcal{H}	XXXIII		-							E⁴		
	- 1	\mathcal{H}		ļ	ŀ				//5.0			E		
հումուսիսակարհակարկարկումուսիսակա		5		1					Open Cracks are coated	- 	╶╎═ ┼╏╎┈├┈┟╸	₽ 5]	
4		5		į	ļ				•			-	}	
6-	- }	\sum_{i}			į				With brown seam at	[1]		E-6		
-	- 1	\square	伽Ш		l				115.0~118.14 , 119.5~120.0.			F .		
7념	- [2		[[Dissolved cracks at	1.8		7		
4	- 1	34	#I#III		-			3	118.45 , 118.55 , 119.25~	- [u]				
8-	- 1	H			J				119.5.	77		8		
4	1	5	HHH!	1	1	Ì			Crystolline cave at]] []]]]	<u>. </u>		
9 = =		5							//9.57.			£_9		
1		51	WW.	ŀ					**			E		
/20 1	\perp	<u>·∑</u> [/20.0			E/20	283.2	
		Ĭ.	N R			1	1	1	▶ drillers note 4					
		K	163 E						ick), 2 (substick), 3 (piece), 4 (fragment), 5 grain					
	core loss								5 (salt)					
RQD 1							1 (Hesh) ~ 5 (decomposed)							

Upper Quae Yai PROJECT HOLE No P-1 (SHEET 7 OF 7)													
LOCATION Penstock, left bank DEPTH OF HOLE 140 0 m COMMENCED May 25 IS											_		
ELEVATION 403 2													
COORDINATE 1682 330 6N 490 750									NGTH OF ROCK DRILLING 137			E0110104	
ANGLE FROM HORIZONTAL90							•			<u>О</u> п	LOGGED BY	Y Fuk	utake
BEA	BEARING OF ANGLE HOLE CORE RECOVERY 100 0 %												
OBSERVATION OF CORE											Z		
CEPTH	NAME	00	CORE RECOVERY	CEMENT, TION KIND OF BIT CASING	COLOR	표면	SS	E ING		WATER	, , , , , , , , , , , , , , , , , , ,	DEPTH	£LEVATION
ă	DEP POCK CO CO CEME CEME CEME CEME CEME CASI						MARD NESS	CORE	DESCRIPTION	}	PRESSURE TEST SE OF DRILLING WAYER	1 18	ELF.
/2 om			0 4-100		 	*	-	u		LEARAG	LUGEDN (Vmin)	1200	283.2 🖫
		¥										1	
	ļ	5							Open crachs are			E .	
]		$\cdot \Sigma$				ľ			Coated with brown seam			1	
] ,]		٠)							at 120.0-126.1, 130.6			E.	
	- 1	\mathcal{H}	HHH						~130.7, 132.0 - 134.2.	=7.5		2	
	İ	5				•			134.4-136.0, 139.0-139.5	η='		Ē.	1
	Ì									77		3	
	1	$\cdot \Sigma$	XXXIII	1]]	Dissolved cracks at			E.	
"		긷							134,3~137.3.			E⁴	
[\mathcal{H}	KMIII						0 11				İ
"=	ł	5	WIIIII						Ordinary crocks, no			下"	
[]		Σ	иШ		i				brown seem at		Supply		
"]	4	1							126.1~1290,1290~1306			E 6	
,∄	2	\mathcal{H}	XIIII						130.7~132.0 , 136 0 ~ 137.1	2		Ē_	İ
'3	7	\mathcal{H}	ИШ						/37.4~/39.0 <i>. /39.5</i> ~/40.0 .	0.6	Wo Leakage	[7]	
6 2 2 3 4 5	SANDSTONE	-57					ĺ		sheared zones with	" "	11111	Ē	1
"]	≥	$\cdot \square$	KAII		818	3	3	3		7		E-8	
]	3	?	144111			3	٦	7	gouge and breccia at	11			
		\mathcal{H}	KAKIII		isi				1296-129.7, 130.1-130.2			E-9	
	(0)	.51		i	brownish								
130	ž	$\cdot \square$	KTTIII		2				Calc SS are deep			<u> </u>	
39 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ca lcareous	?		ĺ	7			ĺ	Wethd. at 123.0~123.2.				
']	ça	:4	1	!	7				124.4~12482,134.7~135.0.			illi,	
	at	5		1	20						-		
"]	G	Σ	111	İ	818					0.8		E-2	
3		\mathcal{L}		ļ						<u>= 77</u>			
3		\mathcal{H}		j				1		7		3	
]]		5	(HIII)	1	-							Ē.	
"]	İ	Σ	#IIIII									E 4	
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5 thirdustaling	- [7]						111	 	F 5	
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6.7		3				1						E B	
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] 9-	- 1	$\cdot \square$	棚川			İ	ļ	- 1				E-9	
140		·Li		l			İ	1	140.0			14 0	263.2
<u>1777 - 1</u>		- <u>- 1</u>			ţ	 	, '	+	b drillers note 4	1.11	111111	<u> </u>	
			M P) (51)	ck); 2 (substick); 3 (piece); 4 (fragment); 5 grain				
	tore loss								5 (soft)				
				RQD		1 (fi	resh) -	5 (dec	omposed)				

PROJECT HOLE No P-2 /SHEET 1 OF 9 Upper Quae Yai LOCATION Penstock left bank COMMENCED May 1 _ 1979 DEPTH OF HOLE 180.0 m 380 8 m ELEVATION DEPTH OF OVERBURDEN __2.0 m COMPLETED May-15 -1979 COORDINATE 1682 274 2 N. 490 653 3 E LENGTH OF ROCK DRILLING 178, Om DRILLED BY FONDISA ANGLE FROM HORIZONTAL 90 . TOTAL LENGTH OF CORE 180 0 m LOGGED BY Y. Fukutake BEARING OF ANGLE HOLE CORE RECOVERY 100 0 3 OBSERVATION OF CORE CORE RECOVERY ROCK NAME WATER TABLE DEPTH DEPTH WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON (/min) om 380-8 T Overburden $\dot{\omega}$ 2.0 -2 -3 Good Core, but cracks brn. E-8 3 3 3 Į brn. É٥ 2 2 2 ₹ Eз - ค 18.0 3 2 - 9 3 360.8 ▶ drillers note 4 1 (stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain I (hard) - 5 (soft) 1 (fresh) 5 (decomposed) - R00

					C	ìΕ	OL	OG	SIC LOG OF DRILL	HOLE	
	Upp	er (Juae	Yaı !	PRC	JEC	CT		HOLE	No P - 2 (SHEET 2 OF	9)
LOC	ATIO	ON	Pens	tock, left	ba	nk		DE	PTH OF HOLE 18	O O m COMMENCED M	oy_ 1 _ 1979
ELE	VAT	ION		38	0 8	<u>11 (</u>	<u>1</u>	DE.	PTH OF OVERBURDEN	2 Om COMPLETED M	<u> 15 - 1979</u>
COC	ORDI	MATE	1682	<u>2742N 49</u>	0 6	53 3	E	LE	NGTH OF ROCK DRILLING 17		FONDISA
ANO	ELE I	FROM	A HORI	ZONTAL	_	90	-	TO	TAL LENGTH OF CORE 18	O O m LOGGED BY _	Y Fukutake
BEA	RIN	G OF	ANGL	E HOLE			<u></u>	CO	RE RECOVERY 10) <u>O</u> <u>O</u> %	,
			4.	۷.,					RVATION OF CORE	WATER TABLE	z z
БЕРТН	ROCK NAME	00	CORE	TENT TOO TOO TOO	ĕ	¥ 5	ESS	₩.E	DESCRIPTION	WATER PRESSURE TEST	DEPTH ELEVATION
1 2	Š.	-		CEMENTA TION KIND OF RIT CASING	COLOR	WEATHER-	HARD NESS	CORE	BESCRIPTION	LEAKAGE OF DRILLING WATER	
2 om	ļ- <u>-</u> -		O → 100					Ť		LUGEON (Clmzn)	±0 2 0m 360.8 ℃
3	alcareous SA	بماجلجلجلجلجلجلجلجلجلجلجلجلجلجلجلجلجلجلجل			dark gry,	2,3	2	3 - 2	Banded Structure. Very good Core, but cracks brn.	E:1=177 Supply	րավումը անավայի անականականանումը 8 9 9 1 1 2 3 1 4 1 5 1 6 1 7 1 8 1 9 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1

- 9

4 0 340.8

9.0 = n7

p drillers note 4 1 (stick). 2 (substick). 3 (pieca). 4 (fragment). 5 grain

1 (hard) ~ 5 (sett)

1 (fresh) ~ 5 (decomposed)

F WOD

DEPTH OF HOLE 190 Om 190	Upper C	luae Yai					HOLE N	0 P-2 SHEET 3 3 9
ECURDINATE (682, 2% 284,90 893) ELENATION FOCK DRILLING 178,0 m DRILLED BY FONDISA ANGLE FROM HORIZONTAL 90 to TOTAL LENGTH OF CORE 180,0 m LOGGED BY Y, Explayable DEARING OF ANGLE HOLE — CORE RECOVERY 100,0 m LOGGED BY Y, Explayable DEARING OF ANGLE HOLE — CORE RECOVERY 100,0 m LOGGED BY Y, Explayable DEARING OF ANGLE HOLE — CORE RECOVERY 100,0 m LOGGED BY Y, Explayable DEARING OF ANGLE HOLE — CORE RECOVERY 100,0 m LOGGED BY Y, Explayable DEARING OF ANGLE HOLE 15 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	LOCATION		_			DE		
ANGLE FROM HORIZONTAL 9.9. TOTAL LENGTH OF CORE 180 g m LOGGED BY M. Fundishe BEARING OF ANGLE HOLE CORE RECOVERY 100.0 OBSERVATION OF CORE ANTO INFO. 180 g m LOGGED BY M. Fundishe BEARING OF CORE ANTO INFO. 180 g m LOGGED BY M. Fundishe BY M. Fundishe BEARING OF CORE ANTO INFO. 180 g m LOGGED BY M. Fundishe BEARING OF CORE ANTO INFO. 180 g m LOGGED BY M. Fundishe BEARING OF CORE ANTO INFO. 180 g m LOGGED BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. Fundishe BY M. F					_			
BEARING OF ANGLE HOLE CORE RECOVERY OBSERVATION OF CODE ANTER DESCRIPTION ANTER DESCR								
							-	_
Solution of the state of the st	BEARING OF	ANGLE HOLE						ō
### STATE OF THE PART OF THE P		2 25 0					RVATION OF CORE	WATER TABLE 1A P
### STATE OF THE PART OF THE P	HIGH AN C	AND DE STANK) 8)	ž S	25	7 E	DECCRIPE ON	NATER PRESSURE TEST
### Supply Supply		3 8 E 3 50	[ទី	A.E.A.	4	0.5	DESCRIPT THE	LEANAGE OF DRILLING WATER
Banded Stracture. Very good core, but Cracks brn. 2 1 2 2 2 2 1 3 3 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 am	0 → 100	\Box					
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	6.	Core loss			1	(ha d)	5 (40(1)	
		L RQ0		1 ((fresh)	5 (4	ecomposed)	

Upper Quae Yaı PROJECT HOLE No P-2 SHEET 4 OF 9 LOCATION Penstock, left bank 180 0 m COMMENCED May- 1 - 1979 DEPTH OF HOLE ELEVATION 380 8 m DEPTH OF OVERBURDEN _ 2. Q m COMPLETED May- 15 -1979 COORDINATE 1682 274 2N 490 653 3E DRILLED BY ___ FONDISA___ LENGTH OF ROCK DRILLING 178 0 m ANGLE FROM HORIZONTAL 90 . TOTAL LENGTH OF CORE 180.0 m LOGGED BY Y Fukutake BEARING OF ANGLE HOLE CORE RECOVERY 100 02 OBSERVATION OF CORE DEPTH COLOR WEATHER ING HARD. WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON (E/min) 60m 6 0m 320.8 ₽ Banded Structure. Very good core, but Cracks brn. 2 3 1 ı 3 70.0 2 Banded Structure. Good core, no brn.crachs, dark but shd. as a whole. 2 2 2 > drillers note 4 1 (hard) - 5 (soft) 1 (fresh) 5 (decomposed)

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DEPTH	ROCK NAME	100	CORE	CEMENT, TRON KIND OF BIT CASING	ğ	E E	553	ING.		WATER		DE PTH	A710
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Upr	per Q	uae	Yai		JE(.00	HOLE OF DRIEE			G 1	
LOCATIO			rock, left			_	DE		O m	COMMENCED M		
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			274 2N 49			_		NGTH OF ROCK DRILLING 178			_FON [
BEARING			ZONTAL HOLF		90	-			<u>0.0</u> m 0.0=	LOGGED BY	/ Fuk	utake
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DEPTH COCK NAME	L O G	RECOVERY	CEMENTA TION KIND OF BIT CASING	8	E E				ŧ	TABLE	ОЕРТН	ELEVATION
POCK DE	<u>-</u> 5	E C	CEM CAST	COLOR	WEATHER-ING	HARD	CORE	DESCRIPT ON	į.	PRESSURE TEST SE OF DRILLING WATER	8	ELF
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5 c c c c c c c c c c c c c c c c c c c				gry ~ reddish brn.	3	3	3	Banded structure. Shd. as a whole. Some cracks brn. or Coated by seam.	97: 77 77:		հումականականականականականականականանությունը	260.8
-		2222	core loss		1		hard)	> driller 3 note 4 (tick) 2 (substick) 3 (piece), 4 (fragment), 5 grant - 5 (soft) scomposed)	.			

MOLE No. PROJECT MOLE No. P. 20 MOLE 17 or 9		Upp	er	Quae	Yaı				-00	AIC LOG OF DRILL		- '	•	
ELEVATION 380 8 m DEPTH OF OVERBURDEN 2.9 m COMPLETED May 19-1979 COMPLIANTE 1882 278 2M 400 653.3E LENGTH OF ROCK DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLED BY FONDISA DRILLING 178.9 m DRILLING 178.									DE	· · · · · · · · · · · · · · · · · · ·				1 1979
COORDINATE ISSE 274 28 490 655.3.E ENGTH OF ROCK DRILLING 179.0 m DRILLED BY FONDISA. ANGLE FROM HORIZONTAL 90. TOTAL LENGTH OF CORE CORE RECOVERY 100.0. DRILLED BY FONDISA					380	8								
ANGLE FROM MORGE HOLE CORRECOVERY DOD 0: WATER TABLE											78 O m			
BERAING OF ANGLE HOLE CORE RECOVERY OUR PROPERTY TO CORE ANGLE TABLE OUR PROPERTY TO CORE OUR PROPERTY TO							90	-		_ _				
Banded structure. Shd as a whole. 1	BEA	RIN	G OF	ANGL	E HOLE				CC		-			
Banded structure. Strict as a whole. 1990 Shd. as a whole. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able. 10-70cm breccia and cracks brn. but not So remark able.	-	M		Κ¥	4 7 % 13					RVATION OF CORE			T	z
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Banded structure. Shd as a whole. 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		Š			유 포필증	8	WEA	H.	22	Drackler - r v			ă	1 1
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Shot as a whole. Some cracks bin of coated by Seam. 1240 Shot as a whole.	1 4		5				i			Banded structure	1 11 1		Ī.	200.0
Some cracks brn or coated by Seam. Supply S	1 1		$\cdot \square$			9							F	
Shd. as a whole. 10-70cm breecia and cracky Jone alternation. Some cracks brn. but not so remarkable. 130 130 140 150 150 160 160 160 160 160 16	1 1	!	\mathcal{H}			2	1						E-1	
Shd. as a whole. 10-70cm breecia and cracky Jone alternation. Some cracks brn. but not so remarkable. 130 130 140 150 150 160 160 160 160 160 16	2-		5			13		3	3		Iω	Supply	Ē.,	
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1 (hard) - 5 (solt)				12			•	t t	1 (stol					
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LOCA	TIO	N	Pensi				-	DE		.Om COMMENCE	D May - 1	<u> </u>
EFEA							-			Om COMPLETE		
				274 2N 49			_		NGTH OF ROCK DRILLING 178			DISA
				ZONTAL		90	-			Om LOGGED BY	Y Fukt	itake
HEAR	ING	OF	ANGL	E HOLE	_		-			0.0-		
\ <u>.</u>	MA	ای	a t	4 20 U		Œ.	_		RVATION OF CORE	WATER TABLE	=	₹
ОЕРТН	ROCK NAME	<u> </u>	CORE	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER ING	HARD	CORE	DESCRIPT ON	WATER PRESSURE TEST	DEPTH	ELEVATION
	ğ			2 ***	Ծ	×E.	ž	υn		LEAKAGE OF DRILLING W		
/4 Dm			0 1 00							LUGEON509/m	n) 40/40m	240.8 🖫
السيلييياسلسيك					· Bry.	3	3	4	Shd. as a whole. 10~70cm breccia and Cracky Jone alternation. Some Cracks brn., but not SO remarkafle.	274 Supp	ահահահանանուն	
nhadandani					reddish brn		5		/45.0	17 Lea Kay	luid.	
سأسلسلسلسلسل	Calcareous SANDSTONE.				gry ~ reddish brn.	3 5 2	3 \ 2	3 5 2	Banded Structure. Good Core. Core Length 5-40cm. Cracky Zone or Shd. Zone at 156~156.5. 157.8~158.2.		ահավումիակակակակակակակակակակակակակակակությունը 1 2 3 4 5	
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			1. R	1		1	ł	1,	p drillers note 4 stick) 2 (substick) 3 (piece), 4 (fragment), 5 grai	•		
			はだ	- core loss		Į	١,		- 2(204) - 2(204)	••		
			ł	RQB		1			ecomposed)			
									•	PC POPPING HIS	en nereton	(C) T (C) 1 T

	r Quae		PRO.			HOLE	No P-	- 2 SHEET 9 OF	: 9
LOCATIO		tack, left			DE		0 0 m	COMMENCED!	
ELEVATIO			08			PTH OF OVERBURDEN	2 _Q m	COMPLETED !	
COORDIN						NGTH OF ROCK DRILLING 170	3_0 m	DRILLED BY	FONDISA
ANGLE FI BEARING			9	<u> </u>			ი დ ი	LOGGED BY	Y. Fukutake
	O Allac						0.0 ,		
DEPTH POCK NAME	E H	CEMENTA TION XIND OF BIT CASING		: 7 :	085	ERVATION OF CORE	WATER	TABLE - 11-	ž
DEPTH DCK NAA	CORE RELOVERY	EME THE TASH	COLOR	ING	CORE	DESCRIPT ON	1	PRESSURE TEST	7 4
<u> </u>		7 220	0	<u> </u>	ŏ3			SE OF DRILLING WATER	2 37
160m	0 = 100			_ _			0	LUGEON (4min)	40 160m 220.8 T
uhmhunhundundundundundundundundundundundundundu			yry ~ Γedaish bra N ∽ ω	1	3 [2	Banded Structure. Good Core. Core length 5~40cm. Cracky Jone or Shd. Jone at 164.8~165.2, 166.2-166.4,1668~167.0, 173.3~1760.177.~177.5, 179~180.0.		Leakage	riginalist in the contract of
180					ļ	180.0			180 200.8
	N. N		1.	1		➤ driller's note 4	 	<u> </u>	- 100120010
	ND.	ere loss		1.0	1 (snc) rd) - 5	1 7 (substick) 3 (piece), 4 (fragment), 5 grain			
	LR		1	rest) -					

Honor	0	V_:					SIC LOG OF DRILL	· · · ·			
LOCATION	Quae	tal stock, lef		DJEC	<u>. T</u>			No		JF 4	
ELEVATION								80.0 m		May_3	<u>0 - 19</u> 79
COORDINA		292 224 5 N A		<u>m</u>			PTH OF OVERBURDEN	<u>16</u> m	COMPLETED	Jun -	4 - 1979
ANGLE FRO				60	=	LE	NGTH OF ROCK DRILLING	78 4 m	DRILLED BY	FON	IDISA
BEARING O				7°E				<u>80 0 m</u>		Y Fu	kutake
	1 ANGL	T HOLE	, <u></u>					00 0+			
DEPTH ROCK NAME	14 FE	4 4 5 U	<u> </u>	e i			ERVATION OF CORE		TER TABLE11		ž
DEPTH CK NAM	CORE	CEMENT TION KIND OF BIT CASING	COLOR	H S	MESS	CORE	DESCRIPTION	- 1	TER PRESSURE TEST	DEPTH .	ELEVATION
- L		n × m ∩	ဗ	WEATHER ING	Ě	85			KAGE OF DRILLING WATE		1 5
Om	0 - 100							 	LUGEON (l/min,		292.6 🖫
1 60 A			brn.				Organic Soil at 0.0-0.5.	ŤT	30(4)111	10 U.	2,50 4
1-0			19	- 1	ſ		Silty clay at 0.5-1.6.				<u> </u>
			dark		- 1		artig cong or rior			1 1 1	
2-1 5	71111111		3		_			 	┼╌┼╌┼╌╅┐╎┊		
			ŀ		Í		Very good core	Toct	7	-2	
] 5	THINIA				1		Open cracks are coated	/	*	<u> </u>	
] []						. !	With brown seam at 1.7	80	Бирр	y E 3	
1 1 15							~2.0, 2.23, 2.64, 3.0.	^	`	F	
1 1			-			į	3.9, 5.2, 6.65, 6.9, 7.26	:		E-4	
ukudunkuduntanlandundundundundundundundunkudunkulukulukudundundundunkulukulukudundundundundundundundundundundundundun				Ì			7.55, 7.85, 8.6, 8.8. 9.63		Leakag	e 🗗	
1 5				1		- [7.93, 7.85, 8.0, 8.0. 7.00. 9.93.	· -	╅╌┼═╅┈╏╏╁┈┦	_ <u>E</u> -5	!
1 1 15	MANN	ļ						1 1	1	Ę.	
[6.4] [∑	MANA	1					Dissolved cracks at			-6	
1 1 1				- 1		1	<i>4.5</i> .	11.	1 1 1 1 1 1	E I	
1 13 4		ĺ			ł	1		2.3		Ē, l	ľ
SANDS TONE		ļ				ļ		11	1 1 1 111 1		
1 8 2 5								77	;;	8	
43\∑										Ε̈́Ι	
1 64 81 51		į		2 2						1 6 1	
1 4814		ļ	gry.	4 4				\perp		E"	
1/0 ⁴ s) (H			00		<u> </u>					_[_/。]	
]			7		1			1 1		_E''	
[1	81.8				all cracks are open	$\vdash \vdash \vdash$	 ∔₄ᠮᠮ᠋┆╽	₣.	ł
Careous Perrenas	111 III	ŀ	00	ı			Cracks, Coated With			E'	
24 S H		╽.	1,2			ĺ	brown seam, except for	~		ահավասե	
	XXXII I		ownish		1		a few dissolved cracks	23.		E	İ
		i	2		1	1	at 11.0 . 14.25.	p	i	F 1	
Je			020					77		F3	
L₄∄이∑		1	7		1		Cracky zone at 10.5~	11_{1}			
]					2	2	10.65, 16.0~16.1.			-4	
		1	-				oborro 1 zanno with			F	
							sheared gones with		├ ─ │ ╺ ┤ ┈┞╏ ┪		ĺ
[] [5]		ĺ		1			gouge and breccia at			F	
					1		11.3~11.7, 19.75~19.85.			F 6]
							Soluable caves at	8		F	-
			1				16.2-16.5.	27.		E-7	
3 13					1		10.27 10.01	'		F	ſ
8 1.5-1								77		-8	
										<u> </u>	1
		1		1						E,	
20 1 1							00.0		-		[
<u> 1 1 11</u> V	J N UNHIII			-	 		20.0 ▶ drillers note 4			202	275.3
	<i>[</i> 2]		Ī	1	1,	(stick	# drillers note 4) 2 (substick) 3 (piece) 4 (fragment) 5 grain				
12	4 K/7 "	re loss	1	1	, (hard)						
	Е по	X 0	·	(fresh)			•				

	Unr	er	Quae	Yaı					SIC LOG OF DRILL				
LOC				stock, fet					PTH OF HOLE 8	00 P-	3 ISHEET 2 UF		<u>;</u>
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BEA	RING	OF	ANGL	E HOLE	N	57°	<u>E</u>			0 0	COOGED B1	r. Fu	<u>utake</u>
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DEPTH	POCK NAME	100	CORE	CEMENT TION KIND OF BIT CASING	8	HER	2 2	F		WATER	, ,	ОЕРТН	Ó
	Ş	- 1	3	3 352	80103	KA.	HARD	CORF	DESCRIPT ON	1	PRESSURE TEST	33	ELEVATION
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		3	ZZZZZ			1	†	1			50(4min)	io 20-	275.3 🖫
1, 1]	Σ				1		1	Open cracks are coated			Lilling	
']		2				}		}	by brown Seam at		1 1 11 1	<u> </u>	
	j	H	1441						21.55. 21.78. 23.05. 23.93.	'	1 1 1 1		
	ļ	5							24.05. 24.34. 24.4. 24.66. 24.9 ~ 25.0, 26.29. 27.25.	/6./		2	
1 3		\square	444				1		29./3. 29.23.29.55, 30.08.	1/=		Ė	
1	- 1	\mathcal{H}		[1			i	E 7.10 , E 7.20, 27.00, 00.00	777	1 1 1 11 1	3	
4.3		3					1		Dissolved cracks are			F	
1	İ	\Box							Coated with brown seam			<u> </u>	
	- 1	\square					ł		at 22.72.	j 🌡		<u> </u>	
		\mathcal{H}		ĺ					W.2 22.72.		1 1 1 1 1 1	5	1
2 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		H							Sheared Zones With gouge		Supply		
	-	됐	1				}		and breccia at			-6	
7.4	4	\square	1331III		ł				37.3-37.6, 38.0-39.7.		No Pakage		ļ
4	SANOSTONE	+			ı	3	3	2	1, 55	3.8		[]	
8-	2	H	ЖШ	-	-	J	٦	3		11 1			
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9-3	2	\square		ł	9				recemented breccia at		1 1 11 1		
4		\leftarrow							28.6~28.85, 32.2~32.3,			9	
30-		H			2		-		37.0 ~ 37.3.]	-30	
4	3	$\prod l$			818					! 4		-3u	1
14	60	\Box	WWI.	1	ſ				Crystalline Caves at	<u> </u>	<u> </u>	- 1	İ
4.	g	+1	иШ		3				•	' '	12-31.0	[
2-4	Calcareous	H	70 III	1	brown:Sh	ŀ	-		36.5 , 36.7 , 36.8.	5		-2	
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6-4	13	<u> </u>				-	- [1	ļ			[
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			12	ore loss			اً اِ		i) 2(substick) 3(piece), 4(fragment), 5 grain				
		ŧ	RC		1	166-		rd) 5 School	(solt) mposed)				
			- 10					(4000	- p-oud)				

	Upp	er	Quae	Yaı	PR	OJE	СТ		HOLE I	No P-	− ·3 (SHEET 3 a)	= 4	
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				IZONTAL		60		TO		0 0 m		Y Fuk	
OEA	KING	UF	ANGL	E HOLE	<u>N5</u>	7°E				<u>o</u> ō ¾			
1	ROCK NAME	ی	ERY	4 z 5 0	<u> </u>	Ta:			RVATION OF CORE	WATER	TABLE	1	₹.
нт азо	i ₹	2	CORE	CEMENT, TION KIND OF BIT CASING	COLOR	£ 5	HARD	2 F	DESCRIPT ON	1	PRESSURE TEST	- I	ELEVATION
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	1	\mathcal{L}	A						all cracks are ordinary	11		Ē	2.0.0 \$
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1 4	- 1	\mathcal{H}		·		1	1		Sheared zones with gouge	1 111	1 1 1 1 1		1
2-		\square	14411			_	ا ۾ ا		and breccia at 40.05.			المعالسانسانسانسانسانسانسانسانسانسانسانسانسانس	
1 4	1	\mathcal{H}	44411			3	3	3	40.34, 41.46, 42.22.	4.6		2	
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1 6-3	1	\square						İ	except for one dissloved]]]]	Supply	E, I	
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7-	4	5#							CIUCRS UL 3045~ 30.0 ·		No reakego	Æ, I	ļ
4	. اچ	\square						- [Cracky zones at 54.8~	5.7		Έ΄ I	
8-3	SANDSTONE	\square			à€					= 777		E ₈	
4	913	ζ∦	JH III		816		1	1	55.0 , 59.0 ~ 59 8 ·	7	1111	E" }	ł
9-4	{ }	5-11	HHH		7	-			Sheared zones with			E. 1	
=	S) {	놰	\mathbb{H}						gouge and breccia at			E"	
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<u>003</u>	15	1/1	17 				1	1	<i>50.0</i> ▶ didlers note 4	_Щ_		60 2	240.6
		Ø	K 3		1		Ī	(stick	y arrier's note 4), 2 (substick), 3 (piece), 4 (fragment), 5 grain				
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		Ĺ	RC	Ø		1 (Ires	h) ~ 5	(decon	posed)				

	Unn	۵r	Quae	Yaı				-0(SIC LOG OF DRILL		_		
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coo	RDI	IATE	1682 :	224 5N 49					NGTH OF ROCK DRILLING 78	_ <u>6</u> m	COMPLETED J		015A
				ZONTAL		60	_		- - -) O w	DRILLED BY		
BEA	RINC	OF	ANGL	E HOLE	N5	7°E	_			<u>5</u>	LOGGED BY	<u> </u>	kutake
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OFPTH	NAME	0 0	CORE	CEMENTA TION KIND OF BIT CASING	g	E C	SS	2		WATER	TABLE	E	δ
ŏ	ROCK	_	REC	CEME KIND BIT CASI	COLOR	WEATHER	HARD	CORE	DESCRIPTION	1	PRESSURE TEST	DEPTH	ELEVATION
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3	ļ	\mathcal{L}				ľ			dissolved cracks at	<i>u</i> = <i>u</i>		E 3	
4		H							63.5 , 63.8 .	7-			
4-		5							0 0 20000 0+			F4	
1 =		Σ		ĺ					Cracky zones at			E	
5-	-	\mathcal{H}						.	62.9~63.0, 63.15~63.25,	┤╂┼	- - - - 	£ 5	
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[]		\sum_{i}		Ì				1	Sheared zones with gough			-6	
1,3	₹	34,		- 1	ļ			-	and breccia at 65.5-65.75	62			
[`	SANDSTONE	H							67.3-67.57, 68 15-68.25	=12.3	No leakage	E 7	
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الله ا	8	:				3	3	3	Cavernous zone at			E. I	
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			R	190		1 (fre	sh) -	5 (decc	mposed)				

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COC	RDII	TAV	1682	4175N 49	2 00	163	E	LE	NGTH OF ROCK DRILLING 39			LED BY			ISA
ANG	iLE i	FRON	4 HORI	IZONTAL	_9	0	•		 -	09 m		GED BY			utake
BEA	RING	o o F	ANGL	E HOLE	_		_	CO		<u> </u>					
	Ē.		>		Π	_		OBSI	ERVATION OF CORE	<u> </u>			.	7	7
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3-4	5	Σ			brn.	3 4	3	4	3.09				E3		
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4-	SANDSTONE	莃				1			Core 6055 4.0		"		-4	ŀ	
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8-3	2,5	嵙	N.		700				Core Poss. 6.1				l E-a		
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4	SANDSTONE	\mathcal{L}		ŀ					Cracks at 12~12.5						
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			1	care lass		1 11-			5 (soft) omposed)						
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			Quae	Yaı	PR	OJE	СТ		HOLE	No s~	1 (SHEET 2	0F 2	•
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				417 5N 4		$\overline{}$	-	LE	NGTH OF ROCK DRILLING 3	9 <u>. i</u> m	DRILLED BY		DISA
				ZONTAL		90		TC		09 m	LOGGED BY		utake
		OF	ANGL	E HOLE						.7 _ 4			
I I	ROCK NAME	ی		t ≅ρ ο	-	1 ar	1		ERVATION OF CORE	WATER	TABLE1/\		Z
DEPTH	ž	ိ ၂	CORE RECOVERY	CEMENTA TION KIND OF BLT CASING	COLOR	H	e z	CORE	DESCRIPTION		PRESSURE LEST	БЕРТН	ELEVATION
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20m		\downarrow	0 100				<u>L</u>				LUGEON 50(Smin		356.17
2 3 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	STONE.		2		brn ~ WRite gry.	3 - 2	2	3	Rock hard, but Cracky generally. Core length 3.5cm. all cracks wethd.and coated by seam. Solution cracks at 18.5~18.85, 19.55~19.6, 217~21.9, 29.85. Cracky gone at 23.55~23.8, 24 ~ 24.45, 26 ~ 26.2.			րևահանականականականականականականական	
30	8.4				brn-White gry.	3 2	2	4 3	28.3			ույսուրույրույրույրում 3	
- 2 3 4 5 6 7 8 9 14 14 14 14 14 14 14 14 14 14 14 14 14	Calcarence				gry- brn.	2 3		3	Very hard, remarkable Calcite veins. Cracks brn. and filled by Seam. Solution Cracks at 31.95 33.335.37.75.38. Shd.at 38.1,38.75. No core at 3725-37.3.			dudadadadadadadadadadadadadadadada	
40	1.5	أسا	Ш		2	-3	/ 3	3	39.4 40.0			40	336.1
					-	1	+		▶ driller's note 4		· · · · · ·	<u> </u>	
		1/1	1/1	re loss					(c) 2 (substick) 3 (piece), 4 (fragment), 5 grain				
		Ł	— RQ			1 (free		d) Si (decon	(soli) nposed)				
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	Han	or.	Опав	Yaı					GIC LOG OF DRILL	_					
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			1682	151 IN 49					PTH OF OVERBURDEN	<u>0 65</u> n					5 <u>-1978</u>
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				E HOLE	_		_			<u>7</u> 8 n 0_%		OGGED	RA	Y Fu	<u>kutake</u>
	_		`	<u> </u>	Т				ERVATION OF CORE	 -					
ОЕРТН	ROCK NAME	9	CORE	NO ON	Œ	E.				- WA	TER TA	BLE	W	ž	Š.
	ŏ	د	2 2	CEMENT TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CORE	DESCRIPT ON	1		SSURE TES		DEPTH	ELEVATION
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	8		filmer		انوا	-	\vdash	+	Overburden.	•	1-1	TUGEON 50(min) +	e Cem	3/6.3
	0.8	쒸			66.	_	<u> </u>		(blk soil) 0.65		;				
<u> </u> 1결	- 1	$\cdot \square$			gry.	2	١,	3	Core length 10-35cm.					E 1	
=	ł	·Д			90	•	<u> </u>	Ľ	Cracks brn. 1.7						J
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1 4		\mathbb{H}	11115		brn	1	1	1	all cracks filled by Seam. Shd.at 1.85, 2.5-28			1'		<u> </u>	
3 4	-	٠,5П			2	3	4	4	2-21-25	1/2	eakag	اام		3	1
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1 4	- 1	겜			pp	J	3		Most of them hurizontal.			11		<u> </u>	1
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7-9 4	<u>- ا</u>			i	brn.		Į		all cracks brn, and filled	¦				_	
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		1/2	Ŋ			1	<u> </u>	+	> driller a note €			11_1	<u> </u>	20	£ 70,3
			[3]					l (st	ck) 2(substick) 3(piece) 4(fragment) 5 grain						
		,	· · · · · ·	ore loss		1			5 (saft)						
			p	sćo		1 (fre	ish) ~	5 (dec	omposed)						

Upp	er (Опає	e Yaı					SIC LOG OF DRILL				<u>-</u>
LOCATIO			Spillway						10 5-2			
ELEVAT				6 3		<u>т</u>				COMMENCE		
COORDIN								NGTH OF ROCK DRILLING 45		COMPLETED DRILLED BY		
ANGLE F					90	_	TC	TAL LENGTH OF CORE 41		LOGGED BY		
BEARING	OF A	ING L	E HOLE	<u>,-</u>	<u> </u>				<u>0 _³.</u>			
DEPTH ROCK NAME	0 6	E P	4 20 g	-	le:	T ,,		ERVATION OF CORE	WATER T	ABLE4/v		ž
DEPTH DCK NAN	100	RECOVER	CEMENT, TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CUTTING	DESCRIPTION	i	FESSLPE TEST	1 DEPTH	ELEVATION
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44 6				7	3	3	3	all cracks brn.and				
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5 4 0				reddish				Cracky at 20.15~20.45,			E.5	
	>			1.6		i	ļ	21.6~22.0, 23.0~23.25,			E 1	
] 6	에				ŀ			24.0~25.45.			<u> </u>	
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30-4	13/31/			154		- }		Cracky at 28.0-28.1, 29.4~	! !			
RATE.	19111			greenish	ŀ	Ī	İ	31.0 3/7~3245, 33.0 ~ 340	L _	411	-30	
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···	<u> </u>	Ŋ Ш			<u> </u>	. 4		▶ driffer s note ◀			40	276.3
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	_	— RQ	9		1 (fres	.h) 5	(decor	posed)				

GEOLOG	IC LOG OF DRILL	HOLF -	
Upper Quae Yoi PROJECT		Vo. S-2 (SHEET 3 OF 3)	
ELEVATION 316 3 m DEP COORDINATE 1682 151 IN 490 230.5E LEN ANGLE FROM HORIZONTAL 90 TOT	TH OF HOLE 45 TH OF OVERBURDEN 0 GTH OF ROCK DRILLING 45 AL LENGTH OF CORE 41.	9 m COMMENCED Dec 18	_1978 -1978 DISA
BOCK NA CORE CORE CORE RECOVER KIND DOW	DESCRIPTION	WATER TABLE	ELFYATION
40n 0 = 100		Lugeon 50(/min) +0 4 0m	276.3 🖫

1 (fresh) ~ 5 (decomposed)

Upper Quae Yai **PROJECT** HOLE No PH-1 (SHEET ! OF 2 LOCATION Powerhouse, Left Bank DEPTH OF HOLE 30 0 m COMMENCED Nov _20 _1978 ELEVATION 200.7 m DEPTH OF OVERBURDEN __0.0_m COMPLETED Nov -28 -1978 COORDINATE 1682206.4 N,490459.8E LENGTH OF ROCK DRILLING 30.0 m DRILLED BY EGAT ANGLE FROM HOLIZONTAL 90 * TOTAL LENGTH OF CORE LOGGED BY M. Yamada 27.68 m BEARING OF ANGLE HOLE CORE RECOVERY 923 -OBSERVATION OF CORE WATER TABLE ELE VATION ---DESCRIPT ON WATER PRESSURE TEST LEAKAGE OF DRILLING WATER LUGEON (/min) om *200.* 7 ♀ 2 2-3 3-4 0.6 Cave 0.9 2 2.3 3.4 Cave - 2 Cracks dissolved and White Stained brn --3 2 3 Generally banded structure 2 developed 447 2 3 3 4 - 5 Core loss 55 2 3 3-4 Core Loss - 8 2 2-3 3-4 Supply Core loss Core loss 768 Someparts of none core seem SANDS TON - 8 to be clayey zone and not cave. 2 3 2 1 - 9 Lustrous cracks remarkable 3 4 - /0 10.4 Fresh and hard Cracks no brn. 2 12.8 -3 Fragmentary core at 2 2 143~14.55. 2 Clay seams at 14.48~ ŧ 15.51 - 5 3 o174 Clay Seam at 17.5-17.53. 2 3 1 Lustrous Cracks remarkable 3 4 Somewhat brittle 2 2-3 core lost at 1945-19.60. ▶ driller's note 4 1 (stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain (chard) - 5 (soff) 1 (fresh) 5 (decomposed)

lin	per Q	uae	Vai			.OI	-00	SIC LOG OF DRILL					
LOCAT			rhouse, Le				DE			-1 SHEET 2 OF 2 3 COMMENCED Nov _20 _1978			
ELEVAT			200			m							
COORD	INATE	16822	206.4N,49	04:				NGTH OF ROCK DRILLING 30	_	OMPLETED			
			ZONTAL		90	•					M.Yam		
BEARIN	IG OF A	NGL	E HOLE	_		_	ÇO	RE RECOVERY 92.	3_%	. 4 4 5 5 1		<u> </u>	
_ ¥		Α¥	4 _ u					RVATION OF CORE				7	
DEPTH ROCK NAME	0 0	RECOVERY	CEMENTA TION KIND OF BIT CASING	COLOR	ξŞ	ESS	₩ <u>₹</u>		DRILLED BY BB m LOGGED BY WATER TABLE WATER PRESSURE TEST LEAKAGE OF DRILLING WATER LUGED GOT OF THE CONTROL LUGED GOT		DEPTH 0	110	
, §	- `	, BEC	9 592	õ	WEATHER	HARD	CORE	DESCRIPTION			, E	LLEVATION	
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o 6 8 2 4 8 2 5 8 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				White gry.	2	2	43 2 3 3 4	2035 212 Banded Structure. Fresh and hard Cracks no brn. Fragmentary cores at 22.8-23.0, 23.25-23.45. 26.0 26.7 28 6 Cracky Jone at 287-30.0 m 30.0	ea 5.7 = u2	Supply	րավասկանակարկակակակակարկակարկանականակուն	170.7	
			ere loss		t (fres	l (har	d) - 5 (b drillers note 4 1 2 (substick), 3 (piece), 4 (fragment), 5 grain soft) soft)			0		

	lone		Nugo '	Vm!					SIC LOG OF DRILL		_		
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	VATI			223		_	m			.0 m	COMMENCE	D	_1978
coc	ORDIN	IAT	1682	135.7N,4					PTH OF OVERBURDEN 2 NGTH OF ROCK DRILLING 33	.2 m	COMPLETED		-1978
				IZONTAL		90					DRILLED BY		AT
				E HOLE	_		_		-2.7.	.30 m 2 _ ³,	LOGGED BY	M. Yam	<u>ada</u>
				T,	Т				ERVATION OF CORE	<u> </u>		- T-	
DEPTH	ROCK NAME	90	CORE	1 NO 0 N	~	۳.,	T			WATER	TABLE	-	<u>Ş</u>
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1	二	-		1	9		٦		Fragmentary core at 6.65-6.75.	ا يُرارُ ا		E-8	
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	VAT			223			_			2 m	COMPLETED		-1978		
COC	RDII	NATE	1682	2135.7N,4	90	500.	9E		NGTH OF ROCK DRILLING 33		DRILLED BY	EG			
ANG	SLE	FROM	/ HOL	IZONTAL	9	0	•			30 m	LOGGED BY	M. Yam	σdα		
BEA	RIN	G OF	ANGL	E HOLE			-	co	RE RECOVERY 84	.2_2,					
	¥			4 ي				0851	ERVATION OF CORE				ž		
DEPTH	ROCK NAME	0	CORE	CEMENTA TION KIND OF BIT CASING	ĕ	NG	ESS	ية 5		i	PRESSURE TEST		ELEVATION		
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Upper Quae Yai		JEC.		GIC LOG OF DRILL									
LOCATION Powerhouse, Le					Vo PH -3								
ELEVATION 211		m			O _m COMMENCED Jan _ 8 _ 1979								
COORDINATE 1682149.0N,4		5.3E		NGTH OF ROCK DRILLING 26	9 m COMPLETED Jon 17 1979								
ANGLE FROM HOLIZONTAI													
BEARING OF ANGLE HOLE					.19 m LOGGED BY M. Yamada .8 ;								
¥ ₹ ₹			OBS	ERVATION OF CORE									
DEPTH ROCK NAME 1 O G CORE CORE RECOVERY TION KIND OF DITTE	8	E E	ESS		WATER TABLE - W- I								
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UCATION POWER HOUSE HELT BORN DEPTH OF HOLE LOCATION 21.14 m ELEVATION 21.14 m CORDINATE ISO2149 ON A904853E ENGTH OF ROCK PIRLLING 26.1 m DRILLED BY E.S.A. ANALE PROM HOLIZONTAL 90 TOTAL LENGTH OF CORE PIRLLING 28.1 m DRILLED BY E.S.A. ANALE PROM HOLIZONTAL 90 TOTAL LENGTH OF CORE 23.19 m DRILLED BY E.S.A. SOBERATION OF CORE BEARING OF ANOLE HOLE CORE RECOVERY 82.9 DESCRIPTION WATER TABLE	1	Upp	er (Sune	Yai	PRC)JE(CT		HOLE N	OPH-3 (SHEET 2	υ 2)			
ELEVATION		LOCATION Power house, Left Bank DEPTH OF HOLE 28.0 m COMMENCED Jan 8 1979													
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HOLE No PH ~ 4 (SHEET | OF 3)

GEOLOGIC LOG OF DRILL HOLE

PROJECT

Upper Quae Yai

LOCATION ELEVATION COORDINATE ANGLE FROM	Powerhouse, Le 242.8	70	e SE	DEI LE: TO	PTH OF OVERBURDEN 2. NGTH OF ROCK DRILLING 47. TAL LENGTH OF CORE 49.	O_m COMMENCED E	eb_17_1979
DEPTH ROCK NAME	CORE RECOVERY CEMENTA TION KIND OF BIT CASING			OBSI	DESCRIPTION	WATER TABLE	
0.0 0.0 0.0	0 - 100	brn.			Topsock Clay ~ Silt. 2.1	Lugeon (Umin)	40 Om 242.8 T
Calcareous LIMES TONE Calcareous LIMES TONE Calcareous LIMES TONE		reddish » bluish white.	2	1 1 2	\$\\\ \phi 10^{cm} \text{ cave at 22-23} \\ \phi 7^{cm} \text{ cave at 325-33}.\$ \\ \text{Banded structure.} \\ 4.9 \\ \text{\$\sigma} \text{ cave at 3.25-33}.\$ \\ \text{Banded structure.} \\ 4.9 \\ \text{\$\sigma} \text{\$\cap 2^{cm} \text{ cave at 6.6}.} \\ \text{\$\sigma} \text{\$\cap 2^{cm} \text{ cave at 9.5}.} \\ \text{\$\sigma} \text{\$\cap 2^{cm} \text{ cave at 9.5}.} \\ \text{\$\sigma} \text{\$\cap 2^{cm} \text{ cave at 9.5}.} \\ \text{\$\sigma} \text{\$\cap 2^{cm} \text{ cave at 9.5}.} \\ \text{\$\sigma} \text{\$\cap 2^{cm} \text{ cave at 9.5}.} \\ \text{\$\cap 2^{cm}	Supply Leakage	նումիայիումիումիումիումիումիումիումիումիումիում
	core loss	{		(hard)	srich) 2(subsrick) 3(piece), 4(fragment) 5 grav 5(suh) ecomposed)	n	

HOLE No PH-4 (SHEET 2 OF 3 **PROJECT** Upper Quae Ya! COMMENCED Feb _ 17 _1979 Powerhouse, Left Bank LOCATION DEPTH OF HOLE 50.0_ m COMPLETED Feb -22 -1979 242.8 m ELEVATION DEPTH OF OVERBURDEN 2.1 m COORDINATE (682023.5N, 4906866E LENGTH OF ROCK DRILLING 47.9 m DRILLED BY EGAT 70 ' ANGLE FROM HOLIZONTAL TOTAL LENGTH OF CORE 49 15 m LOGGED BY M. Yamada BEARING OF ANGLE HOLE S50°W CORE RECOVERY <u>98.3</u> 2 OBSERVATION OF CORE õ CEMENTA TION KIND OF BIT CASING WATER TABLE RECOVER DEPTH WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER LUGEON (9/min) 224.0 6 20m Ē, Fresh and hard Brecciated structure. White ٠, 2 Calcite vein remarkable Supply f Same parts cracks bin . reddush-bluish LeaKage 4 starts white so 2 2 SANDSTONE 1 290 1 - 9 bluish White Some parts brecciated 30 Structure . Crucks almost fresh - 1 Calcareous -3 White reddish~ bluish 25.8 - 8 Massive. Calcite vein found in Some parts. Bluish While at 360-370. ▶ dri¥er's nate 4 1 (stick), 2 (substick), 3 (piece), 4 (hagment), 5 grain t (hard) 5.(solt) f (fresh) 5 (decomposed)

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				023.5N,49		0.6			NGTH OF ROCK DPILLING 47			EGA	
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Ξ.	ROCK NAME	g	CORE	CEMENTA TYON KIND OF BIT CASING	<u></u>	9,5				WATER TABI	γ.	DEPTIL	ELE VATION
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FLECTRIC POWER DEVELOPMENT CO. LTD TOKYO JAPAN

p drillers note n
1 (stuck) 2(substack) 3(pince) 4(fragment) 5 grain

• driller a note 4

1 (hard) 5 (soft) 1 (fresh) - \$ (decomposed)

PROJECT Upper Quae Yai HOLE No PH - 5 (SHEET | OF 2) LOCATION Powerhouse Left Bank DEPTH OF HOLE 40.0 m COMMENCED Mar - 2 -1979 ELEVATION 222.0 m 1.8 m DEPTH OF OVERBURDEN COMPLETED Mar - 7 -1979 COORDINATE 1682033.6N,490576 2E LENGTH OF ROCK DRILLING 38.2 m DRILLED BY __EGAT ANGLE FROM HOLIZONTAL 60 * **TOTAL LENGTH OF CORE** 37.60 m LOGGED BY M.Yomada BEARING OF ANGLE HOLE N20°E CORE RECOVERY 94.0 _ 3, OBSERVATION OF CORE CORE RFCOVERY CEMENTA TION KIND OF BIT CASING WATER TABLE ELEVATION DESCRIPTION WATER PRESSURE TEST LEAKAGE OF DRILLING WATER LUGEON (Vmin) om 222.0 T Topsoil ĝ brnClayey. \dot{o} 1.8 sheared zone. Clay With brecciated - 3 Supply brn Remarkably Wethered . yellowish 5 5 4 Leakage ð Purple reddish 9.9 818 2 2 LIMESTONE 10.95 Cracks brn. 4 3 Prn. gry ŧ Clay film remarkable. 4 3 -2 -3 Clay With abundant brecciated LS. - 4 LIMESTONE (HW=3-2, - 5 C = 2-3) at 130 -13.3 4 5 5 135~137, 14.5~147 15.0 ~ 15.6 . Я ₽ driller's note 4 f (stick) 2 (substick). 3 (piece). 4 (fragment). 5 grain 1 (hard) ~ 5 (soft) I (fresh) 5 (decomposed)

HOLE No PH-5 SHEET 2 OF 2 , Upper Quae Yaı PROJECT LOCATION Powerhouse Left Bank DEPTH OF HOLE 400 m COMMENCEDMar - 2 -1979 ELEVATION 222.0 m DEPTH OF OVERBURDEN _1.8 _ m COMPLETED Mar - 7 -1979 COORDINATE 1682033 6N,490576.2E LENGTH OF ROCK DRILLING 382 m DRILLED BY ___ EGAT___ ANGLE FROM HOLIZONTAL 60 " TOTAL LENGTH OF CORE 37.60 m LOGGED BY M Yamada BEARING OF ANGLE HOLE N20°E CORE RECOVERY 94.0 -

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DEPTH	ROCK NAME	901	CORE RECOVERN	CFMENTA TION KIND OF BIT CASING	æ	WEATHER	<u></u>			WATER TABLE	Ţ	ELLVATION
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Honor Ougo Vai	PROJECT	HOLE N	ID Q - 1 SHEET 1 OF 3 ,
Upper Quae Yai		DEPTH OF HOLE 50.	
ELEVATION No D			O m COMPLETED Apr -28 -1979
COORDINATE _ No D	oto	LENGTH OF ROCK DRILLING 50.	
ANGLE FROM HOLIZON I	AL 90		13 m LOGGED BY CH. Peel
BEARING OF ANGLE HOL	.£	CORE RECOVERY 84.	3
5 2 3-4		BSERVATION OF CORE	WATER AB F M 2 2
DEPTH CORE NAMI LOG CORE RECOLERY FROM	CASING	DESCRIPT ON	WATER PARTSURE IFST
30 20 1 2 2 1 4 4 7 1 X	CASING CASING WEATHER ING NESS	DESCRIPT ON	LEANAGE OF DRILLING WATER
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0.B A	-1-1-1-1	Top Soil 0.50	
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5==		Core length generally	
	200 3	10-30cm, Sometimes	
64 7 1	00 5 1	4	[-6]
	4	70 cm.	
1,45 [1]	120	1	
	whity	Easy break to Small	
	3	Pieces.	}}
1 3 0 F-111111111		pieces.	
	1 1 1	į	
10 7 25		}	[
	1	j	
		1	
			₹
2 0		12.00	<u> </u>
		are to worth origina	
		No brn. Weathering.	1
	876	Core length 5~ 16cm	
	1	3 {	
	2 1	Very easy break to	
	4 Linw	4 small pieces.	
	45		1!
		16 30	
		No core. Cove fill	
		(cave?) soil.	
		17 40 / 17.95	
	100	core length 10-30cm.	
	16 3	Same Constine	
9-4		2 1	
	yinw 4	Easy to break	20
50 4 F-4000000		▶ driller's hote ◀	
13. KI	ĪĪ	1 (stick) 2 (substick) 3 (piece), 4 (tragment), 5 grain	1
N EN core for		ard) 5 (soft)	
<u> </u>	† (fresh)	5 (decomposed)	
•			DESCRIPTION DANGED DESCRIPTIONS OF A 1 TO

Un	ner (Quae Y	(ai)JE(HOLE 1	10 Q - 1° (SHEET 2 OF 3)		
LOCA			Right Be			_	DE	EPTH OF HOLE 50.0 m COMMENCED APT 20 1979			
ELEVATION No Data m						1	ĐΕ		O m COMPLETED Apr -28 -1979		
COORDINATE No Data ANGLE FROM HOLIZONTAL 90						_	LE	NGTH OF ROCK DRILLING 50	O m DRILLED BY FONDISA		
						-			13 m LOGGED BY CH. Pael		
BEARING OF ANGLE HOLE									.3,		
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ОЕРТН	L O G	CORE	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER	HARD	CUSTING	DESCRIPT ON	WATER TABLE		
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			Na Dat		·—- <u>'</u>	-		PTH OF OVERBUR NGTH OF ROCK D			O m COMPLETED API	
			ZONTAL		9 O	•		TAL LENGTH OF			·	DISA
			E HOLE			-		RE RECOVERY	CORE		<u>13 m</u> LOGGED BY <u>CH</u> 3 ÷	Pael
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	JPP ATIC		9DU(ight Ba)JE(<u> </u>	DE	HOLE N PTH OF HOLE 50.	0 0 - 2 (SHEET OF 3 ; 0 m COMMENCED May - 2 - 1979
	VATI			No Da			- n			3 m COMPLETED May -9 -1979
	RDIN			No Do			-		NGTH OF ROCK DRILLING 48	
ANG	LE F	RON	HOLE	ZONTAL	_9	0	•			3 m LOGGED BY CH. Peel
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LOCA.			ight Ban				DE		O m COMMENCED May 2 _1979
ELEVA	NOITA		No Dat	<u>ta</u>		1	DE	PTH OF OVERBURDEN 1.	m COMPLETED May - 9 -1979
	DINATE		No Dat			-		NGTH OF ROCK DRILLING 48	
			ZONTAL E HOLE		90	-			3 m LOGGED BY CH.Peel
	1 1	ANGL	E HOLE	<u></u>				RE RECOVERY 96 RIVATION OF CORE	
1 = 1	C O G	CORE	NG OF	g¢ .	£				WATER TABLE — WO HATER PRESSURE TEST HE HATER OF PRINCIPLE WATER H
DEPTH	, c	CORE	CEMENT/ TION KIND OF BIT CASING	COLOR	WEATHER ING	HARD NESS	CORE	DESCRIPT ON	WATER PRESSURE TEST
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	;		}		1		1,,	b driller's note 4 stick) 2 (substick) 3 (piece), 4 (fragment), 5 grain	•
	į	N EU	— core loss			١,	(hard)	- 5 (soft)	
		L	RQO		1 ((fresh)	~ 5 (d	lecomposed)	ELECTRIC WALLS DEVELOPMENT OF LT

Upper Quae	Yoi P	ROJECT		HOLE No a -	2 'SHEET 3 OF	
	ight Bonk		DEPTH OF HOLE	500 m	COMMENCED Ma	
ELEVATION	No Date		DEPTH OF OVERBURDEN		COMPLETED Ma	
COORDINATE			LENGTH OF ROCK DRILL			FONDIŞA
ANGLE FROM HOL BEARING OF ANGL		90_	TOTAL LENGTH OF COR	E <u>483</u> m 966	LOGGED BY	CH.Peel
 	T TOLE .		OBSERVATION OF CORE	300		
NAME NAME	A NO ON	~ * g		WATER	TABLE - 4/2	DEPTH ELEVATION
DEPTH HOCK NAMI LEST, CORE	CEMENTA TION KIND OF BIT CASING	WEATHER ING HARD	DESCRIPT ON	WATER	PRESSURE IFST	4 4 4
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Upper Quae Yai **PROJECT** HOLE No Q - 3 (SHEET I OF 3) LOCATION Right Bank DEPTH OF HOLE 50.0 m COMMENCED May - 16 - 1979 ELEVATION No Data DEPTH OF OVERBURDEN __1.5_ m COMPLETED May - 20 -1979 COORDINATE No Data LENGTH OF ROCK DRILLING 48.5 m DRILLED BY FONDISA ANGLE FROM HOLIZONTAL 90 ° TOTAL LENGTH OF CORE 49.1 m LOGGED BY CH. Pael BEARING OF ANGLE HOLE CORE RECOVERY 98.2 OBSERVATION OF CORE CORE RECOVERY DEPTH WATER TABLE LEVATION COLOR WEATHER ING --1/--DESCRIPTION WATER PRESSURE TEST LEAKAGE OF DRILLING WATER LUGEON (Plmin) Hum is Soil With Some 8 roots of Plant o, _ 1 150 3 4 Supply Core lost 5 2.85 ea Kage 3.00 . 3 Rock is rather deep weathered cavenous zone gravelly size all cracks are weathered 6 818 brownd. 1 3 4 light 5 - 8 11.45 100 Generally rack has no - 2 brown cracks, good Core recovery massive brown cracks at 22.70 ~ 23.05 and filled by Yellow Soil. Э 3 3 b drifter's note 4 I (stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain 1 (hard) - 5 (soft) f (fresh) = 5 (decomposed)

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coc	RDINAT	Έ	No Do	ta		- <u></u> -		ENGTH OF ROCK DRILLING 4	1.5 m COMPLETED M							
			LIZONTAI		9 0	_			- · ·	FOND						
BEA	RING O	FANG	LE HOLE	_		_			9.1 m LOGGED BY	CH.Pe	<u> </u>					
	¥	_ ≥	١, ١	T				SERVATION OF CORE	<u> </u>	т т						
DEPTH	ROCK NAME	CORE	CEMENTA TION KIND OF BIT CASING	Į,	14.	5			WATER TABLE W	1 = 1	ρ					
	Ž i	2 2	CEME TIND	COLOR	WEATHER	HARD	CORE	DESCRIPTION	WATER PRESSURE TEST	ОЕРТН	ELEVATION					
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PROJECT HOLE No Q - 3 (SHEET 3 OF 3) <u>Upper Quae Yai</u> LOCATION Right Bank DEPTH OF HOLE 50 0 m COMMENCED May 16 -1979 ELEVATION No Data m DEPTH OF OVERBURDEN _1.5 m COMPLETED May -20 -1979 COORDINATE No Data LENGTH OF ROCK DRILLING 48.5 m DRILLED BY FONDISA ANGLE FROM HOLIZONTAL 90 TOTAL LENGTH OF CORE <u>491</u> m LOGGED BY CH. Peel BEARING OF ANGLE HOLE ___ 98.2 CORE RECOVERY OBSERVATION OF CORE CORE RECOVERY CEMENTA TION KIND OF BIT CASING DEPTH CE PTH DESCRIPTION WATER PRESSURE IFST LEAKAGE OF DRILLING WATER LUGEON (/mn) 401 **4**0m Supply 3 3 3 - 5 345 -2 - 7 ≽ driffer s note 4 l (stick) 2 (substick) 3 (piece) 4 (fragment) 5 grain 1 (hard) - 5 (soft)

1 (fresh) 5 (decomposed)

PROJECT (Thi Khong Site) HOLE No LL-1 (SHEET 1 OF 2 Upper Quae Yaı Left Bank DEPTH OF HOLE COMMENCED June 25 1979 LOCATION 35.00 m 189 COMPLETED June -30 -1979 ELEVATION DEPTH OF OVERBURDEN 8.60 m m COORDINATE ____ LENGTH OF ROCK DRILLING 26.40 m DRILLED BY EGAT 90 LOGGED BY CH. Peel ANGLE FROM HOLIZONTAL TOTAL LENGTH OF CORE 48.28 BEARING OF ANGLE HOLE **CORE RECOVERY** OBSERVATION OF CORE WATER TABLE - W-WATER PRESSURE TEST CORE DESCRIPT ON LEARAGE OF DRILLING WATER LUGEON **0** → 100 Om Δ . - 2 Δ Humus soil and yellowish clay Δ Ø Δ o. dark Δ 6 Δ 3-4 3-4 All Cracks are weathered. - 9 9.60 brown.

Core loss Sheared at 9.00-9 60 10.00 10.40-10.60 10.75 3.4 3.4 4 All cracks are Weathered. brown. reenish Small voids distributed 3 3 3 - 2 over at 11 75-12.75. = 77 12 75 13.00 Core lost Bit All cracks are weathered. brown brick. 4 - 5 4 4 1 Small fragment about 5 8-15cm. - 6 7 - 7 17.40 77 All cracks are Weathered -- 8 3 3 3 brown 19 20 core lost. 19.50 ► driller's nate 4 1 (stick) 2 (substick) 3 (niece), 4 (fragment), 5 grain 1 (hard) 5 (soft) I (fresh) 5 (decomposed)

ELEVATION 18.9 m DEPTH OF HOLE 33.00 m COMMENCED June 25.1979 COORDINATE FROM HOLIZONTAL 90 TOTAL LENGTH OF ROCK DRILLING 28.40 m DRILLED BY EGAT TOTAL LENGTH OF CORE CORE RECOVERY 96.28 COMPLETED Wine 30.1979 ESARING OF ANGLE HOLE CORE RECOVERY 96.28 COMPLETED Wine 30.1979 DESCRIPTION OF CORE 96.28 COMPLETED WINE 30.1979 OBSERVATION OF CORE OF RECOVERY 96.28 COMPLETED WINE 30.1979 OBSERVATION OF CORE WAITE FAMEL OF PAULING WATER FAMEL OF PAULING WAT		Jpper	Quo	e Yai	PR	OJE	CT	(TI	hi Khong Site) HOLE N	No LL.	- I (SHEET 2	OF 2 1	
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BEARING OF ANGLE HOLE CORE RECOVERY 95.28 OBSERVATION OF CORE OBSERVATION OF CORE WATER TABLE WATER TAB							-	LE	ENGTH OF ROCK DRILLING 26.	40 m	DRILLED BY	EGA	Ţ
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BEA		۱۲۰ و	ANGL	E HOLE						33 -			
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ا کی اور میان میان میان میان دور دور دور دور دور دور دور دور دور دور	Calcareou			\$ 55 mm - Di	green.	3 1 4	3	3 - 4	Some cracks are brown. Cracky Zone at 15.00 ~ 16.50.	- 77 = 50		5 6 7	
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GEOLOGIC LOG OF DRILL HOLE Upper Quae Yai PROJECT (Thi Khong Site) HOLE No LL-2 (SHEET 2 OF 2

LOCATIO	N	Left Ba	_			PTH OF HOLE 30.	00 m			- -1979
ELEVATION				m			0 m		ıly - 7	-1979
	ATE					NGTH OF ROCK DRILLING 22		DRILLED BY	EGA	T
ANGLE F	ROM HOL	IZONTAL	90	_:		TAL LENGTH OF CODE	m		CH. P	
BEARING	OF ANGL	E HOLE					<u>3</u> 3_1	_		
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DEPTH ROCK NAME	CORE	CEMENTA TION KIND OF BIT CASING	COLOR	2 2 2	F E	DESCRIPTION	1	ER PAESSURE TEST	DEPTH	ELFVATION
	-	2 3 20	8	HAH	85		1	AGE OF DRILLING WATER	^	EL.
20m	0 →100						° 10-7	LUGEON	40 20m	
Some designation de designation de designation de designation de d	0 - 100	\$ 55 mm - Diamond Bit	red brick, reddish green.		3	Weathered cracks, brown Many Void With green material. 26.00 All cracks are weathered brown many void With brown material, and many White Spotted. 30.00	70 Test 105m	LUGEON	20m 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8	4 3
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						ck) 2 (substick) 3 (piece), 4 (fragment), 5 grain				
		RQD	1			5 (soft)				
		ww								

	Up	per	Quae	Yai	PR	OJE	CT	(T	hi Khong Site) HOLE	No	RR-	- I (SHE	ET I s	of 2 ,	
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	VAT			187	' 		<u> </u>		EPTH OF OVERBURDEN 3	40	2_ m				1979
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				IZONTAL E HOLE					OTAL LENGTH OF CORE			LOGGE	D BY	CH.F	ee t
	1	G Ur	ANGL	E HOLE	_					1.17	_ 30				
	POCK NAME	o l	باري د ا	4 4 5 0		Te -	1	OBS	SERVATION OF CORE	_	WATER	TARE F			ž
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HOLE No RR-1 (SHEET 2 OF 2) Upper Quae Yai PROJECT (Thi Khong Site) 30 20 m COMMENCED July _ 13 _1979 Right Bank LOCATION DEPTH OF HOLE COMPLETED July - 16 -1979 187 ELEVATION DEPTH OF OVERBURDEN 3.40 m COORDINATE __ LENGTH OF ROCK DRILLING 2680 m DRILLED BY ___EGAT____ ANGLE FROM HOLIZONTAL 90 . LOGGED BY CH Pesi TOTAL LENGTH OF CORE 98 17 . BEARING OF ANGLE HOLE CORE RECOVERY OBSERVATION OF CORE CORE DEPTH WATER PRESSURE TEST DESCRIPT: DN LEAKAGE OF DRILLING WATER LUGEON 201 Ēι All craks are weathered 3 3 2 brown. breenish -2 8, Ēз 23.50 23.80 Core Loss General core length F-5 about 3-7cm. 3 3 4 All cracks are weathered brown. - б pale Cracky Zone at 23.80-24.10 55 27.00 Horizontal crack cracks изыв surface are weathered F-8 at 28.80 ~ 29.20. 29.75~ 3 3 3 29.80. Pale 2980 30-1 - 30 gry 3 3 3 All cracks are weathered brown, dissolved cracks at 29.80~30.00. 30.20 2 -3 - 5 8-3 - 8 9 ▶ driller's note 4 1 (atick), 2 (aubstick), 3 (piece), 4 (fragment), 5 grain 1 (hard) ~ 5 (soft) 1 (fresh) - 5 (decomposed) ---- ROD

PROJECT (Thi Khong Site) HOLE No RR-2 SHEET 1 JF 2 Upper Quae Yal COMMENCED July _10 _1979 LOCATION Right Bank DEPTH OF HOLE 30.60 m COMPLETED July -12 -1979 **ELEVATION** 198 DEPTH OF OVERBURDEN 3.80 m DRILLED BY __EGAT___ COORDINATE ____ LENGTH OF ROCK DRILLING 26.80 m ANGLE FROM HOLIZONTAL 90 ' TOTAL LENGTH OF CORE LOGGED BY CH. Peel BEARING OF ANGLE HOLE CORE RECOVERY 9892 1 OBSERVATION OF CORE EL F VA TION WATER TABLE -----CEPTH CORE WATER PRESSURE LEST DESCRIPT ON LEAKAGE OF DRILLING WATER LUGEON Orr On 657 Silty Clay With root B. Plant. o. Δ 380 ROCK is deep weathered 3 all cracks are weathered 1 dish 4 4 brown. 4 rede - 7 8.00 8 Good core recovery, - 9 brick. all cracks are weathered 10-3 3 1 brown, distributed With 2 White material. Dıamand 1185 2 Rocks is Weathered. 4 4 3 1270 deep Weathered Core lost 13 00 12 00 12 20 12 50 - 12 60. - 3 3 55 mm 73 68 4 1400 All cracks are weathered 511 3 3 3 brown. red 17.40 All cracks are weathered brick 8 2 2 brown ţ 3 i Voids are filled by 9 3 red 3 green material. 20 00 > dr lier 5 note 4 1 (stick) 2 (substick) 3 (piece), 4 (fragment), 5 grain I (hard) 5/soft) 1 fliesh) 5 (decomposed)

HOLE No RR-2 (SHEET 2 OF 2) Upper Quae Yal PROJECT (Thi Khong Site) Right Bank 30 60 m COMMENCED July_10 _1979 LOCATION DEPTH OF HOLE 198 ELEVATION 3.80 m COMPLETED July - 12 -1979 DEPTH OF OVERBURDEN COORDINATE _ LENGTH OF ROCK DRILLING 26.80 m DRILLED BY ____EGAT___ ANGLE FROM HOLIZONTAL 90 TOTAL LENGTH OF CORE _____ m LOGGED BY CH. Peel BEARING OF ANGLE HOLE 98,92 2 **CORE RECOVERY** OBSERVATION OF CORE CEMENTA TION KIND OF BIT CASING COLOR WEATHER HARD HARD NESS DEPTH WATER PRESSURE TEST DESCRIPTION LEAKAGE OF DRILLING WATER 0 → 100 LUGEON 20m 2 On Core length about 10 cm. - 5 Good care recovery, greenish 3 3 3 cracks are not so E-6 weathered. 1 1 1 1 1 1 1 Ó - 8 Ë-9 - 30 30.60 -2 - 5 8 - 8 ġ ⇒ driller's note 4 adriller's note a

1 (stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain 1 (hard) ~ 5 (solt) † (fresh) - 5 (decomposed) ---- ROD

CHAPTER 2 MATERIALS

Chapter 2

Material

2-1	Result of Soil Test for Sample taken from each meter of Test Pit		
2-1-1	Result of Soil Test	4	sheets
2-1-2	Gradation Analysis	30	sheets
2-1-3	Compaction Test	32	sheets
2-2	Result of Soil Test for Representative Sample		
2-2-1	Result of Soil Test		
2-2-2	Gradation Analysis	3	sheets
2-2-3	Atterberg Limit	6	sheets
2-2-4	Compaction Test	2	sheets
2-2-5	Compaction and Permeability Test	3	sheets
2-2-6	Triaxial Compression Test	12	sheets
2-2-7	Gradation Analysis after Compaction	6	sheets
2-3	Concrete Aggregate		
221	Possile of Tost for Course Aggregate		

2-1-1 (1) Results of Soil Tests

			Soil Cla	ssification	Water		Att	erberg Lin	nits			Grada	ition			Compac	tion**
Area No.	Sample No.	Depth	Unified	Revised	Content as received	Specific Gravity	LL	PL	P 1	-38.1 mm (1 1/2")	-19.0 mm (3/4")	-4.75 mm (No. 4)	-2.0 ^{mm} (No. 10)	-0.425 mm (No. 40)	-0.075 mm (No.200)	Optimum Water Content	Maximum Dry Density
110.	140.	(m)	System	P.R. System	(%)		(%)	(%)		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(t/m ³)
	P – 1	0.1-1.0	GC	A-6-a(2)	7.4	2.61	37.6	19,9	17.7		100	73	58	47	38		
		1.0-2.0	GP-GM	A-1- (0)	10.1		-NP-	-NP-	-NP-	[66	30	19	14	11	13.2	* 1.83
ļ		2.0-2.5	GC	A-2-6(1)	10.9		33.9	19.6	14.3		89	56	45	36	32		
	P - 2	0.2-1.0	GC	A-2-6(1)	9.5		36.8	21.5	15.3		99	65	50	42	34		
		1.0-2.0		A-1-a(0)	9.2						82	38	27	19	14	16.4	* 1.75
		2.0-2.5	GW-GC	A-2-6(0)	6.5	,	31.8	19.0	12.8	•	82	27	12	11	6		
	P - 3	0.2-1.0	GM-GC	A-2-6(0)	7.2		20.1	16.0	4.1		93	55	35	26	13		ļ
		1.0-2.0	SM	A-2-7(0)	12.2		50.9	38.3	12.6		100	77	53	33	25		
		2.0-3.0	GM-GC	A-2-6(0)	8.4		21.6	16.7	4.9		65	48	42	36	27	13.0	1.81
i		3.0-4.0	SC	A-2-6(0)	13.8		24.5	14.8	9.7		85	67	54	44	27		•
		4.0-5.0	CL	A-6 (6)	15.1		30.6	18.2	12.4		100	88	83	78	61		
	P - 4	0.2-1.0	sc	A-2-6(1)	8.0		32.4	18.9	13.5		100	78	63	53	35		
		1.0-2.0	SC	A-6 (2)	8.8		34.2	21.9	12.3]	100	85	69	62	42		
		2.0-3.0	CL	A-6 (12)	15.6	1	35.8	16.0	19.8		100	97	91	86	69	18.4	1.73
		3.0-4.0	SC	A-6 (2)	14.6		35.6	23.6	12.0		100	86	74	66	43		
İ		4.0-5.0	CL	A-6 (7)	15.4		30.2	19.2	11.0		100	92	86	83	66		
	P - 5A	0.3-1.0	SP -SC	A-2-6(0)	9.0		35.3	22.1	13.2		96	59	41	29	12	15.0	* 1.78
	P - 5B	0.3-1.0	GC	A-2-6(0)	5.7		36.4	23.3	13.1		100	59	35	27	22	12.5	* 1.86
	P 6	0.3–1.0	SC	A-6 (4)	10.7		37.0	21.1	15.9		100	78	65	56	46		
		1.0-2.0	SM	A-2-6(0)	10.5	2.68	34.0	27.2	6.8		100	76	53	40	34		
	 	2.0-3.0					1	1							}	16.9	* 1.72
		3.0-4.0	GW_GC	A-2-6(0)	12.7		39.8	21.0	18.8		69	36	24	15	10		
	 	4.0-5.0	GP-GC	A-2-6(0)	15.5		38.9	21.3	17.6		82	43	28	18	12		
!	P - 7	0.2-1.0	GW_GC	A-2-6(0)	13.9		40.2	22.1	18.1		100	41	24	11	7		
		1.0-2.0	sc	A-2-6(0)	11.6	1	37.7	24.0	13.7		92	53	35	20	13		
		2.0-3.0						İ								17.1	* 1.78
		3.0–4.0	GM	A-2-7(0)	11.6		41.4	29.4	12.0	ļ	92	50	34	21	16		

* Soil sample passing sieve 3/4" otherwise passing sieve No. 4

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2-1-1 (2) Results of Soil Tests

			Soil Cla	ssification	Water		Att	erberg Lin	nits			Grada	tion			Compac	tion**
Area No.	Sample No.	Depth	Unified	Revised	Content as received	Specific Gravity	LL	PL	ΡJ	-38.1 (1 1/2")	-19.0 mm (3/4")	-4.75 (No. 4)	-2.0 mm (No. 10)	-0.425 (No. 40)	-0.075 mm (No.200)	Optimum Water Content	Maximum Dry Density
10.	140.	(m)	System	P.R. System	(%)		(%)	(%)		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(t/m ³)
	P - 8	0.2-1.0	SC	A-2-7(1)	12.7		49.4	28.0	21.4		100	68	50	. 31	22	 	
		1.0-2.0	GP-GC	A-2-6(0)	11.4		35.7	20.1	15.6		77	39	26	15	11	14.3	* 1.82
		2.0-3.0	SC	A-2-6(0)	21.8		26.8	17.7	9.1		100	99	89	56	31		
	P - 9	0.2-1.0	SC	A-6 (1)	8.0		31.3	22.3	9.0		98	80	67	55	38		
		1.0-2.0			4.2		23.8	14.9	8.9			i i	į	 		14.1	1.88
	P - 10	0.3-1.0	SM	A-7-6(1)	17.6		49.3	43.2	6.1		100	97	89	64	38	<u> </u>	
		1.0-2.0	CL	A-7-6(7)	8.5	•	41.0	24.7	16.3		100	76	66	59	56		
1		2.0-3.0	SC	A-6 (2)	14.5	2.68	1.98	23.1	16.0		100	90	76	52	37	22.0	1.65
•		3.0-4.0	CL	A-6 (7)	10.0		37.1	22.7	14.4		100	88	77	68	59		
		4.0-5.0	SC	A-6 (3)	14.3		37.0	20.2	16.8		100	88	73	50	40		
	P - 11	0.2-1.0	SM	A-7-6(3)	15.5		51.6	38.3	13.3		98	85	69	49	42		
1 1		1.0-2.0	SC	A-7-6(1)	12.1		42.2	25.0	17.2		92	70	52	41	36		
		2.0-3.0	GC	A-7-6(4)	12.4		45.1	24.1	21.0		100	65	52	44 	39	14.5	* 1.83
		3.0-4.0 4.0-5.0	GW-GC	A-2-6(0)	9.7 10.2		34.9 34.4	22.3 15.6	12.6 18.8		87	32	12	10	5		
										1							
<u> </u>	P - 12	0.3-1.0	ML	A-7-6(7)	12.8	2.67	41.8	26.8	15.0		100	99	93	72	59		
		1.0-2.0	GC	A-2-6(0)	8.4		32.8	18.3	14.5		92	50	31	21	14	11.1	* 1.93
		2.0-3.0	GW-GC	A-1-a(0)	8.1						90	39	22	11	6		
	P - 13	0.3–1.4	GW	A-2-6(0)	9.6		37.0	21.7	15.3		54	9	4	2	2	13.6	* 1.83
	P - 14	0.0-1.0	GW-GM	A-2-7(0)			48.0	28.3	19.7		78	29	16	9	7		
		1.0-2.0					30.4	22.6	7.8						}	16.2	* 1.80
		2.0-3.0	ļ		9.3	2.71	31.7	21.6	10.1	:]				1	
	P - 15	0.21.0	sc	A-2-7(1)	19.7	2.71	58.7	33.1	25.6	:	100	87	65	35	20	30.2	1.42
	P - 16	0.2-1.0	GM	A-2-7(0)	12.3		52.4	32.0	20.4		96	52	30	23	12		
]	į	1.0-2.0			9.6		51.9	29.3	22.6					<u> </u>			
		2.0-3.0	GP-GC	A-2-6(0)	11.3		40.4	23.3	17.1		100	49	28	14	9	15.2	* 1.83
		3.0-4.0	SC	A-2-6(0)	9.6	2.75	39.3	22.0	17.3		100	63	42	25	18		

* Soil sample passing sieve 3/4" otherwise passing sieve No. 4 ** ASTM D698-70 Method C

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2-1-1 (3) Results of Soil Tests

			Soil Clas	ssification	Water		Att	erberg Lim	its			Grad	ation			Сотра	ction**	7
Area	Sample	Depth	Unified	Revised	Content as received	Specific Gravity	LL	PL	ΡI	-38.1 mm (1 1/2")	-19.0 ^{mm} (3/4")		-2.0 ^{mm}	-4.25 ^{mm} (No. 40)	-0.075 ^{mm} (No.200)	Optimum Water Content	Maximum Dry Density	
No.	No.	(m)	System	P.R. System	(%)		(%)	(%)		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(t/m ³)	
	P - 17	0.0-1.0	GW-GC	A-2-6(0)	8.9		36.5	23.7	12.8		100	52	30	15	11			1
	<u> </u>	1.0-2.0	GW_GM	A-2-6(0)	12.5		34.6	24.6	10.0		78	46	30	18	12	13.6	* 1.81	
		2.0-3.0					32.1	19.2	12.9								<u> </u>	
	P - 18	0.4-1.0	sc	A-2-7(0)	11.6		44.8	25.5	19.3		9 i	66	45	26	19			
]	1.0-2.0	SM	A-7-6(10)	10.3		59.8	33.4	26.4		100	86	71	58	49			
	<u> </u>	2.0-3.0	[! 		,	l		1				19.0	* 1.72	
		3.0-4.0	SP-SC	A-2-6(0)	10.0		36.0	23.5	12.5		92	66	40	19	11			
		4.0-5.0	SP –SC	A-2-6(0)	8.5		34.6	22.8	11.8		100	68	36	16	9	<u> </u>		
	P - 19	0.3-1.0	sw	A-2-6(0)	11.1		33.8	25.1	8.7		94	61	33	7	2			
		1.0-2.0	sc	A-2-7(1)	9.9		41.6	23.2	18.4		100	83	60	37	29			
		2.03.0	sw	A-2-6(0)	18.6		31.5	19.3	12.2		100	78	46	13	2	14.5	* 1.83	
		3.0-4.0	SP –SC	A-2-6(0)	10.8		33.9	20.3	13.6		92	67	41	18	11			
		4.0-5.0	GW-GC	A-2-6(0)	10.5		33.2	19.6	13.6		100	50	28	10	6			
į	P - 20	0.2–1.0	SM	A-2-7(0)	12.6	2.66	51.6	42.2	9.4		100	76	61	42	19			
		1.0-2.0	SM	A-2-7(2)	9.9		58.2	36.0	22.2		100	69	48	37	31			
		2.0-3.0	GW-GC	A-2-7(0)	13.0		46.5	24.5	22.0		90	46	28	16	12	15.6	* 1.80	
	<u> </u> 	3.0-4.0	GW_GC	A-2-7(0)	11.3		42.3	23.4	18.9		100	31	19	11	6		<u> </u>	1
		4.0-5.0	GW-GC	A-2-6(0)	10.4		37.8	22.0	15.8		56	29	19	13	10	Ē		
i	P - 21	0.2-1.0	МН	A-7-6(11)	31.4		59.4	39.2	20.2		100	98	88	69	53			
	•	1.0-2.0	GC	A-2-6(0)	17.8		34.5	22.3	12.2		89	46	31	20	16	36.0	1.36	İ
İ		2.0-3.0	мн	A-7-6(10)	25.9		57.8	36.4	21.4		100	98	86	63	34	70.0	1.30	1
į		3.0-4.0	SM	A-2-7(1)	27.8		57.3	39.0	18.3		100	98	87	64	31			
	P - 22	0.2-1.0	МН	A-7-6(8)	25.0		61.0	47.3	13.7		100	98	93	78	56	13.3	* 1.91	
		1.0-2.0	СМ	A-2-6(0)	6.5		27.1	22.1	5.0		70	51	46	40	19			
į	P - 23A	0.2-1.0					74.2	47.6	26.6							34.8	1.35	* Soil sample sieve 3/4" otherwise p sieve No. 4
	P - 23B	0.2-1.0	SM	A-7-6(4)	25.8	2.65	60.5	34.0	26.5		100	99	89	58	36	34.0	1.39	** ASTM D69 Method (

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2-1-1 (4) Results of Soil Tests

			Soil Classification Water Content as				Att	erberg Lim	its				lation			Compa	ction**	7
Area	Sample	Depth	Unified	Revised	Content as	Specific Gravity	LL	PL	P 1	-38.1 (1 1/2")	-19.0 mm (3/4")			-0.425 (No.40)	-0.075 mm (No.200)	Optimum Water Content	Maximum Dry Density	1
No.	No.	(m)	System	P.R. System	(%)	Gravity	(%)	(%)		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(t/m ³)	
· · · · · · · ·	P - 24	0.2-1.0	SM	A-7-6(8)	35.7		63.2	43.5	19.7		100	99	94	76	49	<u></u>	<u> </u>	-
		1.0-2.0	SM	A-7-6(7)	28.7		71.0	36.4	34.6		100	99	87	57	39		1	
		2.0-3.0	SM	A-2-7(1)	26.5		53.2	33.9	19.3		100	96	75	41	22	29.1	1.47	1
		3.0-4.0	SM	A-2-7(2)	25.0		61.1	38.3	22.8		100	96	83	54	34			
		4.0-5.0	GW-GM	A-2-7(0)	8.0		48.6	31.8	16.8		72	33	19	9	5		<u> </u>	
	P - 25	0.2-1.0	CL	A-7-6(14)	16.8		44.8	25.5	19.3			100	97	87	74			
		1.0-2.0	CL	A-6 (5)	10.9		29.2	19.0	10.2		98	93	86	79	61	1		
		2.0-3.0	CL	A-6 (4)	12.2		30.1	19.5	10.6		98	92	84	74	54	17.0	1.78	
		3.0-40	CL	A-6 (5)	11.0		28.1	15.8	12.3		100	89	80	70	54			
		4.0-5.0	GC	A-2-6(0)	12.0		38.2	22.7	15.5		89	49	32	21	16			
	P - 26	0.0-1.0																
	ļ	1.0-2.0	GC	A-2-6(0)	9.3		30.3	16.8	13.5		76	41	27	20	14		1	
		2.0-3.0	GC	A-2-6(0)	7.2		34.2	20.8	13.4		89	49	31	24	21	12.1	* 1.91	
		3.0-4.0	GC	A-2-6(0)	86		30.7	17.8	12.9		78	52	35	22	14			
		4.0-5.0	GW-GC	A-2-6(0)	4.2		30.8	19.5	11.3		71	25	15	8	6			
	P - 27	0.0-1.0																
		1.0-2.0	SC	A-7-6(3)	14.8		40.6	22.8	17.8		100	86	70	52	41			
		2.0-3.0	SC	A-2-6(0)	13.1		38.6	23.1	15.5		86	60	35	18	11	18.0	* 1.75)
		3.0-4.0	GP-GM	A-2-6(0)	15.6	2.74	33.3	24.0	9.3		100	42	27	15	9]	
		4.0-5.0			14.5						100	75	61	45	37			
	P - 28	0.3-1.0	SC	A-2-6(0)	12.6		37.1	23.3	13.8		100	70	48	35	19	13.5	* 1.83	
		1.0-2.5	SC	A-2-6(0)	10.8		27.6	15.4	12.2		94	74	59	52	34	15.5	1.03	
	P - 29	0.3-1.0	SC	A-6 (6)	9.8		34.3	18.3	16.0		94	81	71	68	54		Ì	
		1.0-2.0			8.6						100	76	67	61	40			
		2.0-3.0	GC	A-2-6(1)	11.8	2.66	36.4	20.6	15.8		79	50	39	32	26	15.0	* 1.79	
		3.0-4.0	GC	A-2-6(0)	8.6		33.3	18.4	14.9		86	53	39	27	16			
		4.05.0	SC	A-2-6(0)	14.8		39.3	22.7	16.6		93	66	52	36	22			
	P - 30	0.3-1.0	SM	A-7-6(4)	18.1	<u> </u>	65.7	44.2	21.5		100	86	59	46	38			* Soil sample sieve 3/4" otherwise pa
		1.0-2.0														21.4	* 1.62	sieve No. 4
		2.0-3.0	GW-GM	A-2-6(0)	13.8		39.2	27.1	12.1	i	57	24	13	9	7			** ASTM D698 Method C

