Depth (m)

General Geologic Description, Engineering Properties of Rock/Materials, and Drilling Remarks etc.

n _ 1

Residual Soil, brownish, highly plastic with traces of silty materials, completely weathered.

3 - 200

Volcanic Breccia, sound rock starts at depth 28m. The upper portion of sound rock is generally poor with recoveries ranging from ground particles to broken chips and fragments and several core pieces, relatively short.

Searing was observed at 23.17 m and 26.37m.

Recementing along these sheared structures is tight. Rock is friable to hard.

Lower portion is sound rock, broken to massive with breakages attributed to mechanical handling. Joints are widely distributed along core samples ranging from stringers or hairline sized to several mm thick, recemented with quartz calcite minerals.

Lapilli Tuff, noted at 63.67 m to 84.67 m, blocky to meassive sound and hard to very hard rock.

200 - 310

Volcanic Breccia with andesite intrusions noted at 244.50 m to 265.91 m depth and

277.23 m to 309.05 m. Physical characterlstics of rocks are hard to very hard, sound, and broken to massive with minor inclusions of chips and fragments at mid section. Sheared and brecciated sections are of considerable amount with a minimum interval spacing of 5 m.

Most of these structures with presence of extreme jointings were observed along the andesitic rock, although generally tight and recemented with quartz-calcite minerals. Myolinite and chalky material were also noted on some of these structures.

Drilling was difficult but with an average of 85% grayish return water, reducing volume as depth increases.

310 - 400

This portion shows andesites intruding volcanic breccia in alternate sections, measuring 2 m min. and 35 m max. thickness.

Recoveries are mostly core pieces with angular chips and fragments at 363.52 m to 367.5 m depth. Rock samples are slightly to extremely jointed with fractures that have initiated from these joints. Calcites are the predominant recementing minerals ranging from hairline to several mm thick.

Rock is sound, hard to very hard and very broken to massive.

Rotary drilling was difficult all throughout with no return water.

A graphical log with general descriptions is attached herein for immediate reference, as shown in Fig.2-2-36.

(3) Comments and Recommentations

1) The existence of water leakage at depth 312.7 m to the bottom of the hole is possible due to no return of circulation water during drilling operations.

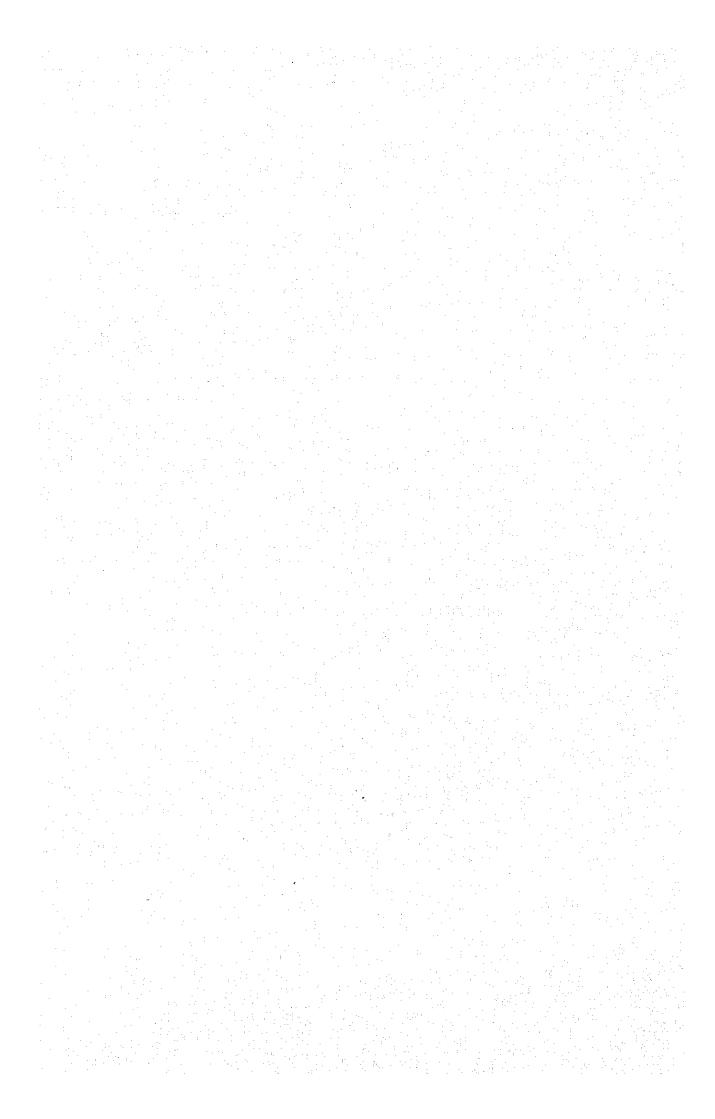
Negative Factors

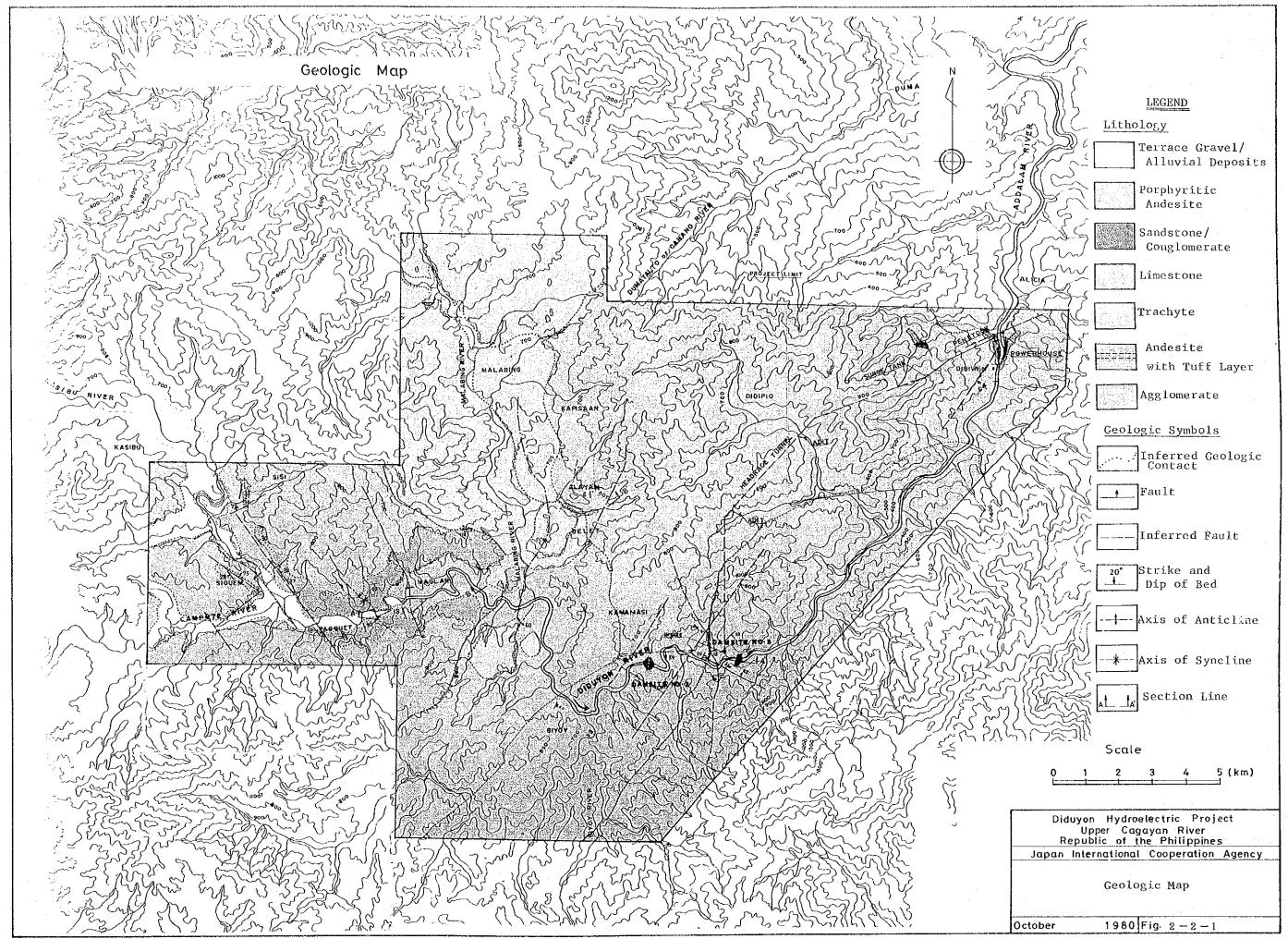
- a) Ground water elevation was measured at 312.7 m after completion of the drill hole. The above water table is unreliable since introduced circulation water possibly accumulated. No further measurement was conducted after the initial reading.
- b) The presence of brecclated and sheared structures from 310 m to 200 m above were generally healed and tight. These structures are insufficiently absorbent due to the high percentage of return water, but can also be considered a possible factor to the existence of chalky materials along some structures.
- c) Fractures below 310 m are generally tight, with slight alternation of cementing materials, predominantly carbonaceous minerals.

Water Loss can be attributed to possible slaking not vivid through ocular investigation. It would be therefore advisable to conduct laboratory tests on these samples.

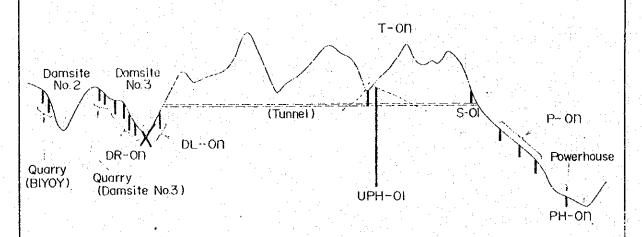
 Confirmation of slaking at a depth of 363 m lacks substantial data, thus, the following observations are possible factors and or evidence of slaking at this depth;

- a) Grouting was applied at depth 363.87 m to 364.5 m due to consistent blocking of the core bit that might be caused by caving of fragments. During the grouting process the first three (3) bags of cement introduced in the hole were washed out, prompting EGI drillers to end seven (7) bags of cement and three (3) bags of bentonite to block the cave in section. Recoveries afterwards were mostly chips and fragments.
- b) Volcanic breccia intruded by andesites became darker compared to the same rock type above it, a possible indication of metamorphism altering the composition of the original rock. Samples should be taken for petrographic analysis to determine possible alterations.
- 3) The presence of a steep dipping fault along the Didipio creek can be another possible factor. These must be confirmed by detailed mapping and additional bore holes.





Distribution of Boreholes



Damsife No.3 DR - O1 70 DR - O2 50 Inclined DR - O3 50.1 DR - O4 100 Inclined DR - O5 70.2 DR - O6 100 DR - O6A 70 DR - O7A 70.1 DR - O7A 65	
DR - 02 50 Inclined DR - 03 50.1 DR - 04 100 Inclined DR - 05 70.2 DR - 06 100 DR - 06A 70 DR - 07 70.1 DR - 07A 65	
DR - 03 50.1 DR - 04 100 Inclined DR - 05 70.2 DR - 06 100 DR - 06A 70 DR - 07 70.1 DR - 07A 65	
DR - 04	drilling
DR - 05 70.2 DR - 06 100 DR - 06A 70 DR - 07 70.1 DR - 07A 65	drilling
DR - 05 70.2 DR - 06 100 DR - 06A 70 DR - 07 70.1 DR - 07A 65	
DR - 06 100 DR - 06A 70 DR - 07 70.1 DR - 07A 65	
DR - 06A 70 DR - 07 70.1 DR - 07A 65	
DR - 07 70.1 DR - 07A 65	
DR - 07A 65	
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DR - 08 50	
DR - 09 50	
DR - 09A 50.1	1
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DL = 0.3 50	40.11 12.22 PAGE 1
DL - 04 IOO Inclined	aritting .
Total 945.5	
Damsite No 2 D2R - O1 60	
D ₂ R - O ₂ 40	
D ₂ L - O I 40	
Total 140	
Quarry A - OI 50 Drilling imp	plemented, but with few
	les unfit for geological
$\Lambda = 03$ 50 interpretati	ion.
A = 04 50	
A - 05 50	
Total: 200 (35)	
Water way T - OI 40	
7 - 02 40	
T - 03 = 40	
1 - 04	
Total 160	
Surge Tank 5 - 01 100	
8 Penstock P = 01 22.7	
	n Hydroelectric Project
P - 03 20 U	pper Cagayan River
Total 162 7 Reput	blic of the Philippines
Powerhouse PH - OIA 40 Japan Inte	rnational Cooperation Agency
PH - 02 40	<u></u>
	gic Logs of Boreholes
UPH-01 400	gio Logo of Dolellotes
Total 520	
Grand Total 2128.2 October	1980 Fig. 2-1-2
(35)	1000 h 18. 5. 1. 2

Legend Geology Symbols Name Residual Soil / Talus deposits Ŕs Gr Terrace Gravel / Alluvial Deposits Agg Agglomerate Tfbr Tuff breccia Tuff T f Ad Tf br Alternation of Andesite and Tuff breccia A_d Andesite Por Porphyrite Gouge (Fault Clay) Fractured or Sheared Zone Completely or Highly Weathered Zone Core Recovery and R. Q. D. Core Recovery R.Q.D Diduyon Hydroelectric Project Upper Cagayan River Republic of the Philippines Japan International Cooperation Agency Geologic Logs of Boreholes 1980 Fig. 2-2-3

Fig. 2-2-4(1) GEOLOGIC LOG OF DR-01

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Fig. 2-2-4(2) GEOLOGIC LOG OF DR-01

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Fig. 2-2-5 GEOLOGIC LOG OF DR-02

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BORE					ELEV	ATIONEC)1,31 ^m	INCL	NATION		TOTAL DEPTH 50 "
DEPTH	SYM-	G E C	WEATH	6 Y	HARD-	CORE RE & R.Q	.D. (%)		SEON	ROCK CLASSI-	REMARKS
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	1/3/				,		A]			grayish fresh and hard
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٠	然							0.2			34.8 - 36.1 m slightly weathered.
								0.2			slightly weathered. . 35.2m
								0.2			slightly weathered 35.2m . 6cm rhodochsosite calcite
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- 40	が対象がある。これが表現の対象がある。							0.	2		slightly weathered 35.2m . 6cm rhodochsosite calcite
-40								0.	5		slightly weathered 35.2m . 6cm rhodochsosite calcite
-40								0.	2		slightly weathered 35.2m . 6cm rhodochsosite calcite
-40								0.	5		slightly weathered. 35.2m Gcm rhodochsosite calcite vein observed.

		: NO:	DR -	O3 GY	IELEV	K 1	ON RE	556 60	347 XEN	YIIN Y	1 130	ንድሮ	M.		90° ROCK	
DEPTH			WEATH ERING		HARD- NESS	B	R.	Q.E	OVEF). (%) 80 1	00	VΑ		E	k	ASSI- NOTON	REMARKS
	200		A-2	F-2	D-2				Q						C M	O √ 1.8 m slightly weathered.
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Fig. 2-2-7(1) GEOLOGIC LOG OF DR-04

		GLO) L O	GY	ELEV	Κġ	Æ	EQ	OVE). (°	ŖΥ.	LL	JGE	ON	VI 1	ROCK CLASSI	
	BOL 30668	NAME	MEAIH ERING	JOINT	HARD- NESS	2	: P(, 1	0 60) (7) (80 	100	ν δ	A L	UE V	o —	FICATION	REMARKS
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	231		?	?	D-1		.			-	7				J	gray, fresh, very hard and
		Αgg														massive.
İ																
ľ												3.	4			Joints are rare and tightly filled with rhodochrosite.
20-	533			F-1											· • • • • • • • • • • • • • • • • • • •	
ľ	133			P == 1			i					3.	2			20.5~21.8 m
	公		:	F-1					. !							andesitic dyke or sill, chilled margin observed.
				F-1 TO	D-1		ţ	į į	.							Citivied indigits open red.
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Ý	271/			F-2			4				1		اجها			no return water
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2 - 55

Fig. 2-2-7(2) GEOLOGIC LOG OF DR-04

ĺ	BORE	HOL	No.	DR.	04	FLFV	ATIC	N55	37	7ml	NCL	ÍΝΑ	TION	45°	TOTAL DEPTH 100 M
			$G \mathrel{E} C$	LO	GY		COR	ERE	χÖЙ	RY	ΞŪ	GE (N	ROCK	TOTAL DEL CIT 1100
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١.	•				F-4	' -					,				
		35	Agg,		::).3	1		
.	7	13.3			25.5	:	1			11.		1	ì		
		ないな			F-3			İ		-71	1				
: 1	- 20 -		7.7						1			}	·		
					100			1.0				: :			71,1~72.2m
•		$\langle i \rangle \langle i \rangle$		A-2		D- I	;	!		Ž.		;	. }		72.5 ~ 73.1 m
-		とびり			F-4	TO		•			(2.6		Сн	73 5 v 75 m
-						D-2		:			1	1		-	andesitic lava flow
- 1	- 44	沙沙						- 1	: !	1		; : !	: !	1	1
		ふかり			F-1	:				1		· .	1		
-		いい			-		:		. :		i i			В	
		73.3					. :		4 :		12.5				
ı		ジバシ			٠			4		4	. 1	0, 5			
		2.2		·							;	. !			
	-80-							_ :			;		ı		
1		55			F-2	D-1	1.			333					
- [小ご		A-1	' -	D 1		1		4	4	: 1	1.		81.7~82.8m
Л	,]	7				-					d.,	<u> </u>		ł	andesitic lava flow
1								1.			1	0, 4	١.		
•		133	Agrical Control							N.	横刀				
		スシン			16			,		4	;		•		
		200		2.12				•		1		ļ i		:	
		27.7 (1)						ţ		3			:		
		》::/:						:				. =	•	•	
		兴分			_			1		1		5. Y] -	
-		XXX			F-1		!!		i i	1				1	
	- oe -	広 図							<u>i l</u>		ا خدما چو	ļ.,		.	
		17.7					H		1	Ç.	[:	!			
1		4553	•				. :								91.4~91.8m
1	N.4		1.5				1	į.		All .					andesitic leva flow
		17.17		'			. ;	1		N		၂၁.¦]	100
		117	r it is						1	从				1.	
		2//			·			- [W.	4		1		
1	ľ	13/17						1		3		1	į.		
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		5			F-2		ļ			(D)		8	, 6		
ŀ	<u> </u>	7/3			-				ji	a			Ì.		e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de
		公公		1.1.									!		
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	100					1.00		1						3.0	

Fig. 2-2-8(1) GEOLOGIC LOG OF DR-05

HOLE	No.	DR -	05	ELEV	ATI	ON	352	.78	3m	NCL	IN	ΔΤΙ	<u>ON</u>	90°	TOTAL DEPTH 70.2
SYM-	S E O	L. O WEATH	G Y	HARD-		R.	ECC C.D	XE). (RY %)	١٧.	Δ١	UE		CLASSI:	REMARKS
BOL	14541111	ERING	00111	NESS	3	0 40	- 60		100		io 	15	ао 	FICATION	silly clay with sub-angular
A A A	Rs.														pebbles
**************************************						123	\dashv	_	-		-	-	-	ļ	3.0 ~ 5.5 m graylsh to brownish.
KK		Δ-4	F-4	D-4										D	highly weathered and
ĤĦ)									est.	İ				ļ	extremely jointed gray,
浴				٠.		-				i i		!			fresh and hard.
				D - 2										В	Clasts are andesitic, pebble to cobbly and sub-angular to sub-rounded.
				7		1						1	1.		Some rhodochrosite filled
												Ì		:	joints observed
沒沒										($ \cdot $	3			
(A)															
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然為			F-2					. :			1		į		
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	1										•				20~50 m slightly altered
		-							100) ; 4	}	!		
	Ago						i	i				!	1.	,	
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	1	A-1				1	!	:	7		-			1	
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验	1	1	F - 3	<u> </u>		- -	ļ	<u>.</u>	1	- ;					31.8 m
泛			1		1	:						i	:		thin andesitic dyke
	1			1		:	•		1		O.	3	į		
经		1	•				-	•			. !	i	i		
			F-2	:	1		:		1		. !		:		
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	SMOL AND AND AND AND AND AND AND AND AND AND	SYM-NAME Rs. A CONTROL OF THE CONTR	G E O L O NAME MEATH BOLL Rs. A 4	G E O L O G Y SYM- NAME WEATH JOINT Rs. A-4 F-4	G E O L O G Y SYM- NAME MEATH JOINT HARD- BOL Rs A-4 F-4 D-4 D-2 F-2 F-2	G E O L O G Y COR SYM- NAME MEATH JOINT HARD- BAL NAME MEATH JOINT NESS 2 Rs. A-4 F-4 D-4 D-2 F-2 F-2 F-2	G E O L O G Y CORTE F SYM NAME WEATH JOINT HARD- 8 R G S	G E O L O G Y NAME WEATH JOINT HARD- 8 R Q D R S R S D - 2 F - 2 F - 3 F - 2	G E O L O G Y CORE RECOVE SYM NAME WEATH JOINT HARD- B. R. Q. D. (6) Rs. A-4 F-4 D-4 D-2 F-2 F-2 F-2	G E O L O G Y CORE RECOMENT SYM NAME MEATH JOINT HARDS 8. R. Q. D. O 60 100 Rs. A - 4 F - 4 D -	G E O L O G Y CORE RECOVERY LU MESS 8. R. Q. D. (%) V. R. S. R. Q. D. (%) P. S. R. Q. D. Q. D. (%) P. S. R. Q. D. Q. D. (%) P. S. R. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D. Q. D.	G E O L O G Y CORE RECOVERY LUGE BORN NAME MEATH JOINT HARD BO R. R. Q. D. (%) S O O O O O O O O O O O O O O O O O O	G E O L O G Y COPE RECOVERY LUGEON BOLL NAME MEATH JOINT MARS 80 40 50 60 100 6 6 10 10 10 10 10 10 10 10 10 10 10 10 10	G E O L O G Y COME RECOVERY LUGEON SOLUTION NAME MEATH JOINT NAME SESS & 20 40 50 40 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	G E O L O G Y CARE PROVERY USED NO VALUE CLASSING MAME MEATH MORD BR R.O.D. MY VALUE CLASSING MAME PRING JOINT MESS BO 40 00 100 00 00 00 00 00 00 00 00 00 00 0

BOR	EHOL	E No.	DR -	0.5	FIFV	177	ON	352	78	įή	INC	LĪ	NΔ	Ti	ON	90°	TOT	-05		H	70	. 2 m	
DEPTI	SYM- BOL	G E C	MEATH MEATH	G Y JOINT	HARD- NESS		R (). (1). (2). (2). (3). (4). (4). (4). (4). (4). (4). (4). (4	(%), (% 80	RY Will Mind	\ \ 5	V A	SE(JE	0	ROCK CLASSI- FICATION		REN	1 A F	RK S	3		
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Fig 2-2-9(I) GEOLOGIC LOG OF DR-06

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MAC.	HOLE	No.	DR -	06	ELEV	1T/	ON	64	3.97	/110 755	IN	CLI	NA	710	QN	90°	TOTAL DEPTH 1100
€РТН	SYM-	3 E O NAME	MEALL H	JOINT	HARD- NESS	B	R	 J. 0	.VE), (ر ازد	,	V Ą	SE()E	***	ROCK CLASSI	REMARKS
	BOL		ERING		NESS	r		, 60		100			, 16) 20		FICATION	
- [Y		ا أي) - -							. 4	,		pale brown, silfy
			ja er er					13	٠,							<u>, </u>	
•				7 A.										į	1		
· . [Rs.						1			1	. 5	, 1 d 1 d			- 1	
ľ	4 4																
					1									eri Gran			
[1.0									133					
7.8														(1) (1)	Y		7.8 ~ 26.1 m
					•	P				11						121611	completly weathered
10									7 3		-					3 3 3 4 3 4 3 4 4 3 4 4 4 4 4 4 4 4 4 4	(non core)
	114		133						4		•	3 4			1		
•						þ			, i								Clasts are sub-angular to
ŀ	H1/41					•			23.			3 / 3 - 4 : 3 - 1 :					sub-rounded and pebbly to
															1		cobbly
Ì					(þ			ř.					7.	.46 1		Matrix is medium to coa
l	[[1]									44.			G.				grained.
Ī	(L)													•			
			A-5	?	D-5	b .	5	7.	·						Ϋ.		
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İ					(þ		!	. ,				14.3				26-1~33.5m
						TC:	N/						:		j: '	1.	light brown to grayish
	別計		A-4	F-4 TO	'	١				}				٠.			highly weathered and friab
	1111		"	F-5											-		
	177		A-3		D-4	¥											
30	17(1)		то	F-4	T			1 .									
.	14341		A-4					i	i				; ; ;				
			17			1									2		
	17/11				'	٩.				:	i						
	分社		A-3					;				1					gray to brownish gray,
	12:23				D-3				: !						Ì		moderately weathered
	 35					P	1.5		i	,		İ		-			
.	NAS		tester.	F-4	D-4		1	No.	37		-			i	į		37.5×50m
	12:5		Д-3	то	ļ.,	1/		! ~		3							numerous rhodochrosite
	EE 1331	100	ТО	F-5	D-3		δ									CL	thickness varying from stringer to 10 cm.
•			A-2		D-2	,		1	71							7	38.7 ~ 47.6 m
	*****			F-4	7		þ							,	1		andesitic lava flow
	£22222		A-2	F-3				1								CM	
		Ad.		ľ					9	3	į					× M	
			Λ	E . A	}	1			/			3	8	•			43.4~48.1 m
, i			ТО	F-4	1,		-	ļ	1		1				1		several 60~70° oriente
	200000		A-2	F-3		1.19						1					slip planes observed.
	F*******		A-2	F-3	0-2		ď	(h.		П			j			
	经经									1							
		4		1.	i												

Fig. 2-2-9(2) GEOLOGIC LOG OF DR-06

		No. G E C	LO	GY	ELEV	KO.	Æ F	$\mathcal{H}\mathcal{K}$	λĒR	Y	LUC	1036	1	ROCK CLASSI	TOTAL DEPTH 100 "
QEPTH 30	BOL	NAME	MEATH ERING A-2	TOINT F-3	NESS	۴	2 *	3.D	80	Ž	7 ~	L.UI	æ	FICATION	
			A-1	F-4											50~92.3m slightly weathered and
				F-3						 					altered.
				F- 4					1			6.6			grayish with purplish tints,
									. Y					См	joints dominant and several
				F-4						Ĭ.,.				OM.	slip planes observed and
			A-2		D-2										oriented at 50~90°
							ľ	$\langle $							
60-											4	2.2			
		1	A - I					31							
							14	ď							
	不法			F-3					V						
				F-4			٠.				•), 3			
	派		A-2	F-3					9						
				F-2								1			
			1 2.0	T0 F-3		1	1								
			A-1		1			/				5·2	1		
70-				F-2											
	兴						•		i		ب ال م را].			
	深於				-			þ.	. !	3	. [
		Agg.						/:					. 2		
	资心			F-4			j	/			. :				
	念						Ĭ		1	řL_] [
	分影		, ,	F-3		;	Ŷ		j						
	\$4		A-2		1 /		Ţ.		1 1 A	2		9	d		
80							Ť			<u>.</u>			-		
							d			2					
	3.5			 					1				į		
	杨辽			F-4											
				. V.				İ			1	1.3	4		
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									7		1				
	送沙											_			
90	以於		ļ	<u> </u>					_	1		5, I			
	区公			F-3			İ	į	ر! لاا	7	1	1			92.3m~bot tom
					1		i		/	1					moderately to highly
		 		F-4			7.	g				i			weathered.
	除於						1	'		E		5.		Сг	humerous rhodochrosite veins observed and altered
	经次				D-3		9	4							
	次?				-					-	1				94,3~94.5m
	队心			1	D-2							3			horizontally displaced minute vartical fault observed
100									M	-		J. 1			
		;									nin in rena		111		
			•	•		7.5	. 2	?	60	• :		7		•	
1 -		15		-	:					2.	7				

Fig. 2-2-10(1) GEOLOGIC LOG OF DR-OGA

(G E O	LO	06 A G Y JOINT		COF B ₁	Æ	ŧö	W.	ŔY	1	ĹŪ	3E (NC	يئرون ازرين	ROCK	TOTAL DEPTH 70
YM- 30L	NAME	WEATH ERING	JOINT	B-IARN~								T.		, J. (3)		5 m 14 4 m 14 m
A A			J. M. 11.	NESS	CX EX	∶Κ,) 4	Q). [) (; ac	%) 100	14	LUC V A	, L, L	JE Ja)	CLASSI- FICATION	REMARKS
										7						light brown allty to slightly
A & A	Rs.	1	2 ()						i Ad							plastic.
^ ^ ^		:	1/4	3			÷,		: '\							
1336			3.1				7			١.		ж.				3.1~21,5m
13561				(ş			brownish. completly weathered,
13%			erie si eriel i			·				3						(non core)
13%							!	7,						Ħ.		
333				, C		. 14							- 2			
13%							/ 					4 ;	,			
3.6		۸.5		n - 50									÷		4.5	
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****	A 0	l			No.	142	Ÿ.				1 - 0		1			brownish to grayish, porphyritic.
,,,,,,		A-2		D - 2	8	1	V.		i		•					
****		už.	4.0		1									•		
H			1		/		Ĭ		١.							26~32m highly weathered
		Δ-6	F-4	, (β.				ļ			}		, [], .		grayish to brownish
					5	1								:		
						[Ţ_	ļ.,.			ì	ļ	i ja ki	•		
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1117				24.5	W	CE TA	es. Tr	্ তিন	Ti			į.,		ři.		grayish with reddish to
<u> </u>		A - 3	E _ 3				-				ţ 1.	i			C.	purplish tints.
		~ 3	, ,				1					!				moderately to slightly
文金							/		L	┢	-	1	•	!	A + :	weathered.
יין זיילניני							.]	þ	1				11	· ·		rodochrosite filled join
ラネ					1.7						j	lic	. 3	i.		observed.
	}				1	•					!	1	: 13 :-	i }	٠,	38.6m
	Agg						:	1			i i		,		× #	sheared and brecclated.
]				1		•:3 :	4	1	1					405~42m
念		A-2	FA	D-2		1		<u>.</u>	1	1						slightly swelled
3.7			-	ТО		:	trong Francisco		þ	1	0	1		1		
				D-1		1	i i i	1	/	1		 -				
公			F-2	1	1		!	1	4	Щ	1	[1	•		. 46.3 ~ 46.7m
	1		TO			: .		\langle				1	 	÷.	4 9	brecciote d
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沙島				'											9	
	**************************************	Additional Agg	A d. A - 4 A - 4	Ad. A-4 F-4 A-3 F-3 A-2 F-4 F-2	Ad. A-2 D-2 A-4 F+4 A-3 F-3 A-3 F-3 F-2	Ad A-2 D-2 A-4 F-4 A-3 F-3 A-2 F-4 T0 D-1 F-2 T0	Ad A-2 D-2 A-4 F-4 A-3 F-3 A-2 F-4 D-2 T0 D-1 F-2 T0	Ad. A-2 D-2 A-4 F-4 A-3 F-3 A-2 F-4 D-2 TO D-1 F-2 TO	A d. A -4 F - 4 A -3 F - 3 A-2 F - 4 D - 2 TO D - 1 F - 2 TO	A d. A - 4 F - 4 A - 3 F - 3 A - 2 F - 4 D - 2 T 0 D - 1 F - 2 T 0	Ad. A-2 D-2 A-4 F-4 A-3 F-3 D-3 A-2 F-4 D-2 TO D-1 F-2 TO	Add. A-2 D-2 A-4 F-4 A-3 F-3 A-2 F-4 D-2 TO D-1 F-2 TO	Ad. A-2 D-2 A-4 F-4 A-3 F-3 A-3 F-3 A-1 D-2 TO D-1 F-2 TO	A d. A-4 F-4 A-3 F-3 A-3 F-3 A-2 F-4 D-2 TO D-1 F-2 TO	A d. A-4 F-4 A-3 F-3 A-3 F-3 A-2 F-4 D-2 TO D-1 F-2 TO	Add. A-2 D-2 D-3 CL A-3 F-3 D-3 CL Agg. CH F-2 TO D-1 F-2 TO D-1 F-2 TO D-1

To be continued

IROI	۲Ł	HOL	ENO.	DR ~	G Y	<u> LLEV/</u>	VIII V	Æ.	65 FF(XX OV	EIYY EIYY			GE	ÖŅ	<u>ON</u>	POCK	TOTAL DEPTH 70 M
		SYM. BOL	NAME.	F-2 TO F-3	F-3	D-1			0	0	200		2		5 1	1	ROCK CLASSI- FICATION C H	REMARKS 51~66m numerous joints obserbed filled with impodechrosite. 54.2~54.3 m open caytries.
-60) }		Agg.					4	/	J			2					
		が対象			F-2 To F-3					0			2		· · · · · · · · · · · · · · · · · · ·			
- 70					F-1	D-2 D-1							0					

													The same of the sa					
												<u> </u>	_				•	

BORE	HOL	No.	DR -	07	ELEV	ATIO	ΣN	653	3.15	m No	IN		NA	TIC	N	90°	TOTAL DEPTH 7
DEPTH	SYM- BOL	G E C NAME	WEATH ERING	G Y JOINT	HARD- NESS	8	R.	O.E O.E	OVE). (° o so	(%) (%)	\ 	/ A	LU) E		ROCK CLASSIM CATION	REMARKS
																	brownish. silty to slightly plasti
)						i.			514			with few pebbles.
							7							1			
		Rs.					. 14		,							,	
			- Va.				- 7.								2		
1		i i kwa nua Lihar wali				, i							-3	•			
8.4			A-5	12.5										7			pale brown to dark bro highly weathered:
- 10 -	1131		TO		7					1.5							10~13m
]	A-4			þ						7.				D	completely weathered
	32.2															U	
	243	}	Δ-4		D-3	Ġ.									,		
	经	1															
	心														. şî		
	12/2			F-4	D-4							*.		 			17~17.8m completely weathered
		Agg	E-A			ф		1									
- 20-	份		 	 	1	-		1	24		 -						highly weathered a
	冷心	}				Ŷ.											extremely jointed
	於	3				8											grayish.
	感	1				d 4		e speed	بركيد			ļ ·,	1 2			CL	slightly weathered. joints are filled wi
	於			F-4	D-2				,	i.		į			!		r hodochrosite and o
	於治			F-3			Q		-						! . !		at 35~50° 26~31m
	130	{		F-3	D-	·				1			į				35~45° oriented
	您		A-2	<u> </u>	-	_		:								См	planes observed and with rhodochrosite on
- 30-	莎		1		-		1	1				1		-		?	
	图	1							1	Ρ,					•		
	1217	3		F-3			.		۲.								
	影			F-4			•					1					
	松	1		F TO	3		1.	—		\supset							
	议	}					-		7	200		-				См	
	於	<u>.]</u>		F-4			19	1					1				
40-	巡	\				.	1	u	/	ò	_		1	ļ			
	影	1			1											 	1
	EX			F-3	D-2		!			γ,				:			
	於				0-4	-	!	•		Q.						Сн	
	以							-	-	þ				1			
	腅			F-2			-	. .		d			-				
	以	4												-			
	以						1,			Q							
50	<u>V V</u>	1	<u> </u>		<u> </u>		<u>L</u>		L	1		<u> </u>	<u> </u>		<u> </u>	11,112	

Fig. 2-2-11 (2) GEOLOGIC LOG OF DR-07

1	13 × 1 × 1	$G \in C$) L O	G.Y		ΩÃ	RE F	O.T	WE!	₹Y	Ęu	GE ^ i	ON UE		ROCK CLASSI FICATION	TOTAL DEPTH 70.1	High-S-
DEPTH 50	BOL	NAME	ERING	JOINT	NESS	1) 4	9 6	80	iog	5	10 10	5 7	ç_	FICATION	REWARAS	بلند
30	55			F-2													
									d								
	冷	}		·					1						`		
	化 化				10.5				١.								
										Q.							
				F + 1			li	ļ									
		Agg							· 6								
inger og				F-3					A		-						
60			A - 1		D-2	_		. [: <u>i</u>		-	<u> </u>	ļ		
						1.			Ϋ́								
100	15															61.3 ~ 61.8 m	
	分系			100					9							fractured zone observed and	
		*							J.			-				oriented at 20°	
			100				: }		2	Contract							
	37				-						12.		ļ.,				
	が公	•		F-2	* - :												
	兴兴										į			:			ı
- 70 - 70 i	<u> さる</u>			· 							<u> </u>		-				
70.1										1	-	į					==
A A 4		1.7									i.					•	
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		. [.					.			1			.]			
						7					j.						1
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											, in						L.
										100	.' '	4.4		٠.			

																	DR-07A
PORE	HOL	E NO. G E C NAME	DR - LO	07 A G Y	ILLEV	COF	4. I	655 450	Q(WE)''' RY	INC INC	JG JG	EO	N.	XX	90° Rock	TOTAL DEPTH [65
nerin	BOL.	NAME	MEATH- ERING	TMIOU	MESS.	8	Υ.) 4	0 69) &0	(8)	Į. V	A P	L ()	.ac)	CLASSI- FICATION	REMARKS
		Rs															brown plastic and sitty/
3.1		3											3.				A and a second
																	3.1-18.3 m pale brown to groy
															A (D	completely, weathered.
	州州									4							(non, sore)
	批			100						ا بر							
- 10 -			1557											*			
7.7	抓		?	?	?.	ф											
	州										,				7		
	你你					•								*			
	州和						1			€ . 			X)		1		
										•							
		1							,								
						•	APAN ACCAN			1							grayish with reddish
- 20-	交	1	A 3	F-4	D-2		SP-10			OP-1		1				CL	brown tints. moderately weathered.
				-	2					÷						3 T.	
	念》											-	¥.				
												_	-				
		Agg.	A-3 TO A-2			100	5 (5)			à.				1			joints are filled with rhodochrosite and orien
			A-3	1			1			Ä,	;- ;-		10	4			at 20~70°
			A-2	1						N. C.							25~35m
- 30 -		 	A-6	F-3 T0			~				T	ان	-	_			iron stain and weather observed along some join
	泛			F-2	D- 1			ا				. !				CM	
	冷冷			F-4				6.			13	6	*				
	公	1			D-3		Ŕ		1	2		-	- [, [CL	
	沒		A-3					8				;				CM	slightly weathered to fi
			A-2 TO	F-1	D-2				/		3	2				Сн	
	汾	1	A-1	F-2	1			q					i	ĺ		CH	- slightly jointed and hai
40-	沙兰]	A-3 TO A-2	F-3	D- 3	1 -	-	<u> </u>	5			-	1				clasts are peobly and mais fine to medium grains
	V.		A - 2	A-3	1							-				См	
	1	}	A-3	F-4	0-3 D-4					.	2	.4			•		42~45m moderately weathered
			A-3	 - ~	n ~		gr%		3				- !	٠-		CL	
]	A-3 TO A-2 A-2	F-3	1		۷(ΠΙ						
		•	M-6	F-2	L					X	2			į			
		1			D-3 D-2				į	/ 1			-	İ		Сн	47.5 ~ 47.7 m highly weathened

Fig. 2-2-12(2) GEOLOGIC LOG OF DR-07A

IDA DO	"UOL		<i> ع</i> المما														TOTAL DEPTH LAS M
BOKE	THOL	G E C	L O	GY	ELEV	100	子 ON	65 FEX	DU DVE	RY	<u> </u>	LÜ	GE	ON	ON	ROCK	TOTAL DEPTH 65 m
DEPTH	SYM-	NAME	WEATH ERING	JOINT	HARD-	8	R.	Q.	D. (%)		Ÿ/	Ĺ	ŲΕ	0	ROCK CLASSI- FICATION	TOTAL DEPTH 65 M
50	17.53		C	ļ.,	D-3	 	-		7			Ť	Ť	Ť-	Ť	Ci	50.3 m
			A-2	F-2	D-2			d		4						См	stip plane (slicken side)
				100	D-3					o.		2.		1			with rhodochrosite vein.
	八八		A-1	F 1	0-2					1	11	1				Сн	
	1				10 D-1		1			*	Ц						
	芸芸				01				<i> </i>								
	23%	Agg.	1 1 1 1				1			1		クマ					
	53			`								٠. ٠	1				58.8~59.8 m
							5			The state of the s						- 1	slightly weathered and altered
- 60 -	17.5										٢	-					
- 50										7							
												3				117	
					:					i	H					:	
- 65	<i>```</i> ````					_			_	1	L	-	ļ	<u> </u>			
	4.4															1.7	
												,					
			. :														
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-							7				-	+			,		
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		11.1		7				4-									
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لببا								1 5			_	<u> </u>					

ORE	HOLE	No.	DR -	08	ELEV	1710	ΝС	669	314	m)	IN	<u>CL I</u>	NΔ	TI	NC	90°	TOTAL DEPTH 50
эпн	SYM-	G E O NAME	L O WEATH ERING	G Y JOINT	HARD-	8	E I R	039], 0 a	OVE)), (°	(Y)		LUC V A	JE(JE JE B		ROCK CLASSI- FICATION	REMARKS
			EVIIA		14600		w						******		ee	NAME OF THE PERSON OF THE PERS	brownish .
1	a	85												.5		,	soft and plastic
						udis.								10			
Ī		Rs.											· · ·			1 6877 13 (8) 1	
	6						1	 1									
								 			1.5						
				, , ,										100			
9.0	ŮŽŮ.										. ,			Ÿ	- 47		brownish
- 0		•		1	•	Ĭ					j.,						completely weathered
173																	
	议纠							· .									
	NA						1							:			
	出					ф				٠.							
	糾	1 2 2 2 2								1 - 1						D	
						•				.:							
			A-5	?	D- 5												
20-	134	A gg.		3													
	KKI					ф											
: 1																	
	H	}				•											
	111				ļ								•	} : !			highly weathered
	(科		A-4	F-4 TO	D-3												
		1	A -	F-5	.د- دا	۱.	ļ.,										
3O	国					198	(4)	-	14	_	L	<u> </u>			<u> </u>		
	11/1			F-4		ф			4	ż							
	HH					w											grayish.
.*.	ES:			F-3	D-2		1	100		শহন				4 :			slightly weathered.
						300		1	1				i i			CL	
	汉公												ļ.,				gray with punplish tints
	沒沒	1							1	}		2.2	1			Сн	clasts are pebbly and matri
	经]								The state of the s	3			1		"	is fine to medium grained
40-	122	¥	A-2	 		<u> </u>	·	ļ	19		٠.		ļ.,	+	<u> </u>		
	区公	1		F-2					\	7							
	1								`	\setminus							
	含				D-I							2.5					
	影										H						45~46.5 m
rishi _{la} S	(1-1)	1					ľ	İ		\$						47.1	low angled joints are filled
	区	-			-							2 .0)				with rhodochrosite and with slicken side.
	沙沙	}					.			A. 4.							WILVAUL FILE.
50	1130	<u> </u>	<u> </u>	1	<u> </u>	丄	<u></u>		1	. 9					<u>L</u>		

Fig. 2-2-14 GEOLOGIC LOG OF DR -09

والمراكبة والمنافعة المتلأ ووالمنافعة			A 40 A 40 A	7		. 1. 2. 3	٠, .	/L.(. 2	3 131	بعناسه			UF	OU OS
BOREHOLE	Nò.	DR-	09	<u>ELEV/</u>	III	ΟŅ	688	3.38) M	IN	CLI	NΑ	T (NC	90%	TOTAL DEPTH 50 "
the second of the second of the second	NAME	L Q WEATH ERING	G Y JOINT	HARD- NESS	ω 8	R.	CO D. D D D D	CVE) (°	(%) (%)	1	V A	EC LU) E) N)	ROCK CLASSI- FICATION	REMARKS
			***************************************			,							,			brownish.
						-7 : I		20								ailty to slightly plastic
	* * * * * * * * * * * * * * * * * * *		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													
* * * * *	Rs.	717			. * *											
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1																
, , , , , , , , , , , , , , , , , , ,		10					:. :									
9. 2						111			_					-		0.0. 207M
10 - [\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$																9.2~ 20.7 m highly weathered.
																recoveries mostly sub-angu
2,2,2,2,2		35%				,				:						to sub-rounded fragments of andesite.
******	Ad.	A-5	?	D-5	•					,					CL	
277777					٠.							٠.,	1			
22222																
27777				Ì												
1777					रक्									· .		clasts are pebbly.
20 375					3											
	Ag-g				1	4								i.		grayish.
经验		A-3	r -4	D-3	2 17	À		.						- :		moderately weathered.
FILE		?	. ?	7	/		-	,								reddish brown to grayish.
以任					1		7									highly weathered and heavil oxidized and friable.
队组	f 1.1	A-4.		(-				
MMI		A-4	F-5			1	3					·				
化初		TO A-3	то	. 0)							· [<u>.</u>		
30			F-4		,										D	
NAM "				D-4) 							7		100		
	e es	A-4						· .			: !					
17/17			7			-						:				brownish.
<i>\$220</i>					Γ											gouge?
迎到		A-3	F -3		-7			7.34	1		,			i i ;		35m slicken side observed with
		TO	. TO ⋅	D-3	5)	:	j	Ĭ							rhodochrosite vein.
13/3		A-4	F-4	- 34	//				Ĺ		:				CL	39~4(m
政治		?	?	? .	K	•		Ž.						! !	-	dark bluish gray.
40-1171 NZVI		<u> </u>			/.	ļ		1		1			<u></u>		_D	highly altered and slighti expansible.
								, a	1	1				i F		
- 1 次多		A-3	F-4	D-3	}	γ :-	; {		1			٠.	! !		CL	
经 公							ń	4		1			ļ '			
次约		A-3		D-3] \										top a bottom
		T0 A-2	F-3	то D-2			1								См	rocks are slightly sheared.
於				-	1	1.	[*]	i ja	27					1:		
(XX)		?	3	1.7	1		2500		- A						CL	
50 (2)					<u>P_</u>	M			• ;	<u> </u>		L				

Fig. 2-2-15 GEOLOGIC LOG OF DR-09A

BORF	HOLE	No.	DR-C	94	ELEVA	XTI	N		ortura.	T	INC	LI	VA	î l	Ινίς	90°	TOTAL DEPTH 50.1
ЭЕРТН	(3 E 0	L O WEATH ERING	ĠΥ		COF	E F R.(). (9	₹Y 6)		ŲĢ	E0	E	37.	ROCK CLASSI CATION	REMARKS
100	BOL	IVAIVIE	ERING	JOHAI	NESS	200	40	90	60	ICO	5	- 10	10	*	3	-ICATION	
				140 MA 1611 - 1		1.1 1.2)e.					2						brownish and plastic.
13.38 38.7								¥									
		Rs.										1		15.			
				e V ill		3 7 F			38			(.					
					7.3												
9.2	נותו					Н	_			70		_				7 C 1	
10-	批		A - 5	?	D-5					A							92~16.8m
	例	in a				dis	. A.	786	17.5								dark brown and slightly plastic.
														3	(4) (3)		(only studge)
	批组		•		, ,				:). 			
	伙们					130	3 (4)		(·		\ \frac{1}{2}						
		Agg.							2 82							ַם	Light brown.
				F-4	10									,			completely weathered.
			A-4		D-4	Ĭ.L	77	# 11 # 4						4.			
20-	M		1	F-4		-	-		-	\dashv	\dashv			: :			
				ТО		•	Sec.										
	图料			F-3			0							٠.			grayish.
	队机			F-4 T0		 											highly weathered.
valj j	队们			F-5										*. * *	j.,		
•	批判]	A-3	F-4	D-3	i i					• •			,			
		•	~ ~	TO:		٩											28.6 ~ 29 m
• · · · · · ·	(34)			F-2		\	Ш	14.3		,							few stickenside observed and oriented at 50°
30-	一分		-	F -2	1		-						-	1			29 ~ 32m
	以公															CL	grayish with purplish tints: moderately weathered.
7	队组		A-4			f						16	4				32~42m yellowish brown.
				F-3	10.4	Ø.	100										highly weathered.
		1		T0 F-2							-			L.	1		
	议议					ď				•						a	375 ~ 38. (m
	1/17					1	IL.					1	9.4				brownish clay, gouge? 38! ~ 40m
]				•	,	14. 1									dark gray. slightly expansible.
40 -	177	\ 		1 1 1		+-	-	11	100	d	-		-	-	1		40m
	111	}				9		À]				1				stickenside observed and oriented at 40:
	原於	1				$ \ $		7						28	3.2	1.0	42 ~ 50.1m light brown.
-: "	图	1	?	?			R									CL	moderately weathered to fr
	经	1			?			M	2		-	-	\vdash	_	+		clasts are pebbly and
	经制	1	A-2	F -2				H							1	CM	matrix is course grained.
	除的		A-1		[1		l û	1	741				2	7	 	top - bottom
	松水				D-1		'			8						Сн	rocks are slightly sheared
5 O	1577	1			<u> </u>			L			L	_	Ш		<u></u>		Ĉ _L

Fig. 2-2-16 GEOLOGIC LOG OF DL-03

DEPTH	SYM-	G E C NAME	WEATH	JOINT	HARO-	8	R.	Q:[OVE) (°	ر س		Λ	EC	JE		ROCK CLASSI- FICATION	REMARKS
recommendation and comp	BOL		EKINO		IVE 55	<u> </u>	-				-				_	KAIKN	light brown to grayish.
		Rs.															silty with traces of coarse grained particls.
3.3							10-1										3.3 ~ 5.6m
			A- 3		D-2	α								- 14		CL	grayish moderately weathered and
	沙			F-3	D-1				14. ₁₀					. · · .			joints dominaut.
			A-2		T0 D-2				8							Сн	5.6m~bottom grayth with reddish purpLish
		}							Ğ	7							tints. fresh, very hard and massive
- IO -	完了		ļ	١							2		_			8	Hear, very tidio dia massiva
																	joints are very rate and tightly filled with rhodochrosite.
		}		F-2										13.	8		clasts are pebbly to cobbly
										3							
1		}		_	D-1					X.	Т		٦				
	松		A-I	F-1													12~12.2m slightly weathered.
. ` '	沙	1									1	3.2					
20	(1) (1)	Agg.		F-2													
-20-		1								}							
	公	1		1				-		À	þ		. [
	於	1		F-I						4		0	. [24.6m
	総]								4	-	1					s Lightly brecclated and recemented with rhodochroste.
	经]										1 :-		-			
				F- 2			-				О	5					
	12/]		~					-	1				ĺ			
-30-	137	1	ļ			-	+	-		2	П						
				F-1		١.											
	沙									1 0	$ \ $	3.	3	.			
	絘	}							į	3		j -					35.1m
	汉			F-2			-										return water Lost.
	於	}					1	; . 			d	2.3			1.5		38M
	常								1								slightly brecciated and recemented with rhodochrosite
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Fig. 2-2-17(1) GEOLOGIC LOG OF DL-04

BORF	NAI E	AIA I	Ph I	<u> </u>	ELEV	١٣١	ÓΝ	567	, OB	im	IN	CLi	NΑ	110	N	50°	TOTAL DEPTH 100 "
CÆPTH	SYM-	S E O	L O	ĞΥ	HARO-	8	E R	OF Q I	DVE) (°	(Y) (8)		ŬĈ V A	E(JE JE		ROCK CLASSI- PICATION	
	BOL	NAME	ERING	JOINT	NESS	28) 4	o 60	80	100		s K		3 2		CATION	
				in the second						3.00		A .					Light brown. Substitute by the courses grained particle
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	4 A A							£						÷			
4.5								3			7		1			77 s	4.5% IO.2m
				?		1							, i				grayish. joints dominant
			A-3		D-2	V	-	C He		. 7		ĵ.	1		é		
			. : - :			X		2				3		i.e		D	
10-	ZZ-03.		-	* 8.:							**				5		10.2m~ bottem
	经			F-2		177	20	ALC:		798 YY	1		j.				grayish with purplish tints.
	以				D- 2					β							fresh to slightly weathered.
					ТО	۵	1			*					: - ::	Сн	very hard and massive.
					D-I					d	h						joints are rare and tightly filled with rhodochrosite.
	公司		A-2	F-I						S. S. S. S. S. S. S. S. S. S. S. S. S. S							clasts are peobly to cobbly. matrix is fine to coarse
		1	то	r - 1								24					grained.
	沙	Agg	A-1							Ì					1		
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,	となり			F-2	D-2						4			12.6	*		joints dominant.
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	1111				D-1					H		╁	لــا				25.2 ~ 25.9 m
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Fig. 2-2-17(2) GEOLOGIC LOG OF DL-04

BORE HOLE No. DL 0.4 ELEVATIONS 67 CONT. CONT. DEPTH CONT. DEPTH CONT. DEPTH CONT. CONT. DEPTH CONT. CO	DEPTH	EHOLI SYM-	GEC	L O MEATH	G Y	HARD-	Ωí 8	₹EÎ	Q.1 Q.1	OVE). (RY %)	, LT	JGE A L	O U	Ž.	ROCK CLASSI FICATION	TOTAL DEPTH C REMARKS
B 53.8 ~ 55m slightly breediated reconsented with rhouse slightly breediated reconsented and reconsented r	50	BOL	TAPHALL.			NESS	8	2-4	0 6) 8 (100	5	Ю	7	20	FICATION	
F-2 F-2 I B S3.9 S5m slightly brecloted recommend with rho 1.8 Agg F-1 Agg A-2 To A-1 F-3 A-1 F-3 A-1 D-1 F-3 A-5 A-5 A-5 S1,phily brecloted recommend with rho 82.6 ~ 62.9m covilias and speck rhodochrosite observe 1.3 A-2 To A-1 F-3 A-5 A-5 A-5 A-7 A-7 A-7 A-7 A-7		心态		A~L		D-1											
F-1 Agg F-2 TO A-1 F-3 F-3 A-1 F-3 A-1 F-3 A-1 F-3 A-1 A-1 F-3 A-1 A-1 A-1 A-1 A-1 A-1 A-1 A		133										19					
F-1 Agg F-1 Agg A-2 TO A-1 F-3 A-1 D-1 F-2 A-1 F-3 A-1 B-3 A-1 A-1 A-1 A-1 A-1 A-1 A-1 A		论公			• *								١.			1	53.9 ~ 55m
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F-I Agg A-2 TO A-2 TO A-1 F-3 4,5 F-3 F-3 IQ.9 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-		17										3	9				cavities and specks
F-2 F-3 F-3 F-3 F-3 F-2 F-3 F-3		[32]			F-I			-			•						rhodochrosite observed.
F-4 D-1 TO D-1 F-2 F-2 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3		[分》									A	4			ļ		
F-4 D-1 TO D-1 F-2 F-2 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3		177]					4						
F-4 D-1 TO D-1 F-2 F-2 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3 F-3	100	泛河								•		1 2	1	.			
70 A - 2 F - 2		以以	A					7.	.227		1	. 1					
F-3 F-3 F-3 F-3 F-2 F-3 F-3 F-3		图的	H g g														
F-3 F-3 A-1 F-3 A-1 F-4 To D-1 To D-1 F-4 To D-2 F-3 A-1 D-1 A-1 D-1 A-1 A-1 A-1 A-1	70-	(公)			F-2		2.				₩	7	+-	+		1	
F-3 F-3 A-1 D-1 TO A-1 D-1 F-4 TO D-2 F-3 IQ.9 A-1 F-2 A-5 A-5				A - 2	-				1								
F-3 F-4 TO D-1 F-3 IO.9 A-1 D-1 F-2 4.5 3.2 F-3 7		13/2		то								3	9				
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F-4 T0 D-1 2.7 D-1 F-2 F-3 T2 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3		以公		1. 17													
F-4 T0 D-1 2.7 D-1 F-2 F-3 T2 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3 T3		152			<u> </u>							1					
F-4 TO D-1 P-3 F-3 F-3 7		汉公	N. 7.	4 1	r -3					. `				-			
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F-2 F-3 F-3 7		3															
F-2 F-3 F-3 P-3 P-3 P-3 P-3 P-3 P-3		沙次			:									Ι <mark>Ο</mark> , :	9		
F-2 F-3 F-3 P-3 P-3 P-3 P-3 P-3 P-3		沙沙			<u> </u>									<u>.</u>			
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Fig. 2-2-18(1) GEOLOGIC LOG OF D2R-01

		No. G E O	L O	G Y	18	COF	E F	X63	É	LU	GE.	ON	8 3	90° ROCK	TOTAL DEPTH 60 1
EPTH	SYM- BOL	NAME	WEATH ERING	TMIOL		8,	R.(ECOV 1 D.	(%) 80 100	V	A L	ŲE.		CLASSI- FICATION	REMARKS
			A-3	F-3	D-2 To D-4		70-0							D C	grayish brown highly to insiderately weathered. fractured. grayish with purplish to brownish tints: joints dominant. Joints are stained with fron oxides.
10-		Ad.		F-3	D-2			7				7		Сн	grayish with purplish tints.
	**************************************			F-4	D-3	4				o				ဂ ၂	
	A A A A A A A A A A A A A A A A A A A			F-3	D-2					O				Сн	
3 0 –			A-2	F-2	D-1										dark gray with purplish tints
		Agg		F-I	D-2					0					slightly weathered to fresh. clasts are pebbly to bouldery.
3 0-				F-2	D-2 T0 D-1					Ο		The second secon	The second secon		rhodochròsite filled joints are rare.
	淡淡淡			F-3 F-2			A COLUMN TOWNS TO SERVICE TO SERV		0	3					
	が状態			F-4	?					0					
40-			A-I	F-2					۱ ۽	0.1					
			A-2	?	?		•			0					
50	公公	1			D-:										

Fig. 2-2-18(2) GEOLOGIC LOG OF D2R-01

DEPTH	SYM-	NAME	L O MEATH	TAIOL	HARO-	ã	₹. F R. (3. D	(%		Ž	UG / A	ĽŬ	E	K	ROCK CLASSI- ICATION	REMARKS
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			A-1		D-5						Q.	. .					
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			A-2		D- I					N	,					<u>.</u>	
	(3)	Agg.															
	(3/2)			A14											١		
			A-1								0						
	经的			F-I))						
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RE	HOLE	No.	DzR- L 0	6 Y	ELEV	XTIO COF	ΣŃ	65t	5.60 OVF)m YY	N	CL.I	NA SE (TIO NC	ON	90° ROCK	TOTAL DEPTH 40
ηН	SYM- BOL	NAME	L O WEATH ERING	JOINT	HARD- NESS	8	R	0.[) () ex	%) > 100		V Λ		JE	0	ROCK CLASSI- FICATION	REMARKS
•															200		brownish.
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Fig. 2-2-20 GEOLOGIC LOG OF D2L - 01 BORE HOLE No. D2L - O | ELEVATION 651.30 M INCLINATION 90°

GEOLOGY CORE RECOVERY LUGEON ROCK
DEPTH SYM- NAME MEATH JOINT HARD- S. R. G. D. (%) V A LUE CLASSI
BOL NAME ERING JOINT NESS 20 40 60 80 100 5 10 15 20 FICATION TOTAL DEPTH 40 DEPTH SYM-BOL REMARKS brownish. slightly plastic to silty. Rs 9.0 grayish with reddish purplish tints. 10 F-3 highly weathered. A-5 D D-2 grayish. F-2 A -3 moderately weathered. grayish with purplish tints. A-2 slightly weathered to fresh. F-1 Сн clasts are pebbly to cobbly. Agg. matrix is coarse grained. 20 D-2 A-1 F-2 TO rhodochrosite filled joints are rate D-1 F-330 F-2 D-1 40

BOR	HOL	. No.	A -	01	ELEV	ΔΤΙ	ON5	84.3	5m	IN	CI.I	NΑ	11	NC	90	A - O I TOTAL DEPTH 50
1	1000	G E C NAME) ()	$\alpha \vee$	1000	M	₹F F#	??X/	FRY	1.31	LUG	3E(JE JE		ROCK CLASSH FICATION	
		₽s														talus deposit. consists with dark bro silty clay and boulders
3.6	高級影響		A-2	F-4	D-2										D	grayish stightly weathered, joints dominant, hard,
- 10 -	公公				,	1										Iom - bottom
																usable for aggregate.
		Agg		F-3	7F - 4 TO	1 1 1 1 1 1	1									
	以於			F-4 F-3	F-3	 								,	CL	
20 -			F-4-	F-3	F-4 TO F-3				F100							
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Fig. 2 - 2 - 22 GEOL

GEOLOGIC LOG OF A-03

BORE	HOL	E No.	A -	03	ELEV	ATI	ΟN	62	5,70)m	ĪŃ	CL	N/	TI	ΟÑ	90°	TOTAL DEPTH 50 "
1.5		$G \in C$	LO	G Y		∞	Æ.	REC	Œ	RY		LUC V A	GΕ	ON:		ROCK CLASSI	
OEPTH	SYM- BOL	NAME	WEATH ERING	JOINT	NESS	100	۲۲. ۱۹ و	(J.) 0. 6	D. (/o/ D 100) L	8 S	Ó	CLASSIF	REWARKS.
		4.44		Carlo Marie Carriera	With the Chambers of the Chamb											11	brownish. silty to slightly plastic.
		Rs					1										
		17.5	•			'									.:		
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	^ ^ ^ ·		5.7							[. : 	i ·		Ì				
6.7								<u> </u>			<u> </u>	:-					dark brown complifely weathered.
			:		ì						ŀ						6.7∼ 23 ^m
- 10	H 2 2 2 3 3								ļ			<u> </u>					
• ,					11.20	Ì		!									only sludge.
			A-5	7													
					D-5												
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	6353435 6353435		?	?	?	1	: 			i.		;	1				35.2∼ 44.3 ^m
		1			D - 5	V	!		:			i V	: '	:			dark brown
					آ ر	þ	-			1		: !		1	ŧ		silty to slightly plastic.
4		1								: :		1		i.			completely weathered.
		1							:			:	i į	1			
40-		}	?	7		†			, -	<u> </u>	1	ļ	; ‡	i -	<u>: </u>	ļ -	only sludge
$U_{\alpha}(z)$		1	{								1		1				
							:			. ':		, .	100				
			:				İ									1 2	
	探到	1					İ							1			44.3 ^m ~ bottom
		}						:		1							brownish clay with some boulders
		3				þ		-				[.				,	
•	 	}						į .									fractured or sheared zone.
	<u> </u>	1										!		}		1. 1	top to bottom.
]				•											unusable for aggregate.
50	K:X:X	<u> </u>						1	1		L	<u> </u>	1	<u>i </u>	1.	<u> </u>	L <u>. </u>

Fig. 2-2-23 GEOLOGIC LOG OF A-04

BORE DEPTH		G E C	LO	04 G Y	HVBD-		R I		XE) (KY W	- 1	UG	iE()N		90° ROCK CLASSI CATION	TOTAL DEPTH 50 REMARKS
*************	BOL	NAME	ERING	JOINT	NESS	2	o '4	0 60	200	ióo		Ç	LL	1	ρ	CATION	
	4 4 4																brownish. silty to sandy with some pebb
	4 6 4	Rs					1			: 1					- 3.4		and boulders of andesite.
									<.	ξ.						Strain.	
3.9	} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•			D-50	<u> </u>								-			gray(sh with brownish
		Targer.			-			X 1007	1			,				a Second	coatings.
		1					2		bo							1277	highly weathred.
	,,,,,,,	Ad				3		1							651	CL	
		3						الحر					100			V.L	joints dominant or crushed.
		\$												4 17 424 - 1			
-10-	****)		<u> </u>				700			—	,		<u> </u>		7.7	
-	,,,,,,,	}			D-2	B)		1.				生活基础表现的管理基本企
		}				1	Z.	9			1.		-1	* **			
	*****		A-5		'						٠.,	S _i ,	, . , .			1	
]	ر ۲														
		1			(1 1 N 1 N 1 N 1 N 1 N 1 N 1 N 1 N 1 N 1	
		7		F-5		1											
		4			12 12											1.	
1 2 21		3			D - 3°												
		}	1 1 1			P		•					- 1		1		
20-	*****	1	-	<u> </u>	D 5	ф	ļ		L						ļ		
		1			-	7.	# 1/4º	1									Light gray.
		3				ф.	Ï				•						porphyritic.
		3					i i .	1	ļ			i	1		1:::	D	
	2000					ф											
	*****	4	Δ-4			ير، ا			`			:		<u> </u>			25.20 bottom
	,,,,,,					φį	!		ļ	i s		1				1.	grayish with shades of
		}					1	,	9		٠.						reddish brown. highly to moderatery weathers
		1			D-4	ф	ļ	1 .			:						
		7				ф] :			ĺ			ĺ		1		
- 30-		}		-		ф	ļ			-			 		1-	 	fine grained texture.
	*****	3 ,				φ :	•						} -		'		
	*****		}	F-5				1									
		3		ro		ф:						1		į			
		3		1		\mathbb{N}				_							
	54444			F-4		1	}								į.		
						1							1				35.4™⊸ bottom
	£ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	3		F-4			: .	R		9	1	-			-	CL	medium hard. usable for aggregate.
		4			-	1		\	1					'			annen in affindans.
	*****	1	A-3				1.		\	١,	•					См	
40-		j	ļ	F-3] .	ļ	ļ.:	ļ	<u> </u>	γ:			<u></u>	<u> </u>	-	<u> </u>	
	£4444	3		ļ	-			į						i		Сн	
	**** ***	3			D-3			g e						1			
	24444	7			:					?							
	*****	3	```				•										
	£33333	3		E- 0			:		ĺ								
				F-2		.	i			٥ş			١.		Ì		
	*****						ĺ								İ		top~ bottom
	£****	3					-		f	i							al tered.
	2000	3							Ø	3		1.					uplotes.
50	£****	4		<u> </u>	<u> </u>						L					<u> </u>	
														÷			
										9							

BORE	HOL	E No. G E C	A -	05	ELEV	4T I	ÖN	*****	COLLEGE.	ŽΨ	IN		ÑΑ	TI	ON	90°	A - 05 TOTAL DEPTH 50
DEPTH	SYM- BOL	NAME	L O MEATH ERING	JOINT	HARD- NESS	8	R	Q D	, (8X	%) %)	١	VΑ	ינו נוני	JE	0	ROCK CLASSH FICATION	REMARKS
		Rs			and the same												Light brown. slightly plositic to silty.
3.0		\$. ,								<u> </u>		1		3.0 ~ 7.8 m
			A-5	7					:			: :		:		D	tight brown. completely weathered.
					(
																	7.8∼ II.9m Light gray
- 10-			A-3	F-3	D-2	N		.,2	0.5	e de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela composición dela comp						СL	moderately weathered.
				F-2	,		<u>8</u>		÷								porphyritic.
		Δd			D-1				/							См	11.9~ grayish, silghtiy weathered.
					D-1			,		0				··.			joints are stained with
				F-3	то D-2	<			1.						.:	Cr	Limonite. hard to very hard
			A-2							٦,						См	11.5~15.4m no return water.
- 20-				F-2	D-1				/	1000						Сн	
				r-z						,							
				F-3 F-1		į		7			þ					См	24.9~44.IM no return water.
				F-2	D					1					1		
				F-3	D-1 TO D-2				b							CL	
- 30				F-4	D-2		8		:								joints dominant
30		*			D-I			!		200)
		7		F-3	T0 D-2					j K						C.,	
		3						1	P	ĺ					İ	См	
				F-2	:												
		3	5 2.													CL	
		7						d								См	
40-	*****				?				/	-		L					
		,		F-4	1 17				δ							Сн	
				L+4													
			-				‡ [f			,							
		3			D-1	-										См	11 O - h-w
					то					ł,						Сн	II.9∼ bottom usable for aggregate.
50		3		F-2	D-2 D-1	1.			. :								

Fig. 2-2-25 GEOLOGIC LOG OF T-01

()R	FH. I	- No	~ (T-	01	FI FV	ΔΤΙ	ŌΝ	653	.84	m	INC	LI	NΑ	TIC	N	90°	TOTAL DEPTH 40 m
,,	SYM- BOL	G E O NAME	L, O MEATH- ERING	G Y JOINT	HARD- NESS	82	R.	7E.C), (°,), (°,	Y い。		UG / A	E()N		ROCK CLASSI- FICATION	
																	brownish to Light brownish. silty to sandy. slightly plastic.
		Rs															
8 6						a										: 1	
_ 10	淡淡		A-4	F-4												D	Light brown to gray highly weathered. Joints dominant.
				F-5 F-4	D-4, to D-5	R R		474									clasts ore granular. matrix is andesitic, medium grained and modarately cemented.
	淡淡	Agg		F-4												СL	14.7 ~ 19.7 m moderately weathered.
-20				F-3	D-2			(Logic					-			D CL	19.7 ~ bottom grayish to Light gray.
	次次		A-2	F-2 T0						×.						OL.	slightly weathered. joints are rare.
	公公公			F -!	D-3	α				202						A	
			-			-				7						Сн	
-30	談派											!		 1. 1.	!		
	が必然			-											-		
						-											
-40	1777	1				<u> </u> -		-	ļ				-		-	-	
· -									1	+			•	:			
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						:			-								

Fig. 2-2-26 GEOLOGIC LOG OF T-02

. 1	DODE	-	i ig.		02	FLEW	\T I	100		28				۸۱۸	TIC	IM	anel	TOTAL DEPTH 40 m
	BORE	MUL	E NO. J G E O	10	GY	LLEV/	icoi	光	EO	OVE	RY	. 1	JUC	EC	N	***	ROCK	
ý	DEPTH	SYM-	G E O	WEATH-	JOINT	HARD-	8	R.	Q.E) (⁶	%) 100	5	/ A	LU	E	,	ROCK CLASSI- FICATION	REMARKS
	Day Charles and November	00000		<u> </u>								1		1			194 111-11	pale brown.
		00000													٠.	.		pebbly to bouldery
		00000		7 to E									٠٠.					
		00000 00000 00000	Gr			5							.					
:		00000					[-			1				
	5.5	بَرِي									1			-				Light gray.
				A-3	F-3		١.)								CL	
			ħ.		F-3	D-3,				4	2							Light gray with greenish tints.
		133					. `							.				tigiti gray with grounds into.
	- 10				F-2						7							
					~						0.1							clasts are granular and matrix is fine to medium grained.
		13.5]		F-2												См	
	A	33			TO					j					.			
		13/2	1		F-3					1								
		松谷	1		<u> </u>	D-2					· A						:	
		13/2	1	A-2	F-2					9	**			, : ,: :			50 a 15	
		(22)			ļ <u></u>						\:							medium hard.
		以於	1	' '		•					A	. !			į			•
			}		F-I	i		-			1)						
	- 20 -	15.5	Agg								1							
			120					1	i k			j					Сн	
		1.3						ì	_		1			.	1			23.8 ~ 24.2 m
		炒		· .	F-4			·	Ţ,	etric	υr				j			joints dominant.
		133				D-3			Y 7	. P	1							
		1300	1	١.			·		b		4							
					F-2				!						·			
		(3)] .									1	•				
		1				1		1			1					i I		
- 5	- 30-) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1	ļ	 	ļ	-		<u></u>	-	//		! 			_		
. :		17.7V	.	ν						1			1			ļ !		32.6 ~ 33 m
		念	}		F-4			1	i i	[]								joints dominant.
		15/5	1	1		} :		ļ.		į	/ 9							
			1			-				ļ.	V					! !		
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Fig. 2-2-27 GEOLOGIC LOG OF T-03

ORE	HOL	No.	T.	03	ELEV	\T (NC MC	643)O.	SITT ESC	INC		NΑ	TIC	ΣN	90 %	TOTAL DEPTH 40 M
EPTH	SYM- BOL	g E o name	WEATH ERING	TOINT	HARD NESS	e e	R	0.E	. (*) (*) (80	%) (%)) 5	ÌΑ	L	E		ROCK CLASSH FXATION	REMARKS
	Ordered Same			A sale page in our				*******	•••••		***				ę'		brownish sitty to sendy.
		Rs															elightly plastia.
3. 5			\$ 13 °		\$5.50X		À			i.				6			
3, 3	3 (3)	L ,	en yezh				- 7		37				<)† ;	4	1	pale brown.
			ं के किया है। जन्म कर्ते	多数的					N	- 1					g.	, Q	
	论		A-5	4	D-5			7.	•			5°.					
				F-5		þ				¥.				4 % 1 %			
				F-4		7000	6926								Ara S		
10-				,,,	D-5								,	ت. سنب	2	3545 P.C.	Light brown to light gray.
	(11)		A-4		D-4							٠,					
	[於]				100 800	$ \rangle$						4					
	沙沙	* ** **	A-3	建式			Γ.		35. 27.	1	1					CL	
	公公				D-4	(2					- : ;		3			hairline joints are tightly filled with rhodochrosite or
	经过	Agg	A-4	1.4	[7.1				calcite.
. : :::::::::::::::::::::::::::::::::::			TO A-3	F-3					. (
			74 5	TO					av l	Sales S							
	1			F-2	0-2							;;; ;;;			ŀŞ		porphyrific andesite clasts and fine grained matrix.
20	1775		ļ			ļ				Į,			7		-		
	沙区		A-2										*	,			
										Q.						- 20 to 5	
		1											1,				
	******	Ad	6.7													Сн	gray.
	2,5,5,5	AU	-Agg					7		9					1 3		fine grained texture. joints are tightiy filled
				ļ	D-1					1							with rhodochrosite.
		Ad			1		. '						i :			1, 51	
	44444	ď	1 to 1 to 1	F-2			200									1.55	
30-			100		-	-	-		-	- 10		 			ļ		
				۱.,													
			A-2	F-I	D-3								'	100			
	区公		то		T .												Light gray to Light gray
	KA		Δ-1							Q)		F					with greenish shodes.
	が る	Agg	['				2.4			V							ctasts are perphyritic
•	バベン									1					ļ.	10.00	andesitic and granular.
	公司			later.	D-2		1:	100									matrix is medium grained.
	经公	1														1.1	
40-		1		-				 			\vdash	-			ļ		
								:				 					
	1																
٠							1	A Comment		'	1						
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	,		Fin	7	2 - 1	8		GI	- 0	l C	G	IC		L ()Ġ		OF	т-04
IBAG	FL					ELEV												
DÈM	НЗ) I -MY	3 E O	L O WEATH ERING	GY	HARD- NESS	(O)	R.	ECC C	XE) (°)	マイ る)	L	UC	E C)N		ROCK CLASSI- FICATION	REMARKS
-manage	-LE	3OL	IANAILE	ERING	JOHAI	NESS	- 5	0 🛠	60	80	100	5	K	15	- 3	2	FICATION	A and battom parting
																		top and bottom portion mainly consist of gravels.
	808		4													:		
	9		186											Ì				middle portion is clayey to sandy and brownish.
	9					•												
	000	0000								.	:							
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	9	0000												.				
14.	7 6 9	0000					_				_			_	:			
		, , , , , , , , , , , , , , , , , , ,			F-5	D-2												pale brown to grayish
	Į,			A-5		0-2												
							Tie.											
- 20				A-4			_	i v							-			
20		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				D-5	1	IJ	•					•			D	
		7777	Αd	44 154 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		. (þ											
.		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	A-3 TO	_	F-4	D-2	- 2	777										
			Α-4														-	grayish. 25,8m
- 1 4 4 - 1 4 4		() () () ()	ing (in a constant) and a constant of		1. 13	D -1			7		S		. !					opened rhodochrosite geode
		4444			F-2						1.0				1 .			observed.
to the		4444									Colonial Colonia Colonial Colonial Colonial Colo]- 		joints observed.
30	1		1944 11.				ļ									-		grayish with reddish brow
	- (·	> \\		A-2														crasts are granular.
																-	Сн	
			Agg			D-2												
	Į.	バン									7							
		333		.83	F-1					-	1							
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RE	HOLE	No.	5 -	OI	ELEV	Ϋ́Τ̈́Κ	ON	69:	564	mili	ICL.	ÑÃ	TIC	N	90°	S-OI TOTAL DEPTH 100
1.7	(3 E O	L O WEATH ERING	G Y JOINT	HARD-	00F 84 84	R	ŒŒ Q.E), (°	RY %)	LU(VA 5	SE(JE N	k	ROCK CLASSH TCATION	REMARKS
	POL		EKING		IYEOO	Î	Š		Ĩ	100	Ť		Î		MILLIN	gravish.
		14 m	1.00			¢									CL	joins are filled with quartz.
										No.					**************************************	3.4n 3.7m
	*****				3-4				1	7	1 2				Сн	fractured.
	*****		E-A	e y						1						
	****			1 1 2									4.		См	
			ii i													
												M.	1			
0	******				1 ,		. ``				-	-				
		5 E.														
			A-2		1.0											
			A~Z			-										
	000000									9					Сн	
		-														
											1 2		:		-	very hard. joints oriented at 35 ~ 45*
																Join's offerfied at 55% 45
0_															·.	
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	27777					'										
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10-		1		1	1	-	1	-	 	9		-	! - -	; †:	<u> </u>	40.0 ~ 40.17 m
er i	原於	1	A -1		1					1	, ;				В	fault? oriented at 5°.
• •	120	1							1					1		
٠.	以次		ТО						1	18						
	区沿	,		F-2	:					1						
	路	Agg	A-2	2												
•	153	4											-			grayish with purplish tints.
	炒价]														Braffiner street Laurkarier, liet far.
	下分	1		1		1	1	1.	1 -	M		1			1	

Fig. 2-2-29(2) GEOLOGIC LOG OF 5-01

	HOL	GEC	S - L 0	GY		Ю	E	ĒČ	ΟV.	Ϋ́	•	ĽŪ	ĴĖ (ัฐเ		ROCK	TOTAL DEPTH 100
ЕНІН	SYM- BOL	NAME	WEATH- ERING	JOINT	HARD- NESS	2) (0 6	D. ((6) (0)	-	V /4) i) E	0	ROCK CLASSI- FICATION	REMARKS
	沙沙	§ 12								j.				1.7		В	
	450									7						ļ	
	公公			e de la companya de l		٠.				1							light gray.
	沙区	1						:		0.00	,						joints ane filled with rhodochrosite and quartz.
	~~						:										
										4				٠		Сн	
F	$\langle \cdot, \cdot \rangle$						1								: !	0.0	
	1							12.		1							
60 -		A 1															
00	117						;		i.i.	,)						joints are filled with
}		200	A-1	2.00						¢.							rhodochros ite
F	(大人)		ΤO	F-2						*							
ľ	335				D-2					G				٠		В	
. !	320		A-2		2											. 1	
.	35									·							
		Agg	ja da ja														
ļ	530									100				1.2		<u></u>	
- [泛沙		· · · · ·)						
70-	(V)								-							Сн	
	200								·	3.45	: 1					Оп	
				F-3		•							!			. 41	
					ļ <u></u>												
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Fig. 2-2-30 GEOLOGIC LOG OF P-01

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DEPTH	SYM- BOL	NAME	WEATH ERING	TOINT	HARD-	ã	R	$\widetilde{\mathbf{Q}}$. $\widetilde{\mathbf{D}}$) (9	%)	ij	UG / A /	LŬ	E.		ROČK CLASSH FICATION	REMARKS
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Fig. 2-2-31 GEOLOGIC LOG OF, P-02

30RE	HOL	E No.	P -	O 2 G Y JOINT	ELEV	ΥŢ	ON	335	67	m)	IN	ÇĻĴ	NΑ	T [NC	90°	TOTAL DEPTH 201
жетн	SYM-	G E C	MEATH	G Y	HARO-	8	R.	Q.[(VL.) (KY %)	\	JU. V A	しし	JE:	1.	ROCK CLASSI- FICATION	REMARKS
	BOL	NAME	ERING	JOINT	NESS	. 8	0 4	0 8	90	100		. () - K	5 2	<u> </u>	FICATION	
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			A-4		D - 50												friable."
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			4		2.93											D	
			A-3		D-4								7		4	6.	
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Fig. 2-2-32 GEOLOGIC LOG OF P-03

		Fig.	2	2 -	32) 31-3	G	:0	L()G	IC	ni fu	L)G		OF!	P-03
BORE	HOL	Ξ No.	D +	03	ELEV	TI	ÖNÏ	96	O	m	ÍN	CLI	ÑĀ	Tic	M	900	TOTAL DEPTH 20 M
DEPIH	SYM-	G E C NAME	MEATH FRING	7 D TMIOU	HARD- NESS	00/ 6	R (10.00 10.00	OVE), (°	RY %) ∵∞	\ \ 8	UC V A	LU) E	,	ROCK CLASSH KATION	REMARKS
					i dia		127								4.5 5		prownish
		485 201					2,10,30		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		13°						plastic clayey materials with boulders.
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			280 m												7		
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		Rs															
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15.8			A-4		D-5,												Light gray
		Αd	то	F-5			X					1 22 2 1 2 1 1				D.	friable.
- 20 -			A-3		D-4				-		- :					15.5 1.6	
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Fig. 2-2-33 GEOLOGIC LOG OF PH-OIA

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2011		S E C	10	GY	ELEV/	ĊŌ	T	REC	ÖΫ	RY	113	Ľΰ	SE(Ż	~~	ROCK	
HIYY	SYM- BOL	NAME	WEATH ERING	JOINT	HARD- NESS	8	R. o ∙4	Q.I p e), (o ø	%) 0 100		V A	LL)E	-11	CLASSI- FICATION	REMARKS
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	4 4 4					4.											stightly plastic.
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1.5		Gr				·											brownish gray to grayish.
	3 0 0 0 0 0 0 0 0 0						12										andesitic boulders.
						liy.									1		
	00000														:	1.5	terrace gravets
8,5	00000					N											groyis h.
10	******		A-3					ļ							7.		stained along joints.
		1.3	то	F-2							1.	,					porphyritic.
	, , , , , , , , , , , , , , , , , , ,		A-4	то	D-4	1											
															·		
		Ad		F-3		1	1.4									CL	
•	20000				' '		23.7 2.	142						.:			
				ì							·		3.4				graylsh.
			. :								-					1	clasts are andesitic.
	公公				. 5, 1,	Ĭ								•			
	バン							1993.4 400000			. 2						
20-	+74-4		A-4		D-20		Ì.	-				ļ		-		D	matrix is slightly decomp
	(3)		A 4		D-3	6			718							U	
	经公				5			`		. s.t.							
		Agg				্ব	·				:				·		
	C.C						þ							٠		См	dark gray
	333									**		i				·	joints dominant and filled with quartz/calcite.
				F-3					1	W. Lect.						<u></u>	
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	公 之								\setminus	1							brownish with shades of purp
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Fig. 2-2-34 GEOLOGIC LOG OF PH-02

BORE	HOL	E No.	PH-							115	IN(2.2	ŇÁ			900	TOTAL DEPTH 140 M
	277	GEO	LO	G Y		ΥY	ã₹F	44 7	λÆ	ĮΫV		U	ŝΕť	M.		ROCK CLASSI	REMARKS
DEPTH	BOL.	NAME	ERING	TMOC	NESS	8) 4) 6	90	100			Ll	24	2	FICATION	
	00000		s kerya. K	交通		r tê,		y o ^N to			,						brownish sediments. silty with tridoes of ocurse
	# 0 0 0 0 0 0 0 0 0				* * 1	11.	Š.			1		7					grained particles. grayish to Light brown.
	00000							(C)			2.3	ing Tigh		3.	9		gnde sitic boulders.
							9 1 1		,						Ŵ.		terrace gravels.
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				,						4							
	20000	1		F-3	D-2		3.			are chr						Сн	
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		1			,												
					0-2	ļ				3.0						См	joints are stained and filled with quartz.
				N. Y.					δ	1					: · · .		
	233333	bA [F-2	D-1				٦							Сн	
	******	1			0-2			/		1						- 41 24	
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		1			D-2		K			Ž.						См	
		1			то											Сн	
	24444	3		F-3	0-1		$ \propto$,							CM	grayish with slightly purplish.
		3								and and						Сн	fints.
	633333	*					3	\\						7.		См	
		3		F-3													
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Fig. 2-2-35 GEOLOGIC LOG OF PH-03

BOR	EHOLI	E No.	РΗ -	03	ELEV	471	ŌN	174	14	m	IN	ČLI	ÑĀ	Ti	ÖÑ	90°	TOTAL DEPTH 40 M
		$G \in C$) L 0	G Y	7. gat.	(CV)	Ē	ξQ	WE	ŘΥ		V A	SE?	Йζ	444	ROCK	
DEPTH	SYM- BOL	NAME	MEATH ERING	JOINT	HARD- NESS	CX 2	K. 0. ≉	w.L) (C	(%)		V A	ָרֶיּנְ אַ	JE.	9	CLASSI- FICATION	
	A A A	Rs															reddish brown, plastic
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						1										
	00000								1.1								brownish to grayish.
	00000				, 1					. :							mainly consists of andesitic beutders with silty materials.
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			A-2				d		İ								porphritic.
					D-2		اسا	۶.	-								joints are filled with
				D-3-	D-2	\sim		<u></u>	Ţ				1.1	1.			r hodoc hro si te.
20 -	*****									+	. :						
			1		D - I					77		!					Light gray.
									σ								tappiti tuff.
	1.4		-			1					:	1				Сн	joints are filled with
1.	24.00	Tf			D-2				þ		1.	Ì			. :		rhodochrosite.
					TO.			1	7.	*		1	•		-		
	(%) (%) (%) (%) (%) (%) (%) (%) (%) (%)				D-3			/		1						CM	
			A-2	F-2				۵		f) z			•				
			TO A-3			-				1		ĺ	2				
30	2.24		A -3			<u> </u>				7	-	-					
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	次分	•	A-2		D-I			ĺ						İ:		4.5	grayish with purplish tints
	图沙	Agg		F-3													
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Fig. 2-2-36(I) GEOLOGIC LOG OF UPH TOI

DEPTH	SYM-	NAME	L O WEATH ERING	G Y JOINT	HARO- NESS		R,(Q.C	(°/	(6)	ŢŢ	A۱	Ų	E _{xo}	K	ROCK LASSI KATION	REMARKS
		Rs									1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						brownish highly plastic residual soil and talus deposl
3.0	1				D-3					1	1	+	,1 4		1	130.12	Light brown.
	淡流	Y	A-4		TO												joints dominant
					D-2		•								CL Section		6~10.3m no return water.
			•	7	(3 14. 80				,	3.	(3) (3) (3) (4) (4)			D	
	院		7_		7												groyish to purplish brown
-10-							Ì				Å,	1			9		
	溪	Agg	A-3		D-I	- 148 - 2									}		
	沙				D-2						** ***						grayish with purplish tints.
	泛		A-2	F-I	то D I											Сн	hard to very hard.
	泌			1	١٠٠١			in								37	
	劉			F-2	0-2				1	`\							
							7									CL	
-20-	家				i i									. V.			
	100			?	D-2		90.9							7.		<u> </u>	dests are pebbly to cobbly
	经				то D-1	***											desir de paper, la comp
	经			-		1										8	joints are rare and filled with quartz.
	沙				D-2						1						
	133	}		F-2		-					-						
30	133				D-I									38			
"	120													Ą.	3. 3.		
	念	}		F-I						()	,						ioints are raw and filler
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Fig. 2-2-36 (2) GEOLOGIC LOG OF UPH-01

		$G \in C$	UPH L 0	GY		COF	7	ÆΟ	OVI	RΥ		ĽÚĆ	SE(NC		90° ROCK	TOTAL DEPTH 1400 M
	SYM- BOL	NAME	MEATH ERING	JOINT	HARD- NESS	8	R.	O 6) (%) > I@		V A	Ll) E	o O	CLASSI- FICATION	REMARKS
50	徐宏	Agg		F ~ 2	ו –ם					C				14:			54.8~57.8m
	協能			<u> </u>						1						В	no return water. crystal tuff.
		Tf	7. (5 c	3.5								;>.		tuff grades downward into
					?	1.					•			;			tuff breccia.
				7		v									<i>/</i> *.		clasts are pebbly,
		Tfbr		•	9.0	·Þ						<i>j.</i>	:				tuff and tuff breccia
										0						A ₁ 1	exhibit graded bedding. 56.3~59.5m
										O	• •						clasts are cobbly to
-60-																	pouldery. grayish to light grayish.
						77			Ţ	. 1			14.1	,			
	(An. 37) (1.01)	,	-	F-2	D-1					9)	•					tuff grades downward
										1							into iapilli tuff.
								٨		C-100							64~81.5 m
				F-I								9 84		,			lapilli tuff.
		Τf								Į.					1	1 A. 44 A. 1 A. 1 A. 1	
						2			:		•						
										2				1.			matrix is medium to
70-										art.				1.			coarse grained.
					?					1							
										4						Service .	
			, ,		D-1		2.			Š							75.7~148m
			A-2							3							2/3 to 1/5 return water.
										1							
					?					1				- 1.			
			: -							(A)							
80-										\$							
											ĺ			7			lapilli tuff grades
	6				D-2					N. A.							downward into tuff breccia
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