KINGDOM OF THAILAND

FEASIBILITY STUDY ON LAM TA KHONG PUMPED STORAGE DEVELOPMENT PROJECT

FINAL REPORT APPENDIX

NOVEMBER, 1991

JAPAN INTERNATIONAL COOPERATION AGENCY

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APPENDIX

٠			P	ag	<u>e</u>
Α.	GEOLO	OGY AND CONSTRUCTION MATERIALS	A	-	1
	A-1	Logs of Drill Holes	· A	~	1
	A-2	List of Faults and Joints in Main Drill Holes	A	_	41
	A-3	Geologic Sketches of Test Pits	A		53
	A-4	Data of Permeability Tests in Pits	A	-	57
	A-5	Data of Drill Hole Deformation Test	A	•••	61
	A-6	Data of Drill Core Test	A		103
	A-7	Triaxial Test Data of Undisturbed Samples	A	-	131
	A-8	Mineralogical Analysis Data of Drill Cores	A	_	157
	A-9	Test Data for Embankment Material	Α	-	18:
	A-10	Test Data for Concrete Aggregate	A	_	21.
	A-11	Mineralogical Analysis Data of Drill Cores	A	_	233
В.	DEVEL	OPMENT PLAN	В	-	1.
	B-1	Continuous Generating Capability of Pumped Storage			
		Power Plant in Japan	В	-	1
	B-2	Overall Efficiency of the Project	B	-	3
	B-3	Peak Duration Hours Required from Power System,			
		Possible Pumping Hours and Generating Hours of			
		Hydro Power Plants	В	-	7
•	B-4	Hydro Power Ratio and Pumped Storage Ratio to Total			
		Power Facility in Japan	В	-	15
	B-5	Construction Cost of Alternatives	В		17
	B-6	Calculation of Economics	В		23
c.	PRELI	MINARY DESIGN	С	-	1
	C-1	Preliminary Design of Case-1	С	-	1
	C-2	Preliminary Design of Case-2	С	-	11
	C-3	Preliminary Design of Case-3	С		21
	C-4	Preliminary Design of Case-4	С		29
	C-5	Preliminary Design of Alternative-1	C	~	35
	C-6	Preliminary Design of Alternative-2	С	_	47

		Page	
D.	COST	ESTIMATE	
	D-1	Project Cost of Development Plan D - 1	
	D-2	Economic Cost of Development Plan D - 11	
	D-3	Annual Expenditure D - 21	
	D-4	Civil Work Cost of the Project D - 51	
Ε.		OMIC EVALUATION E - 1	
	E-1	Economic Analysis of Alternative Plans E - 1	
	•		

APPENDIX — A

GEOLOGY AND CONSTRUCTION MATERIALS

APPENDIX-A GEOLOGY AND CONSTRUCTION MATERIALS

CONTENTS

A-1	LOGS	OF	DRILL	HOLES

- A-2 LIST OF FAULTS AND JOINTS IN MAIN DRILL HOLES
- A-3 GEOLOGIC SKETCHES OF TEST PITS
- A-4 DATA OF PERMEABILITY TEST IN PITS
- A-5 DATA OF DRILL HOLE DEFORMATION TEST
- A-6 DATA OF DRILL CORE TEST
 - A-6-(1) DRY DENSITY, P-WAVE VELOCITY AND COMPRESSIVE STRENGTH
 - A-6-(2) SPECIFIC GRAVITY AND ABSORPTION
- A-7 TRIAXIAL TEST DATA OF UNDISTURBED SAMPLES
- A-8 MINERALOGICAL ANALYSIS DATA OF DRILL CORES
 - A-8-(1) PHOTOGRAPHS OF SAMPLES
 - A-8-(2) X-RAY DIFFRACTION CHART
- A-9 TEST DATA FOR EMBANKMENT MATERIAL
 - A-9-(1) GRAIN SIZE DISTRIBUTION AND ATTERBERG LIMITS
 - A-9-(2) COMPACTION AND PERMEABILITY CURVES
 - A-9-(3) TRIAXIAL TEST DATA
- A-10 TEST DATA FOR CONCRETE AGGREGATE
 - A-10-(1) SPECIFIC GRAVITY AND ABSORPTION
 - A-10-(2) GRAIN SIZE DISTRIBUTION
 - A-10-(3) ABRASION TEST DATA
 - A-10-(4) SOUNDNESS TEST DATA
 - A-10-(5) CRUSHING VALUE TEST DATA
- A-11 MINERALOGICAL ANALYSIS DATA FOR CONCRETE AGGREGATE
 - A-11-(1) PHOTOGRAPHS OF SAMPLES
 - A-11-(2) X-RAY DIFFRACTION CHART

 $\mathcal{A}(x,y) = \{x \in \mathcal{A}(x,y) \mid x \in \mathcal{A}(x,y) \in \mathcal{A}(x,y) \mid x \in \mathcal{A}(x,y) \}$

A-1 LOGS OF DRILL HOLES

				KHONG				_ Lacat	lon 👡	Upper Pon	d Boring No. DIN	I-1 Log	No1	014	
											MSI. Depth of Hole				
				11							very 97.6 Depth of Overbur				
Beari	ng of A	ngle	Hol					Comp	dny _	<u> FRVI</u>	Total length of co	re 97.60 H. Logo	leq på —v	PALLANA	
Octa	n Depth	0,0,0	Geology	Symbol of geology	Gore recovery	of Core (mm.)	Casing	Colour of rock	Weathering	Mertiness Average longth of core	Description	WATER PRESSURE TEST LUGEON VALUE O	O Drill SO Pressure 20	NOO Tima min R Depth	Elesation
	8	~		3.3			 				0.00-13.30 M;		Π	6	
14/8/90	1. S.					TUNGSTEN CARBIDE		red & brown			Overburden, 0.00-5.00 M; Stiff clay, red & brown, 5.00-6.10 M; Completely weathered rock,	0.00-5.00 M CONSTANT HEAD TEST k= 9.7×10 ⁻⁵ cm/scc		ուկահովայիակակակակակ	
	o Նակադեակա							brown gray-			6.10-6.30 M; Sandstone boulder 6.30-13,30 M;	5.00-10.00 M, Constant head test		ւտիուրորու Հ Ֆ Հ	
	7 8 0 10 10 10	Charten	Ton Ton To Lo				CASING	8प्रवर्			clay, hard & dense, pale gray (0.00-0.40 M :Top soil.	k= 8.3×10 ⁻⁸ cra/sec		րույրությունույիույիույիույիույիույիույիույիույիույի	
15/8/90	ուսանույնում այս					मास.		pale			0.40-3.20 M :Residual soil 3.20-13.30 M :Highly weathered claystone	10. 00-15. 00 K. Variable Head Test		ովայիուկակակականում 2 3	
	4 5	76				core 54.7	14.00	н.			13,30-49,05 M; Quartzitic Sandstone, very hard & dense,	k= 2.3×10 ⁻⁴ cm/sec		արությունույր 15	
16/8/90	manapanana 6					7.00£					bedding 0 ⁰ -10 ⁰ , fine to coarse grained well cemented,	15.00-20.00 M.		գրակականը 7	
	o o S					AMOND CORE BI					irregular, vertical fracture at 15,00- 16,00 M;	GWL \ 9.70 M.		8 9 20	
17-18/8/90	ումումումումումումումումումումումումումո	Sandstone	,			NMLC DI		light gray			small cavity surface texture (pebble loose) at 19,90 M, 20.30 M, 24.25 M, 34.35-34.65 M 35.20-35.40 M, 39.00 M 39.15 M, 40.85 M,			այրությունությունում	
2078/90	4 8 8 2 8 14 14 14 14 14 14 14 14 14 14 14 14 14	STATES THE									44.60,46.30 M, 46.90- 47.20 M, 47.95-48.25 M 48.95-49.00 M, joint, 80°, at 26.90-27.10 M.	25,00-30,00 M. (2.3*)		մասիցիականակավասիակակականականականունունուն	
	9	01										V			

LOG OF BORING

EGAT

Angle from Horizontal 90 Bearing of Angle Hole	Location L Elevation — Total Dept	632.141 m.HSL Th Core Recovery 97.60	Boring No. <u>DED-1</u> Depth of Hole <u>100.00</u> Depth of Overburden 1 Total length of core <u>91</u>	Commenced	21/9/90
Symbol of geology Symbol of geology After Core recorary Action of Bit Core (mm.)	Colour of rock Weathering	Hordness songit	LUGEO)	TABLE - V = 5	Co Time
06/8/02 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	light gray	texture	(00-35.00 M.	ահամահուկանականումյանում
134/3/90 Landandendundundundundundundundundundundundundun	mort defrolley	39.0 40.8 44.6 46.9 47.9 48.9 core lo 47.50-4 48.30-4	0-39.15 M, 0 M, 0-46.30 M, 0-47.20 M, 5-48.25 M, 5-49.00 M, 40. mented at 9.05 M. 43. 9.70 M; ne, idense		6 7 8 9 40 – 2 3 4 5 6 7 8 9 0
27-2518/10 28 2 9 9 9 6 30 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20	reddish yarlous gray & brown brown	49.70-5 Alterna sandsto siltsto some pe ground 50.60-5 highly weather core 10 56.20-5 Siltsto	6.20 M; tion of ne and ne, hbles in mass at 0.80 M, to completely red at 52.30-55 50 M, ss at 53.30-53 85 M. 9.20 M; ne, massive 3.20 M;	0.3 36.75 A. 50-60.00 M.	անավարկավարկակակակականականականականականականականակա

EGA			1.434	TA · KHC	we .							ORING ond Boring NoD		riss M	. 3	_ 4	
						11 E	- L	Local Fleval	lon lon	632.14	li m l	ISL Depth of Hole	100.00 M.	. Comm	enced_	14/8/90	
				سند. اه	9	00		Total	Den:	h Core	3 Reco	very 97.6 Depth of Overbu	rden 13.30 M.	Comple	eted	21/9/90	
								Comp			GAT	Total length of c	ore 97.60.H.	Logge	d by ^	PATTAN	A
	ļ —	П			- ×-	-	<u> </u>	Ι	_	7	Ę		WATER PRESSURE		S	E .	
Date	- -	0	Geology	Symbol of sealogy	Core recover	Kind of Bit f Core (mm.	Cosing Cementation	of rock	Weathering	Hardness	Werege lang	Description	1	\cup	≅ \$	Cepth	Elevation
8	Dept	ä	9	20		2.0	.8 .	Colour of	¥.	F F	5 5		WATER TABLE -	Ψ	Preseum	Time	- 1 H
		.,	i ii	Ĩ	-100%	8	, .	3	 	/	- 5				ુ દ્વ	0 M	
	65							Ę				bedding 0°-10°,	60.00-65.0	10 Pt.	TT	E. (0	
Ì] [-		ပ္					рхожи				hard & dense]		📙	
	-		Sta					ish grey				fine to medium grained			\mathbb{N}^{+}		
{	2	96	Sadstone					reddish and grey				micaccous, well cement	ed (1.6)		\mathbb{I}	E	· .
ļ	3-		·s	<u> </u>				F 6				cross bed		k		3	
8									9))			63,20-70,30 M:	GNI. \ 32.5	<u>10 H.</u>	\	E	
8	4			#\$\$#					-			Siltstone, muddy,		- {	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	F. '	
9-30/6/90	5-	\vdash										slaking at		 	-117	- 5	
≈	6.4	106						tho:	.			65,00-69,50 H,	65.00-70.0	ю и.	11	E 6	
								& orown	Ш	S.		core loss at			-1/1		
j i	7-		Siltstone				J. 75°.	5				67,60-68,90 H,	(0.3)	·	1	7	
	8	o l	ilt					usoxi	Ш		\mathbb{m}			, k	17	E a	
	, aqu		S				õ				Ш		GAT V 18	60 H	N		
Š	9	63					FAT	various							\perp	F 9	
06/6/1	70-						CEMENTATION	2							4	70	
] 3	ł - H	SS.				ត ប	grey			<u>.</u>	70,30,70.95 H; Sandsto	70,00-75.0	ю M. [
	1 7	40										fine grained, moderate		- ' [Ν		
	2 -	0.				uu.			Ш			Well cemented			1-1	2	
	1					54			Ш			70,95-85,35 M;	0.3		1		
8	3-	100				core		,				Siltstone,			17	3	
06/6/9-5	4	100				i i			Ш			massive, dense, britt1	, GWI. 10.	80 ''	$+\Gamma$	4	
5-6	5											riade to sandstone, slaking at 75 00-76,35		L		LE ,	
	July	0				BIT			Ш			highly weathered	75.00-80.0		$\langle \cdot \rangle$		1
i	6-					8	\	green				at 71,00-71,50 H,	73,00-00.0	, K	44-		
	7		` :				76.20					72,00-72,50 H,			II	7	
15/9/90	l ala	95	: :			DIMOND	. :	brown,				76.35-76,50 M,	(1.3)		17		
15,	6		Ų			3		pro pro				79.10-79.50 M,				LĒ 9	}
	9 1	100	Stot			2		red,				80.00-82,30 M.	GNL/_22.	50. H		1 9	
	O)	32	Siltst												M	80	
	80		S					various color,				no joint	80,00-85.0	ю м.	$\sqrt{1}$		
17/9/90	1 4		1.1					ŭ					1 4.		Ν	աղուպուպուդրու .v 6	. 4
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	1	50	: -					Yar								VE 1	
	3-	-											GNL / 23,5	o 11. K	++	3	
	4		: 3					1							XI	E 4	
	, and	87													1 /		
8	արտարարույույրուրարո								Ш				85,00-90,0	10 M	11	ոյուրականությունությունը Մարդականությունը	1
18/9/90	6.1	1	2.					😽				85,35-95,30 M;	00,00,00,0	""	1.1	E 6	
84	lundu lundu			::::				58				Sandstone, moderately			N	🖺	-
	7 -	100	e e	[::::]				ght				grade to well cemented	(0,6)	- {			
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06	8 இ		Sandstone			<u> </u>	:	ا بد ا				some siltstone.	GNL 35,	30 H		յումասանում Մահասանում	
06/6/61	9 11			::::}				dairk				laminate	Y	į : [1	E 9	
67	90			لننننا					Щ			at 85.35-89.50 H,	<u> </u>			LE 9	

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Projec	dhate	—			N 775.	411 E	3	_ Loca! _ Eleva	lion	632	. 141	m.HSL	_ Boring N _ Depth of	Hole	100.00 H.	Com	nenced	14/8	/90
Angle					90 ⁰			Total	Depti	Core	Recor	ery 97.60 1	Danth of	Complete	den 13,30 M	Como	leted _	21/9	790
Bearla	g of	Ang	le Hoi	•				Comp			EGAT	· · · · · · · · · · · · · · · · · · ·	Total len	igth of co	77.60 H	L009	d by -	R.PA	III
Oats	F Depth	8 8 0,0	Sectory	Symbol of peology	Core recovery	of Core (mar.)	Cosing Cementation	Colour of rock	Weathering	Kordness	O Average length	Des	scription		WATER PRESSUL LUGEON VALUE WATER TABLE	0	a i	100 T	
20-21/9/90 19/9/90	$\frac{1}{2}$	100) pequifs	į .	NMIC DIAMOND CORE BIT ϕ_{of} Com	COS	reddish brown dark to light grey Colour o		Koré	O MATEG	small s at 88,0 hard & no Joir 95,30-1 siltsto fine sr sub-tor hard &	potted control of the	Hainly some interca	90,00-95 A.9* GNL \(\sqrt{35} 95,00-16 lated, \(0,3 \)	,00 M.		ըստ կանավամամանականականականականականականականականակ	- 1
	<u>۔</u>							<u> </u>	Щ	Щ	Щ	<u> </u>			30:m.),2(£0:0,			Markania	9
	Cara	1411		$\triangleright < 1$				Autog -		- 1 ·	, T.,	EYEFES	oyoʻgta di U\$H#I	main Ibas	**************************************				

EGA Proje		×	I.A	м та к	CHONG			l.oco		OF BO)}IU-2	_Log No	. 1	of2	
	rdinate	\$	1,63	8,044	N, 775 90 ⁸		E	_ Eleva	ilon _		MSI. Depth of Hole		_ Comme		11/7/9	
				0) is	30				Dept odny "	ECAP	very 90 % Depth of Overbu	rden 36,05 M.	_Comple Logical	tedA	PATTAN	
Peols		I			·····					· · · · · · · · · · · · · · · · · · ·	total length of c	7			-EI	1
Detre	Depth	7. P. Q. D	Geology	Symbol of genlogy	Core recovery	Kind of Bit Oof Core (mm.)	Casing Camentation	Colour of rock	Weathering	Hardness Average langth of core	Description	WATER PRESSURE LUGEON VALUE WATER TABLE	0	Ē	100 Time mi	Elsegilon
06/1/11	ж О – ഗ 3 ամումամասկակա		OVERBUNDEN					unouq usipper			0,00-3,00 H; OVERBURDEN, stiff clay, lateritic (Residual soil) 3,00-16,10 M; Quartzit	CONSTANT HEAD 0.00-5.00 M k = 8.08x10	D TEST		ումյումյումյումյունումյում	
	ակակակար 5	-									Sandstone, medium to coarse grained, hard & dense, well	5,00-10,00 1	м.		արուրարություն	
12/7/90	6 7 8 0 0 7 7 3	0	Sandstone					grey & brown			cemented, poor comented at 9.85-10:10 M, 12:00-12 15:00-16:10 M, highly weathered at 4:22-4:55 9.85-10:10 M, 10:75- 11:10 M, 12:00-12:10 m 14:65-16:10 M, bedding 10 ⁹ , cross bedding at 9:15-9:30 h	CONSTANT HEAD	D TEST		ում դումուկուկում կումում կում կ	
13/7/90	ուրումասիականությունը և 8 8 3 – 1 Արդականականությունը ուրումասիականությունը ուրումասիականությունը և 10 – 10 – 10 – 10 – 10 – 10 – 10 – 10	38	Claystone Quartzîtîc			NMLC DIAMOND CORE SIT, \$ of core. 54.7 mm.	DNISYO	various color			core loss at 3,50-4,25 M, 7,80-9,85 10,10-10,75 H, 14,15- 14,65 H, vertical fracture, clay coated, at 15,70-16,00 M, 16,10-21,70 H; claystone/mudstone, dense, massive, soft, Alternation of clayst and sandstone,	CONSTANT HEAD 6,50-25,00 H k = 3.91x10	D TEST		3 4 5 6 7 8 9 20 1	
14/7/90	արարուրային արդարարուրային արդարուրային արդարուրային արդարուրային արդարուրային արդարուրային արդարուրային արդար	33	sandstone sandstone	****		Š	23,00	purplegwhite			well comented, bedding 0°-20° irregular contact 24.65-40.00 M;				ամորժումումումումումումում	
16/7/90 14/	manufundandandandandandandandandandandandandan	9	Quartzitic Sandstone					white & grey			Quartitic Sandstone, fine to coarse grained well cemented, hard, dense, sub-horizon bed Alternation of fine and coarse grained at 24,65-32,20 H,	7.5	н. ,20 н		անումյումումյումյունունունունունունունունունունունունունո	
16	30					(Kary)	West of datom	karing - jokad)	Hardne	till till till till till till till till	- Average length of Core I (mare the	 BOcm.], 2 (Soem. 20 cm.), 4 (less than 5 cm		n	<u> </u>	
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EGAT			LAN	l TA	KHONG							ORING Boring No. DHI	1-2	i na N	lo 2	o!	. 2	
Project Co-ord	ingles	16:						Local Eleval	ion'	632.	078 m	Boring No	40.00 N.	Comn	renced		11/7/5	10
Angle f	rom H	orizoi	ntal .		90			_ Total	Depth	Core	10000 vo	<u>cy 90 % Depth of Overbur</u>	den	_ Comp	leted	~		
Bearing	of Ar	gle H	ole					_ Comp	any —	EG	AT	Total length of co	76.05 M.	Logge	q på	<u> </u>	A, PA	CANA
Date	M Oepth	-[]	(Acousti	Symbol of geology	Core recovery	Kind of Bit Pot Core (mm.)	Casing Cementation	Calaur of rock	Weathering	Hardness	o Average length of core	Description	WATER PRESSURE LUGEON VALUE WATER TABLE	○	o Drill		Oc. 10 Cepth	Elevation
15/7/20 12/7/71 06/7/81	#83 - 2 3 4 5 6 7 8 9 5 7 8 9 5 − 2 3 4 5 6 7 8 9 5 − 2 5 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 5 6 7 8 9 9 9 0 − 2 3 4 5 6 7 8 9 9 0 − 2 3 4 7 8 9 9 0 − 2	defone	li.		\$	NM.C DIANNO CORE BIT		white and gray				bedding joints, 0°-10° at 25.50 M, 25.80 M, 26.40 M, 27.50 M, 28.80 M, 29.05 M, 29.40 M, some pebbles of claystone at 29.80-30.10 M, 31.90-32.20 M,	. 30,00-35,00 (1.7) GNL \ 12 35,00-40,00 (0,8) GML \ 22	<u>.00</u> н.				
LJ_	Core les	. –	•[[1	 { reab}	Weell - 5 (decem)		Harden.	1100		Avarage lingth of Core I (more (200 eff) 8(20cm., 5	50 cm. } , 2 (80 cm., 20 cm.) , 4 (em), ,) 5 (gr41	sed)			

5/6/90	% 0 m		Symbol of gaology	8	Kind of Bit f Core (mm	Casing Cementation	Colour of	Weashering	Kardness	Averoge	6	Description	WATER TABLE	γ	ò	Pressure	Ĕ	Depth
25/6/9	" ii ii				TEN Got		90			8	Ш	0.00-8.20 Н; OVERBURDEN,	0.00-5.00 M. CONSTANT HEAD	100	\	8	001	0
3	մայուրայի				TUNGSTE CARBIDE						(0,00-3,00 M; lateritic clay, (Residual soil) stiff, high plastic,	k = 0.35x10 ⁻⁴	cm/sc	6		րեպատեսո	2
	արարար	OYERBURDEN				CASING	рхови		-4470			3,00-7,70 M; decomposed rock, (claystone) core loss at				 	 जिल्लामान्त्र	4
9	manifush	OVER					reddish			2016		4,30-4,70 H, 5,00-5,40 H,	4,50-10.00 M CONSTANT HEAD		7		որբուրաբող	6
8	indumban 					7.50M		Ü				7.65-8.30 H,	$k = 1.61 \times 10^{-3}$	cm/se	c.\		գուղագուր	8
8.	Marining 1											8,20-30,45 M; Sandstone, hard & dense,				-	րահաժամա	9
	dundundund 32				mm.						,	fine to medium grained well cemented, joint, 70°-80°, Fe O st	nined (μ,	$\left \cdot \right $		րություցույր	2
	որովում -				CORE 54.7						$\ \cdot \ $	at 11,15-11,30 H, 12,40-12,55 H, bedding 10 ⁰ at	GNL \ 5.90	м,		$\frac{1}{1}$	ուդոոգուգո	3
	ulturlustus 88				, 9 OF C							16,00-17,00 М, 18,00-20,00 М,	V 15,00-20,00	м.			մասիայիում Մասիայիում	5
7	198				CORE BIT							core loss at 14,20-14,25 M,	(0.3°)				հոսհասևում	7
8	Janhudunda S	4			DIAMOND		grey						GNL 4.8	0 м.			ականակա	8
27/6/90	denhudad	Sandstone			NMIC		z En					horizontal joint Fe O stained at	20.00-25.00	N.	1		սիագարուր	20
7.7	mpulmulm 83											22,24,22,25 P, joint, 45 ⁰ (FeO) at 22,70,22,75 F,	1.4		١		իումիումում	2
4	100 miles						٠					limonite rich at 25.50-25.60 M,	CHT V 4 30	<u>.</u> .jr.	\setminus		ուրույրույրո	4
	udundundun S											26.85-26.95 H, 27.55-27.75 H.	25,00-30,00	М.			արահումում	6
28/6/90	lunhundum S												(1.7)	;			ուղութիուր	7 B
l g	4 184				·								GWL / 12.3	υМ,			ամասման	9

EGAT Projec	:t			TA KIIO ,744 N				Local	lon "	Upp	er P	ond	ORING Boring No. DIN-3 Log No. 2 of 2
				ol		00 2		_ Elevoi	noi: Iasd	h Co	re j	Reco	pyery 96 1 Depth of Overburden, 8.20 H. Completed 3/7/90
				a							EGAT		Total length of core 47.95 M. Logged by A.PATTANA
Date	Depth	% A.O.D	Geology	Symbol of geology	Core recovery	Kind of Bit Oof Care (mm.)	Casing Cementation	Colour of rock	Weathering		The state of the s	0, core	I Description I And Average Average at all All A
30/6/90	20 1 2 3 4 5 6 7 8 9 20 1 1 2 2 3 4 5 6 7 8 9 20 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	0	Pebbly Sandstone	D D D D		ND CORE BIT Ø of more 54.7 mm.		light grey					30,45-44,75 M; Pebbly sandstone, muddy, coarse grained, mudstone pebbles, 1 mm, up to 5 cm, size, cavernous surface (nebbles loose) core loss at 30,50- 30,75 M, 43,00-43,30 M, moderately poor cemented at 30,80-33,50 M, 34.00-35,00 M, 37.00- 39.50 M, 40.50-41.00 M, Moderately to well cemented at 30,50- 40,00-45.00 M. 34,00 M, 36,00-37,00 M, 39.50-40.50 M, 39.50-40.50 M,
3/7/90	4 5 6	0	itic Sandstone			NMEC DIAMOND		it grey	· ·				41,00-41.70 M, closed joint, 70°, at IS.20-15.40 M, sub-vertical, irregular, fracture at 42,30-42.50 M. 44,75-50.00 H; Quartzitic sandstone, medium grained, very well cemented, hard, dense, bedding 5° at GML 2.36 H. 2.0° 4 2.36 H. 5 4 6 8 6 7 6 7 6 8 8 8 8 8 8 8 8 8 8 8 8 8
"	e de la constanta de la consta	78	Quartzi					light			i i		49.30-50.00 H, 5ub-vertical joint at 9
	արումյու լույանում արևում ա						Westl						48.00-48,20 M, BOTTON OF NOLE 50.00 P. Bull

## 1	Angle from Bearing of A			900		Total Com	Depti pany	EGAT	overy 100	Depth of Hole Depth of Overbur Total length of co	den	Completed Logged by	27/1/9 A.PATT
0.00-6.40 N; 0.00-5.00 M. VARIABLE IRAD 0.00-5.00 M; VARIABLE IRAD 0.00-5.0	1 1	1	Symbol of geology	. 1	Couing	Colour of rock	Weathering	Mardness Average length	Desc	ription	LUGEON VALUE		Ē Ē
50 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	06/2/02 0 4 5 6 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Larbide	Tight		8	OVERBURD 0,00-5,0 Stiff cl 5,00-6.4 Decompos (0,00-0.20 0,20-3.50 3,50-6.40	EN, 0 H; ay, 0 M, cd rock M:Top soil, M:Residual soil. M:Highly	VARIABLE IMAD TEST k = 3.28 x 10 ⁻⁶ 5.00-10.00 M	CITI/SECT	ա այստերակակավահակակականունունու
Sub-vertical fracture (clay coated) at GML 6,20 M. 7,50-8,00 M, 11,60-12,10 H, 7,50-8,00 M, 11,60-12,10 H, 7,50-8,00 M, 11,60-12,10 H, 7,50-8,00 M, 121,00-22,00 M, 24,50-25,00 M, 25,10-25,50 M, 25,10-25,50 M, 25,10-25,50 M, 25,10-25,50 M, 25,10-25,50 M, 25,10-25,50 M, 27,00 H, 11,11 H, 11,1	10 6 July land	35 10)			6.50				Quartzit nedium t hard & d well cem hight fr sub-hori decompos	ic Sandstone, o coarse grain ense, ented, acture, zon bed, ed rock	k = 1.04x10 ⁻³	cm/sec	մադումակակավարհականականուն
9 - 1	23/7/90 2 4 2 2 4 2 1	[0 0			core	gray			sub-vert (clay co 7,50-8,0 21,00-22 25,10-25 28,60-29 fracture 19,45 M,	ical fracture ated) at 0 M, 11.60-12. .00 M, 24.50-2 .50 M, 25.60-2 .00 M, 29.30-3 , 70 ⁰ , at 19.4	ро н, Y 5,00 м, 6,00 ₅ м ₀ 0-20.00 0,40 м,	- \	րջնուկաների հետևուկանուկականումը
	0 8 - 0 0 4 5 6 7 7 00 7 00 7 10 10 10 10 10 10 10 10 10 10 10 10 10	Quartilic Sands			DIAMOND CORE BIT, P				10,20-10 27,70-27 bedding Feo stra 11,50 M, high fra 24,00-26 some peb at 26,50 cavernou	.90 M, .50 H, joint (horizon ined) at 32.25 M, ctures at .00 H, bles of clayst -26.90 M, s surface at	20,00-25,00 2,0' One GML \(\sqrt{15.9} 25.00-30.00	м. М.	maine I mai male calient le mitera di mai franche di territori de caliente

EGA:			IAH	TA KIIO	ING		٠	Locale		OF UPPER	BO	ORING Boring No	IU - 4 L	ng No. 2	of	2
			1637	.748 N	775,4	02 E				638.29	6 m.	HSL Depth of Hole	50.00 H. C	ommenced.	20/7/9	0
				al	0	··		Total i	Depti	Core F	ccove	cy 100 % Depth of Overbur	den6.40 HC	ompleted	27/7/9	
Bearl	ig of	Αno	ìe Ho	le				_ Compo	H1Y	EGA	T	Total length of c	50.00 M. L.	ogged by	A.PATT	ΛΝΛ
Date	. Depth	% R.O.D	Gaology	Symbol of geology	Cora racovery	Act Core (mm.)	Cosing Cementation	Calaur of rock	Weathering	Mardness	A Average length of core	Description	water pressure te Lugeon value (Water Table — //) [[100 Timemin	Elevation
25/7/90	2 3 4 5 6 7 8 9 9	93 70	Quartz It te			core 54,7 mm,		pie light gray				sub-vertical fracture, clay coated, at 33,00-33,30 M, 33,80-34,00 M fracture, 70°, at 30,9 35,00 M, 38,50 M, cavernous surface at 35,10-35,30 M, 37,30-37,46 M, 37,85-38,90 H, iron rish (red) at 38,90-38,95 M,	GNL \ 16.00 35.00-40.00 N GNL \ 22.60	N	90 1 2 3 4 5 6 7 8 9 40	
26/1/90	40 2 3 4 5 6 7 8 9 9 5	0 0	Silty Siltstone Mudstone			MUC DIAMOND CORE BIT, & of		brown greenish gray & brown and purple				A1,75-47,95 M; Siltstone, dense, brittle 47,95-50,00 M; Silty Sandstone, mode, well cemented, horizor bed, hard 6 dense	40,00-45,00 I	м.	- 2 3 4 5 6 7 6 3	
	1 2 3 4 5 6 7 8 9 O Con							aring				BOTTOH OF NOLE 56:,00 N.	SOcm. 1, 2 (SOCM. 200m.)		9 0 - 2 3 4 5 6 7 8 9 0 համորիաժափահահահահահահակահանահանահանակա	

ngle fi	rom Ho	rizont	,895N, ol		9(00	_ Eleve Core	illon Recov	0 PPE1 646 , 38 70 FY	98	MSL. Depth of Hole	rden 1.25 m. Comp	leted	22/6	/90
	Depth R. Q. D	Sectory	Symbol of geology	Care recovery	Mind of Bit Oof Core (mm.)	Casing Cementation	Calour of rock	Weathering	Hardness	Average length of core	Description	WATER PRESSURE TEST LUGEON VALUE O WATER TABLE	O Brill. SO Presidure kg	E Depth	Elevation
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	» 1 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 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 0 1 2 3 4 5 8 7 8 9 9 0 1 2 3 4 5 8 7 8 9 9 0 1 2 3 4 5 8 7 8 9 9 0 1 2 3 4 5 8 7 8 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 0 1 2 3 4 5 8 9 9 9 9 0 1 2 3 4 5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	ZITIC GLAY OB.			4	SNISY)—) o	g dark gray brown light brown light brown				0.00-1.25 m; OVERBURDEN Sandstone bo. Iders at 0.00-0.65 m; 1.00-1.25 brown sand at 0.65-1.00 m. 1.25-10.10 m; Sandstone fine grained, hard 4 dense, well cemented, subhorizontal bed, core loss at 2.10-2.80 m, highweathered at 5.80-5.88 m; 7.55-7.70 7.90-8.10 m. decomposed rock of sandstone at 8.10-9.00 m. 10.10-25.00m; Clay, decomposed rock At 10.10-18.00 m, light brown (shale) At 18.00-22.00 m, brown (siltstone) At 22.00-25.00 m, dark gray(shale) 25.00-30,00 m; Quartzitic Sandstone, moderate to well cemented fine to coarse grained, subhorizontal bed some mudstone pebbles	m-CONSTANT HEAD TES k=6,11x10 ⁻³ cm/sec		աշկավարիականականավածավածականականականականականականականականականակ	9 0 1 2 5 6 6

GAT rojec		1639	TA KIIO ,095 N		200		_, Local		VATER NA 31.049 m.I	Boring No		Log No. Comme		of _ 16/3	/90	
	linotes		·	900		*****	Eleval	NON	00.6.1	Debitt of Hora	9:55 M.	Complet	ed	25/9	/90	
		lorizont note Ho	01 le				∴ Total Comp		EGAT	Total length of c	229,00 M.	Logged		A P	ATF	NΛ
Dets		R. O. D Geology	žžoje	Care recovery	Kind of 8H Core (mm.)	Casing Comentation	ă	Weathering	Hardness werage langth of core	Description	WATER PRESSURE LUCEON VALUE (Dy Arnasus	Time	Oepth	
	١	" 3	Symb	1	Ž,	ů	Colour of		¥ \$: & &	8	ĸ	
\dashv	# 3	<u>*</u>	12.521	100 %		-A		mi	ហើយវិត	0,00-9,55 M;		Ň	ΤĪ	TE	ि	
	1)			OVERBURDEN		1			- 1	
1	al a	1 .					1			0,00-0,48 M; Top soil	,	K			. 2	
- [5-4	1					1	11111	{{	hrown,			11			
_	3-							Ш		0.48-1.10 H;					- 3	
	a di	1					ě			Sandstone boulder,		<u> </u>	 -	<u> </u>	- 4	
De 11 / 14-01	*]	z.					# #			1,10-4,90 M;	4,50-6,50 M	\				
	5-3	OVERRUNDEN				, .	ğ			Stiff clay, reddish	CONSTANT HEAD		11		. 5	
1	. 6 📲	E.					Ě			brown,	$k = 1.50 \times 10^{-3}$		1	Ė	- 6	
-	o o o o o o o o o o o o o o o o o o o	8			ا تے ا		brown f reddish brown			4,90-9,55 M; decomposed rock/clay,	4,50-9,50 M		11	TE	. 7	
	7-				7 194		Š			brown.	CONSTANT HEAD	- 17			-	
	8 =				54.7					(0.48 3.00 N :Residual soi			1		В	
	, and	1			Ų.					3.00-12.10 Millighty weathered claystone	 		\mathbb{N}		9	
1					8		<u></u>						╫	╁┋	,	
1	10-	00 8			9 of					9,55-12,10 M: Sandstor					- 10	
1	्राच्या स्वास्	Sandstone				.	white			siltstone, bedding 30 highly crack at 11.60	CONSTANT HEAD	TFS	1 1		- 1	
1			 		8		lred ·			11.80 M, 12.00-12.10	$k = 3.55 \times 10^{-4}$	cm/sec		\ <u> </u>		
ļ	2	<u> </u>	[• • i		CORE		brown.				 		14	├ -[
, [3-11		::			y.				12.10-35.70 H;	12,50-18,50	4 N			• 3	
7. /2	-9	1	::		DIAMOND	CASING	1			Quartzitic Sandstone,					- 4	
1	4 17 15 15 15 15 15 15 15 15 15 15 15 15 15	0				W7	1			medium to coarse grain	ned,			1	•	
	5 =	1	 		MATC	TON				well cemented,	$\left(\begin{array}{c} 0.7 \end{array} \right)$	- []			- 5	
- }	64	1	[CEPENTATION				bedding 0°-10°, cross bedding at 13.5		- F	\prod		- G	
ļ	Juli				•	GI G	1			siltstone at	GHL, 15.50	Ιм.			•	
-	7	7	::			 	{			14,00-14:05 M;	- \	- " []				
	31 -						-			14.85-14.90 M,					- 8	
	թ. թ	1								15,00-15,12 N,	18',50-24',50 1	_ \	╀┼	H		
_]	9 1	֓֟֟ <u>֟</u>					}			15.75-15.78 M,	16,50-24,50	μ	╀	-[-	
	20 -	Sandstone								17,28-17,30 M,		· . \			- 2:0	
1	ᅽ	nds!	{		Ę		}			17,40-17,44 H,		. \	1		- - I	
1	19/	' ss	[]		1 9		٠ چ			18,70-18,75 H,	0.4		M	\ E	.	
I	ավարկակակարակակարակարարարարությանութ	;			47	.	LIGHT GRAY			18,90-19.05 H,	4.4.5		\square	LĒ	9 20 2 3	
1	3.4	Ţij.			core		E			19,50-19,52 H,	GPL \ 3.01	<u>□</u> "			3	
) - 135:	Quartzitic			, 427 Ω		l ii			21,60-21,62 H,) V	- 1,	1			
1	4 =				BIT,		}			25,83-25,84 U, 26,50-26,52 H,			14			1
-	5 4	-	1		E E		 	₩		siltstone alternated	24,50-30,50	9. \			5	
	្នី ដូ	od i	[1900	CORE		j			20,50-20,90 H,	T . ₩.	- }}			. 6	
$\left \cdot \right $	6-4	4								26,15-26,25 11,		H	††	erriteretheriterriterriterriterriterrite	١	
	7 1				ELIN					26,45-26,50 H	(15)	1			. 7	
	4				(WIRELINE)		[sub-vertical fracture		\prod			8	
		1			NO.					nt 27,20-27,60 M,	5ML 11.78) и [•]	
	9	}			Ż									I	9	
- [30	J4	}										<u>N.L.</u>	Į	30	L_
	C** #1						hering -	4	- † . ↑ -	- Average length of Core I (more tha	s 50 am.) , 2 (50 am, 20 as	mJ,	,		$x_{i} = x_{i}$	

EGA	-			nh W1601	to.					OF B						a: 0	
Proje	ct rdinat			B,095	4.5		_	Fleva Fleva		. Water W		_ Boring No ^{D1} _ Depth of Hole	1W - 1 230.00 M.				
	from	16.5			900						ry 99.6 1	Depth of Overbu	and the second s	. Completed	3	5/9/90	
				le				Comp		PC NO		Total length of co	229 DB M			. PATTA	ΥA
	·	٠. ٢ا			1	1		· :	T	1 1	1:					<u> </u>	
				Symbol of geology	1	± €	3	300	8	iength			WATER PRESSURE	TEST	1		
Pg *	Cepth	R. Q. D	Gedlogy	8	Core recove	Xind of Bi	Casing	, t	Weathering	Herdneze erage len	Des	cription		V- (1)	ş	the o	Elevation
8	8	œ	ğ	2	3	\$ 2	8	Colour	3	Herda Werda			WATER TABLE -	4_		Ĕ)	ü
(M	%		ெ	100 %	စီ		3	-	1 5	<u> </u>	·			8	B N	
	30	100					Π				siltato	na at			11	30	
	1-		9					1			i e	II.92 H.	30.50-36.50	н. \		上	
ļ. ·	,		to					1			J2.89-3	12.90 М,			11		1
	2	87	Sandstone				1 1	.]			34.15-3	4.16 M.					
	3							gray			34.70-3	14.72 4,	(1.0*)	-		Ē- 3	
	4		Quertzitic					ρ							11		}
ļ		1	rtz.			,		light						\			
		97	å										GWL √11.5	0 M. \		5	
	6) [·						11		6	. }
06/	يّ	 	900	0							1	19.80 M;			4+	-	
06/1/02	7		Sandstone	0				brown 17].	Sandstone, sub-	36,50-42.50	и.			
] ~]	8-	35	San	, 0			i i		,			, ca√arnous sur es loosa), pebbl	-	IV		E 8	: 1
}	12		117			,		1151			} ``	mm. up to 3 cm.		1 }	11		1
	9~		Pebbly					reddish and gre				na at 38.00-38.	\ /			1 9	l
	40			iiii							 			- 11		E-40	.
}	-		ě	188888			CASE	purple			39.80-1	12.10 H;	GW6∧ 13.0	о н. \			
	1		350	[] } } } }				light Pum			Claysto				╀	-[·
	2		Claystone	133333			2	119			core lo	ss at 40.00-40.	60 М,	$\sim M_{\odot}$		E 2	.
 	_3	 −	SS	خ زر			CEMENTATION	burple			12.44			- 	11	1	.]
	3					ا ۽	ENT	-			1	13.20 M:		-1		E 3	l
	4	0.	910			ž.	E S				II .	Sandstons, & gray color.	NO TEST	1 /	$ \cdot $	E 4	
	170		Sandston			47.	Ĭ	3:27			Pothia	a gray color.		-	V١		ĺ
g,	5	-	us.			COLG		}			43.20-4	15.30 N; Sandste	ne.		11	ĮΊ	
21/7/90	6					បី					fine gr	aines, well	J. 1	- [\]	11	6	l
~						0		gray			cemente	d, high weather	ed ical	1 \			·]
1	Lindan de	80									fractu	e at 44.10-44.8	0 м,	— I N			
	8	1 1	92			INE		senish			15.30 -	72.30 M;	47.50-53.50	н.	V	₽ 8	
		Н	3:			REL		и			Siltsto	one, some sandy,		<u> </u>			
	9 1	10	Silts		M	IM (· · · · · · ·			1	brittle, spotte		1			
	70	- 1	. (2)			Š		1.			1	ous at 19.00-	(0.2)	[]	1-1	₽ 50	1
23/7/90			.	ili il				roddish			50.50 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- 1/1		₽ \	
23	1042	0.3			303			8 .6				oss at 46.00-46.	30 M, GWL \ 27.9	ю н. √			
	2 =		1								5110-	61.30 M.	: V	1 1		2	į
	34		9								52.30-	8.90 M; Mainly	. 5	- 11	4		7 .
	- 4		#iltstone								fine gi	rained sandstone					
	4		1153				l J				with s	iltstone alter-	53.10-59.10	m.			
11	5	10	- 1				54.5	о н. ž			nated,	sub-horizon bed		\ \ \		5	
	, du		230									emented at	(26')	: 1 N			
06/1/12	6		Sandstone					gray				56.00 M. Eractur	e		\prod	E 6	
23	7	9	San									56.00-56.30 M	on A see	,		E 7	
	, I	80						reddish			core lo	es at 56.80-57.	00 H 7 NF \ \ 31.2	20 M.[\[11		
	8		Mainly			27.7		1.00				or and the second of the secon	•	1	TT	E 8	. `
	9	70	ž.	71.7				-	1		58 00-	33.70 н;		\ _	\coprod	ուսարարարարարարարարարարարարարարարարարարար	
	, anda						ı				1	one, muddy		1		E 60	
إسما	60 5	المسا	اب		1 73-12(27)			el Norice			— Average I	ragin of Coco Ilmers then	80cm.), \$ {\$0cm_ 20c	L =),		_EY	

EGA	. 1.2	н та	KHONG						JKING	. Boring No	OHW - 1.	Log No3	of 8	1
Projec	·		,095 N 755	,200 E		, Locatio , Elevatio		ator Way		Boring No Depth of Hole	230.00 M		16/7/90	
	from H			90°				ore Rason	ry 59.6 %	Depth of Overbu	rden 9.33 M.	Completed	25/9/90	
Beori	ng of An	gle Ho	ie		·	Compa	inγ	TADG	·	. Total length of a	ore 229.00 M.	_Logged by —	A.PATTANA	
Osta	W %		Symbot of qeology	10		Colour of rock	Weathering	Hardness or Average length of care	Des	cription	WATER PRESSURE LUGEON VALUE WATER TABLE		الما	Erewation
30/7/90	MO 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 4 5 4 5 4 4 5 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	Siltstone SS S.St Siltstone		HILLIAN HILLIAN BURGERANDA		reddish brown A A D dark reddish brown			63.70-6 5andy 5 5andy 63 65.00-6 Wery fi 65.70-6 sandy, 69.00-8 Siltsto Spotted 66.20 69.20 71.30		69.10-75.8 GWL \(\sqrt{20}\)	10 M.	0 - 2 3 4 5 6 7 8 9 70 - 2 3 4	
31/1/90	ակապետիարականական հայաստանում արարական հայաստանում ան 2 3 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Silatone		WHITH THE STATE OF THE STATE OF STATES OF STAT		raddish brown and gray			75.00 muddy a very fi intersa 82.70 84.15 04.60 85.00	lamination at -77,00 M, t 69.00-73.00 ne sandstone lated at -83.50 M, -84.20 M, -84.80 M, -85.30 M,	6W3 \\ 20.	10 M.	5 6 7 8 9 8 – 2 3 4 5 6	
1/8/90	7 6 9 90 Cere bei				Westh	red brown and gray			of sandst svo-hovin moderatel	9.50 M; Alternal one and siltstone on lamination, y well commented	87.30-93.50		8 100 8 100 9 100 90	

EGA Proje		L/	NM TA	KHON	3			Locat		bhan b		DRING Boring No	DHW = 1 Lod	No	401	8	
Co-o	rdinate		1638	,095 F	755,2	3 00		_ Elevai		631.049	m	. HSL Depth of Hole	230.00 H. Con	menc	d_16	/1/90	
Angle	from	Ho	rizont	ol	90			_ Total	Dept	h Cora Res	010	ry 99.6 % Depth of Overbu	rden. 9.55 M. Con	pleted	25	/9/90	
Bearl	ng of	Ang	le Ho	e	<u> </u>			Comp ـ	dny_	EGAT	-	Total length of c	ore 229.00 H. Log	ged by	λ.	PATTAI	NN.
Dafe	Depth	R.0.0	Geology	Symbol of geology	T	Kind of Bit Pof Core (mm.)	Casing Camentation	Colour of rock	Weathering	Hordness Average length	of core	Description	WATER PRESSURE TEST LUGEON VALUE O	1	50 Pressurekq	FC Depth	Elevation
2/8/90 1/8/90	M onigonjandan jan jan jan jan jan jan jan jan jan j	67 106	Silts					reddish brown				89.50-100.50 M; Siltstone, cross lamin fine sandstone alterna at 91.55-91.60 H, 92.50-93.00 M, 93.70-94.45 H, 94.90-94.85 H, 96.40-96.80 H, 98.80-99.15 M, 99.50-99.75 M, spotted calcareous at	1 \ /			թ - 2 7 4 5 6 7 առևանախակակակակակակակական	
3/8/90	3-pm-pm-pm-pm-pm-pm-pm-pm-pm-pm-pm-pm-pm-	10¢				cose 47.6 mm.		nword				31.60-92.00 M, turbidite bed at 96.55-96.70 M, 91.60-91.70 M, 100.50-103.80 M; Sandstone,well comente slightly, calcareous, hard & dense, pross bed, siltstone pebbles at 102.10-102.30 M, 102.80-102.85 M, {turbidite zone}	99.50-105.50 M. 2.5 GWL 15.10			16 8 9 0 - 2 3 4 5	
	6 7 8 9	95 82				NO WIRELINE, Ø of						103.80-120.55 M; Siltatone, fine sandstone interbe at 104.60-104.70 M, 105.20-105.80 M, 110.05-111.00 M,	105.50-111.50 }			ահավորիականակարհուկումու	
4/8/90	ությունուկուկուկուկուկուկուկու	92 84	Siltstone					reddish brown				118.00-118.30 K, 118.50-118.90 M, 119.95-120.05 M, sandy at 117.30-120.55 spotted calcareous at 117.50-120.00 H.	M,111,50-117.50 F			ումում ումիայի	
06/8/9	6 7 8 9 20 %	86 100		W. Company			Wast					Average leagth of Corp Cance Man	25.60 b			5 6 7 8 9 0	

EGA			PHON	,							OMING		OKH 3	l a - Na	5_01_8	,
Projec			KHON 1,095 1	755,20	3 00			ion	57	1,049	m, MS1.	Boring No Depth of Hote	DHW - 1 230.00 W.	Log No Commence	14 17 100	
	from H			940								_ Depth of Overbur		_Completed	25/9/90	
							_ Comp			EGAT		- Total length of co	229.00 H.	Logged by	A.PATTAN	Α
Date		Geology	Symbol of geology	Core recovery	Oof Core (mm.)	Costag Cementation	Colour of rock	Weathering	2	o descope length	Des	cription	WATER PRESSURE LUGEON VALUE WATER TABLE	πεsτ Ο Λ- Ξ̄	₹ [Elevation
6/8/90	arbardandandandanda	nation of one & siltstone					s light gray				Alterna and sil	125.55 M; tion of sandsto tstone, tal bod,	GWC J 22	60 M	ահումուսիուսիումունումու	
	ումուսիումումումում ամասիումումումում	Alternat					dark s				moderat comento	ely woll	123,50-129,5	ю н. \	ակումումասկայմա	
06	Ampunganjanganganganganganganganganganganganganga	Sandatone					light gray				Sandsto micaceo horizon hed at siltsto	ne, fine graine us, hard & dens bed, turbidite 126.00-126.10 M ne intercalated	GWL \\ 20		7 100 10	
7/8/90	130 dankaringanian	Sandy			•	-	purplish gray				129.80- siltsto	10-129.25. H. 132.40 H; Sandy ne, moderately mented, good co	(0.1)		endandandanda 2	
	tradendendendendendende	Siltstons			47.6 тм.		redeish brown				Siltsto laminat interca 133.8	136.88 H; ne, horizontal ion, sandstone lated at 0-134.30 H, 5-134.75 M,	GHL \ 51.	10 M	ահավասհահահահանակա	
	nhaisainhanna	Afternation of SS. & S.3c			, pof core		light & dark gray				Altarns and sil horizon			60 M	in 7	
14/8/90	nthadantadantadantadanta	Sandaton			no Wireline		light gray				Sandsto well ce grained inturca 140.80 lenticu 140.80- 141.30	144.90 H; ne, nard 4 densa mented, medium , siltstone letad at 140.40 H, 141.80-142.2 lar texture at 140.90 H, 141.2 144.58 H,	141.50-147.5 0 8, (3.4)	- M	uilmhuilmlauthuilmtaataalaa	
	5 6 7 8	Pebbly SS.	0 0 0 0				dark gray spotted in light gray				144.90- sandato pebbles texture	00-100 147,30 M; Pebbl no, siltstone , lenticular , vertical	Y V	30 M	ատևումումունումու	
15/8/90	8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Sandsto					derk gray				147.30- Sandsto fine gr laminatio	eat 146,70-146. 150,50 H; ne, V.fine to ained, subhoriz m, madacately well agk of Core ((more 1800	147.30-153.:		11 9 9 1 1 5 O	

EGA	-		 42								ORING				
	ct rdinali			. 095 N	G 755,2	3 00		_ Locali			Boring NoD				
				ol	900						xy 99.6 1 Depth of Overbu				
								_ Compo	any	EGAT	Total length of c	229,00 H.	Logged by	A.PATT	ANA
		,			y			,		1		T			ابــــــا
1				Symbol of geology	Asset	a €	ě	7963	Ę.	 		WATER PRESSURE LUGEON VALUE	TEST	Ē	
1 2	C depth	A. O. D	Sectory	8	Core recover	0 2	Cosing	5	Kealhering	Horeness erage Jen of core	Description	1	W 1 1	Depth Company	Eleration
٥	å	*	.5	3 E	Core	A Kind of Bit	Cosing	Cotour of	44.00	Horeness Werage leng		WATER YABLE -	A	<u>.</u>	#
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	150										Semodfed? 5429:80 CHara		_ N	150	1
	1	100		• • •				1			150.50-166.90 H;	(0.6)			1
}	2							1			Quartzitic Sandstone,			2	1
}							}				coarse to medium grain	Ed. GHE / 51.	30 H.		1
1	3-2						}	1			wall cemanted,	V	-	3	. }
}	4							1			hard & dense.	153.50-159.	50 M.	4	
	1		. :-	• • •							sub-horizontal bed,		. 1/1 1		.
06/8/50	5 -										very good core,	0,1	1 1 1 1		.
3	6	0.0	1								very fine grained sandstone interbedded			E 6	1
	7										at 152.15-152.40 H,			+ = 1	
}	7							1			high fracture at	A			
}	8										161,25-161.90 H.	GWL 151.3	<u>ю</u> н. \	8	
{	9							1							· {
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	10		0			. !		1				159.50-165.	50 H	160	.
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2	7					W.			Ш			CANNOT TEST	, 141	1 7	
	20					ŽŽ					166.90-190.70 M;			₽ 8	
	1111					3					Siltstone, massive, dense, brittle,		1/1-1		
	o I	74				2	,				slipping planes at		1	170	
<u> </u>	היים:	igdots									165.90 H,170.80 H,	169.70-176.	70 H	170	
18/8/90		80					. 0				very fina grained .				
<u>s</u>	lassid.	-						100			sandstone alternated		- - - - - - - - - - 	+	!
	2	\dashv					i				at 173.00-176.00 M.	0.0		2	
[3	87					ļ	20			180.50-181.20 H,			= 3	
8	, I		tskone					reddish brown			slip plunes, CO _J coate	1.	: : N		:
22-23/8/90	4-4		2				ļ	15.5h			30°, at 177.20 M,	GHL A 32	.70	1 1	1 1
1.7	5.7		5.					redd			178.30 и,	<i>V</i>		հունա <u>և</u>	4
"	1	100									some spotted calcareou at 177,00-190.00 M.	.			
	. 9. գ.										95 T11.00-TA0.00 W.		NT	1	:
<u> </u>	7.0	Н										177.50-183.5	10 H. 1	համարկացիս 7	
	© Jeneba	<u></u>]						J 출 Ì	
8	8-	78]											VE ,	
24/8/90	9												k++	-	
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	Cert	لبب	المسيد. أحد		₽431-35-11\d 1		West		٣,	7 t	- Arasaga langth al Sura I (mera fbm	30 m.) . 2 (50 m. 20	ıa).		,

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				KHONG 8.095	N. 755	. 200	Έ	_ Locali Elevati	ion . Ion	631	.049	Boring NoD a. MSL Depth of Hole	210.00 H	og n Comtn	enced	16/7/9	0
					900							Depth of Overbu					
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	· ·				· · · · · · · · · · · · · · · · · · ·		٠	T			· T	T		·		E	
				6000	\$	Sof Core (mm.)	<u> </u>	¥ i	1	•	Įğ.		WATER PRESSURE T	EST	. 1	E	ا و
*	t de d	R. Q. D	Geology	Symbol of geolog	Core recovery	Kind of Bit Core (ma	Cosing. Comentation	Colour of rack	Wan the a class	Hordes	nerage length		WATER TABLE -	~ 1	Ę .5	S Que	Etaration
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	80											Siltstone.			IN	E.	
g	帽	63				} '	·	}				brittle.	0.3		111	ուպումու	
24/8/90	2	_		11.5				İ				very fine grained		Į,	441		
24	킠		i					ļii			0.4	sandstone alternated a	GNL / 42.5	0 н.		ահամա	
l	3 -	78										at 180.50-181.20 M,	V		\mathbf{N}		
8	Ē	٠.											183.50-189.50	м.	\mathcal{M}	արութ	
25/6/90	1	60	2	H			,	ç	H		-	spotted calcardous.			17		
\ <u>~</u>	5 🖥		Siltstons					brown	H	·				, k	411	- 5	
}	6 Ja	-	1154					Ę.	Ш				(11)		N	6	
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	յարուրուրումու	55	bu c					{.	il			190,70-195,70 M;					
1	2-7		isto					3	Н			Alternation of siltsto	he (01)			¥ 2	ĺ í
8	300	-	6 Sandstone			ε		reddish brown grayish brown				and fine grained			111	_	
8/8/90		65				£ 0	}	ממ	1			sandstone, brittle, sub-	any A as a		M	4	
ñ	dardanderija		Siltstone	iji),		47.		reddish grayish	Ш			norizon bed, slaking	GWL 11.6	0 11.		4	:
İ	गम्प	75	1 3 t			core		edd Kay				siltstone, small scale		. }	NI		
	5 -		511	:::::					Ш			cross bodding			$\perp \Lambda$	_ E 3	
	6 m					of Of			H		1	195.70-208.30 M;) [\mathcal{M}	<u> </u>	
	udan							1 1				Siltstone,		١		Ē,	
]	չ 8 Հայաստանումում	۱,,				341						massive & brittle,					
6/90	8 3	"-		1111		IRELINE		1	Ш			slip plane at 195.90 H	CANNOT TEST		11	8	
29/8	곀	1	į			3 (Ш			calcareous mottling			. }	ա	
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\vdash	- 클	┪	.			i			Ш				200.00-209.00	м.	111		
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15/9/90	3		Siltstone					۽	Ш								
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	2 դադարու								Ш				A CONTRACT		$X\square$	£ 5	
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	չ Ն 8 8 բողևանակայանակ								₩			208.80-215.05 H;		<u>0 1 </u> 2013 k		 9	
		72)					red				Sandy Siltstone,		1	/ 	210	
	1 0 3 1 0 0 1					1			ч	-25-5	سليد.	- Arerige length of Core I mere than	50cm.),2(80cm, 20cm			<u>.</u>	

Bearing of A		iai								Total length of co	re 229.00 M. Log	ged by	A.PATT
Octs M Depth	R. O. D. Geology	Symbol of geology	Core recovery	Kind of Bit Pof Core (mm.)	Casing Comentation	Colour of rock	Weathering	Hardness	or Average langth of core	Description	WATER PRESSURE TEST LUGEON VALUE () WATER TABLE		100 Timem E Depth
19/9/90 19/9/90 19/9/90 19/9/90 19/9/90 19/9/90 19/9/90	Sandy Siltstone					reddish brown				Sandy Siltstone, sub-horizontal bed, slip plane at 212.70 P	0.1		անունունակահահահանականունակա
90 90 90 90 90	73			NE. Ø of core 47.6 mm.		имола				Siltstone, brittle, spotted calcareous, spotted pyrite and carbonate assemblage at 216.80-217.00 M, fine grained sandstone interbedded at 217.10-217.70 M,	GNL // 50.00 215.50-226.50 H.		6 7 8 9 0 ~ 0
22/9 9 Cf	Siltstone			NO WIRELINE		reddlah				219,60~219.80 M, 220,50-220.70 M, slip plane at 224.70 N	CWL 54.60		արարարարարարարարարարարարարարարարարարար
1-25/9/90 0 O	1									BOTTON OF HOLE 230.00 8	(21) GWL (50.00 M		ուրուրուրուրո 8 8
1 2 2 4 2 6 7 8 8 9 0 5 6 1 8 9 9 0 5 6 1 8 9 9 0 5 6 1 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9					West S (dasma					Arrege laugh of Cas I (pate like)			ամահակահակումունուկումունումունունունունունունունուն

oject LAN TA KHONG 0-ordinates 1638.284 N 774.562 E								tlen	422.0	50.00 M	Commenced15/10/30_						
gle from aring of							Totel Comp	Dept odny	EGA	T	vary 98.5 beath of Overbur Total length of co	re 246.45 M.	_Logge	d by	λ.Ι	ATTAN	۱۸
Date	8.0.0	Geology	Symbol of geology	Core recovery	Kind of Bit Oof Core (mm.)	Casing	Colour of rock	Weathering	Hordness	ca destrage length of core	Description	WATER PRESSURE LUGEON VALUE WATER TABLE	Q	o brill	SO Pressure by	r Oapth	
ACCOUNTS A CO CO CO CO CO CO CO CO CO CO CO CO CO		BOULDERY TALUS			. Tungaten		reddish brown 6 brown				0.00-19.00 M; OVERSURDEN 0.00-0.20 M; Soil. 0.20-3.00 M; Clay. high plastic, 3.00-3.90 M; Decomposed Rock, 3.90-19.00 M; Sandstone boulders in clay, large boulder at 3.90-7.75 M; core loss at 4.40-4.80 M, 7.75-8.50 M, 12.20-12.45 M, 15.00-15.50 M.					0 - 2 3 4 5 6 7 6 9 10 - 2 3 4 5 10 - 2 3 4 5 6 7 6 9 10 - 2 3 4 5	
8 9 20 2 3 4 5 6 7 8 8 7 8 7 8 7 8 7 8 9 20 9 20 9 20 9 20 9 20 9 20 9 20 9		Silvatone			NQ WIRELINE, 0 of core		reddish brown & brown				19.00-39.80 M; Siltstone: some slightly calcareous highly to completely, weathared at 19.00-20.60 soft, brittle, some calcareous- motting joint, 390-450, at 23.50 M, 24.80 M, 34.60 M,					6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 համակակակակակակակակակակակակակակակակակակա	

Bearin	1	Γ			тт		Γ	<u> </u>	17-	WATER PRESSURE TEST LUGEON VALUE	3 E			
Sate	M Depth	Geology	Symbol of geology	Core recores	Mind of Bit Pot Care (mm.)	Coning Comentation	Colour of rock	Weathering	Hordness Average length		WATER TABLE - N - 5	50 Pressure IOO Time	Page 1	Efector
18/10/90	0 1 2 3 4 5 6 7 7 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Siltstone				CASING	reddish brown 6 brown			sub-horizontal calcite veinlets at 29.95 M, 33.30 M, (slickenside) soft, brittle some calcareous mottling	(1.5°) GWL	ու 1 տվացնումում կաներվում կողմայի արկային այն այն կար	30 - 2 3 4 5 6 7 8	
19/10/90	8 9 0 - 2 3 4 5 6 7 8 9 0 - 6 3 6 7 8 9 0 6 7	Sandy			NO WIRELINE . O of core 47.6 mm.	44.50 #	reddish brown			39.80-42.50 M, Sandy Siltstone, brittle, sub-horizon lamination, small scale cross bed 42.50-170.05 M; Siltstone, brittle, slightly spotted calcareous, slaking at 44.50-45.00 M, some granules in silt matrix, moddy at 45.00-52.50 M, slip plane, 100-150, at 58.30 M, 96.05 M,	39.50-45.50 M. (1.0') GML \(10.30 M. \) 45.30-51.50 M. (0.1') GML \(\) (13.00 M.	ևակամավորմայից մետիշյական անումիա իավափումիա կումիայի ամյանական անձանական անումիան անումիան անումիան անումիան	9 40 1 2 3 4 5 6 7 8 9 9 50	
23/10/90 20/10/90	2 3 4 5 6 7 6 100 100 100 100 100 100 100 100 100 1	Siltacone					reddish brown 6			96.35 N; 102.85 H,	51.50-57.50 M. (0.01) GML \ 8.80 M.	udundande de	2 3 4 5 6	

EGAT Project	i <u>LA</u>	1638	KIIONG N 284,	774,5	62 E		. l.ocal	ion Wa	tor Way 2.831 m	Boring NoD Boring NoD Bering NoD Bering NoD Bering NoD Bering NoD	250.00 M. Con	menced_	of 9 15/10/9 24/11/9	Ų
Angle from Horizontal 90° Bearing of Angle Hole								Depih≌ ony	EGAT	ore 246.45 M. Log	ged by	A.PATTA	NA	
Cat*	W 0.09th	•	Symbol of geology	Core racovery	Kind of Bit		Colour of rock	Γ_Τ	Mardness on Average length of core	Description	WATER PRESSURE TEST LUGEON VALUE O	, s	Time nan Depth	Elevation
23/10/90	6 8 2 9 9 9 7 7 20 00 10 10 10 10 10 10 10 10 10 10 10 10									Sandy at 62.50-65.75 M core loss at 65.75-66.30 M, 71.70-72.20 M, 81.00-81.50 M, Muddy at 69.00-70.30 M 80.00-85.00 M,	GWL \ 9.00 M. 63.50-69.50 M. 0.4		- 0, 3, 4 5 6 7 8 9	
24/10/90	անումիակավարականիականիականիականիականիականիականիակա	Siltatone			WIRELINE, Ø of sore 47.6 mm.		reddisn brown 5 brown			60°(polish) at 73.10-73.20 H, slaking at 75.00-75.20 M, joint, gypsum & CO3 contcd, 10°, at 51,30 N, 34.50 H,	69.50-75.50 M. (0.04*) GHL \(\sqrt{12.10 M} \) 75.50-81.50 M.		10 - 2 3 4 5 6 7 8	
25/10/90	9 5 - 5 2 4 5 6				M ON					85.30 M, 85.75 M, 87.40 M, 80.50 H, 82.00 H, 82.35 M, gypsum & calcite Vein, horizon, (2 mm. thick) at 80.40 H, 92.30 M, 93.90 M, 97.15 H,	GHL \(\begin{align*}		9 80 2 5 4 5 6	Action to the second of the first the second
26/10/90	7 87 90 90 90 Cwo 511						herita —			Average langth of Cara I [mare late	87.50-93.50 M.		7 6 9 9 0	

EGAT Project	LAGI TO	KWONO								ORING		bu	IW - 2	los N	^ 4 °	· of	q	
			N 774	562 I									250.00 M.					
Angle from													den <u> 19.00 ผ.</u>				/11/9	
Bearing of A	ingle Ho	₩				Comp	dny.	EG	AT		- Total length	h of co	re <u>246.45 H.</u>	Logge	1 by	A.	PATTA	NA
Deta Dayth	R. O. D Sectory	Symbol of peology	Cora recovery	Sof Core (mm.)	Casing	Colour of rock	Weathering	Hardness	Average length of core	Des	cription	:	WATER PRESSURE LUGEON VALUE WATER TABLE	0 V-	O Dritt	100 Time min	Depth	Elekation
L	*	1.55	W.												Ť	1	90 90	
26/10/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/00/90 26/10/90	388									siltston brittle			0.1°) GWL \ \ \ \ 14.5 93.50-99.50 0.1 GWL \ \ \ \ 38.4 99.50-105.50	н.			2 3 4 5 6 7 7 8 9	
27/10/90 2 4 2 6 2 9 4 2 5 2 6 2 4 2 5 2 6 2 6 2 6 2 6 2 6 2 6 2 6 2 6 2 6	73 877 877 877 877			NQ WIRELINE , Ø of sore 17.6 mm.		roddish brown & brown				calcarcou 117.7; 127.5; 127.9; 128.0; 126.7;	s colites bx 5-117.80 M 0-127.75 M 5-127.98 H 0-128.30 M 0-128.85 M 0-133.80 M	d at	0 GW. \square 15.8 105.59-111.50 H 0.02* 111.50-117.5 0.i CWL \square 17.5 117.50-123.5	м.			~ }	
9 120				: N -											\mathbb{N}		120	
Cara N)31 ····•	أكحن]		West) 5 (decamp			1	1.		ages of Coro I (se	iara sawa i	60 cm.) , 2 (50 cm., 20 cm.) , 4 (loss 3 ma 8 cm	18(~	41			
							Karém	eeu l(hard	f) - 5 (s	sfI)	2 gr : 12			.,	•			
									A	- 23				1			·	

LOG OF BORING **EGAT** Location Water Way Boring No. DHW - 2 Log No. LAH TA KHONG Project Co-ordinates 1638,284 N 774,562 E Elevation 422,831 m. NSL Depth of Hole 250,00 M. Commenced 15/10/90 24/11/90 Total Depth Care Recovery 98,58 8 Depth of Overburden 19,00 H. Completed Angle from Horizontal 900 Total length of core 246.45 M. Lagged by -Bearing of Angle Hole Company, WATER PRESSURE TEST LUGEON VALUE Caning Camentation Colour of rock Description ŝ Amerage WATER TABLE ----Sandy at 121.10-123.50 M 135,50-135.70 M, 129.00-133.50 M. joint, 10°, gypsum and 123.50-129.50 M. CO3 coated, at 126.90 H, 137.60 M, 138.90 M, 140.05 M. 142.00 M, 142.65 M, 112.85 M, 144.50 M. 29/10/90 gypsum and calcite vein, horizontal, (2 mm, thick), 129.50-135.50 M. at 122.55 M, 123.30 H, 131.20 M. 131.55 M. 131.90 M, 132.35 M, 133.10 M. 136.50 M. 144.25 M. 145.35 M, reddish brown 3-29.90 M. 145.70 H, 146.25 H, 146.55 H, 148.45 H, 119.20 M. Siltstone calcitevein, 45° dip, 135.50-141.50 M. at 133.20-133.40 M, 133.65-133.70 M, 30/10/90 10-.140.00-146.00 H. GWL 1.50 M. 146.00-152.00 M. 0.2 5.00 H Average langth of Core I (more than BORM.), 2 (500m, 20cm), \$ (20cm., 94m.), 4 (lass than Bem.) 6 (prainsé) **→**[[SS]] Westhering [fresh]=\$ (decompaned)

EGA.	-		14 MB	KHON				L	00	OF	F B(ORING	M 3	N 6 . 4	. 9	14
	ct	~				562 K						Boring No. DH n.MSL Depth of Hole				
				al)		_ Cleve	nion.	L Core	Recove	xy 98.58 9 Depth of Overbu	dan 19.00 M. Com	leted 2	4/11/9)
								Come	ndny	11/	EGAT		246.45 M. Logo	ed by	. PATTÀ	VA.
								*******			,	Total torquir of a			71	, _ ,
	.			\$	2	- ê	8	4	١.	.]	£		WATER PRESSURE TEST	1 P 1		
	. £	0	ABo	Symbol of geolog	Core recover	Kind of Bit Core (mr	Casing	8	Weathering	Hardness	werage lang of core	Description	LUGEON VALUE	<u> </u>	Oapth A	Elevation
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			Ī	\$	100 %	A Kind of Bit Of Core (mm.)	ŭ	8			1			0 8 2	, M	
-	150	%		100	530	}		 	Y						130	
	1 4					3). · · · :					horizon gypsum vein		X	Ē i	
	maria	/8										at 151.10 M, 151.53 M,		$\square \square$	m.i.u	
	2 =	[E 2	
1	- 1					3	•					some apotted calcareou	P 152.00-158.00 M-	$\backslash \backslash \backslash $. !
	3-1	77										at 150.00-155.00 M, 167.50-170.05 M,		$ \setminus \cdot $	in l	
	4		- 1			1	[107.30-170.03 M,		$ \cdot $	4	
\ . :	5						}					gypsum veins, 10°,	(0.2,			
	յ հուհ											at 158.30 M, 161.75 M.		M + 1		
	6 🖥											162.55 N,	GHL 4.00 M.	\mathbb{R}^{N}	6	1 1
\	7-1	9.7					1	١.					γ	11V1	E ,	
8	(]															
15/11/90	8 1		. :											 	E 8	
12/	المسا					\$	}	1					158.00-164.00 M.	N + 1		
1	o uhundu	0				.		1				gypsum veins: 45°,			₽ ĭ	1
	150-						·	ĺ				at 161.25 M, 169.60 M,			7.60	
	Man												(0.1.)	$11\mathrm{M}_{-}$		
i	Line		. •						\mathbf{I}					MMM	E '	
	2-					Ē							GWL / 12.70 M.	N: []	2	1 1
	1	,				2		}		3						
	3-1		1			e :						slip plane, 10°,			1	
	4-		- 3			8		brown				at 163.95 M,	7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	 	4	•
	_ 1		9:			8	}						164.00~170.00 H.	N = 1		
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	o Sumfu		. :											I. [\] [:	170 170	
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) i	1		7 1				1	}				lenticular bed at	170.05-176.00 H.	$\mathbb{N} \mathbb{N} \mathbb{N}$	E,	2
	1		1 :									172.30-172.85 M,		A = A	<u> </u>	
8	2 4	93	100		333									$\lambda + \lambda$	2	
16/11/90	l territ		1					·		7.			(0.01,)		E 3	
16	3 1111	9	43.1				ŀ							M 1 1 1.		
	4 1	- 1 - 1 - 1			333		. .					small scale cross bed	<u>снь Ле. 70 м.</u>	$ \cdot $	4	
	2	100					1	}				at 175.95 M.	7		_ 5	
	Auth		1.		1000	•	ŀ								<u>[</u>]	134
	6.7		-										176.00-182.00 M.	M	6	
]]	7 1												110.00-102.00 M.	\mathbb{N}^{+}	E 7	
	1	87								100				[N][1]	E.	
	7 80				M							/ 179.05-181.05 M;	(0.02*)	$\lfloor N \rfloor$	E 8	
	1		1					200				Silty Sandstone,			E 9	7
	9 1	83				İ		brown				hard & dense, well cemented	GNL / 6.70 H.		11 9 11 0	
	130 <u>1</u>	لك		152				<u></u> ,	₽Ŭ		سلام	- Average length at Care I (more than	80:n \ 2 (80:m 20:m)		-10 A	

LOG OF BORING EGAT Location Water Way Boring No. DHW - 2A Project_ __ Depth of Hole __ 230,00 H____ Commenced __ 13/10/90 Co-ordinates 1638.284 N 774.362 E Elevation 422.831 m.HSL Total Depth Coro Rossiary 98,58 1 Depth of Overburden 19.00 H. Completed 24/11/90 900 Angle from Horizontal - Total length of core - 246.45 Ma. Logged by ---Bearing of Angle HoleCompany_ EGAT WATER PRESSURE TEST Kind of Bit (Core (mm.) Core recovery Comentation LUGEON VALUE Depth Cesing Mordness Cotour of Description WATER TABLE -- Wgat. Sperage horizon lamination. ss. no joint. 181,05-196.35 M; Siltstone, brittle, 182.00-188.00 M. spotted calcareous, sharp contact, 20°, at 181.05 M, { with 0.02* gypsum vein) fine sandstone interbed at 191.20-192.00 M. GWL **12.00 N**. horiżon gypsum veins at 189.40 N, 191.60 H 191.80 M, slip planes, 10°, at 188.00-194.00 M 190.22 M, 190.30 M, 900 190.35 M. 190.50 H, addish gypsum veins, 10°, at 192.20 H, 192.95 M 193.62 M. slip planes, 150-200 3-193.18 M, 193.26 M. 70 194.00-200.00 M. 0 WIRELINE 196.35-197.30 H; Silt brown Sandstone, hard & den moderately well cemen 8 13.80 M. 197.30-206.40 M; Siltstone, slip planes,00-100, at 197.90 H, 198.25 M 200.00-209.00 M 198.35 H, 199.15 M, Ç. Old 199.70 M, 201.15 M. ندو 201.25 M, 201.30 M, 204.80 H, 205.95 M. 205.70 M. gypsum veinlet at 201.35 H, 201.80 H, 5 202.30 H. 6 206.40-215.75 M; Silty Sandstone, 8 moderately cemented, some spotted calcarcou Angreça Hagis, at Care ([mere then BOem.], 2(50em., 20em.) 3(20cm., 5cm.) 4 (lave then 6 cm.) 3 (grafted) Hardrens 1 (kard) - 5 (soff)

								_ Total _ Comp	DepthCoro Reac	Yeary 98.38 1 Depth of Overburden 19.00 M. Completed 24/11/90 Total length of core 246.45 M. Logged by A.PATTANA
Date	Depth	R.Q.D	Geology	Symbol of geology	Core recovery	Out core (mm.)	Caning Comentation	Colour of rock	Weathering Hordness Amerage length	WATER PRESSURE TEST LUGEON VALUE WATER TABLE - V S S S S S S S S S S S S S S S S S S
18/11 90	4 11	93	Silty Sandstone					r.wo.xq		Silty Sandstone. good core, horizon lamination at 221.00-215.75 M, slip plane at 208.10 M (cannot set pressurd) fracture, 75°, at 215.00-215.20 M. 30°
61	նակակակարակակարակարակարակարակարակարակարա		Quartzitic Sandstone			NO WIRELINE, O of core 47.6 mm.		light gray		215.75-230.82 M; Quartzitic Sandstone, massive, hard & dense, micaceous, medium grained, well cemented good core, joint. 75°, at 224.45-224.60 M, some layers of siltstone pebbles at 223.33-223.34 M, 221.18-221.20 M, 64.50-250.00 M. CONSTANT HEAD TEST k = 3.22x10 ⁻⁵ cm/sec.
23/11/90	The state of the s	37 37 65	Siltetone					reddish brown		230.82-249.30 M; Siltstone, brittle, slaking, slip plane at 231.00 M, some spotted calcareous at 231.00 M, 232.50 M, 236.00-236.30 M, 248.00-249.40 M, Muddy at 232.00-233.00 M, joint, 10°, at 232.42 M slip planes, 10°, at 236.95 M, 238.00 H, 238.05 N,

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roje(o-or	it dinate	<u></u>	1638	3 284	N 774,	562 €		Eleva	tion	422.	831 m	HSL Depth of Hole	250,00 M.	– cour	nence	ىخىـــــــــــــــــــــــــــــــــــ	*07.55	
حادث	from	سطا	leante	al	90			Total	Denti	Core	R33376	ry 98,58 1 Depth of Overbu	rden 19.00 (r Comt	detect.			
orir	ıg of	Ang	e Hol	•	_ _			Comt	odny	EG	A I	Total length of c	ore	roos	eó by -		1	
Dete	E Depth	% n.o.n	Geelogy	Symbol of geology	Core recovery	Out Care (19.11.)	Casing Camentation	Calour of rock	Weathering	Hardnoss	c. Average tength of core	Description	WATER PRESSURE LUGEON VALUE WATER TABLE	O :	o priii	30 Pressure 10	ս [Elecotion
25/11/57	4 5 6 7 8 9	65 90 47	Siltatone			NO WIRELINE , 3 of nore 47.6 mm.		reddish brown				slip plane, 15°, at 238.35 M, slip planes, 30°-40°, at 244.60 M, 243.50 M, 243.80 M, 242.25 M, Sandy at 248.00-249.30 M, 249.30-3250.00 H; Silty Sandstone, carbonate pebble at 249.88 H, good core	3.22 × 10			Sia yan na sana da ununun mana na mana na mana na mana na mana na mana na mana na mana na mana na mana na mana		
	արտականականականականականականականականականակա		ss.					brown				BOTTOM OF HOLE 250.30 A				ច្ចេចប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធារាមប្រជាធ	9 0 1 2	
		tes s	**1		-	((feesk)	- 5 { dates.	pesed]	Hardet	es (Car		- Accress lemen of Gree Linese, they sell) 3(20cm., 3	gm.), 4 (lase then 6 c	e.) 6 (gre	ined]			

earli	trom H of An	orizoni ole Ho	a)	900			Total	Depth pony	Core R	ORING Boring No Boring No Boring No Boring No Depth of Hole ecavery 98 Depth of Overbu Total length of a	ore 176,40 M. Logg	pleted 21, ed by A.P.	/9/90 \TTAN	`
Deta	M 0 %	Geology	Ology	1	Kind of Bit				Hordness Aperoge length	Description	WATER PRESSURE TEST LUGEON VALUE O WATER TABLE	g le	M Depth	
15/8/90	0 - 2 - 3 - 4 - 5 - 6 - 2 - 6 - 9 - 50	BOULDERY TAKUS AND THE STATE OF		THE HOLD THE CONTROLL OF THE WASHINGTON OF THE WASHINGTON OF THE WASHINGTON OF THE WASHINGTON OF THE WASHINGTON	LIMNY DIANOND BIT, \$ of core 47.6 mm.	NATURE OF THE PROPERTY OF THE	brown 8 garey			0,00-31,50 M: OVERBURDEN, 0,00-0,90 M; Decomposed rock, brown, 0,90-2,30 M; sandstone boulder, gre 2,30-2,50 M; core 1055, 2,50-3,50 M; sandstone boulder, grey, 3,50-4,20 M; core 1055, 4,20-4,40 M; sandstone boulder, grey, 4,40-4,80 M; core 1055, 4,80-8,00 M; decomposed rock of sandstone, brown 8,00-17,40 M; decomposed rock of sandstone and siltston brown, 17,40-20,20 M; sandstor brown, 17,40-20,20 M; sandstore boulder, medium grained, well cementer light grey, 21,75-24,00 M; decomposed rock of sandstone, brown, 22,00-22,60 M; 23,30-23,70 M; decomposed rock of sandstone, brown, 22,00-22,60 M; 23,30-23,70 M; decomposed rock of sandstone, brown, 22,00-23,50 M; decomposed rock of siltstone	4,50,12,10 M, CONSTANT HEAD TEST k = 1,07x10 ⁻³ 10,50-15,75 H. CONSTANT HEAD TEST k = 9,50x10 ⁻⁴		11 12 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 20 1 2 3 4 5 6 6 7 8 9 20 1 2 3 4 5 6	化二十分 化二十分 医多种 经营销 化二甲基二酚 化二苯基甲基二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基
16/8/90	չ 8 0 % Մյուհույհուկութույիս				NOCAIRELINN						26,00-30,00 M. (13*) GNL \(21,30 M)		druhadanianianiani	

EGAT		7 A	м та	KHONG						T-21	- E(Irace	JKING .	DHT-1	.oo No	of	6	
Projec	ctions			,489 N		826 F		. Local . Eleval		316.6	077 m.	Boring No	18 0 . 00 M	ommence	d <u>11</u>	18/90	2
Angle					90°			. Total	Depti	h_Co	re Rec	overy Spenth of Overh	urden 31,50 H. C	ompleted.	21	19/9	
				•				Comp		Ec	GAT	Total length of	core 176.40 H.	ogged by	A, PA	<u>AUATT</u>	
Date	Depth	7. O. D. K	Geology	Symbol of Goology	Core recommy	Mind of Bit Oof Core (mm.)	Casing Cementation	Colour of rock	Weathering	Hordness	a Average length of core	Description	WATER PRESSURE TO LUGEON VALUE (50 Pressure to	M 0406	Elevation
	30 1	0											30.00-35.00 1	" \		ահաժոսհո	
16/8/30	2 3 4 5 6	0	Siltstone					reddîsh brown				31.50-37.60M; Siltstomaddy, calcareous, brittle, highly to completely weathered.	10°) CM \ 27', 11	$ \bot $		ահունուհոյհունուհունուն	
190	7-10-10-10-10-10-10-10-10-10-10-10-10-10-		Sil					reddi				36,00-37,30 M, core loss	(19.)			ամուսիայիսոյիսո	
17/8/90	9 40							sh grey				37,60-45.00 M; Sandy Siltstone, calcareous mottling, sub-vertical fracture				թ 9 <u>.</u>	
790	2	50	Sandy Siltstone				41.50	e reddish brown/brownsh grey				at 38,30-38.50 M, 39,20-39.40 M, 40,30-40,40 M,	40,00-45,00M			ուսիութուրույիութուրույիութուրույի	
20,18/190	4 5 6 7 8 9	60				OF CORE 47.6 mm.		n & brown				45.00-52.50 M; Siltson muddy, slightly calcar fine sandstone intercat 49.30-49.60 M, sandy at 51.50-52.50	rebus, callated (0.5)			ունուհամամամումանը	
	20 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2	85	Siltstone			DIAMOND BIT, A.OF		greyish brown				sub-horizontal bed, small scale cross bedding,	50,00-55.00			e 0 –	
21/8/90	ուդուդուդությանության է Հ	80	Silty Sandstone			NQ (WIRELINE)		greyish brown				grade to sandstone 52,50-67,35 M; Silty Sandstone grade to medium sandstone, hardfdense siltstone alternated at 52,50-54,70 M, vertical calcite vein at 59,65-60,15 H, good core	55,00-60,00	M. \		2 3 4 5 6 7 6	
	9 60 F	85					W4661					Average langes of Cord (Colore II	da 50 ch.), 2 (50 cm. 20 cm.	\mathbb{N}		6 0	

## 1 Description Light Market M	Angle from t	5.5	•	90°	ा		_ Comp			CNT	еху 98 1	Depth of Overbui	WATER PRESSURE	Logge TEST	a by	21/9 A.PA	FTANA
Colin Coli			Symbol of geole		Kind of Bit	Caning Comentation	Colour of rack	Weathering	Hardness	Average leng	Des	cription	LUGEON VALUE	٥ ٧	ě	M Ton	1
Siltstone, dense f. massive, slightly calcareous, Columbia Co	22/8/22 0	Sury Sandstone			1000		moen grey				bedding 60,00-60 67,35-70 spotted sub-hor calcite	0.00 m; calcareous, izontal bed, yein	65,09-70,00 0.4 GML \(\sqrt{38} \).	<u>10</u> м.\		յու իսնիրկայիա խոլումակակակակականականակակակականումունուն -	2 2 3 4 5 6 6 7 8
15	23/8/90. 5 6 2 2 4 2 6 2 2 4 2 10 10 10 10 10 10 10 10 10 10 10 10 10	8			DIAMOND		ľ				Siltsto dense &	ne, massive,	76,00-82,00	м.		անումարնումյունումարիանումարնումյունումյունումյունումյունումյունում	1 2 2 3 4 5 5 6 6 7 8 9 9 0 0
9 9 903 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	24-25/8/90 24 0 0 0 4 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0	54					יש				84.8 Middy a 81.90-8 85.00-8 Sand	0-83.00 m, 0-88.00 m, t 3.80 m, 6.10 m, .00-90.00 M; y Siltstone, to sandstone,	82,00-88,00	м.		nedanistanismina.	2 3 4 5 6
Core bes - 1(tieich)-5(deremperes) 3(20cm., 2cm.), 4(bes blan Bom.), 2(60cm., 10cm.)	27/8/90 66 60 alungunbar	တ် ဟ				Wast	_ م				horizon fractur 89.80 m	tal bed, e, 60°, at	80cm.],2{80cm, 101				1

EGAT	LOG OF	BORING Boring No. 10	ur - 1 Log No. 4	of _6
Project <u>LAM TA KHONG</u> Co-ordinates <u>1638,489 N 773,826 E</u>	Floration 316.0	77 m. HSL Depth of Hole 1	BO.00 H. Commenced	11/8/90
Angle from Horizontal 90°	Total Depth Core F	ecovary 98 8 Depth of Overbure	den31.50 MCompleted	21/9/90
Bearing of Angle Hole		Total length of co	re176.40 M. Logged by	A.PATTANA
	· · · · · · · · · · · · · · · · · · ·			
Symbol of geology Symbol of geology Symbol of geology Core recovery Kind of Bit Out Core (mm.) Cosing	Colour of rock Weathering	Description	WATER PRESSURE TEST LUGEON VALUE O	100 Time
Sands tone Sands	grey brownish	90.00-91.70 H; Silty-Sandstone, with siltstone alternated, spotted calcarcous (lanticular texture) 91.70-92.80 H; Sandy Siltstone, spotted calcarcous, vertical fractures at 91.70-91.80 H, 92.10-92.25 M, 92.50-92.80 N, calcite veintletat 91.80-92.00 M, Quartzitic Sandstone, hard & dense, sub-	0.3 GWL \ 57.70 M. 94.00-100.00 M. IA* GWL \ 50.00 M.	այն ու կամարկանականականականականականականականականակա
30/8/90 9 C	groy dark gray	horizontal bed, very well Cemented, siltstone pebbles at 97.35-97.40 M, 98.24-98.26 M, fracture, 70°, at 99.8 gypsum vein 15 cm thic dip 50°, polish,	()	րուհումումուսիսահումումումումումումումումումումումումումո
Siltstone Siltst	reddish brown	and 106.20-105.80 (70°C) muddy at 100.80-103.00 107.00-108.00 M; Silty Sandstone grade to siltatone, ventical lifeachuse at 108.00-129.03 M; Siltstone, dense, britt slightly calcareous fracture, 70°, at 115.50-115.65 M, colcareous mottling at 108.50-109.00 M, 110.00-115.30 M, spotted calcareous at 122.30-123.00 M, 126.50-127.80 M.	M. (1.9) GNL \(\sum_{51.20} \) M.	7 6 9 10 1 2 3 4 5 6 7 2
9 m 70		Arrego looph of Coro I (mire then	118.00-124.00 M. 50cm.),250cm.20cm.; 6.1.4(101.100.00.00.)5(crited)	9

EGA			AM 10	A KIIOI	No.			L	OG	O	= B(ORING	DHT v l	u 5 .	. 6	v :
Proje					773,8	26 E		Local Eléval		<u>Tal.</u> 316	trace .017 m	Boring No	180.00 M. Com	nenced 1	1/8/90)
Anok	tron	Ho	izoni	0)	900		_ 	Total	Depti	h Core	Recove	cy 98 % Depth of Overbu	rden 31.50 M. Com	olesed	1/9/9	0 .
Bearl	ng of	Ang	e Hol	e							TAE	Total length of c	ore 176.40 M. Logg	ed byA	.PATT/	NA .
					•		Γ	Γ.	Ι		iength core		WATER PRESSURE TEST	8 5		
\$	Paper	χ.ο.	Geology	Symbol of geolog	Core recor	Gof Core (mm.	Cosing Camontation	Colour of rack	Weathering	Mardness	Average 5	Description	WATER TABLE	Pressure		Elevation
	M 120			9	100 %	9		8	1		8			0 R 2	M ≘12 O	
	2- -	173					 					spotted calcareous at 122.30-123.00 M, 126.50-127.80 M.	0.4 GWL \(50.60 M.		որություրություրություն հուրություններ	
06/6/9	4~	87	Silastana]] ! !	eddish brown					124.00-130.90 M.		անուգիումուսիումունումուն Մարդերումումումուն	
	9	83	900										0.5 GML 48.30 H.		7 B 9	
	130 - 1 - 2 -		Silty					brown				129.65-131.20 M; Silty Sandstone; Slightly calcareous, modexatoly cemanted	130.00-136.60 M.		ավումամումա	
06/6/1	3		Siltstone			.core 47.6 mm.		reddish brown				131.20-137.30 M: Siltstone, spotted calcareous denso & brittle	(0.6) SWL∕\49.40 M.		3 4 5 <i>6</i>	
	7	93 93	ernated			WIRELINE, Ø of						137.30-145.30 Mr Mainly Sandstone, with	136.90-142.00 M.		ուրորդությունությունում	
8/9/90	40	100	Siltstone alt			NO		ಸಿಕಾವರಿ ತ				siltstone alternated, (silty sandstone), calcareous, turbidite bed at 137.30-137.50 \ spotted calcareous	GML \ 48.80 H.		ակումուսիումումումում Դուրումումումումումում	
	3 4 5	90	Sands tone.					y umorq				at 137,90-133,00 M, mainly siltstone at 140.60-142,00 M, fracture, 70 ⁰ , at 143.60-144,00 M.	142.00-148.00 H.		ւ 3 4 5	
06/6/11	6- 7- 8-	00! 00	alternation of \$5 6 5.5t					Sown is grey				145.30-149.05 M; Alternation of sandstorand siltstone, sub-horand bod, small scale x-bod joint, 75°, CasOqcoat, at 145.85-146.00 M, 148.30-148.55 M.	izon		6 7 8 9	
L	150	60	ss.	لنننا					Щ	T İI		Sandstone,	Rosen 1. 2 (80em 20em).	سليلا	F15 O	

EGAT Projec	~ *			LV Kijo				Lacor	ilon	Ta	ilra	e Boring No	- 1	Log No.	6	6	
Co-o	dinates			,489 N		26 E		. Elēvo	tion _	316.	077 n	n. HSL Depth of Hole exy 98 1 Depth of Overbu	180.00 M. dep. 31.50 M.	.Commen .Complete	ced <u></u> id	1/8/90 1/9/90	
-											î	Total tength of c	ore 176.40 M.	Logged t	у	PATTA	NA
Pate		% B.O.D	Geology	Symbol of geology	Core recovery	Mind of Bit Oof Core (mm.)	Cosing Cementation	Colour of rock	Wedthering	Hordness	ca Average length '	Description	WATER PRESSURE LUGEON VALUE WATER TABLE —	0	SO Pressure kg	E Dapth	Elevation
17/9/90	20 - 20 - 20 militari		Sandstone					grey				fine grained, well cemented, sub-horizont bed, joint, 80°, calci coat, at 149.60-150.10 joint, 70°, at 151.70-	M. (0.4)	00 H.		ուկամահոմակո	
/11	2 4 maniputa	55	SS.altern			÷		brown			6	151,95 M, 152,20-154,50 M;	154,00-160,0			որարարարությունում	
12/9/90	8 6 2 9 9. 19 10 12 12 12 12 12 12 12 12 12 12 12 12 12	337										Mainly Siltstone, with sandstone alternated, spotted calcareous, dense & brittle 154,50-180.00 M; Siltstone, massive,		.00 M.		inalandundundundundundundundundundundundundun	
19/9/90	որ որ գ որ գ որ գ որ գույուրակումու	33	Siltstone			0£ core 47,6 mm		тиохф				dense & brittle, calcareous mottling, vertical fracture at 156.65-157.00 M,	160,00-166,0 0.6 GNL 40 166,00-172.0	.50 J		ուժումումումումումումումումումումումումումո	
761	ույլուդումումյուլուդուդուդումումյույրույրույրույրույրույրույում	37				NO WIRELINE, Ø' 0		reddish br				slip plane, polish, at 170,10 H, 171,00 H, 176,00 M.	0.2 GWL \(\sigma 58.3	0 11.		որտրություրություրություրություն Տ	
20/9/90	7 3 4 10 6 2 խողացիականությունությունում	- {											(0,2)	о м. s e и.		ավորվորվորվուկունորնումումում	
21/9/90	8 6 8 մասիուկույնունո	_										BOTTON OF HOLE 180,00	178.00-180.0	0,60 M.		militarinalization 13 O	
	Core 4	***	→	ISKI	1	(frosb)	West) - 5 (decem	urką – Hedl) 120 (hai	_£_ 10−5t	Average length of Core ({more the 8(20cm., 3	180cm.), 2 (50cm., 20 cm.), 4 (less than 8 cm	:=), .)5(wehee)	, State		

EGAT Projec			TA KHO		· .		Locati	lon .	Tailrac	ORING Boring No	DIIT-2Log	No 10	13_	7.7.2
		4	,536 N	0	629 1	<u> </u>				Depth of Hole 7 every 93 5 Depth of Overbu				
			le				Comp			Total length of c				
Date	М: 9	Geology	Symbol of geology	Core recovery	Mind of Bit Of Core (mm.)	Cosing	Calour of rock	Weathering	Hardness or Average length of core	Description	WATER PRESSURE TEST LUGEON VALUE O	O Drill 50 Preseura Lip	Depth	Elexation
18/7/90	0	Surst			ELINE, \$\text{\$\phi\$ core 47.6 mm},	CASING CASING	60			0,00-8,00 M; OVERRURDE 0,00-0,40 M; brown cla boulder of quartzitic sandstone at 0,40-0,70 0,85-1,00 M, 1,80-2,00 2,80-3,80 M, core loss at 0,70-0,35 1,00-1,80 M, 2,00-2,80 3,80-4,50 M, 6,25-6,45 6,75-7,35 M, decomposed siltstone at 4,50-6,25 M, 6,45- 6,75 M, 7,35-8,00 M, 8,00-10,70 M; Siltston spotted calcareous at 8,20 H, 10,60 H. core loss at 10,70-11,85-H, 11,85-12,35 M; Quartzitic sandstone 12,35-18,80 M; 12,35 M: Siltstone,high weather shale interbedded at 14,50-15,00 M, spotted calcareous at 12,00-13,00 H, 16,30-16,35 M,	M, H, 4.50-10.00 M. H, CONSTANT HEAD TEST k = 0.47x10 ⁻⁴ cm/sc 10.50-14.50 M. CONSTANT HEAD TEST k = 0.45x30 ⁻⁴ cm/sc Surface of bedrock.		ամյակամայիակականակակակակակակակակակակակակակակակակա	
20/7/90	9 Q - 0 15 4 15 6 7 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	S. Sin			enia on	TATTON CONTROL OF THE	GREY REDDISH BROWN & GREY			18.80-28.40 M; Mainly Siltstone with fine sandstone alternated, sub-horizontal laminat calcite veinlets at 27.15 M, 27.20 M, 27.7 spotted calcareous at 20.00-21.00 H, fine sandstone interbe at 22.30-22.65 M, small scale cross bed, vertical fracture at 19.60-19.90 M. 28.40-32.15 M; laminated sandstone with siltstone alternative sandstone with siltstone alternative sandstone with siltstone alternative sandstone with siltstone alternative sandstone alternative sandstone alternative sandstone alternative sandstone alternative sandstone sandsto	GNL 4.10 M. Ideal 25,00-30,00 M. GNL 11.45		9 20 - 2 3 4 5 6 7 8 9 30 - 2 3 4 5 6 7 8 9 30 - 2 3 4 5 6 7 8 9 30 - 3 9	

EGA	ſ	٠.,	LARC	TA, KHO	NG					OF BO	OKING 30 Boring No	DHT - 2. L	na No. 2	of	3	
Proje-	ct rdinot	es	163	8,536	173,	629 E		, Local , Eleva		000 000	.HSL Depth of Hote_	70.00 K. C	ommenced.	17,	/7/90	حشيت
Angle	trom	Ho	rizont	dl	900			Total	Oep	th Core Resove	ry 93 8 Depth of Overhi	rden 8.00 H. C	ompleted	25	/7/90	سسسنا
Bearl	ng of	And	ie Ho	le			:	_ Comp	ony.	EGAT	Total length of c	ore 65.30 M. L.	ogged by		PATTA	NA.
Date.	M. Depth	0.0.x	attooology	Symbol of opploay	Core recovery	Kind of Bit Of Core (mm.)	Casing Cementation	Colour of rock	Weathoring	Hardness On Average length of core	Description	WATER PRESSURE TE LUGEON VALUE (WATER TABLE)	100 Time min	# Capth	Elevation
	2-	96	S.ST					Erey and Eroun			sub-horizontal laminat fracture, 80°, at 30,50-30,80 H, 32,15-38,60 M;	on, 30.00-35,00	и.		3 - 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
26/1/22	3 4 5 6	60	Sandstone					light grey			Sandstone, fine graine micaceous, well cement lentionlar texture at 37,70-37.75 M, sharp horizontal bed, at 33,85 M, joint, 45°, at 34,10 M 36,75 M, joint 0°-10° at 35,60 M, 35,85 M,	0.6	м.		3 4 5 6 7 8	
21/7/90	3- 4- 5-	80				of core 47,5 mm.		reddish brown			35,90 H, 35,95 M, 36,60-57,30 M; Siltstone, brittle, convolute bed at 39,50-39,70 M, spotted calcareous at 43,65-43,75 M, 44,50-44,80 H,	GNL 14.70	и.		9 40 1 2 3 4 5	
23/7/90	7- 8- 9-	80	Siltstone			NO WIRELINE, Ø o		reddish greenish brown brown x			core loss at 51,00,51,30 M, fine sandstone interbedded at 53,17-53,47 M, spotted calcareous	0.2 GWL \ 11.8 50.00-55.00 0.8 GWL \ 12.15	м		6 7 8 9 0 1 2 3 4	
24/7/90	5 6 7 8 9 60	10	Sirtstone SS alter					green brown purpl			at S5.80-57,00 P, sharp contact (sub- horizontal) at 57,30 P 57,30-59,15 H; Hainly siltstone with sandst afternated, spotted calcareous vertical f; 59,15-65,85 H; Mainly fine sandstone with	ne GN/L 10.8 acture 58,95-59	15 M.		5 6 7 8 9	
	Cora		→ 1			l(fresk)	Want - 5 (decom)	ering —	J	1(ks/4)-5(s	3190am 5	80cm.], 2 (50cm., 20cm.) cm.), 4 (1ess Stan 6 cm.)5	(grahed)			

EGAT Project	LAM TA KHOI	NG		ارا Locati	JO UF D		II -2 Log I	No. 3 of 3
Co-ordinutes	1638,536 (173,629	В	_ Elevan	on 290.004 t	n. HS Depth of Hole	70.00 N. Com	menced
Angle from Hori	izontal	90°		. Total i	Depth Core Recov	Depth of Overbui		leted 25/7/90
Bearing of Angli	e Hole		 ,	_ Compo	iny EGAT	Total length of co	ore 65.30 M. Logg	ed by A. PATTANA
Octe Octe A R. 0.0	Geology Symbol of geology		Yof Core (mm.) Casing Cementation	Coleur of rock	Wadthering Hardness o Average length	i Description	WATER PRESSURE TEST LUGEON VALUE O	O Dritti 50 Pressure ho 100 Time min 75 Depth Eleverion
17/792 24/7/42 26/7/72 3. 10/7/7/22 26/7/22 26/7/2	Sandstone Sandstone, S.St alternated	NO WIRELING OF COTE 47.6 mm.		grey light 4 dark grey		siltstone alternated, spotted calcareous, siltstone at 63.75-63.80 M, 64.50-64.55 M, small scale cross bed, bedding fracture at 65.00-65.85 H. 65.85-70.00 M; Sandsto fine grained, hard@den well cemented, sub-hor bed, fracture, 70°, at 66.70-66.80 M, 67.10-67.25 M, 67.70-68.00 M	GISI. A 14.20 M.	ավտվակակակակակակակակակակակակակակակակակակ
25			West			siltstone interbedded at 68.38-68.54 M. BOTTOM OF HOLE 70.00 M		70 - 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0

Control of Section 18 1

EGAT			1. AM	TA KHO	ONG.					BO	ORING Boring No. — DH	≀т~3	Los N	lo1_	of2	1 1
Project . Co-ordin		1638					_ Locali _ Eleval				HSL. Depth of Hole	50.00 m.	Comm	enced.	53/6/	
Angle fr	om Hor	izonic	il ii				Core K	ecov	e <u>ry</u>	9	Depth of Overbur				28/6/5 A. PAT	
Bearing	of Angl	e Hok	•				Comp	any			Total length of co		_Logge	d by	:	
	M Depth	Geology	Symbol of geology	Gors recovery	A Kind of Bit of Core (mm.)	Casing Cementation	Calour of rock	Wedthering	Hardness	a Ave.age length of core	Description	WATER PRESSURE LUGEON VALUE WATER TABLE	0	O Britis	100 Time min	Elevation
23-25/6/90	0 - 2 3 4 5 6 7 8 9 0 0 ուղումումումումումումումումումումումումումո	OVERBURDEN			CORE 54.7 mm.	0.302180	brown Light grey				0.00-10.10 m; OB. 0.00-6.70 m; Top soil 0.60-6.70 m; Dudwittitic sandstons Doulder, moderately well cements oceationally high weathered; core loss at 1.45-1.60 m, 2.40-2.55 m 5.50-5.70 m, sign of water circulation at 2.70, 2.70-3.62-3.70, 3.90-4.00.4.70, 4.90 m, 6.70-10.10 m; Decomposed rock of sandy siltstone; core loss at 8.80-9.45 m. 10.00-10.25 m.	(4.3')	0 m.		ուկտիպվուկանորիայիայիայիայիայիայիայիայիայիայիայիայիայի	
06/9/97	nthathathathathathathathathathathathathat	SANDSTONE SILTY SANDSTONE			NMLC. DIAMOND CORE BIT, 0 OF CO	10.50 P	grey reddish brown				sanistone, subhorizonce bed, joint 40° at 13.80 siltstone at 11.10- 12.00 m. 14.20-23.40 m.Sandstone fine grained, hard & dense, well cemented subhorizontal bed, good core At 23.00-23.40 m; brecciated sandstone grade to siltstone.	GWL. 3.0			ի 2 3 4 5 6 7 8 9 <u>8 1 2 3 4</u>	
05/9/	4 मित्रांगरीय 175 55 66 7 88 99 00 175	CALCAREOUS SICISTONE					raddish brown				23,90-42.00 m; Calareous siltstone, some sandy, some calcareous mottling decomposed at 24.30-24.80 m, 28.20-28.55 m, 29.00-29.60 m.	(I.I°)	70 m.		անումումումումումումումումումումումումումո	
•	Care Jons				liness'.	₩ 20 - 5 { £ecn#	(Asring — gc sed)	Ha/ dre) 39)(ker	#)- \$(1	- Aracego longib of Garo I Emoré than \${200cm., 5} = 38	50em.},4fissa ihaa6em	.) 5 (grein	n4)		

Bearing of An	ie Hol					_ Comp	dny_	ı	EGA	Depth of Overbur Total length of co	re 48.60 m. Logg	ed by	A. PATTA
Date N. Depth	Geology	Symbol of geology	6 Core recovery	A Kind of Bit Øot Core (11m.)	Casing	Calour of rock	Weathering	Hordness	on Average length of core	Description	WATER PRESSURE TEST LUGEON VALUE WATER TABLE	O Drift 50 Presturekq	100 Time mi
3 0 m	SILTSTONE					reddish brown				Calcareous siltstone Calcareous mottling	(0.5°) GWL. 7.55 m.		ույլույիություրույիություրույիություրույիությունույիությունույիությունույիությունույիությունույիությունույիու
2 3 4 0 197/75 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	CALCAREOUS SILT			DIAMOND CORE BIT		greenish brown					0.5°) GWL. 7.55 m.		6 7 8 9 4 0 -
28/6/90 2 9 0 05 2 0 0 05 2 0 0 05 2 0 0 05 2 0 0 05	SILTY SANDSTONE			NMLC. I		brown (some grey)				42.00-30.00 m ₁ Silty sandstone, calcaceous, very fine grained, hard & dense, moderately well cemented, subhorizontal bed, At 42.00-42.50 m; calcareous mottling. Vertical fracture at 46.00-47.30 m, 47.60-48.10 m.	GNL. 9.70 m.		րույրությանը և որ որ որ որ որ որ որ որ որ որ որ որ որ
2 3 4 5 6 7 8 9 C										BOTTOM OF HOLE 50.00 m			ովսակավարկակակակակակակակակակակակակակակակակա

A-2 LIST OF FAULTS AND JOINTS IN MAIN DRILL HOLES

List of Faults and Joints in Main Drill Holes (1-11)

Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHU-1	5.4	50		DHU-1	32.8	10	
	9.4	70			35.8	5	
	9.55	10 - 20			40.2	15	
	9.7	10 ~ 20			40.3	5	
	10.3	10 ~ 20			43.05	0 ~ 15	
	10.4	50			43.6	0 ~ 15	
	12.25	35			43.7	0 - 15	
	13.6	0			51.2	15	cl = 0.5
·.	13.6	45			51.5	20	
	15.0 ~ 15.25	80			51.6	20	
	15,25 ~ 16.0	90 ~ 85			51.7	35	sh = 1
	17.6	70			51.75	20	sh = 0.5
	17.7	40			52.4	*	sh + cl = 5
İ	17.9 ~ 18.5	80			52.6	10	
	20.63	10	:		52.9	35	
	20.5	0			55.1	35	c1 + sh = 220
	21.95	0]	57.3	5	cl = 0.1
	22.3	10]	57.9	30	
	22.7	0 ~ 10)	59.15	10	cl + sh = 0.2
	22.8	0 ~ 10			60.7	10	
	22.95	0 ~ 10			62.8	0	
	24.05	0 ~ 10	Angel		63.6	10	c1 + sh = 0.2
	24.2	0 ~ 10			65.0 - 69.4	*	sh = 440
	24.3	0 ~ 10			70.9 - 71.4	20 ~ 35	
	24.9	5			71.1	35	cl + sh = 1
	24.93	_ 5			74.8	30	
	25.2	5			74.9	35	
·	26.15	10			79.05	40	
	26.5	10]	79.1	20	sh = 40 (cemented)
	26.8 ~ 27.2	80			80.5	25	sh = 0.5
	28.6	10			80.7	30	
	29.23	5			80.9	10	
:	29.9	10			80.95	10	
أيما بأول	31.7	10		l je sa si tak	81.5	20	
	32.5	5]	81.7	40	

^{*} unknown dip

List of Faults and Joints in Main Drill Holes (2-11)

Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Orill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHU-1	81.8	20		OHW-1	68.1 ~ 68.2	20	
	81.8	40			68.1 ~ 68.2	20	
	82.1	20			69.6	45	sh = 10
	82.1	40			69.7 ~ 71.0	30 ~ 45	similar joint : 9
	90.4	. 60			72.0	25	
	94.8	60			72.2	30	
					72.4	15	
					73.5	30	
DHW-1	8.4 ~ 8.95	30			75.4	45	
	13.5	: 10			76.7	20	
	27.35	80			78.2	25	
٠.	27.55	70			78.5	35	
	38.8	30			81.25	15	cl + sh = 10
	39.5	55			89.3	45	
	39.7	35			89.35	45	
	41.85	15			89.6	30	
	43.3	25			89.7	30	sh = 70
	43.2	25	sh = 45]	89.8	30	
	44.3 ~ 44.8	90			89.95	15	
	44.8	50			93.03	15	cl + sh = 1
	48.8	30			103.9	10	
	48.85	30			105.0	20	
	51.3	30	sh = 130		106.2	35	
	51.60	35			107.7	35	
	51.70	15			108.4	30	
	51.76	15			108.8	:: :30	
	56.1	80			109.1	30	
	58.45	40			110.1	45	
:	59.55	40			111.05 - 111.30	15 - 40	
!	60.55	35]	111.6	40	
	60.65	35			111.6	5	
i	61.7	35			113.6	30	
į	62.0	40			114.5	30	
	62.7	40			116.0	45	
	68.1 ~ 68.2	40			116.4	45	

List of Faults and Joints in Main Drill Holes (3-11)

Drill Hole No.	Depth (m)	0ip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHW-1	117.4	30		DHW-1	180.9	23	
Į	117.6	35			181.2	20	
1	124.0	15			182.5	25	
	124.3	30			183.3	35	
	124.5	20			183.6	25	
	124.7	55			183.8	5	
	125.1	20			188.6	25	
	144.1	45			192.5	30	
	145.5	25			194.1	75	
	146.4	30			194.5	55	
	146.7 ~ 146.9	90			195.4	25	
	147.3 ~ 147.5	90			195.8	20	
	150.4	35			195.8	30	
- [160.55	10			196.0	20	
	161.4	80			196.3	20	cl = 1 sh = 180
	161.5 - 161.9	85		·	196.8 ~ 196.9	20 ~ 30	
	165.98	35			197.95	25	
	166. <u>1</u>	25			197.95	30	
[166.3	30			198.05	25	
	166.55	25			198.2	20	
	167.2	10			198.2	30	A 1 1 1 1
	169.5	15			198.3	25	
	169.2	0 ~ 15			198.5	20	
Ī	170.5	20			198.6	30	
- 14 N	170.8	40			198.6	25	
	170.8	40			199.1	40	
	171.6	45			200.2	30	sh = 50
	171.7	45			200.7	30	
	174.0	10			200.9	30	
1	177.2	50		1 1	202.0	40	
	178.3	35			202.3	30	
	179.7	25			204.4	35	
	179.95	45			204.7	40	
•	180.5	20			208.5	55	
	180.6	10		1	210.9	80	

List of Faults and Joints in Main Drill Holes (4-11)

(DHU-1, DHW-1, DHW-2, DHT-1)

Orill Hole No.	Oepth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Orill Hole No.	Depth (m)	0ip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHW-1	211.0	60		DHW-2	20.8	40	
	212.2	75]	20.9	40	
	212.2	45			21.3	40	
•	212.7	50			21.4	35	
	213.9	25			21.5	35	
	214.8	25]	21.8	35	sh = 130
	215.4	20			22.1_	30	
·	215.5	25			23.1	90 ~ 75	
	216.8	5			23.3	45	
	218.1	40		<u>, </u>	23.4	40	
	218.8	35]	23.5 ~ 23.6	45	similar joint : 3
	218.8	30		<u>]</u>].	24.1	30	
	219.0	40			24.15	30	
	219.1	40]	24.5	*	sh = 20
	219.2	40			24.7	45	
	220.8	35			24.8	70	
	220.8	40			24.9	15	
	221.3	35		1	25.0	65	
	221.7	25		1	25,3	30	
	221.8 ~ 222.2	25	similar joint : 5		25.9	40	
	222.5	40			27.3	25	
	222.6	30]	28.3	80 - 90	
	224.6	30		1	28.7	20	similar joint : 2
	224.7	55			29.4	25	
	224.7	30			29.5	.30	
	224.9	30			29.9	20	
	225.0	30		<u></u>	30.3	30	
	225.3	30			30.4	30	
	225.5	40			31.0	65	
	226.5	35		 	31.4	45	
	226.5	40			32.5	50	
	226.8	35			32.8	50	
į	228.6	30_			33.1	35	
	228.4	25			33.3	35	
	228.5	30			33.6	20	

* unknown di

List of Faults and Joints In Main Drill Holes (5-11) (DHU-1, DHW-1, DHW-2, DHT-1)

Drill Hole Ko.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHW-2	33.7	70		DHW-2	50.1	40	
L	34.0	80			50.6	35	
	34.6	70			50.7	55	
	34.7	40			50.8	30	
12.55	35.1	60		}	51.4	25	
	35.4	30	sh = 10		51.9	25	
	35.45	55			52.8	25	
	35,5	30			53.15	20	
[36.2	55]	53.8	15	
	36.4	30	sh ≈ 10][54.7	24	
	36.5	30		}	56.2	50	
	36.7	50			56.2	25	
	36.8	40			57.2	25	
.:	39.1	20			57.2	35	
	41.4	10			58.5	25	
<u> </u>	41.6	45	1.5		60.5	25	
	42.2	25			65.6	90	
	42.4	50			65.7	75	
	43.1	50			66.4	75	
	43.3	30			66.5	35	
	44.1	25		}	69.7	10	
	44.2	25			70.0	- 25	
	44.4	25			70.1	15	·
	44.5	25		}	70.3	45	
	44.8	30		1	71.2 ~ 72.2	15	
	44.9	30			71.2 - 72.2	30	
	45.3	30		}	71.2 ~ 72.2	40	
	45.7	40			71.2 - 72.2	35	Shear zone
	45.9	20			71.2 - 72.2	22	
	46.4	20			71.2 - 72.2	34	sh = 100
	46.6	28			71.2 - 72.2	10	(dip mainly 25°)
	47.6	30			71.2 ~ 72.2	25	1
	49.05	24	Service of the service of		71.2 ~ 72.2	25]
	49.2	20		1	73.0	10	
ľ	49.25	35		1	73.05	20	

List of Faults and Joints in Main Drill Holes (6-11)

Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHW-2	73.2	74		DHW-2	92.45	15	
1	76.7	75			92.5	45	
	77.0	75			92.8 ~ 92.9	35	sh = 5
[79.4	10			92.9	15	
	81.9	20 ~ 30	similar joint : 3		92.9	10	
. [81.95	38			93.85	15	
	82.0	40]] .	94.6	25	
[82.9	40			96.1	20	
[83.8	40			96.2	25	
Ī	84.1	30			96.4	30	
	84.2	30]	96.85	30	
1	84.3	30			97.2	20	
	84.4	: 30			97.3	20	
ſ	84.5	30			98.05	20	
Ì	84.6	40			98.15	35	
Ţ	84.62	35			98.3	30	
Ī	84.8	25		1	99.05	30	11.5
ľ	85.3	40			99.10	30	
	85.5	40			99.8	45	
Ī	85.8	40			100.6	20	
[86.1	30			100.7	30	
Ì	87.4	25			101.8	20	
t	87.4	35	<u></u>		101.8	15	
	87.5	35			102.1	10	
	87.5	40			102.3	23	
Ţ	87.8	30			102.5	. 30	
<u> </u>	87.8	15			102.8	58	
ľ	88.4	30			103.8	38	
ļ	88.5	30		1	104.7	30	
ľ	89.05	30			104.85	30	
Ţ	89.3	35			105.9	35	
ŀ	91.1	20		1	110.4	40	
f	91.4	25		1	113.2	10	
<u> </u>	92.1	30	:	1	115.7	20	
. }	92.4	20		1	115.8	20	

List of Faults and Joints in Main Drill Holes (7-11)

Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHK-S	117.9	15		DHH-S	145.7	15	
	118.4	50			146.3	15	
	118.6	20			146.5	20	
	123.4	20			146.7	15	
	126.9	13]	146.8	35	
	128.3	5			146.9	25	
	129.6	18			147.1	32	
	133.8 ~ 133.9	20	similar joint : 3		147.6	10	
	134.1	33			147.6	45	
	134.15	30			148.0	42	
	134.4	20			148.8	42	
	134.6	30			149.2	25	
	134.7	25			149.4	15	
·	134.9	20			150.0	10	
	135.2	20			151.1	5	
	135.4	20			151.5	10	
	136.1	33			152.3	20	
	136.2	30			152.6	40	
	136.3	24			152 7 ~ 152,8	20	
	136.5	15			152.7 ~ 152.8	25	similar joint: 2
	136.9	20			153.1	30	
	137.4	20		1	153.2	30	
	137.6	30			153,4	25	
	137.9	30			153.4	35	
·	138.7	28			153.7	24	
	138,9	20			154.0	37	
	139.6	18			154.3	70	
	140.3	30			155.7 ~ 155.9	25	
,	141.1	75			155.7 ~ 155.9	25	
, , , , , , , , , , , , , , , , , , ,	141.2	45			155.7 ~ 155.9	20	
	141.6	20			156.6	35	
	142.4	10]	157.2	25	
	142.5	15			157.6	25	
	145.4	15]	157.8	10 ~ 15	
	145.5	15			157.9	23	

List of Faults and Joints in Main Drill Holes (8-11)

Drill Hole No.	Depth (m)	Oip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHW-2	158.3	23		DHM-5	197.8 ~ 198.0	45	
-	159,4	35	sh = 170		198.1	30	
	159.6	30			198.8	27	
	160.4	35			200.1	15	
	161.2	55			201.05	25	
	161.7	25)	201.15	30	
	162.5	20			201.3	20	
	163.7	40			201.4	70	
. •	163.9	25			201.5	20	
	165.1	28			201.8	20	similar joint : 2
	165.7	10]	202.0	20	
	169.6	70			202.3	35	
	181.1	35.		1	203.2	- 23	
	181.2	25			203.5	28	
	181.3	22			203.7	- 32	
	183.0	30			204.0	25	
	183.1	35		1 .	204.4	32	
	185.3	22			204.8	22	
	186.1	30		1	205.5	10	sh = 5
	186.4	20			205.7	25	
	187.5	15			206.2 ~ 206.3	10 ~ 15	sh = 5
	187.5	. 20			208,1	18	
·	189.8	30			215.1	78	
	190.5	22			224.5	75	
	190.2 ~ 190.4	30			231.0	27	
	190.2 ~ 190.4	35			232.4	26	
	190.2 ~ 190.4	30			233.2	25	
	191.6	5			234.9	30	
	191.8	5			235.1	25	
	192.2	45			235.4	15	
	192.6	25			236.7	15	
	192.9	28		1	236.9	25	
	193.3	- 33		<u></u>	237.1	10	
	193.6	20]	237.6	25	
·	197.8 ~ 198.0	35			238.0	20	

List of Faults and Joints in Main Drill Holes (9-11)

- 1. ·			(UHU-1, DHW-1, I				
Drill Hole No.	Depth (m)	0ip (°)	Width of Shear (sh) and Clay [cl] (cm)	Drill Nole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DHY-2	238.1	20		DHT-1	38.9	30	
	238.1	20			39.0 ~ 40.0	30	similar joint : 4
	238.4	50			39.0 ~ 40.0	70	
	239.6	15			39.0 ~ 40.0	70	
	241.7	22			40.1	80	
	242.2	36			40.3	40	
	243.0	34			40.5	80	
	243.1	10			40.7	50	similar joint : 2
	243.2	35			40.8	30	sh = 2
	243.5	30		:	41.0 ~ 45.0	20 ~ 30	similar joint : 20
	243.8	35			41.0 ~ 45.0	50	similar joint : 3
	244.6	35			41.0 ~ 45.0	80_	similar joint : 2
	245.3	28			45.0 ~ 54.0	10	similar joint : 11
	245.4	28	· ·		45.0 ~ 54.0	20 ~ 30	similar joint : 9
	245.8	28			45.0 ~ 54.8	50	similar joint : 2
	246.7	30			45.0 ~ 54.0	80	similar joint : 4
	247.8	40			46.5	10	
					52.9	10	
					54.5 - 54.8	60 ~ 90	
DHT-1	32.5	30			59.7 ~ 60.1	85	
	32.7	75			59.7 ~ 60.1	85	
	33.8	20		1	61.7	82	
	33.4	70			66.8 ~ 66.9	30	similar joint : 3
1	34.4	20			67.1	80	
	34.7	20			67.4	30	
	34.8	80		1	67.8	30	
	34.8 ~ 35.0	20	cl + sh = 20		67.9	30	
. i	35.0 ~ 38.0	*	sh = 320		68.85	30	
	37.3 ~ 37.6	25 ~ 30	similar joint : 5	1	68.95	30	
	37.7	60			69.10	30	
	38.3 ~ 38.4	30		1	70.0	30	
	38.3 ~ 38.4	30			71.4	30	
	38.4	75			75.1	20 - 30	
	38.7	75		1	76.2	20 ~ 30	
	38.9	25		1	76.8	20 - 30	

^{*} unknown dip

List of Faults and Joints in Main Drill Holes (10-11)

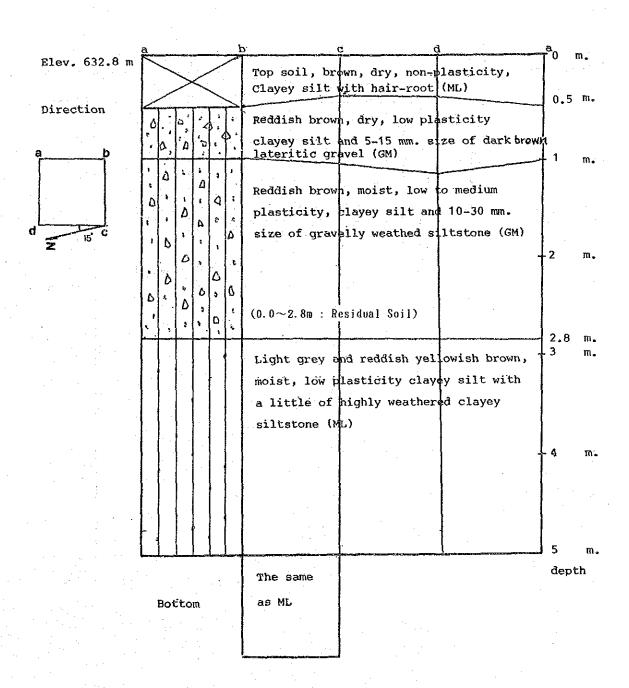
Drill Hole Ho.	Depth (m)	Dip (°)	Hidth of Shear [sh] and Clay [cl] (cm)	Orill Hole No.	Depth (m)	qi0 (°)	Width of Shear [sh] and Clay [cl] (cm)
DH7-1	76.9	20 - 30	**************************************	OHT-1	108.7	20 ~ 35	
Ï	77.9	20 ~ 30			108.8	20 ~ 35	
ļ	78.6	20 ~ 30			109.2	20 ~ 35	
	81.1	20 ~ 30			109.8	20 ~ 35	
	81.3	20 ~ 30			115.7	70	
	81.5	20 ~ 30			118.2	30	
	82.0	- 20			118.2	40	
	83.2	35			118.5	45	
	83.8	10			118.6	65	
	84.0	30			118.8	25	
	84.1	35			120.5	35	
	85.6	30			120.9	35	
	85.7	30	·		121.1	25 ~ 30	
- 1	85.8	30			121.2	25 ~ 30	
	89.8	75	similar joint : 3		121.3	25 ~ 30	
	92.2	60 ~ 90			121.4	25 ~ 30	
•	92.6	90		1 (121.7	25 ~ 30	
	99.8	60		[121.9	25 - 30	
	100.1	60			122.2	20 ~ 40	
	100.2	90			122,3	20 ~ 40	
	100.9	32			122.4	20 - 40	
,	101.9	85			122.43	20 ~ 40	
ļ	102.7	70			122.45	20 ~ 40	
	102.9	85			122.5	20 ~ 40	
	103.0 - 103.4	85 ~ 90	similar joint : 2		122.6	20 ~ 40	
	103.5	50			123.4	20	
j	103.7	65			123.5	25	
	103.8	85		}	123.8	25	
	107.0 ~ 107.1	20			124.15	40	
	107.0 ~ 107.1	50			124.4	30	
	107.0 ~ 107.1	40			124.6	25	
	107.4 ~ 108.0	90			125.3	25	
	108.4	20			126.5	40	
ļ	108.4	10			126.6	25	
	108.5	20 ~ 35			127.7 ~ 128.0	35 ~ 45	similar joint : 6

List of Faults and Joints in Main Drill Holes (11-11)

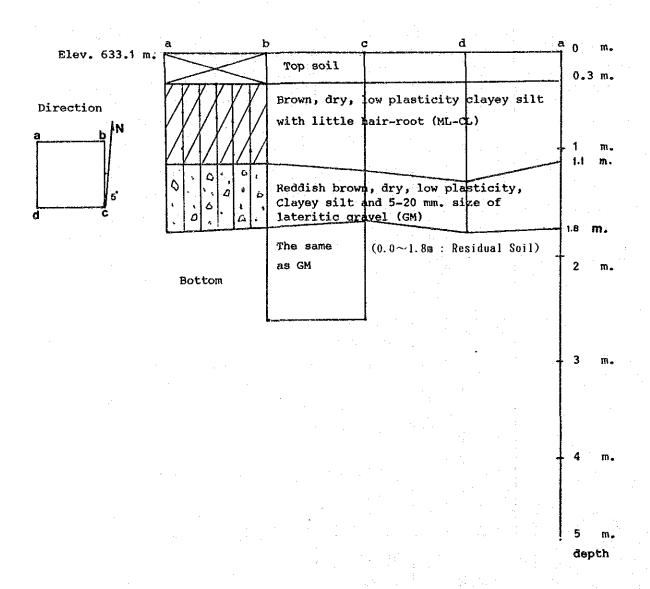
Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)	Drill Hole No.	Depth (m)	Dip (°)	Width of Shear [sh] and Clay [cl] (cm)
DRT-1	128.3	40	sh = 30	DHT-1	164.3	25	
. [140.8	75			164.6	25	
[143.5	45			164.9	40	
. (143.7	75			165.9	20 ~ 30	
[143.8	75			165.8	20 ~ 30_	
{	145.9	75			165.83	20 - 30	
	148.4	75			167.4	20 ~ 30	
	149.8	85			167.6	20 ~ 30	
	151.8	80			167.65	20 ~ 30	
	152.6	20			167.7	20 ~ 30	
	152.7	20			168.1	20 - 30	
{	152.75	20			168.5	20 - 30	
[153.8	65			170.85	20	
	153.9	60			171.0	20	similar joint : 2
ſ	154.6	20			175.9	40	
	154.8	20			176.05	20 ~ 30	
Ī	154.9	40			176.7	20 ~ 30	
Ī	155.5	. 30			176.8	20 - 30	
Ī	155.7	30			178,05	20 - 30	
	155.8	30		1	178.2	20 - 30	
	156.6	25			178.5	20 - 30	
Ī	156.7 ~ 157.0	90			178.75	20 - 30	
	157.5	35			178.9	20 ~ 30	
	157.9	20			179.0 - 179.2	90	
. [158.3	20]	179.6	15	
ſ	160.2	25]			
	160.5	25					
	161.3	15		}			
	161.95	36					
Ī	162.2	30	similar joint ; 2				
	162.6	25					
	162.8	25]			
Ì	163.2	15	1)	1.	
ľ	163.3	30		1		1	
t	164.2	25		1		T	

A-3 GEOLOGIC SKETCHES OF TEST PITS

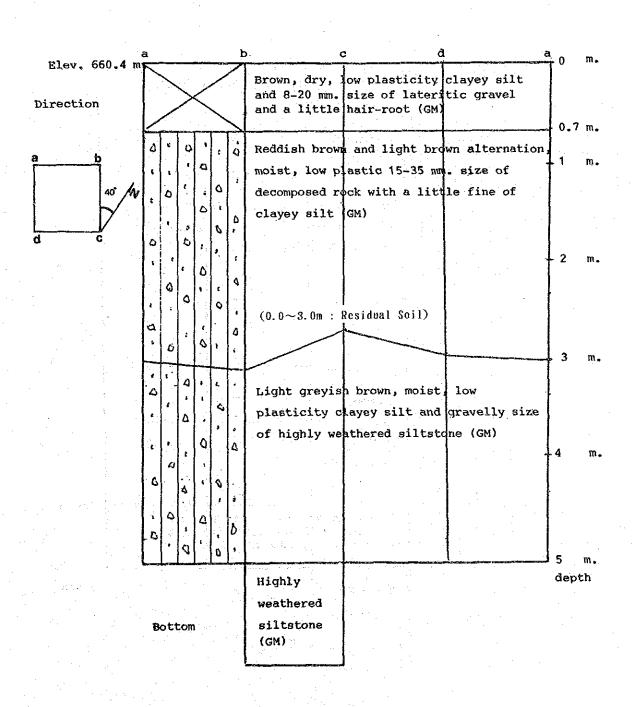
Name of test pitPU-1	Made by Teerachai	.Date 11 Oct 1990
LocationUpper Pondage, Lum	Takhong Project	
Elevation632.8	Depth5.0	



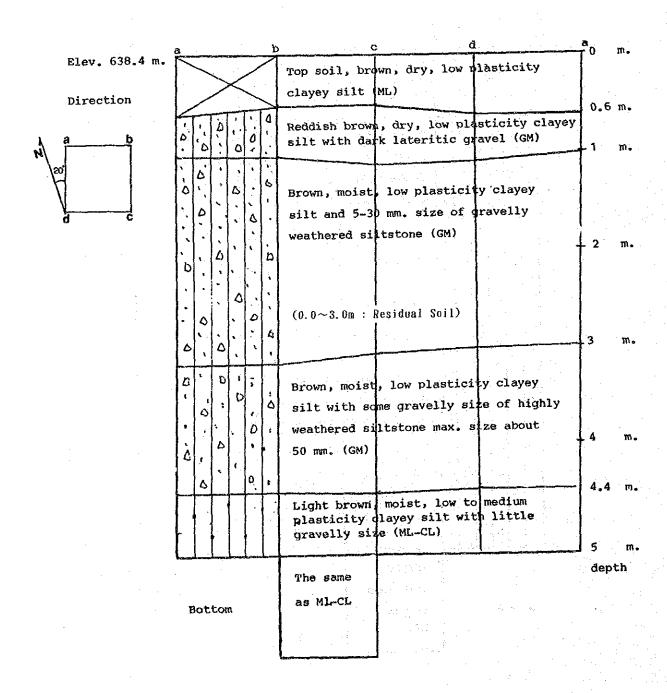
Name of test pitPU-2	
	Takhong Project
Elevation	1.8 Depthm.
	Remark: the bottom is very hard



Name of te	est pitPU-	3	*****	Made.by	Teerachai	Date 11.0	ct 1990
	Upper Pondage						
						•	
Elevation.	660.4	· · m ·	Depth	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	m.	•	



None of test w	pu-4	Made	Teerachai	Date	ogt 1990
Manue of cear b)			The state of the s	•
LoctionUppe	r Pondage, Lum Takho	ong Project	**********		
Elevation	638.4	Depth	5.0	m .	1



A-4 DATA OF PERMEABILITY TEST IN PITS

Geo	Test No. PU-1-1 Date Aug. 18 1990 Made by Location Test Pilt PU-1 Ground elevation 632.8 m Geologic condition Highly weathered claystone (weathering: 4-5, hardness: 4-5 of test well crack spacing: 4-5, rock evaluation: S3) Thickness of unsaturated Strata (Tu) more than 280 cm							
Dep	th of well		well Dimensions the top of well(the Depth o					
		r in well (h) re <u>30.5 °C</u>		rature <u>26.5</u>	°C			
	Time (min:sec)	Difference time (seconds)	Water volume (Difference flow) (cm³)	Discharge rate (cm³/s)	Water temperatur (°C			
	15:10	910	375	0.4121	27.0			
	28:46	826	375	0. 4540				
	45:36	1,010	375	0.3713				
	63:05	1,049	375	0.3575				
	82:49	1, 184	375	0.3167				
	111:32	1,723	375	0.2176				
	149:00	2, 248	375	0.1668				
	179:04	1,804	375	0.2079				
	192:00	776	187	0.2410				
	204:45	765	187	0.2444				
	214:06	561	187	0.3333				
	228:36	870	187	0. 2149				
	240:06	690	187	0.2710				
	252:20	734	187	0. 2548				
	264:16	716	187	0.2612				
	278:15	839	187	0.2229				
	290:52	754	187	0.2480				
			teady state condition		cm³/s			
			A - 57	na ang matanang na na na ang mangkanang kala sakan kanangsalam-ng	in and the second the Copy of the Copy of the Copy of the Copy of the Copy of the Copy of the Copy of the Copy			

Contract of

ocation Te Geologic co of test w	U-1-2 est Piit PU-1 ondition_Highly well crack of unsaturated	Groun weathered spacing:4-	claystone (we 5, rock evalua	2.8 m eathering:4-5, ution: S3)	hardness:4-5
Depth of pi	ground surface pe 30.5 c pipe (r) 1	to the to	Dimensions op of pipe(the	bottom of pit)	5.4 m
Initial dep	oth of water in		Result 25.0 cm	Ground tempera	ture <u>°</u>
Time (hour:min)	Difference time (seconds)	Water hight (cm³)	Water volume (Difference flow) (cm³)	Discharge rate (cm³/s)	Water temperature (°°)
0:30	1,800	24.8	141.4	0.0785	
1:00	1,800	24.8	0.0	0.0000	
1:30	1,800	24.6	141.4	0.0785	
2:00	1,800	24.5	70.7	0.0393	
2:30	1,800	24.4	70.7	0.0393	
3:00	1,800	24.3	70.7	0.0393	
3:30	1,800	24.2	70.7	0.0393	
21:50	66,000	21.5	1908.5	-steady state- 0.0289	
					in Haratej

- :	WELL PERMEANETER TEST DATA SHEET : WELL DIMENSIONS AND DISCHARGE RATE							
	Location Test Geologic cond of test wel	Test No. PU-3-1 Date Aug 1990 Made by Location Test Piit PU-3 Ground elevation 660.4 m Geologic condition Highly weathered claystone (weathering:4-5, hardness:4-5 of test well crack spacing:4-5, rock evaluation: S3)						
	Thickness of	unsaturated Stra	ta (Tu) more than	200 cm				
	Depth of well		well Dimensions the top of well(the	bottom of pit)	<u>4.9 m</u>			
	Depth of wate Air temperatu	r in well (h)		erature	<u>°C</u>			
	Time (min:sec)	Difference time (seconds)	Water volume (Difference flow) (Cm³)	Discharge rate (cm³/s)	Water temperature (°C)			
	12:00	720	100	0.1389				
	27:00	900	100	0.1111	eje -			
	40:30	750	100	0.1333	· · · · · · · · · · · · · · · · · · ·			
	54:50	860	100	0.1163				
	68:40	830	100	0. 1205				
	83:50	910	100	0. 1099				
	98:10	860	100	0.1163				
	113:27	917	100	0.1091				
	128:40	913	100	0.1095	· · · · · · · · · · · · · · · · · · ·			
L	142:50	850	100	0.1176	<u> </u>			
	157:35	885	100	0.1130				
	173:30	955	100	0. 1047				
	188:14	884	100	0. 1131				
	204:00	946	100	0.1057				
	220:20	980	100	0. 1020				
1	236:40	980	100	0.1020				
100	251:48	908	100	0.1101				
	236:40 251:48 (Note: The pr	980 908 reliminary test	100	0.1020 0.1101 steady state- before this m	1			

OPEN-END	PIPE TEST DAT	A SHEET :	PIPE DIMENSI	ONS AND DISCHA	RGE RATE		
Geologic co of test w	st Piit PU-3 Indition Highly Indition crack Indition the crack Indition the crack Indition the crack	Groun weathered spacing:4-	claystone (we 5, rock evalua	0.4 m athering:4-5, tion: \$3)	hardness:4-5		
Pipe Dimensions Depth from ground surface to the top of pipe(the bottom of pit) 5.6 m Depth of pipe 30.5 cm Radius of pipe (r) 15.0 cm							
Initial dep	oth of water in		Result 24.4 cm	Ground tempera	iture <u>°</u> C		
Time (hour:mín)	Difference time (seconds)	Water hight (cm³)	Water volume (Difference flow) (cm³)	rate	Water temperature (°C)		
0:10	600	24.3	70.7	0.1178			
1:00	3,000	24.2	70.7	0.0236			
1:30	1,800	24.1	70.7	0.0393			
2:00	1,800	24.0	70.7	0.0393	e Water		
2:30	1,800	23.9	70.7	0.0393			
3:30	3,600	23.8	70.7	0.0196			
4:30	3,600	23.6	141.4	0.0393			
5:30	3,600	23.4	70.7	0.0196			
6:30	3,600	23.3	70.7	0.0196			
7:30	3,600	23. 1	141.4	0.0393			
				-steady state-			
Discharge r	Discharge rate of water for steady state condition (Q) 0.0321 cm ³ /s						
Average dep	th of water in	pipe for	calculation (h) <u>23.7 cm</u>			
Coefficient of permeability (k) 1.6×10^{-6} cm/s							