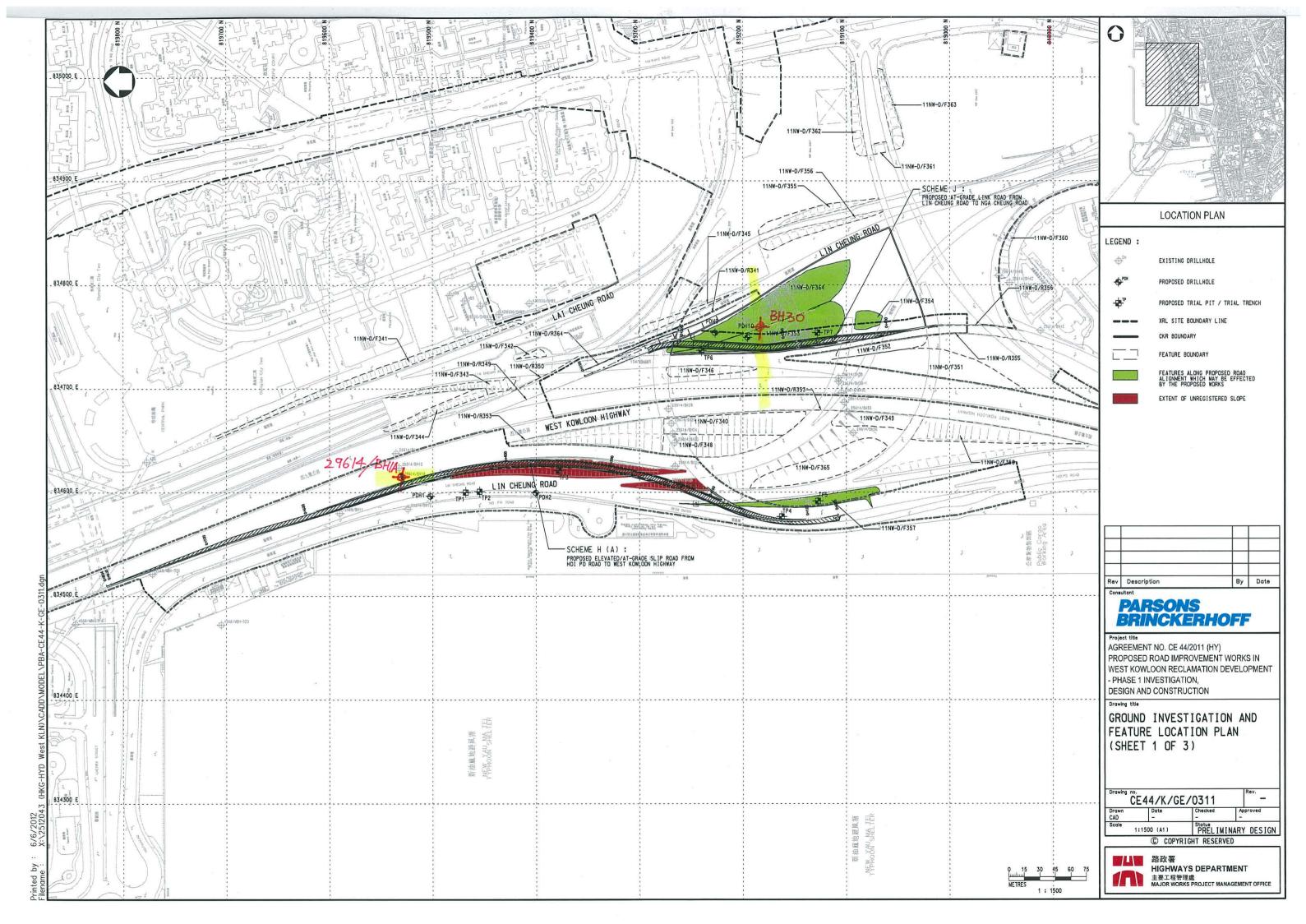
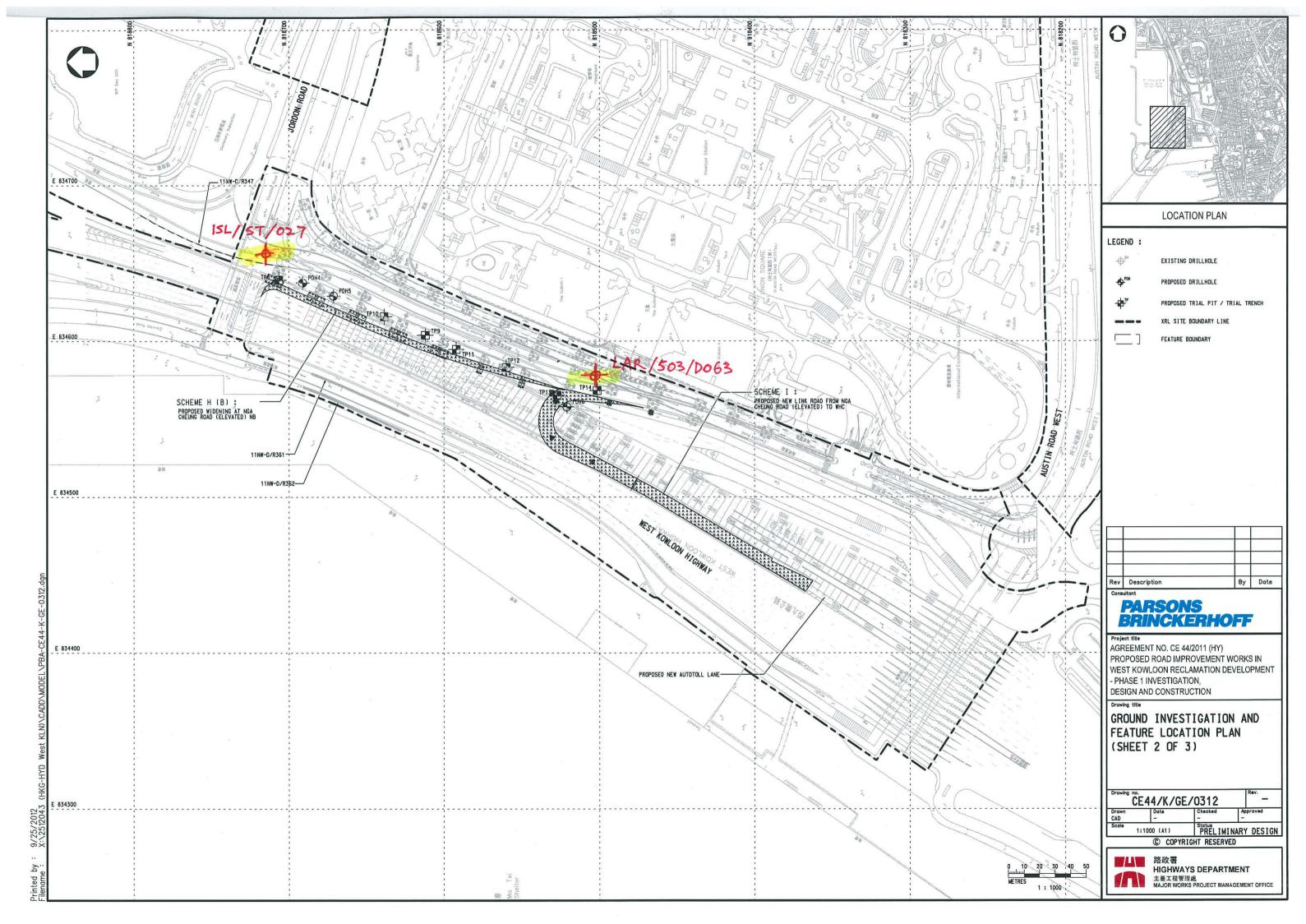
EIA Report (September 2013)

Appendix 6.4B

Existing Ground Investigation Records (Extracts)





								<u>-</u>	_								JOB NO. WK14 HOLE NO. BH1A
]						D	RILL	.HOL	E F	RE	COR)				SHEET of 6 DATE from 13.4.91 to 20.4.91
	PROJ	ECT .	West K You M	Cowle a Te	on R	eclomo wall	otion	ı, Si	te Inv	esti	gat	ion					72.121 10 20.431
3 :	METH	OD f	Rotary	•				0	O-ORI	DINA	ITES	3					ROCK COREBIT T2, TNW
	масн	INE &	No.	Di D7		t Boar	ŧ					83461 81953					HOLE DIA. P to H to N 140mm to 114mm to 89mm
	FLUSI	ING M	EDIUM	We	oter			0	RIENTA	ATIO	N	VERT	TCAL				GROUND-LEVEL 5.37 mPD
	Drilling Progress	Caeing dopth/size	Water leve/ time/ date	<u> </u>	Total care Recovery ☎	Solid core Recovery X	R. Q. D.	Fracture	Tests		Samples	Reduced	Papth (m)	Legend	Crode	Zone	Description
	13/4	p		80	1 1 0 0	190	80	1		ļ			<u> </u>				Cament concrete (FILL)
	1.1.										_	+4.77_	0.50 0.75 1.00				(rule)
					65	55	15	6					1.65				
	1				1	ı							2.00				
				ì	52	52]	9	6									
] <u> </u>				\dashv			;		2.80 3.00				
				i	ا ور	ر او	73	3							ĺ		
	13/4							,					4.00	▓			
	- 13/4 - 15/4			i	İ			\dashv					4.20				
1				1	7	848	46	3					5.00				BOULDER and COBBLE sized fragment of
				İ	i					T2			5.50				slightly decomposed hardrock (FIL)
i	_	6.30			e3	63	50	2					6.00				(12)
<u> </u>		H		jŀ			_	\dashv			}		6.30				·
``		.				1			•				7.00	XXX			
					60	57	57	1								-	
			j	-	\dashv		\dashv	_					7.80 _8.00				
· [ļ					_0.00			İ	
			ľ		#	63	63	1				<u>.</u>					
				-	-		\perp	_					9.00 9.30				
	15/4	н		ao l	43	43	J9	3									
-	4 S	गवरी वीक्ट	urbed so	mple		Water s		<u></u>		1~		<u> T.P.</u>	10.00 F	REMA	RXS		
		arge dist PT liner :	sample sample	ample	* 1	Water k Stander			on teat			22.4.					
ا ر			lurbed so		Ĭ	Permed						<u> 22.7.</u> р <u>Н.W.</u>					
	25 34	ozier son ston son	role		F	Piezome In-situ	iter t	shear S	test	DAT		30.4.					
J: -										·				1			

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- * Tolex 61840 LGEOL HX Fax 8340657 Tels 8910563, 5734365

										***********					JOB NO. WK14
:															HOLE NO. BHIA
						C	RII	LHO	LE R	ECOI	RD.				SHEET of 6 DATE from13.4.91to20.4.91
PF	ROJECT	West k You M	owlo a Tel	on l	Recton	otic	on, S	Site in	vestig	ation					DATE from 13.4.91 to 20.4.91
ME	THOD	Rotary						CO-0	RDINAT	Es		-			ROCK COREBIT T2, TNW
1,,	CHINE &	. No	Dic	mar	it Boo	ırt			Ε	834	614,33				
		2 140.	D7						N	819	530.19				HOLE DIA. P to H to N 140mm to 114mm to 89mm
FL	USHING 1	MEDIUM	Wo	ter				ORIEN	TATION	VE	RTICAL	···			GROUND-LEVEL 5.37 mPD
Drilling		Water level/ time/ date		Total core Recovery 72		R. Q. D.	Fracture	Yeats	Samples	Raducad	Dapth (m)	pueden	Crode	Zane	Description
15) 15/16/				43	45 - 45 - 45 - 45 - 45 - 45 - 45 - 45 -	36	5		72	=9.63	11.00 11.00 12.50 13.40 14.00				BOULDER and COBBLE sized fragment of slightly decomposed hardrock (Fill)
				00	. —			22 bis 43 bis (1,1 22,3,3)			17.00				Soft to firm, greenish grey, CLAY with some shell fragment (MARINE DEPOSIT) Medium dense, light greyish yellow, fine to coarse SAND with some shell fragment (MARINE DEPOSIT)
16/4				Ш			+	N=10	[] \$	L14.53	20.00	- 1		ᆚ.	
1	Small distributions of the Congression of the Congr	urbed som turbed sor	•	* *	Majer h		•		LOCCE	<u>T.P.</u>	Wong	REMA	KKS		
į	SPT liner		F*	Ī	Stander		etrat!	on test	DATE	22.4	l. 91		•		
Ī	U78 undle		•	Ė	Permed]			İ
	Mazier ser	sturbed so note	rubje	4	Pletome	-			CHECK	ED H.W.	Chan				
P/S	Piston son			V	in-situ		•	lest	DATE	30.4	.91				ĺ

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															JOB NO. WK14
															HOLE NO. BHIA
						DR	31.1	HOLE	REC	'ORD					SHEET 3 of 6
		Wast K	اسد'	on R					estigat						DATE from 13.4.91 to 20.4.91
PRO	ECT .	You M	o Te	i Sec	woll		', ' '	ica inv	astigat	,ion					
METH	IOD I	Rotory					19)OOR	DINATES			****	-		ROCK COREBIT T2, TNW
MAC	IINE &	No.	Di Di		t Boar	ţ				83461 81953					HOLE DIA P to H to N
FLUS	HING M	EDIUM	W	ater			C	RIENTA	•		TGAL,				GROUND-LEVEL 5.37 mPD
L	T						_			T					
Drilling Progress	T Casing depth/size	Water level/ time/ date	G Recovery ⊼	Total care Recovery 72	Solid core Recovery X	8, 0, 0,	Frecture	Testa	Sample	Reduced	Dapth (m)	Legend	Crode	Zone	Description
	, r		8				-			-15.63	- 21,00				See sheet 2 of 6
			i	90											Firm to stiff, light yellowish brown, sandy CLAY with fine gravel
16/4 17/4]				↓ ¦				2 :	-15.63	- 22.∞				(ALLUYUN)
				İ				[[]]	a				<		Extremely weak, greenish green, completely decomposed fine grained GRANITE
<u>:</u>			il	i			ŀ	N-19 35(5)	5	-17.63	23.00			{	(Medium dense, clayey SILT with fine
	4.			95				(34 557,13) N-30	5. 7.		_24.00 _25.00 _26.00		*		Extremely weak, pink, Completely decomposed medium grained GRANITE (Medium dense, silty fine SAND)
17/4	н		8					(23 55811) H=30	9	-22.63 -24.63	29.00		ν		Extremely weak, pink, Completely decomposed coarse grained GRANITE (Dense to very dense, fine to coarse SAND)
4	Small dist		•	4	Water s		!		LOGGED	T.P.	<u>Won</u> q	REMA	RKS		
-	Lorge dia S≥T Knær		awbje	¥ J	Water k Standar		alr#1	ion test							
T	J76 undla	-	ompie	1	Permed			~- 1=41	DATE _						
	J100 undi		compli	• <u>\$</u>	Plezome	_			CHECKE	р <u>Н.W,</u>	Chan				1
	doziar so: Psion acr	•		-	Ju-ayra Liescotte		•	· lest	DATE _	30.4.	91				1

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Γ					······································	·	÷								JOB NO
			•			D	RII	LLHO	LE RE	COR	D				SHEET 4 of 6
PRO	DJECT	West i	Cowle	on F	Reclam Mali	a tio	n,	Site in	vestiget	ion					DAIE from 13.4.91 to 20.4.91
MET	НОО	Rotory	,					CO-OR	DINATES				_	_	ROCK COREBIT T2, TNW
MAC	HINE &	No.	Die D7		t Boa	rł				8346 8195					HOLE NA P to H to N
FLU	SHING N	KEDIUM	Wo	ter				ORIENT			TICAL			· _ <u>-</u>	GROUND-LEVEL 5.37 mPD
Drilling Progress		Water level/ time/ data	Woter Recovery X	Toldi care Recovery 22	Solid core Recovery %	R, Q, D,	Fracture	Teats	Samples	Raduced	Dapth (m)	Legend	Grode	Zone	Description
			<u> </u>	-9	Water sc			(1,8 1,011,14,18) N - 50	12.	34.63	33.00 34.00 35.00 38.00		V		Extremely weak, pink, Completely decomposed coarse grained GRANITE (Dense to very dense, fine to coarse SAND)
	Large diel SPT liner : U76 undiel U100 undie Mazier san	oe bedrui elqmos ne bedruit e bedruit	mple	¥ 1	Water to Standard Permeab Plazamet	veri I pen hity t	etroti kest	ion test	CHECKED	22-4.	91	-			

P/S Philas sample

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In-situ vane shear leet DATE 30.4.91

METHOD		tary	1 16	i Sec	NUII			CO-ORD				-			ROCK COREBIT T2, TNW
MACHINE	& N	lo.	Di Di		t Boar	-t				83461 81953					HOLE DIA. P to H to N 140mm to 114mm to
FLUSHING	МЕ	DIUM	W	ater			•	DRIENTA	ноп.	VER	NCAL				GROUND-LEVEL 5.37 mPD
Drilling Progress Casing	depth/size	Mater evel/ irne/ date	Water Recovery X	Total care Recovery %	Solid care Recovery %	R. Q. D.	Frecture	Tests	Samples	Reduced	Depth (m)	Legend	Crade	Zone	Description
18/4 F			8 — —					[[1],[1] [2024,76,51	1 1	7					
					į			N=134			41.00 - -				
					1						42.00 E				
18/4				30						3	E				
19/4								i in is	, D		E .				
]			(10,16 22,32,38,17 H-140	12		E 44,∞ E				Extremely weak, pink, Completely
					1						<u>}</u> E.45.00		٧		decomposed coarse grained GRAN! (Dense to very dense, fine to coar
48.	2		i	95	i						<u> </u>				SAND)
19/4 H 20/4 N			1	 -	1				∠ 23		46.00				
_					1			(12,14 17,20,25,44 N=106	2	1	47.60				
				[[
]			(10 3 16 6 20 23) N = 75	2	4	<u>-</u> 48.00				
	_										49.00				
49. N	~			100	108	90	4		TKWI	-44.13) + +	II.		See sheet 6 of 6
20/4 Smal	diety	rbed se	BO elens		Water		×e		+	l-44.63 D <u>T.P.</u>	F 50.60	REM	ARKS	 }	

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. _}						 										
								-								JOB NO. WK14
					•											HOLE NO. BHIA
L										DLE P		RD				SHEET 6 of 6 DATE from 13.4.91 to 20.4.91
P	ROJ	ECT	West You M	Kow. Ia T	loon ei Se	Reclam awali	atio	n, S	ite Inv	restiga	lion			_		
М	ETH	OD	Rotory	y				(00-0R	DINATE	s				_	ROCK COREBIT T2, TNW
М	ACH	IINE &	No.			nt Boa	rt				8346					HOLE DIA, P to H to N
\vdash					7			\dashv		N		30.19				140mm to 114mm to 89mm
FI	USI	HING A	(EDIUM	γ	Yater				ORIENT.	ATTON	VER	TICAL				GROUND-LEVEL 5.37 mPD
	Progress	Casing dopth/stre	Water level/ trne/ data	Woter	Tolal core	Solid core	R. Q. D.	Fracture	Tests	Samples	Reduced	Dapth (m)	Legend	Grade	Zone	Description
E 2	3 / 4			80	100	190	90	4				<u> </u>	+ + +			
ŧ				l i	计	++						E 50.55	+ + +			
E					190	190	100	0	: -			51.00	† † †			
Ē												51.35	+ ⁺ +			
					100	100	100	2				52.00	+ + +			Strong, light pinkish green with
Ė				İ	H	 	-	\vdash		WAT		52.30	+ + +			dark green speckles, slightly decamposed coarse grained GRANITE
Ē				1	100	100	93	3				E	+ + +	"		medium spaced foint with limonite stained dip 10"-25" and 45"
E												- 22'00 - 22'00	+ + +			20 010 10
Ė			•	1			-	\vdash			İ	53.45	+			
Ė												- 54.∞	+ + +		Ì	
Ė				İ	100	100	100	3			}		+			
Ė 20	/4			80							,,, ,,,	54.95	+ + +			To
E				1						, <u>, , , , , , , , , , , , , , , , , , </u>	-49,58	- 24.95	+ + +	1	\dashv	End of investigation hale at 54.95m
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F]		İ					57.00	. [·
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•	 \$⁄	noll det	urbed so	.]_ mple	ئـــــــــــــــــــــــــــــــــــــ	Woler z	amol:				<u>}</u>	60.00	REMA	RKS		
‡ #	L	orda qu	ಕ್ಷಾ ಕ್ಷಾಗಣ			Water A	V			LOCCED						
		T (iner : 76 undis	-	ample	, ļ	Standar			on teet	DATE _	22,4	.91				
	111	IOO undi	sturbed :	-	1	Plezome	-			CHECKE	р <u>Н.W.</u>	Chan				
P/S		aziec son aten son	•		•	in-eitu			lert	DATE _	30.4	.91				

Lam Geotechnics Limited

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	E	BAC LET		Y	<u>,</u>	ACHY S	COLET	ranc	HE GROUE	. 1	DRILL	HOL	E REC		RD	W. O. PW7/2/33.105/S1 HOLE NO. ISL/ST/027
L	DU	<u> 14,61,1</u>	ANI	17.5	³ ك	OIL & FO	UNDAT	באמוז	SPECIALIST:	•	CONTR.	ACTGC,	/91/050	FC.E.	D.	SHEET <u>1</u> of <u>5</u> DATE from <u>9/1/93</u> to 15/1/93
PI	:OE								LAND S N AREA		IVESTI	GATION	i			
м	ETHO	D R	OTAR	Y					CO-	ORDIN	ATES		-		-	ROCK COREBIT T2-101
м	ACHII	Æ & No	o. Ch	ИС4	ю			_			83465 81871:					0.00m-11,00m SX 11,00m-36,00m PX
F	LUSH	NG ME	אטוכ	A.W	TER	· · ·			ORE			RTICAL				36.00m-44.50m HX GROUND-LEVEL 8.29 mPD
-		depth/		14		, w			' -			-				
Dellino	Progress	Cosing size	Water level/ time/ date	Water Recovery	Total cora Recovery %	Solid core Recovery %	R. Q. D.	Frocture Index	Tests	Somples	Reduced	Depth (m)	Lagend	Grade	Zone	Description
	•	SX			41		-	1/2)								Angular to subangular <u>COBBLES</u>
	•				 -				1	 2 <u>-</u> 101		1.50 - 1.50				with occasional boulder. Boulder at : 2.65m-3.00m.
12	9/1/93				6 0							<u>-</u>				(FILL)
Ē	1/6				80											
	,					<u> </u>			(2.4 5.5.5.7)	†	±5.29	ļ.				
E									130,077 N=24	11		3.45				
<u>-</u>	+									2		4.00 - 4.10				
Ė																
Ë	5								(3.5 (4.6.7.7)	٦		5.00	***			
	_								N=24	• •		5.45				
	5				•					4		6.10				
-												Ē				
	11/1/93		•						(2,4 5,6,5,8) N=24] 5		7.00 - - - 7.45				Medium dense, yellow, fine to medium <u>SAND</u> with occasional
Ę									'N=24	- •		<u> </u>				shell fragments. (FILL)
1	3									6		- 8.10 - 8.10				
E																
1	9								{35 6,7,6,8} N=27	17		9.00		}		
1	10	SX							N=Z/		-1.71	10.00				
	= 5₩.	ALL DIST		-		WATER S				LOGGE		.Yeund	RE	M ARK	(S	
	SP'	rge dist I LINER 6 UNDIST	SAMPLE		<u> </u>	STANDPI	PΕ		IIIAN TEST		19,	/1/93				•
	U	DO UNDIS ZIER SAI	TURBED	SAMP	4 F 🛊 '	STANDAR PERMEAE			TON JEST		KED <u>D. Y</u>		-			•
		TON SAI		wiimi	Ø	IN-SITU	VANE	SHE	AR TEST	DATE	20	/3/93	_			

No. of Concession, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, Name of Street, or other Publisher, Name of Street, or other Publisher, Name of Street, Nam

MACHINE INC.

By a cond trace of

BACHY SOLETANCHE PROJECT METHOD ROTARY

BACHY SOLKTANCHE CROUP

DRILLHOLE RECORD

W. O. PW7/2/33.105/S

HOLE NO. . SOIL & FOUNDATIONS SPECIALISTS ISL/ST/027 SHEET CONTRACT GC/91/05OFC.E.D. WEST KOWLOON EXPRESSWAY LAND SITE INVESTIGATION DATE from 9/1/93 (ADDITIONAL HOLES IN JORDAN AREA) CO-ORDINATES ROCK COREET T2-101 E 834656.07 MACHINE & No. CMC--40 0.00m-11.00m SX 11.00m-36.00m PX 36.00m-44.50m HX N 818712.02 HOLE DIA FLUSHING MEDIUM WATER ORIENTATION VERTICAL GROUND-LEVEL 8.29 depth/ mPD Total core Recovery % Water Recovery Solid core Recovery 3 Water 0.0 Fracture Index Casing size Samples level time Reduced Lovel Tests Cepth (m) Legend Grade date Description 8 10.10 11.00m SX PX 11.00 3,3,4,4) N=14 9 12 10 12.00 12.10 <u>L</u>13 13,00 [2,3 [4,3,3,4] 11 13.45 14 14.00 14.10 Medium dense, grevish yellow to yellowish grey fine to medium SAND with occasional shell |(3,3 |3,4,4,3) 15.00 fragments. 13 15.45 N=14 (FILL) 16 16,00 16.10 _17 17.00 [{2,2 [3,2,3,5] 15 17.45 _18 18.00 18.10 Medium dense, yellowish grey, sandy <u>CLAY</u> with occasional 19 shell fragments. 10.71 (DISTURBED MARINE DEPOSIT) <u> 19.00</u> |(34 |6,4,5,7} 17 Medium dense, yellowish grey N=22 19.45 fine SAND with occasional shell fragments. (DISTURBED MARINE DEPOSIT) SMALL DISTURBED SAMPLE A WATER SAMPLE LARGE DISTURBED SAMPLE . 1 PIEZOMETER TIP REMARKS LOGGED H.C. Yeung SPT LINER SAMPLE & STANDPIPE U76 UNDISTURGED SAMPLE DATE __19/1/93 I STANDARD PENETRATION TEST U100 UNDISTURBED SAMPLE MAZIER SAMPLE (75mm) F PERMEABILITY TEST CHECKED D. Yuen PISTON SAMPLE Ø IN-SITU VANE SHEAR TEST DATE 20/3/93

П		S	BA	CH	CH.		2ACHY 501L & F				F	DRIL	LHO	E RE	CC	RD	HOLE NOISL/ST/027
נו												CONT	RACTG	C/91/05(FCE	.D.	SHEET 3 of 5 DATE from 9/1/93 to 15/1/93
		FROJ	ECT	(ADDIT	NON	LUON	LES IN	1 10 1 22/	VAY RDAN	LAND A ARE	SITE	INVEST	TGATIO	N	_	_	
1.0		METH	OD .	ROTAR	Y					C	O-ORD	NATES					ROCK COREST T2-101
		MACH	INE & I	No. C	мс-	40						8346 8187					HOLE DIA 0.00m-11.00m SX 11.00m-36.00m PX 36.00m-44.50m HX
Π	i	FLUS	HING MI	EDIUM	W.	ATER	1	T-		OF	SENTA.	TION VE	RTICAL	-	·	1	GROUND-LEVEL 8.29 mPD
		Drilling Progress	Casing depth/	Water level/ lime/ date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R. Q. D.	Fracture	Tests	Samples	Reduced	Pepth (m)	Legend	Grade	Zone	Description
		51/1/11 51/1/11						73 62	-:	 . .	1	8	20.10				
		_22		4.80m at 19:30					•	(33 5445) N=18	2		21.45				Medium dense, grey, slightly clayey fine to medium <u>SAND</u> with occasional shell fragments.
		_23	:	at 07:30						3,3 557.8)			- 22.10 - - 23.00				(DISTURBED MARINE DEPOSIT)
		_24					:		Į,	(3,7,8) √=25	2.	2 <u>-15,71</u>	23,45 - 24,00 - 24,10				
		_25										-16.71	25.00				Medium dense, grey, fine <u>SAND</u> with occosional fine shell fragments. (DISTURBED MARINE DEPOSIT)
		12/1/93								4,6 ,8,9,14) !=38	2	1	25,45	⋘			
	1111111						•	1			24		26.00 26.10				Medium dense to dense, grey, fine to medium <u>SAND</u> with
	111111111	.27					1		(2 4,	,4 5,6,8) =23	25		27.00 27.45				occasional shell fragments. (DISTURBED MARINE DEPOSIT)
	10/11/11/11	28									26		28.00 28.10				
	הויניןיייוי	29							(2. 3.4	,3 (,4,5) =16	27	-20.71				_	SSI -Chis
		30_	PΧ						N:	≕1 5	1 %		29.45 30.00		_		Very stiff, greyish brown sandy <u>CLAY</u> . (ALLUVIUM)
		LARG	E DISTU		MPLE	. <u>6</u> PIE	TER SAM ZOMETER INDPIPE					H.C. 19/1		REMA	RKS		
		1 1100 MAZII	UNDIST	IRBED SA URBED S PLE (76m PLE	AMPLE	PER	indaro Imeabilit Situ vai	ry te:	ST	1 IEST	CHECK	20/:	en				·
									,	1				<u>. L</u>	 , ,	·	

7] ,,	CHY SC	LET	ANGI	1E GR	toUP		RILL	HOLE	E RE(COF	ND	W. O. PW//2/33.105/ST HOLE NO. ISL/ST/027
HI	ai i	IL & FOUI					C	ONTRA	ACT GC/S	31 / 05/01	FC.E.D	,),	SHEET 4 of 5
DWL DNA	OON E	EXPRES	35W. JOR	AY !DAN	LANE I AR	SIT.	4						- 444
			<u> </u>	.— 		CO-OF	RDINA	TES					ROCK COREBIT T2-101
C-4	Ю							34656 318712					0.00m-11.00m SX HOLE DIA 11.00m-36.00m PX 36.00m-44.50m HX
WA	ATER								RTICAL				GROUND-LEVEL 8.29 mPD
Water Recovery %	Total core Recovery %	Solid core Recovery %	R. Q. D.	Frocture	Teata		Samples	Reduced	Depth (m)	Legend	Grade	Zone	Description
	<u> </u>				30	bls	228	- <u></u>	30.45	- :=]]		Medium dense, greyish and reddish brown, cloyey fine to medium <u>SAND</u> . (ALLUVIUM)
	:				{3,3 3,4,5,7 N=1	7) 9	29		31.00	[]			Medium dense, brownish yellow, fine to medium <u>SAND</u> . (ALLUVIUM)
	100				40	bls	1 30		32.00 32.45		1		Medium dense, brown, silty fine to medium SAND. (ALLUVIUM) (S2 - C CA-
	100				(2,2 3,4,7, N=2	7,10) 24	333333333333333333333333333333333333333	3. 4. 5.	33.00 33.45 34.00 35.00 35.00 35.45 37.10 37.10			excs.	Extremely weak, greyish brown & pinkish brown, completely decomposed medium grained GRANITE. (Silty fine to medium SAND) Becoming pinkish red at depth 35.00m to 38.00m.
SAME SAME : :	PLE Å	WATER : PIEZOME STANDP	eter "Pe	TLP	ZATION	TEST	DATE	ED <u>H.</u>	.C.Yeun 9/1/93	<u>19</u> 8	REMAR P.M.	кs т. 2	T Pressuremter Test carried out . u at 39.00m to 40.00m.
) SAI 76mm	MPLE I	PERMEA	CHILITA	y Tes	ST .		CHEC	EKED <u>D.</u>	Yuen 0/3/9:	_ 3_			

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2													
CH	7	#ACCHO						DRIL	LHOL	E RI	ECC	RD	W. OPW7/2/33.105/S1
TANC	ΉE	SOIL &					•						HOLE NOISL/ST/027 SHEET of 5
J MEST 165	W4 000							CONTR			OFC	.D.	DATE from 9/1/93 to 15/1/93
WEST KO	NAL HOOK	LES I	KES N J	SWA` JORD	iaj y A nac	ID SI REA)	TE I	INVEST	IGATIO	N			
ROTARY	_							VATES					ROCK CORESIT T2-101
vo. CMC								83465	56.07				ROCK CORESIT T2-101
TWO. CMC				·			N	81871	2.02				HOLE DIA. 11.00m-36.00m PX 36.00m-44.50m HX
] EDIUM	WATER					ORE	TATI	KON VE	RTICAL				GROUND-LEVEL 8.29 mPD
	, k	Τ.,	T	\top	7						T^{-}	Г	
Water level/	Recovery Z Total core Recovery Z	Solid core Recovery %	0	Fracture	왕 됩		S	- P	£_	9			Parasta M
Water level/ time/ by date	Total Reco	Solid	~	, P	Tests		Samples	Reduced	#£	Puegan	Grade	Zone	Description .
			+		†	+	/ -				 		
	100						-	-	==-:		¥ }		•
	ļ	-			lien		_ 27	1	- 41.00	[] [] [] [] [] [] [] []			
الأ					(5,8 19,12,14	.17)	38		41,45	ijij	<u> </u>		See sheet 4 of 5
- ,					`N=5:	2	•			kt filiti Stilit			(C.D,G.)
							39		42.00 - 42.10	tijt	V		1
5.10m			1						42.10	անկին Միկին			
at 19:30									43.00	tiljt.			- Enderson de la constantina della constantina d
11.50m at 07:30					(6,12 13,19,24	36)	40			ՄԱԿ ԾՈՒ			Extremely weak to weak, pinkish brwon, completely to highly
1 07:30					N=90	1			43.45				decomposed medium grained GRANITE.
5.00m	 				18,	^\	×	-35.71	44.00			_	(Silty fine to medium SAND with
19: 30	100		<u> </u>				41	-36.21	44.50		V/IV		some subangular fine gravel sized rock fragments)
11.20m at 07:30						Î		ŀ		+++			
	100	84	44		ļ				-	+			
T Company	<u> </u>		_				ĺ		45.65	+ + + + + +			Moderately pieces to the
										+ + +			Moderately strong to strong, brownish pink and greyish pink,
1	100	47	39						1	┝ [┰] ┾ ┝ ╵ ┿	İ		mottled white & black, moderately to slightly decomposed medium
1				10.7			1	Ē	-	⊦ [†] +			grained <u>GRANITE</u> with medium to very closely spaced, rough to
.					Í	12-1	10	Ė	46.93	++	111/11		smooth & planar, koolinite and limonite stained joints, dispina
	100	63	38					-	1	++	"","		20°-30°, 45°-60° and subvertical. Subvertical joints at:
		_						Ę	<u>47.79</u>	- + +			45.33m-45.48m, 45.47m-45.60m, 45.86m-46.12m, 46.12m-46.30m.
	100	83	77						1	-			45.18m-45.38m, 46.34m-46.48m, 46.70m-46.93m.
+				N.L.					48.49 48.60	- ‡ +	.]		
	100	58	24						48.73 [†]	[+			
				9,0				Ę	49.42	++	İ		70
, — —	100	J8	0	\square		11		41.55	49,84 †	++			
RBED SAMPL	E & W	TER SA	HPLE	<u>—</u> .		-		<u>_</u>	<u>- 1</u>	REM	ARKS	1	End of Investigation hale at 49.84 m.
RBED SAMPLI		ZOMETE!		¥				H.C.Y					
IRBED SAMPL	E · I ST	anopipe Andard		etrat	ON TES	DA	re _	<u>19/1,</u>	/93		C.	J.G.	: Completely decomposed GRANITE
URBED SAMP		RMEABILI					CKED	D.Yue	<u>n</u>				am
°LE (76mm)	<u> </u>					ł							• • • • • • • • • • • • • • • • • • • •

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Gold Ram Engineering and Development Limited	

Drillhole Record

Drillhole No. BH30

Sheet 1 of 8

Gold Rum Engineering and Development Limited		Minimole Recold	Sheet 1 of 8
PROJECT Central	Kowloon Route and	Widening of Gascolgne Road Flyover (Investigatio	on) - Ground Investigation
METHOD Rotar	ry Drilling	CO-ORDINATES	Contract No. HY/2008/14
Machine & No. BR-	-22	E 834757.01 N 819181.69	Date 29/04/09 to 13/05/09
FLUSHING MEDIU	M Water	ORIENTATION VERTICAL	GROUND LEVEL +10,77 mPD

Drilling Progress (dd/mm/yyyy)	Casing depth (m) /Size (mm)	Water level (m) /Time (tib:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.L. / Test Depits (m)	Tests		mples Type De	epth	Reduced	Depth (m)	Legend	Grade	Description
										1 2 2 2 2 3	. O.	.40 .90					Firm, reddish brown occasionally brown, sandy clayey SILT with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
2								3.20	36	4 5	1 2 2	90 00 00 20	+9.27	1.50			Medium dense, greyish brown, clayey silty fine to course SAND with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
29/04/2005 		0.66m et 18:00 Dry et 08:00		95 19 91					4.7, 5, 6 N-22	7 7 7	6-131 6-131 6-131 6-131	60 92 20 63	+7,07	3.70			Brownish grey occasionally grey, angular to subangular COBBLE with much medium to coarse gravel sized moderately strong to strong granite, tuff, brick, concrete fragments and wood pieces and firm, sandy silt matrix. (FILL)
6				/so///				6,70	- 13.7. 5.4.4.6	9 P	6-131	.50 - .50 -	+5.27	5,50			Firm to stiff, greyish brown, sandy clayry SILT with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
7		,		0	_				N =19	12	7.	50	+2.17	8.60			
		3,03m nt 18:00 9,06m at		<u> </u>				9.20	B-128 8,12, 11, 13, 14, 16 N-54	15 16 17	9.1	20		DERMA			Very dense, brownish grey occasionally grey, slightly silty filty filty filty filty for subangular for medium gravel sized rock and shell fragments. (Fil'L from marine deposits)
Lar SPI	Large Disturbed Sample SPT Liner Sample					er Ley dård I ocabili ometer dpipe	enzin ty Tes Tip	atlori T È	LOGGED DATE	M.Chiu 18/05/2009				2. A 121 31.2 3. Cons 10.1 4. Pack	ispectio ling hea 0-32.70 tant be 0-11.60 er test v	id per m. nd per m and	was excavated by hand to a depth of 2.00m. meability test was carried out between depths of rmeability tests were undertaken between depths of d 43.40-44.90m. urried out at the depths of 57.60-70.30m.
PL:st	U100 Undisturbed Sample Mazier Sample Piston Sample Water Sample					ession Shea	Pack	er Test	I '	CHECKED P.C.Lee DATE 19/05/2009			<u>~</u> '	 Impression packer testing were undertaken from depths of 56.60-58.10m, 57.80-59.30m; 59.00-60.50m, 60.20-61.70m, 61.40-62.90m, 62.69-64.10m, 63.80-65.30m and 65.00-66.50m. 			

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Gold Ram Eng and Develo	eincering pinent d

Drillhole No. BH30

		HINDIA KACO	10	
Gold Ram Engineering and Development Limited	12111	ilhole Reco		Sheet 2 of 8
PROJECT Centra	l Kowloon Route and Widen	ing of Gascoigne Road Flyo	ver (Investigation) - C	Ground Investigation
METHOD Rote	ary Drilling	CO-ORDINATES		Contract No. HY/2008/14
Machine & No. B	R-22	E 834757.01 N 819181.69		Date 29/04/09 to 13/05/09
FLUSHING MEDI	JM Water	ORIENTATION VE	RTICAL	GROUND LEVEL +10.77 mPD
Prilling Progress (dd/mmdyyyy) Casing depth (m) /Size (mm) Water level (m) /Three (thirmm)	Water Recovery % Total care Recovery % Salid core Recovery % Recovery % Fracture Index Fracture Index Fracture Index Fracture Index Fracture Index Fracture Index		Depth (m) Legend Grade	Description
O8:60	75	B-142 B-142 B-142 B-142 B-120 18 10.60 11.05 11.05 20 11.20 11.60 11.60		See previous page
15.10 at 18:00 at 18:00 at 08:00	15.2	15, 17, 19, 22 15, 17, 19, 22 15, 60 29 15, 60	83-16.60	·
-19	17.2	B=282		Very dense, grey, silty fine to coarse SAND with some angular to subangular fine to medium gravel sized rock and shell fragments. (FILL from marine deposits)
- 19 	19.2	B=79 35 19.05 36 19.20 17.8.8.7 N=30 37 19.60	REMARKS	19.20-19.65m:Medium dense.
Small Disturbed San Large Disturbed San SPT Liner Sample U76 Undisturbed Sa U160 Undisturbed S Maxier Sample	mple Standard Penetration Permeability Test mple Piezometer Tip	DATE 18/05/2009 CHECKED P.C.Lee	-	

Impression Packer Test

DATE

19/05/2009

Piston Sample

Ge	D.,,	illada Dassud	Drillhole No.	ВН30			
Gold Ram Engineering and Development Limited		illhole Record	Sheet 3	of 8			
PROJECT Central	Kowloon Route and Wid	ening of Gascoigne Road Flyover (Investigation) - (Ground Investigation				
METHOD Rotal	ry Drilling	CO-ORDINATES	Contract No. HY	7/2008/14			
Machine & No. BR	-22	E 834757.01 N 819181.69	Date <u>29/04/09</u> t	013/05/09			
FLUSHING MEDIU	M Water	ORIENTATION VERTICAL	GROUND LEVEL +10.77 mPD				

+10.77 mPD

															······································
Drilling Progress (dd/mm/syyy)	Casing depth (m) /Size (mm)	Water level (m) /Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid care Recovery %	R.Q.D. %	Fracture Index	F.I. / Test Depths (m)	Tests	Samples No. Type Dept	Reduced	Depth (m)	Legend	Grade	Description
<u> </u>												-	XX		See previous page
21				/ <u>3</u> /3//				21.20	B=131 3.7, 13,9,17,15 N=49	39 21.05 40 21.20 41 21.66		20,60			Dense, grey occasionally brownish grey, slightly silty fine to coarse SAND with some angular to subangular fine gravel sized rock and shell fragments. (FILL from marine deposits)
23 05/05/2009 86/05/2009		3.02m at 18:00 7.39m at 08:00		<u> </u>				23.20	B=79 48, 19,9, 10, 12 N=41	42 22.61 43 23.01 44 23.61					
25				<u> </u>				25,20	B-III 6.7, - 7,3,1,0 N=13	45 24.60 47 25.03 48 25.20 49 4 25.60	-14.43	25.20			Firm to stiff, dark greenish grey, sandy silty CLAY with some angular to subangular fine gravel sized rock and shell fragments. (MARINE DEPOSITS)
27					ï			27.20	B-91 8,6, 17,9,7,6 17,9,7	50 26.60 51 27.03 52 27.20 53 27.60		27.20	地質是		Medium dense, grey, slightly sitty fine to coarse SAND
28											-17.83	28,60			Medium dense, grey, slightly silty fine to coarse SAND with some angular to subangular fine gravel sized rock and shell fragments. (MARINE DEPOSITS)
_29 				100/				19.20	B=49 3,4, 4,5,5,6 N=20	55 29.05 56 29.20 57 29.60					Medium dense, pinkish brown, clayey silly fine to coarse SAND with some subangular to subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
Small Disturbed Sample Large Disturbed Sample SPT Liner Sample U76 Undisturbed Sample U100 Undisturbed Sample						er Levi dard F peabili ometer dpipe	enetra ly Tes Tip	stion T	LOGGEI DATE	M.Chiu 18/05/2009	_	REMA	RKS		
Mazier Sample Piston Sample Water Sample					Imp	surenz ression e Shem	Pack	esi er Test	DATE	19/05/2009					

GR	
Gold Ram Engineering and Development	

Drillhole Record

Drillhole No.		BH30	_
Sheet	4	of	8

PROJECT Central Kowloon Route and Widening of Gascoigne Road Flyover (Investigation) - Ground Investigation

METHOD Rotary Drilling	CO-ORDINATES	Contract No. HY/2008/14			
Machine & No. BR-22	E 834757.01 N 819181.69	Date 29/04/09 to 13/05/09			
FLUSHING MEDIUM Water	ORIENTATION VERTICAL	GROUND LEVEL +10.77 mPD			

2		EF		_						••					
Drilling Progress (dd/mm/yyyy)	Casing depth (m) /Size (mm)	Water level (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.L./ Test Depths (m)	Tests	Saraples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
										58-230.60		30,60			See previous page
31 -31 -32 -06/05/200	919	2.68m al 18:00 7.32m at						31,20 - 31,80	3,6, 5,6,7,8 N =26	59 31.60 60 31.80 61 32.20		***************************************			Medium dense, yellowish brown, clayey silty fine to course SAND with some subangular to subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
33		at 08:00		30					L	62 32.60 63 33.60 64 33.70	-22,93	33.70			33.60-33.70m:With occasional clayey pocket.
-34 	9999	2,66im 81- 18:00 9.20m at 08:00	1 1					34.90	7.3, 3.4,3,4 N=14	65 34,70 66 34,90 67 35,30	24 07		0 0 0		Medium dense, yellowish brown, silty fine to coarse SAND with some subangular to subrounded fine to medium gravel sized rock fragments. (ALLUVIUM)
- 36 - 36 - 37 - 37 - 37 - 38	37.90 140mm			0				38.00	3.4. 14.5.3.6 N=20	35.70 68 36.70 69 36.80 70 37.80 71 38.00 72 38.00		35.70		V	Extremely weak, reddish brown spotted white, grey and brown, completely decomposed medium grained GRANITE. (Firm to stiff, slightly sandy clayey SILT with some fine gravel sized rock fragments.)
39										73 38.80					
• Sr	Small Disturbed Sample z Water Level Large Disturbed Sample Stondard Penetration Test 1 (CCCP)											REMA	RKS		
2 Si	T Liner S	ample	-		Standard Penetration Test Permeability Test				LOGGE	D M.Chiu					
ט מ	76 Undisti 100 Undis	turbed !	_	•	Plezometer Tip				DATE	18/05/200	-				
	azier Sam ston Sam	-				ssuren iressio			sit	ED <u>P.C.Lee</u>					
	ater Sam	ple			Var	e She	ır Tes	t	DATE	19/05/200					

GR		rillhole Record	Drillhole No. BH30
Gold Ram Engineering and Development Limited	D.	minole Record	Sheet 5 of 8
PROJECT Central	Kowloon Route and V	dening of Gascoigue Road Flyover (Investiga	ition) - Ground Investigation
METHOD Rotar	y Drilling	CO-ORDINATES E 834757.01	Contract No. HY/2008/14
Machine & No. BR-	22	Date <u>29/04/09</u> to <u>13/05/09</u>	
FLUSHING MEDIU	M Water	ORIENTATION VERTICAL	GROUND LEVEL +10.77 mPD

Щ.									-						· · · · · · · · · · · · · · · · · · ·
Drilling Trogress	(dd/mm/yyyy) Casing depth (m) /Size (mm)	Water fovel (m) /Time (bh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.Y. / Test Depths (m)	Tests	Samples	Reduced Level	Depth (ra)	Legend	Grade	Description
-					**-			40.00	3,4, 5, 6, 6, 7 N =24	75 40,00		-		V	See previous page
47					ı			42.00	•	77 40.81	2 2 2 2	-			
08/05/2	009	3,08m at 18:00 8,72m							3,4, 5,7, 10, 12 N =34	80 42.4				V	Extremely weak, pinkish brown occasionally pink and greyish brown spotted white, grey and brown, completely decomposed medium grained GRANITE. (Stiff to very stiff, sandy clayey SILT with some fine gravel sized rock fragments.)
43		nt 08:00					:	43.40 44.00	4.5, 6,8,11,13 N =38	81 42.8 82 43.8 83 44.0 84 44.4	0	 			gravel sized rock fragments.)
45 -46 -11/05/	2009	3.09m at 18:00 8.33m at						45.00	3.6. 8, 10, 12, 15 N ~45	88 KA 46.	30 00 10	46.80			
47		68:00						48.00	7,16, 12,21,28,3 N = 97	92 44 48.	80 60 40	el concentation		V	Extremely weak to very weak, greyish brown occasionally gellowish brown spotted grey and brown, completely decomposed medium grained GRANITE. (Slightly clayer silty fine to coarse SAND with some fine to medium gravel sized rock fragments.)
49				0						93 48. 93 49. 94 922 49.	50	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		বাহুত্বালয়ৰ চলাভাৰ বাহু	
•	Small Dist				¥ %		2.75		_			KEW	IARKS		
ģ	Large Dist			:	Ţ P	eranca.	ышту :		Test LOGG	ED M.Chiu		-			
	U76 Undis	turbed :	Samp!				ter Ti oe Tir	-	DATE	18/05/2	009				
	Mazier Se	mple	. MILL	aat.	▼ P.	Pressuremeter Test				KED P.C.Lee	<u> </u>				
Ì	Piston Sar Water Sar			Impression Packer Test Vane Shear Test				DATE	19/05/2	009					

Gold	I Ram Eng	ment	\prod				D ₁	ril	llhol	e	Re	CO	rd		Drillhole No. BH30 Sheet 6 of 8		
PRO	Limite JECT	···········	el Ko	wlooi	a Roui	te an	— Id W	ïden	ing of Gase	oien			er (Ins	estidot	ion)		Sheet 6 of 8
MET	HOD	Rot	ary I	Drillin					CO-ORDINATES E 834757.01								Contract No. HY/2008/14
	SHING	·········			Vater				N 819181.69 ORIENTATION VERTICAL								Date <u>29/04/09</u> to <u>13/05/09</u> GROUND LEVEL +10.77 mPD
	T						_	; 		 -		<u> </u>				_	TOTAL BELLE
Drilling Progress	fragress (dd/mm/yyyy) Cathin Galti (m) Size (mm) Water level (m) Water Thone (thimm) Water Recovery % Solid core Recovery % Solid core Recovery % Recovery % Fracture Index Fracture Fr							F.L. / Test Depths (m)	Terts	1	Samples . Type Dep	Reduced Level	Depth (m)	Legend	Grade		Description
-51 -53							THE REPORT OF THE PARTY OF THE	51,10 53,10	39,51,18/20n [1100/170mm]	98 99 10	50.9 51.3 51.3 51.9 51.9 51.9 51.9 51.9 51.9	0	533.90		V	7	See previous page Very weak, brown occasionally teddish brown spotted
65 66 12/05/2009 57		3.97m at 18:00 8.89m at 08:00		81/	59	99	8.6 5.1	55.47 55.76 55.97 38.88 56.94		103	55.00 55.00 72-101 72-101 56.60	-44.70 -44.99 -45.20	55,76 -55,97 -56,66		IV V III	THE PROPERTY OF SERVICE STATES	grey and brown, completely decomposed medium granted GRANITE. (Slightly silty fine to coarse SAND with some fine to medium gravel sized rock fragments.) 55.35-55.45m:Sandy fine to coarse gravel sized rock fragments. Weak to moderately weak, brown spotted grey and prowa, highly decomposed medium grained GRANITE. No recovery, assumed to be completely decomposed JRANITE. Singly occasionally brown spotted gink, black and grey, lightly decomposed medium grained GRANITE with losely to medium occasionally very closely to closely paced, rough stepped occasionally undulating, imonite stained joints, dipping at 10°-20°, 20°-30° and 10°-50° occasional 0°-10° and 50°-60°: 5.97-56.66m:Moderately strong, moderately ecomposed. 6.60m:Slickensided stepped joints, dipping at 0°-10°. 8.04-58.3 lm:Moderately strong, moderately ecomposed.

Small Disturbed Sample Large Disturbed Sample SPT Liner Sample U76 Undisturbed Sample U100 Undisturbed Sample Mazier Sample Piston Sample

Water Sample

Water Level Standard Penetration Test Permeability Test Piezometer Tip Standpipe Tip Pressuremeter Test

2.0

100 97 59,00

LOGGED MChin DATE 18/05/2009 CHECKED P.C.Lee

19/05/2009

DATE

T2-101

72-101

58.56-58.63m:Fine grained granite.

REMARKS

Impression Packer Test

GR	
Gold Ram Engineering and Development	

GR	D ₁	Drillhole No.	BH30		
Gold Ram Engineering and Development Limited		illhole Rec	ora	Sheet 7	of 8
PROJECT Central	Kowloon Route and Wi	dening of Gascoigne Road Fl	yover (Investigation)	- Ground Investigation	
METHOD Rota	ry Drilling	CO-ORDINATES		Contract No. HY	7/2008/14
Machine & No. BR	-22	E 834757.01 N 819181.69		Date <u>29/04/09</u>	0 13/05/09
FLUSHING MEDIU	M Water	ORIENTATION V	ERTICAL	GROUND LEVEL	+10.77 mPD
- Re			1 1		

Drilling Progress (dd/mm/yyyy)	Casing depth (m) /Size (mm)	Water level (m) /Time (hh:mm)	Water Recovery %	Total core Recovery %	Selld core Recovery %	RQ.D. %	Fracture Index	F.1. / Test Depths (m)	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
E			Ιl	//			2.0	68.28	1		_49,49	-60.26	+ + + +	П	See previous page
E E E1				100	100	97	16.7 4.0	60.50		72-101 			++++ +++ +++	Ш	Moderately strong occasionally strong, brown occasionally grey and pink spotted pink, grey and brown, moderately decomposed medium grained GRANITE with closely to medium occasionally very
				160	85	75		i H		72-101	-50.93	61.70	; ; ; ; ; ; ; ;	n	closely spaced, rough stepped and undulating, limonite and manganese oxide stained joints, dipping at 20°-30°, 50°-60° and 70°-80° occasional 40°-50°.
_62 -							9.5	62.07		62.39	-51,23	62.00	+ +	Ш	61.70-62.00m;Very strong, slightly decomposed.
_63				100	87	87		62.99 62.79		72-101	-52,14 -52,26	62.91 63.03	+++	П	62.91-63.03m;Very strong, slightly decomposed.
E				4		 	4.7	63.22	1	63.22		63,22	+-:	Ш	
_ 				100	100	89	4.3 7.1 ≥20.	63.45 63.87 63.95		72-101	-53.20 -53.34	-63.97	- + + + • + + • + +	Π	Strong to very strong occasionally moderately strong, grey occasionally pink and brown spotted pink, black and grey, slightly decomposed medium grained GRANITE with medium to widely occasionally closely spaced, rough stepped and undulating occasionally
					-		1.2				*2,2,3**	- 		11	spaced, rough stepped and undulating occasionally closely spaced, rough stepped and undulating occasionally planar, limonite, manganese oxide and chlorite stained, calcite coated (up to 1mm) joints, dipping at 20°-30°, 40°-50° and 50°-60° occasional 10°-20°, 30°-40° and 70°-80°.
- - - - -				700	92	88	8.5 2.3	64.78 65.00 65.25	-	T2-101		,,,,,,,,,	- + - - + + - - + + + - + +		63.97-64.11m:Moderately strong, moderately decomposed. 64.76-65.04m:Subventical joint.
66							6.3	65.69 66.01	į	- \$ 66.01			 		
_67		3.18m		160	100	96		66.79 67.03		72-101			+ + + + + + + + + + +		•
-12/05/2009 -13/05/2009 		8.90m 8.90m nt 08:00					0.7			67,47			+ + + + + + + + + - + +		
-					99	99	4.7	6B.42		T2-101			+ + + + + + + + - +		- -
_es							1.7	68.85		68.85			+ + + + + + + + +		
70				102	100	100	3,4	69,43		T2-101		1	+ + + + + + • + -		
• Sm	all Distori	bêd Saîr	plė		ż Wat	er Lev	rel					REMA	RKS		
Lai	ge Distur F Liner S: 5 Undistu	bed San imple	ople		Star	dard.	Penen ity Te	ation To st	LOGGED DATE	M.Chiu 18/05/2009					
וט 🖸	9) Undist				🔓 Star	dpipe			DAIL	18/02/2003	<u> </u>				,
Ma Pis Wi	zier Samp on Samp ter Samp	le			Imp	ressin	seter T n Pack nr Tesi	er Test	CHECKE DATE	D P.C.Lee					

G	1
Gold Rum Engi	ncering ment

Drillhole Record

Drillhole No.		ВН30	_	
Sheet	.8	of	8	

PROJECT	Central Kowloon Route and Widening of Gascoigne Road Flyover (Investigation) - Ground Investigation	

METHOD Rotary Drilling	CO-ORDINATES	Contract No. HY/2008/14
Machine & No. BR-22	E 834757.01 N 819181.69	Date <u>29/04/09</u> to <u>13/05/09</u>
FLUSHING MEDIUM Water	ORIENTATION VERTICAL	GROUND LEVEL +10.77 mPD

Drilling Progress (dd/mm/yyyy)	Casing depth (m) /Size (mm)	Water level (m) /Time (hh:mm)	Water Recovery %	Total core Recovery %	Solld core Recovery %	R.Q.D. %	Fracture Index	F.L. / Tert Depths (m)	Tests	Samples No. TypeDep	Reduced Level	Depth (m)	Legend	Grade	Description
71				100	100	100	1.3	70.78		T2-101		71,30	+ + + + + + + + + + + + + + + + + + +	11	See previous page
Ė										71.0	0 -10,22				Drillhole completed at 71,30m
73															
72								•				المديدينين			•
76							:		-			بعاضيتهم ليميضيط مصطاعتهم المصيون المتارين			
77 															
79 -79												و و دورو و او دورو			
_79															
Sn La Sr Sr U7	rali Distur rge Distu T Liner S & Vadistr & Undist	rbed Sar ample irbed Sa turbed S	aple mple		Star Pen Plez Ĉi Star	neabil omete idpipe	Peneb Ity Te r Tip Tip		DATE	18/05/200		REMA	RKS	L •	·
MI PE	azier Sam ston Samp ater Samp	le			Prej Imp	ressio:	eter T	er Test		19/05/200	9				

	BA	CH	Y	T.				CHE GROI	UP	DRILI	LHOL	E RE	CO	RD	W. O. NO14 DRILLHOLE NOLAR/503/D063
		LALI	ULL.	<u> </u>	OL & FO	UND	ATIONS	SPECIALIS		CONTR	RAÇT	530E		-	SHEET1of5 DATE from 19/5/94 to 23/5/94
CLIEN	T' 8	MASS 1	RAN	SIT RA	ILWAY	COR	RPOR	ATION							
PROJE	ECT: Į	ANTAL	AN	D AIRP	ORT R	AILV	/AY	- GROU	VNI DN	ESTIGA	TION	_			ROCK CORESIT T2-101
LOCA	TION : I	COWLO	ON 5	NOITAT	AND	WE5	TER	A ELEVA	TED RO	AD	· · · · · · · · · · · · · · · · · · ·				HOLE DIA 0.00m-6.00m C SX
METH	THOD ROTARY CO-ORDINATES E 834578.06														6.00m-30.00m PX
MACH	INE & N	lo. Cl	(C-4	ю						81850					
FLUSH	SHING MEDIUM WATER ORIENTATION VERTICAL													GROUND-LEVEL +5.08 mPD	
Drilling Progress	Casing depth/size	Woter level/ time/ date		Total core Recovery %	Solid core Recovery %	R. Q. D.	Fracture	Tests	Samples	Reduced	O Depth	Legend	Grade	Zone	Description
, , , , , , , , , , , , , , , , , , ,	\$χ							15, 24, 38		+4.08	1.00	××××			WASH BORING
19/5/94				/ ⁸⁹ /				71bls		· · .	2.00	***			
								(4,4 5,8,78,15) N=38	2		2:45				
3				100/		 -		6, 13, 67 86 bls	33	 	3.00 - 3.45				
1								(1,2 (2,3,2,4) N=11	4		4.00				Loose to medium dense, grey and yellowish brown, fine to medium SAND,
5				89				24, 24, 32 80 bls	5		5.45				occasional with some coarse sand, gravel and shell fragments.
20/5/94	6.00m SX PX				`			(1,1 (3,4,3,2) N=12	6		6.45				(FILL)
7				100				15, 20, 25 60 bls			7.00			`.	
8		:	,					{1,2 334,3} N=13	8		8.00 8.45				
9		į		89				12, 18, 26 56 bis			9.00		!		
F 10	PX	IDDEC C	AVID'		# TEO **	<u>L</u>		<u> </u>	-	-4.92	F 10.00	KXXX RF\	IARK:	 S	
‡ ŁAF	CE DIST	urbed s Urbed s Sample Urbed s	AMP(L	t åP Js	ATER SA IEZOMETE TANDPIPE	ER TI E	Ρ.	71/41	DATE	26,	0 HSU /5/94	- '\-"	· · asiş	-	
🗓 und	X) UNDIS	TURBED	SAMPI	۴ ،	tandare Ermeabii			TON TEST		ΕÞ <u>Ι</u>	И. D.	-			
	zier sah Ton sah	(PLE (76 (PLE	ന്ന)	4,	4-SITU \			R TEST	DATE	2/6	5/94	_			

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E	BACHY SOLETANCHE GROUP														W. O. NO). <u>LAR/</u> !	503/D063
		JELIA.	W.1.		oll. & Fo	UNDA	TIONS	SPECIALIST		ONTR	ACT	530E		•	SHEET2 DATE from 19		
CLIEN	r: M	IASS T	RAN:	SIT RAI	LWAY	COR	POR	ATION									
PROJE	CT: L	.ANTAU	ANI	AIRP	ORT R	AILW	AY -	- GROUN	D INVE	STIGA	TION				ROCK COREBIT	T2-101	
LOCA'	LOCATION : KOWLOON STATION AND WESTERN ELEVATED ROAD).00m-6.00m	sx
METH	METHOD ROTARY CO-ORDINATES E 834578.06														6	30.00m	PX .
MACH	NE & N	o. CM	IC-4	0						318500			_		ADALIST : PET	15.00	mpn.
FLUSH	ING ME	DIUM	WA	ATER				. ORE	NTATIC					_ ,	GROUND-LEVEL		mPD
Drilling Progress	Casing depth/size	Water level/ time/ date	Water Recovery Z	Total core Recovery %	Solid core Recovery %	R. Q. D.	Fracture	Tests	Samples	Reduced Level	10.00 (a)	Legend	Grode	Zone	, , , .	Description	
	PX				· ·			(2,3 12,2,2,3) N=9	10		10.45				·		
- 11 - 11 - 11				100				8, 10, 14 22 bls	11		11.00						
12		 - -						(2,2 4,3,3,4) N=14	12		12.00 - 12.45	\bowtie			'.		·
13 13		,		/a9/	 			7, 11, 13 31 bis	13		13.00 13.45	\bowtie					
20/5/94								(3,3 2,3,34) N=12	14		14.00 14.45	\bowtie					
. 15 - 15				199				10, 5, 10 28 bis	15		15.00 15.45				(See s	sheet 1 of 5)	
16	,							(5,6 (6,5,5,8) N=24	16		- 16.00 - 16.45						
- 17 - - - -				100				6, 9, 11 26 bis			17.00 E 17.45	$\otimes\!\!\!\otimes\!\!\!\otimes$					·
18								(4,4 3,3,3,5) N=14	18	3	- 18.00 - 18.45	\bowtie	N X X X X X				
19				108				7. 8, 8 23 bis		9	- 19.0X - 19.45	***	XXXXXXX				
20	РХ	<u></u>			1		1_	<u> </u>		-14,92	2 F 20.0		<u></u>		<u> </u>		
‡ LA ■ Si	MALL DIS URGE DIS PT LINER 76 UNDIS	TURBED SAMPLE	SAMP	ie j	WATER S PIEZOME STANDPI	ter i Pe	NP ···	,·	DATE		<u>AO HSL</u> /5/94	PE RE	MARI	(S	·		
i i o	100 UNDI	STURBED	SAM	PLE T	STANDA! PERMEA!			ATION TEST		KEO	M. D.	_					,
_	Azier sa Iston sa	-	(6mm)	; <u> </u>				AR TEST	DATE		6/94						·

	E	34	CH	Y	<u>.</u>	ACHY :	SOLE	TANC	HE GROL		ORILL	HOL	E REC		RD	W. O. NO. 14 DRILLHOLE NO. LAR/503/D063
	30	LE.	AM	jH,		OIL & FO	KINDA	CHOIT	SPECIALIS		CONTR	ACT	530E		_	SHEET 3 of 5 DATE from 19/5/94 to 23/5/94
C	LEN	1 N	i ezan	RAN	SIT RA	LWAY	COR	POR	АПОМ						,	
P	ROJE	ः ।	ANTAU	AN	O AIRP	ort r	AILW	ΆΥ	- GROUN	ID INVE	ESTIGA	πον	i			ROCK CORESIT T2-101
Ŀ	OCAT	CATION . KOWLOON STATION AND WESTERN ELEVATED ROAD														HOLE DIA 0.00m-6.00m SX
М	EIK	AD F	ROTARY	, 					ÇO.	VIIDRO-	ATES 834578	3.05				5.00m-30.00m PX
М	ACH	NE & N	lo. Civ	1C-4	Ю						818500					GROUND-LEVEL +5,08 mPD
F	LUSH	NG ME	DIUM		ATER	·		,	ORI	NTATK	N VE	RTICAL				GIOGEO-LEVEL TO,OO MIPD
الحرا	Progress	Casing depth/size	Water level/ time/ date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R. Q. D.	Frocture	Tests	Samples	Reduced	45 (E) 20.00	Legend	Grade	Zone	Description
		PX							(3,3 3,4,5,6)	20		20.45	\bowtie			
Ē									`N=18	,		-	⋘			
E	ži į				109				6, 6, 9	21		21,00				<u>.</u> .
E						1			21bis			21.45				
Ę	22		ļ.		ļ				. auti		<u> </u>	22.00				
:	20/5/94								(45 65,6,6) N=23	22	1	E - 22.45	₩			
Ē									N=23			Ē	\ggg			
Ė,	23	•			109	1			11, 18, 24	23		<u> 23.00</u>				(See sheet 1 of 5)
Ė					<u> </u>	1			53 bis			23.45				
Ė	24								14.5	_ ;		24.00	\bowtie			
Ē									(4,7 7,7,5,6)	24		24.45	\ggg			
Ė									`N=25							
È,	25				100				9, 13, 21			25.00				
Ė					<u> </u>	1			43 bis	25		25.45				·
Ė	26										<u>-20.92</u>	E F 26.00	\bowtie			
التصييبين	21/5/94								(3,3 3,2,2,3)	26		26,45				
Ė	21/						1		`N=10			E	ւկրկեր Այրկեր			Stiff, light grey, sandy slity CLAY with some gravel.
Ė	27				100	1			2, 2, 3	27		27.00	tilit.			(ALLUVIUM)
Ė					<u> </u>	1			7 b/s		'	27,45				
Ė	28			١.					 	<u> </u>	-22.92	F F 28.00				· · · · · · · · · · · · · · · · · · ·
E						1			(3,2 3,5,4,5)	28		28,45	Hiji			
E	i			.					N=17			-	ististi Ettisti			,
E	29					1			3.4.5			29.00				(See sheet 4 of 5)
Ē					1200	4	}		12 bis	2 25		29.45				
:	30	PX									-24.92	F 30.00				
Г	SM.	ALL DIS	TURBED :		4	WATER S				LOGGE		O HSU	RE	ARK	(\$	
	_		Turbed :	SAMPL	_	PIEZOMET STANDPIF		1b		DATE		/5/94	-			
	∄ U7⁄	SIONU 8	TURBED		LE]			NETR	ation test	·			-		•	
	MA B	ZIER SA	STURBED MPLE (7		. 1	PERMEAB				CHECK		M. D. 5 /04	-]			
	i Pis	TON SA	MPLE		Ø I	พ-รเกับ	VANE	SHE	NK 1EST	DAIL	2/0	2/3T				

PISTON SAMPLE

S 0	3A(LET	CH ANC	Y HE	1}				HE GROUP SPECIALISTS	* •		HOLE		OOF	RD	W. O. NO. 14 PRILLHOLE NO. LAR/503/DQ63 SHEET 4 of 5 PATE from 19/5/04 + 23/5/94
		100 ==		/			.00.	701	1	ONTRA	ACI	530E			DATE from <u>19/5/94</u> to <u>23/5/94</u>
CLIENT		ASS TE				_		• • • • • • • • • • • • • • • • • • • •	T. 1615.07	CTIO 4 T	TON:				ROCK CORESIT T2-101
								- GROUNI		 -					
l				AHUN	AND V	VE ST	EKN	ELEVATE							HOLE DIA 0.00m-5.00m SX 6.00m-30.00m PX
METH	XD R	OTARY				_		CO-1	NIORO	TES 334578	3.06				OSOMI-BUILDIN FX
MACH	NE & N	o. CM	C-40)						818500					GROUND-LEVEL +5.08 mPD
FLUSH	ING ME		TER				ORIE	NTATK	N VEF	RTICAL				GROOFD-LEFEL TO.CO	
Drilling Progress	Casing depth/size	Water level/ time/ date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R. Q. D.	Fracture	Teats	Samples	Reduced	30.00 (m)	Legend	Grade	Zone	Description
31 32				199				(1,2 21,23 N=8 3, 3, 5 11 bls	30	· ,	31.00 - 31.45				Loose to medium dense, yellowish brown, very silty medium to coarse SAND with some gravels. (ALLUVIUM)
32 +6/9/17 33 34 34				/sos				(22 2332) N=10 N=10 (44 456.8) N=23	32		32.45 - 33.00 - 34.00 - 35.00		٧		Extremely weak, light pinkish grey spotted with white, completely decomposed medium to coarse grained GRANITE. (Medium dense, silty SAND with some gravel.) (C. D. G.)
36 37 37 38 39 40				100	165	925			2-101		35,63	+ + + + + + + + + + + + + + + + + + +	1		Strong to very strong, pinkish grey, spotted with green and pink, equigranular, slightly decomposed medium to coarse grained GRANITE. Joints are medium to widely spaced, rough and smooth planar, with limonite stained dip at: 10-20 deg, 35-45 deg & 65-75 deg. (S. D. G.)
	MALL DIS	TURBED :	SAMPL	E A	WATER S	AMPL	ـــــــــــــــــــــــــــــــــــــ	·	LOGGED TSAO HSU						
<u>i</u> s	ARGE DIS PT LINER 78 UNDIS	SAMPLE		Î	PIEZOME STANDPII STANDATE	PE		ATION TEST	DATE 26/5/94						
ں 🗓 ں	100 UNDI	STURBED	SAMF	, <u>+</u>	PERMEAE					KED	M. D.	_			
· · · · · ·	iazier sa Iston sa	•	6mm)					AR TEST	DATE	2/	6/94				

BACHY SOLETANCHE GROUP DRILLHOLE RECOR										RD	W. O. NO14 DRILLHOLE NOLAR/503/D063						
(2)	تلىل	IAN	UH		BOIL & F	OUNDA	ATIONS	SPECIALI	ars	CONTR	ACT	530E	-		SHEET5of5		
C)TEM	Π·	MASS	TRAN	SIT RA	II WAY	COR	POR	MOITA					_ - -		DATE from 19/5/94 to 23/5/94		
	ECT:	LANTAL	NA (D AIRF	ORT R	AILV	YAY	- GROL		VESTIGA	TION			·	ROCK COREBIT T2-101		
				TATION	AND	WES	TERN	I ELEVA	TED R	OAD	<u>.</u> .				HOLE DIA 0.00m-6.00m SX		
METHOD ROTARY CO-ORDINATES E 834578.06															6.00m-30.00m PX		
MACH	INE & N	lo. Ci	AC-4	10					N 818500.11						GROUND-LEVEL +5.08 mPD		
FLUSI	HING ME	EDIUM T	,	ATER	T ~~~			OF	PRIENTATION VERTICAL						GROUND-LEVEL +5.08 mPD		
Drilling Progress	Casing depth/size	Water level/ time/ date	Woter Recovery %	Total core Recovery %	Solid core	0 0	Fracture	Tests	Samples	Reduced	¥(E) 40.00	Legend	Grade	Zone	Description		
\$/3 4					77					1.	40.05	+	1				
41 23/5/94				769	100	169	1.7		T2-101		الاست	+ + ₊ + + ₊	\$:		(See sheet 4 of 5)		
			-		//	<u> </u>			+	-36.17	41.25	+ + +			End of investigation hale at 41,25 m.		
_42					,				ļ.		-1-1-1-						
				:							11. 11. 11. 11. 11. 11. 11. 11. 11. 11.						
43											منسيان						
_44				 							المدين	,					
46				 - -													
.45		`									المسالة						
.46				•								, i					
.47												. !		·			
}				į				,		·		į I		-			
_48					 •						1.1.1.1						
1									}				•				
49			1	Ì										- {			
			- {		,									}			
50]								ļ								
4		irbed sa Irbed sa			ater sa Ezomete				LOGGE	d <u>TSA</u>) HSU	REM	ARKS	;			
■ SPT	LINER S	AMPLE		រូ ភា	TANDPIPE	•			DATE	26/	5/94				•		
II uto	UNDIST	JRBEO SA TURBEO S	AMPL	F				ON TEST									
	ier sam On sami	PLE (76n PLE	nm)		FERMEABILITY TEST O IN-SITU VANE SHEAR TEST					DATE							