COPYRIGHT NOTICE

This geotechnical log and its associated data (the Document) is licensed by the Queensland Department of Transport and Main Roads under the <u>Creative Commons Attribution 4.0 Licence</u> (CC BY 4.0). When reusing the Document, in whole or in part, please attribute the Department and author as follows: "(c) State of Queensland (Department of Transport and Main Roads) 2020, licensed under the CC BY 4.0 Licence, prepared by Jacobs". This licence does not apply to the Queensland Government logo or trademarks.

LIMITATION OF LIABILITY

The CC BY 4.0 Licence contains a comprehensive Disclaimer of Warranties and Limitation of Liability. In addition, please note that this Document was prepared for Departmental use only. Reuse of the Document by anyone for any other purpose could result in error and/or loss. You should obtain professional advice before making decisions based on the contents of the Document.

When reproducing any part of this Document, you must also reproduce this limitation of liability notice in addition to the italicised attribution statement above.

Retrieved from the Queensland Geotechnical Database http://qgd.org.au/

This log has been contributed to the Queensland Geotechnical Database with the permission of Jacobs.

	BOREHOLE ENGINEERING LOG														
CLIENT	T : T	MR							POSITION : E: 10435, N: 152877 (56 South Ea	ast Tra	,				
PROJE	CT :	: GUS	BUS	S					SURFACE ELEVATION : 28.0 (AHD)		DATE DRILLED : 31/8/12 to 31/8/12				
JOB NO									DIP / AZIMUTH : 90°		LOGGED BY : NC				
LOCAT	ION			bank of	Bulimb	ba Cre	ek		CONTRACTOR : Geodrill		CHECKED BY : DWL				
PROOF			- 1	LING				z	MATERIAL			1			
PROGRE 9 DNISED &		DRILLING	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE	CONSISTENCY	STRUCTURE & Other Observations			
					- 28.0-	- 0.0	<u> </u>		SILT (ML): Black, low plasticity, trace rootlets.			0.00: - 3.50m ALLUVIUM			
						-	ĒĒ					3.50-7.00m			
						-						RESIDUAL			
					27.5-	0.5						7.00-TD XW ROCK			
						-		ML		M to W					
						-	ĒĒ								
				1.00m SPT	27.0-	-1.0									
				RW/450mm		-						Sample - 1.00m to 1.45m Grading:			
- AS CASING						-			(ML): With fine grained sand.	· +	vs	Gravel = 0%; Sand = 25%; Fines = 75%			
				1.45m		_						Atterberg Limits: LL = 44.2%; PL = 28.0%; PI = 16.2%;			
			İ	1.40	26.5-	-1.5						LS = 11.0%; MC = 73.8%			
						-									
						_	EE								
						-		ML		W					
					26.0-	-2.0	<u> </u>								
						_									
						-									
				0.50		-	ĒĒ								
			ŀ	2.50m U50	25.5-	-2.5	777		SILTY SAND (SM): Grey, fine to medium grained			-			
						Ę			sand.						
						-									
				2.95m		-									
					25.0-	-3.0		SM							
						-									
						-									
					24.5-				3.50m						
					27.0	- 3.5			SILTY SAND (SM): Grey, fine to coarse grained sand, sub-rounded.						
WB						-		SM		м	MD				
						Ľ									
				4.00m	24.0-	4.0			1.00m		$\lfloor -$				
				SPT 11, 16, 16 N=32		F			(SM): Grey brown and pink.						
						Ľ									
				4.45m		Ļ									
					23.5-	-4.5		SM			D				
						_									
						Ę									
						F									
			RILLIN		L 23.0-	<u> </u>	<u> </u>		SAMPLES & FIELD TESTS						
		Auger		RR Ro	ck Rolli		D Disi ES Env		Sample SPT Standard Penetration Test VL Ve	NSITY (\$ ry Loose	0	0 - 4 VS Very Soft < 12 kPa {0-2}			
AD/T	Aŭgei	Screw r Drill	ГC-bit	NO NO	Coring		ES EN EW En	Wat	r Sample W Water Sample ¹ L LOC	ose dium De		- 10 S Soft 12 - 25 {2-4}			
AD/V A WB V	Vashb			NMLC N					etrometer MOISTURE CONDITION	nse	30	30 - 50 St Stiff 50 - 100 {8-15}			
VE Ver	y Eas	sy F	F		N H Very	/ Hard	HV Han (P: Peal	d Var « Su F	Shear D = Dry M = Moist W = Wet CO Co	ry Dense mpact		i0 - 100 VSt Very Stiff 100 - 200 {15-30 -50/150mm H Hard > 200 kPa {>30}			
E Eas			H I DWAT	ard ER SYMB	OLS		N SPT HW SP	blows F pen	per 300mm ´ tration by hammer weight						
7	L = \	Water	level	(static)			RW SPT	l pen	tration by rod weight						
E = Water level (during drilling)										Fi		B10312.540 BH-SKM-22 Page 1 OF			

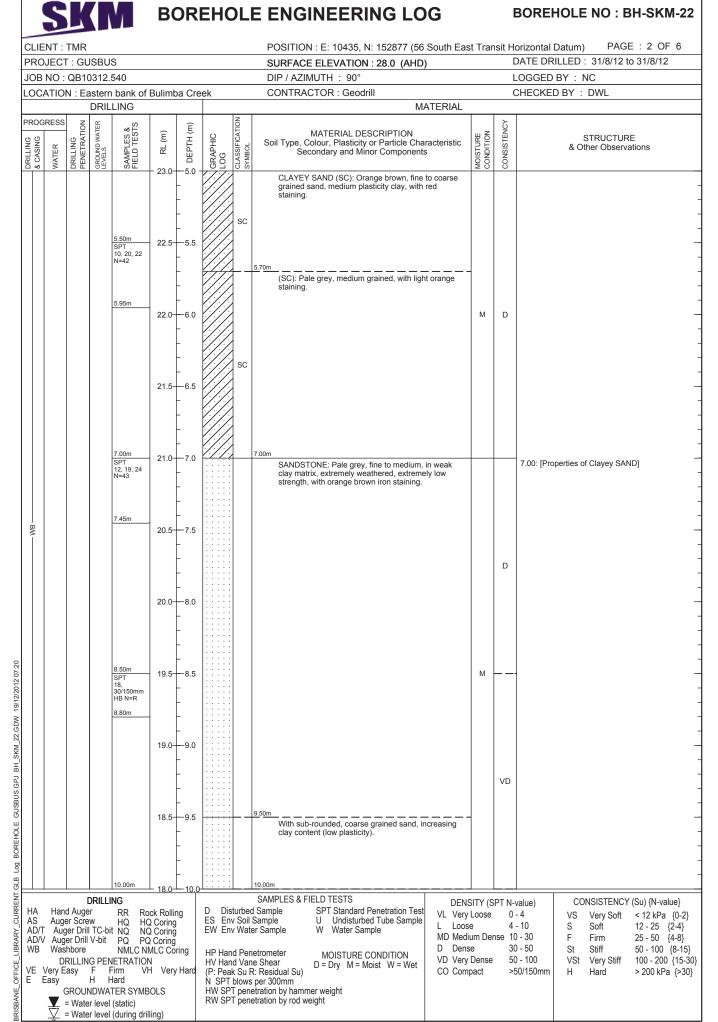
BOREHOLE ENGINEERING LOG

CKW

BRISBANE_OFFICE_LIBRARY_CURRENT.GLB Log BOREHOLE GUSBUS.GPJ BH_SKM_22.GDW 19/12/2012 07:20

File: QB10312.540 BH-SKM-22 Page 1 OF 6

BOREHOLE NO : BH-SKM-22



C	17	L,V	7
			L

BOREHOLE ENGINEERING LOG

BOREHOLE NO : BH-SKM-22

	NT : JECT	: GU	ISBU	S					POSITION : E: 10435, N: 152877 (56 Sou SURFACE ELEVATION : 28.0 (AHD)				orizontal Datum) PAGE : 3 OF 6 DATE DRILLED : 31/8/12 to 31/8/12
		QB10							DIP / AZIMUTH : 90°				LOGGED BY : NC
.OCA	TIO			bank of	Bulimb	oa Cre	ek		CONTRACTOR : Geodrill			(CHECKED BY : DWL
ROGE & CASING	WATER SS	DRILLING PENETRATION	GROUND WATER COUND WATER	SAMPLES & SAMPLE	B RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characte Secondary and Minor Components		MOISTURE CONDITION	CONSISTENCY	STRUCTURE & Other Observations
				SPT 13, 20, 19 N=39	- 18.0-				SANDSTONE: Grey, fine to coarse grained , wi fine sized gravel, extremely weathered, extreme low strength, with pink and red staining.	/ith			Sample - 10.00m to 10.45m Grading: Gravel = 15%; Sand = 65%; Fines = 20% Atterberg Limits:
				10.45m	17.5-	- 10.5 - -						_	LL = 28.4%; PL = 15.2%; PI = 13.2%; LS = 6.6%; MC = 15.0%
					17.0-	- - 11.0 - -			11.10m Orange brown, coarse grained sand , with coars grained sand fine sized gravel.	- <u></u> rse	М	D	
				11.50m SPT 4, 9, 15 N=24	16.5-	- 11.5 - -			11.50m CLAYSTONE: Grey, extremely weathered, low strength.	/	м	VSt	11.50: [Properties of CLAY, low plasticity]
				11.95m	16.0-	- - 12.0 -			11.80m SANDSTONE: Grey, fine grained sand in clay r extremely weathered, extremely low strength.	matrix,	м	D	11.80: [Properties of Clayey SAND]
WB					15.5-	- - 12.5 -			12.50m CLAYSTONE: Grey to dark grey, with fine grain sand, extremely weathered, low strength.	ned			12.50: [Properties of CLAY]
				13.00m SPT 4, 7, 13 N=20	15.0-	- - 13.0 -							
				13.45m	14.5-	- 					м	VSt	
					14.0-	- 14.0 - -			14.00m With coarse grained sandstone bands throughc	out.			
				14.50m SPT 5, 10, 16 N=26	13.5-	- 14.5 - -			Blue grey, with scattered bands of coarse grain sub-rounded sand, predominantly translucent q very low strength, with brown staining.				
				14.95m	10.0	-			15.00m				
	Auge Aug Auge Wash DF ery Ea asy	l Auge er Scre er Drill ar Drill abore RILLIN asy	w TC-bi V-bit G PEN F I H H	RR RO HQ HQ VQ PQ NMLC NM ETRATION Firm VH Hard	l I Very	ring	ES En EW En HP Har HV Har (P: Pea N SPT	v Soil : v Wate d Pen d Van k Su F blows	SAMPLES & FIELD TESTS Sample SPT Standard Penetration Test Jample U Undisturbed Tube Sample r Sample W Water Sample etrometer MOISTURE CONDITION Shear D = Dry M = Moist W = Wet Residual Su) per 300mm	ND Mediur	oose m Der Iense	0 4 10 30 50	- 4 VS Very Soft < 12 kPa {0- - 10 S Soft 12 - 25 {2-4
	T =	Wate	r level	TER SYMB (static) (during drill					tration by hammer weight tration by rod weight				

File: QB10312.540 BH-SKM-22 Page 3 OF 6

S	K	

BOREHOLE ENGINEERING LOG

BOREHOLE NO : BH-SKM-22

	MD									
CLIENT : T PROJECT		s			POSITION : E: 10435, N: 152877 (56 South East Transit Horizontal Datum) PAGE : 4 O SURFACE ELEVATION : 28.0 (AHD) DATE DRILLED : 31/8/12 to 31/8/12					
JOB NO : 0					DIP / AZIMUTH : 90° LOGGED BY : NC					
LOCATION			Bulimba	a Creek	CONTRACTOR : Geodrill CHECKED BY : DWL					
	DRIL	LING			MATERIAL					
& CASING & CASING WATER	DRILLING PENETRATION GROUND WATER LEVELS	SAMPLES & FIELD TESTS	(m) RF - 13.0-	0.01 COG LOG	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components					
			- 13.0		CLAYSTONE: Blue grey, with scattered bands of coarse grained, sub-rounded sand, predominantly translucent quartz, extremely weathered, very low strength, with brown staining.					
			- 12.5 - -	-15.5	VSt					
		16.00m SPT 10, 17, 24 N=41	- 12.0 -	-16.0	16.00m					
		16.45m	- - 11.5 -	-16.5						
			- 11.0	-17.0						
WB		17.50m SPT 8, 13, 21 N=34		-17.5	м					
		17.95m		-18.0	н					
			9.5	-18.5						
		19.00m SPT 7, 15, 19 N=34	- 9.0 -	-19.0	Stained pink red.					
		19.45m	- 8.5 -	-19.5	19.40m Becoming dark grey and black.					
HA Hand	DRILLI		k Rolling	-20.0	SAMPLES & FIELD TESTS DENSITY (SPT N-value) CONSISTENCY (Su) {N-vi urbed Sample SPT Standard Penetration Test VI VeryLopse 0 - 4					
AS Auger AD/T Auge AD/V Auger WB Washl DRI /E Very Eas E Easy	r Screw er Drill TC-bit r Drill V-bit bore ILLING PEN sy F F H H	HQ HQ NQ NQ PQ PQ NMLC NM IETRATION Firm VH fard	Coring Coring Coring MLC Corin V Very F	^{ng} HP Han HV Han Hard (P: Peal N SPT	Soil SampleUUUndisturbed Tube SampleVEVery Losse0 - 4VSVery Suit< 12 kraWater SampleWWater SampleLLoose4 - 10SSoft12 - 25LMDMedium Dense10 - 30FF irrm25 - 50DDDense30 - 50StStiff50 - 100VD Very Dense50 - 100VStVery Stiff100 - 20CO Compact>50/150mmHHard> 200 kF	{2-4} {4-8} {8-15 0 {15-3				
=	ROUNDWA Water level Water level	(static)		HW SP	penetration by hammer weight penetration by rod weight File: OB10312 540 BH-SKM 22 Page					

File: QB10312.540 BH-SKM-22 Page 4 OF 6

SKM BOF							EHC)L	E ENGINEERING LOG		BOREHOLE NO : BH-SKM-22	
CLIE	NT :	TMR							POSITION : E: 10435, N: 152877 (56 South E	nsit H	lorizontal Datum) PAGE: 5 OF 6	
-		: GL							SURFACE ELEVATION : 28.0 (AHD)			DATE DRILLED: 31/8/12 to 31/8/12
-					Dulimb	- Cro			DIP / AZIMUTH : 90° CONTRACTOR : Geodrill			LOGGED BY : NC CHECKED BY : DWL
LUC	ATIO			bank of LING	Bulimb	a Cre	ек		MATERIAL			
PRILLING & CASING	WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE	CONSISTENCY	STRUCTURE & Other Observations
				20.50m	8.0-				CLAYSTONE: Dark grey and black, extremely weathered, low strength. 20.50m			20.00: [Properties of CLAY]
				SPT 4, 11, 15 N=26 20.95m	7.5-	—20.5 - - -			Grey, trace black carbonaceous bands, with orange brown staining of defects.			
					7.0- 6.5-	21.0 - - - - - - - - -				М	н	
- MB				22.00m SPT 30/100mm HB N=R 22.10m	6.0- 5.5- 5.0-	22.0 - - 			22.00m SANDSTONE: Pale grey, fine grained sand in clay matrix, extremely weathered, extremely low strength.	M	VD	22.00: [Properties of Clayey SAND]
				23.50m SPT 11, 14, 22 N=36 23.95m	4.5-	- - - - - - - - - - - - - - - - - - -			23.50m CLAYSTONE: Pale grey, with fine grained sand, extremeley weathered, very low strength, with dark brown iron staining.	м	н	23.50: [Properties of CLAY with sand]
AD/T Aŭger Drill TC-bit NQ NQ Coring AD/V Auger Drill V-bit PQ PQ Coring WB Washbore NMLC NMLC Coring DRILLING PENETRATION VE Very Easy F Firm VH Very Hard E Easy H Hard							ES Env EW Env HP Han HV Han (P: Peal N SPT HW SP	v Soil v Wat d Per d Var k Su F blows T pen	I Sample SPT Standard Penetration Test Sample U Undisturbed Tube Sample L Lo Pr Sample W Water Sample MD Me etrometer MOISTURE CONDITION	dium De nse ry Dens mpact	e 0 4 ense 1 3 e 5 >	- 4 VS Very Soft < 12 kPa {0-2} - 10 S Soft 12 - 25 {2-4}

BRISBANE_OFFICE_LIBRARY_CURRENT.GLB Log BOREHOLE GUSBUS.GPJ BH_SKM_22.GDW 19/12/2012 07:20

File: QB10312.540 BH-SKM-22 Page 5 OF 6

C	77		
		\bot	

BOREHOLE ENGINEERING LOG

BOREHOLE NO : BH-SKM-22

			TMR							POSITION : E: 10435, N: 152877 (56 Sout	th East Tra			
- +-			T : GL					SURFACE ELEVATION : 28.0 (AHD)				DATE DRILLED : 31/8/12 to 31/8/12		
			QB1							DIP / AZIMUTH : 90°				
	.007	4110	N : Ea		bank of LING	Bulim	ba Cre	ек		CONTRACTOR : Geodrill MATER	RIAI		CHECKED BY : DWL	
P	ROG	RESS	z						z	WATER		>		
- H	& CASING	WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Character Secondary and Minor Components		CONSISTENCY	STRUCTURE & Other Observations	
					SPT 19, 30/100mm	3.0-	-25.0			SANDSTONE: Grey to dark grey, fine to mediun clay matrix, extremely weathered, very low stren	m, in			
					HB N=R 25.25m		F				igui.		-	
						1	-						-	
							-						-	
						2.5-	25.5						_	
							L							
	WB -						-				м	VD	-	
							-						-	
						2.0-	-26.0						-	
							Ľ							
							L						-	
							F						-	
					26.50m SPT 30/100mm	1.5-	-26.5		+-	26.50m 26.60m Grey to pale grey, with coarse grained quartz sa	 and.			
	-				HB N=R 26.60m	1	Ľ		1	20.0011			26.60: BH Terminated BH sealed with grout	
							F							
							F						-	
						1.0-	-27.0						-	
							[
							-						-	
							-						-	
						0.5-	-27.5						-	
							Ę							
							-						-	
							-						-	
						0.0-	28.0						_	
							-						-	
							-						-	
7:20							-						-	
012 0						-0.5-	-28.5 -						_	
9/12/2							-						-	
DW 1							F						-	
1_22.G						_10							-	
SKN						-1.0-	- 23.0							
PJ BF							F						-	
US.GI							F						-	
GUSB						-1.5-								
10LE						-1.5	- 23.3						-	
OREF							F						-	
Log B							F						-	
BRISBANE_OFFICE_LIBRARY_CURRENT.GLB_L0g_BOREHOLE_GUSBUS.GPJ_BH_SKM_22.GDW_19/12/2012.07/20														
RENT.	114	11-		DRILL						SAMPLES & FIELD TESTS	DENSITY (
CUR	HA AS	Aug	d Auge er Scre	W	HQ HO	ock Rolli Q Coring	1 r	ES En	v Soil	Sample U Undisturbed Lube Sample	L Very Loose Loose		- 4 VS Very Soft < 12 kPa {0-2} - 10 S Soft 12 - 25 {2-4}	
RARY	AD/T AD/V	Aug	ger Dril Ier Drill		PQ PC	Q Coring Q Coring	j	EVV EN	v wat	er Sample w water Sample MI	D Medium De	ense 1	0 - 30 F Firm 25 - 50 {4-8}	
E_LIB.	WB		hbore RILLIN	G PFN	NMLC N	MLC Co				etrometer MOISTURE CONDITION VE	Dense D Very Dense		0 - 50 St Stiff 50 - 100 {8-15} 0 - 100 VSt Very Stiff 100 - 200 {15-30}	
DFFIC	VE \ E E	/ery E	asy	FΙ		H Very	y Hard	(P: Pea	ik Su l		O Compact		50/150mm H Hard > 200 kPa {>30}	
ANE_(_ (GROUI	NDWA	TER SYME	BOLS		HW SP	'T pen	etration by hammer weight etration by rod weight				
BRISB,	$\mathbf{\nabla}_{\mathbf{F}} = Water level (static)$ $\mathbf{\nabla}_{\mathbf{F}} = Water level (during drilling)$							1.W 3P	i pen					

File: QB10312.540 BH-SKM-22 Page 6 OF 6