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QLD_DMR_LIB_01A GLB_L0g_A_ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNSVILLE RING ROAD 4 KALYNDA PARADE. GPJ <<DrawningFile>> Datgel CPT Tool gint Add-in 17/10/2013 11:45

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No ___BH108___

SHEET __1__ of __5__

REFERENCE No ___11467___

PROJE	СТ	<u>_Tov</u>	w <u>n</u> :	s <u>ville</u> R	ing F	Road Section 4								
LOCAT	ION	<u>Kal</u>	<u>lyn</u>	d <u>a Para</u>	ade (<u>Overpass</u>					COOR	DINATES 46775	8.6 E; 7866518.3	<u> </u>
PROJE	CT No	<u>_FG</u>	<u>60</u>	<u> 20</u>		SURFACE R.L. <u>14.17m</u>	PLUNGE			DATE STARTED	9/4/13	GRID DATUM	GDA 94	
JOB No	1	<u> 268</u>	3/ <u>1</u>	<u>0M/5</u>		HEIGHT DATUM <u>AHD</u>	BEARING			DATE COMPLETED	12/4/13	DRILLER	<u>Cairns</u> <u>Drilling</u>	
PTH (m)	R.L. (m)	AUGER CASING WASH BORING	CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	l	LITHOLOGY	USC	INTACT DEFECT STRENGTH SPACING (mm)	GRAPHIC LOG	ADDITIONAL AND TEST RESI		SAMPLES TESTS
-			Ť			Sandy SILT(TOPSOIL)		<u>7/1/v.</u>						-
- - - - - - - - 1 -	13.87				A	Brown, moist, firm. Low plasticity, some tree roots Sandy SILT Brown, moist, very stiff. Low plasticity. Zones of silty s		i	(ML)				2,7,13 N=20	SPT -
- - - - - - 2	12.67				В	Silty SAND Brown, moist, medium dense t Fine to medium grained sand.	o dense.						3,4,9 N=13	SPT -
- - - - - - - - 3					С	Becoming medium to coarse g	rained.			+			12,16,23 N=39	SPT -
- - - - - - - - - -					D	Becoming very dense.							20,30/110 N>50	SPT :
- - - - - - - - - - - -					E				(SM)	± ± ±			29,30/70 N>50	SPT -
					F	6.7-7.4m: Silty Gravelly Sand It dense with sub-rounded to sub-	oed. Very						30/120 N>50	SPT - - - - - - - - - - -
					G	gravel.	. 0						15,19,26 N=45	SPT -
- - - - - - - - - - - - - - - - - - -	5.17				Н	Sandy SILT Pale grey to brown, moist, hard Low plasticity silt, fine grained	d. sand.		(ML)				11,17,25 N=42	SPT -
	/ARKS	 3											LOGGED BY	
													JA	



QLD_DMR_LIB_01A GLB_L0g_A_ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNSVILLE RING ROAD 4 KALYNDA PARADE. GPJ <<DrawningFile>> Datgel CPT Tool gint Add-in 17/10/2013 11:45

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No ____BH108___

SHEET __2__ of __5__

REFERENCE No ____11467___

PROJECT LOCATION					Road Section 4						DORDINATES 467758.6 E; 7866518.3 N
					SURFACE R.L. 14.17m PLUNGE						
JOB No					HEIGHT DATUM <u>AHD</u> BEARING _						
(E) R.L. (m)		RILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION		П	INTACT STRENGTH	DEFECT	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS WARRIER SAWALES
				J	Sandy SILT (Cont'd)						16,30/30 N>50 SPT -
				L	Sand content increasing and becoming silty sand in parts. Colour change to brown - grey to slightly orange.						12,22,30 N>50 SPT =
				М		(M	IL)				9,14,20 N=34
				N							10,17,26 N=43
				P	Silt content decreasing.						6,12,20 N=32
-5. - - - - 20	33			Q	Silty SAND (See over)	(SI	<u></u>				10,15,19 N=34 SPT
REMAR	RKS _	 		 		 _	_				LOGGED BY JA



QLD_DMR_LIB_01A GLB L0g A_ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNSVILLE RING ROAD 4 KALYNDA PARADE. GPJ <<DrawningFile>> Datgel CPT Tool gint Add-in 17/10/2013 11:46

ENGINEERINGBOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No	BH108
SHEET	_3_ of _5_
REFERENCE No	11467

PRO	IECT	_T	<u>wn</u>	<u>sville R</u>	ing F	Road Section 4		_					
LOCA	TION					<u>Overpass</u>						COORDINATES 467758.6 E; 7866518.3 N	_
PRO	ECT No	<u>_F</u> 9	<u>360</u>	20		SURFACE R.L. <u>14</u> .17m PLUNGE _		_		DATE STARTED	9/4/	4/13 GRID DATUM GDA 94	_
JOB I						HEIGHT DATUM <u>AHD</u> BEARING							_
DEPTH (m)	R.L. (m)	AÚGER CASING	WASH BORING CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	ПТНОГОСУ	SC	WEATHERING	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND AND TEST RESULTS RESULTS	
20	-5.83 -9.73			NEC /6	R	Silty SAND (Cont'd) Pale brown, moist, dense. Medium to coarse grained sand. Becoming fine grained. Becoming medium to coarse grained with some fine gravel.			SM)			10,15,20 N=35 SPT 11,17,17 N=34 SPT	
- 24 - 24 	<u>-9.73</u>				Т	Sandy SILT Pale brown, moist, hard. Low plasticiy silt, fine grained.						12,17,22 N=39 SPT	
					U			(1	ML)			14,22,30 N>50 SPT	
- 27 28 					V	27.15-27.45m: Silty Sand layer. Very dense.			•			13,26,30/100 N>50 SPT	
- - - - - 29 - - - - - - - - - - - - - -					W	Becoming very stiff.						9,12,16 N=28 SPT	
R	EMARK	s_						-				LOGGED BY	1
		_						-				JA	



QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG WLITHOLOGY TOWNSVILLE RING ROAD 4 KALYNDA PARADE.GPJ <<DrawngFile>> Datgel CPT Tool giNt Add-In 17/10/2013 11:46

ENGINEERINGBOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No	BH108
SHEET	_4_ of _5_
REFERENCE No	11467

PRO	IECT	_Tov	<u>/nsvi</u>	ll <u>e</u> Ri	ng F	Road Section 4							
LOCA	ATION					Overpass					CC	OORDINATES 467758.6 E; 7866518.3	3 N
PRO	JECT No	_F <u>G</u> 6	<u>020</u>			SURFACE R.L 14.17m PLUNGE _		_		DATE STARTED _	9/ <u>4/</u> 1	GRID DATUM GDA 94	
JOB 1	No	268	/ <u>10M</u>	1/5		HEIGHT DATUMAHD BEARING			_	DATE COMPLETED _	12/4/	13 DRILLER Cairns Drilling	L
DEPTH (m)	R.L. (m)	R IG I BORING	RI (QD)%	9	MATERIAL DESCRIPTION	LITHOLOGY		HERING	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA	SAMPLES TESTS
핌	-15.83			DRE	SAMPLE	DESCRIPTION	원	OSC	EAT	2000 2000 2000 2000	RAP	TEST RESULTS	SAMPLI
30	-15.83	40≥0	RE	:C %		Sandy SILT (Cont'd)	17	<u> </u>	>		9		S F
- - - - - - - - - - - -					X	Becoming hard.						15,23,30/130 N>50	SPT -
-32					Y							13,19,29 N=48	SPT -
-33 					Z	Sand content increasing.		(M	1L)			8,14,22 N=36	SPT -
- - - - - - - - - - - - - - - - - - -	-21.83				AA	Grading into Silty Sand.						— Rock Roller used from 34.5m to 40.55m 15,27,30/120 N>50	SPT -
- 36	-23.33				AB	Silty SAND Pale brown to grey, moist, very dense. Medium to coarse grained.		(S	M)			20,28,30/140 N>50	SPT
- 38 - 38 						GRANITE Medium to coarse grained, intrusive, igneous rock of felsic composition. XW: Generally exhibits engineering properties of a brown, moist, very dense, fine to medium grained Silty Sand. Relict rock defects.	+ + + + + + + + + + + + + + + + + + + +	X	w			18,30/70 N>50	SPT -
- - - - - - - - - - - - - - - - - - -	-24.83					DOLERITE Fine grained intrusive igneous rock of mafic composition XW: Generally exhibits the engineering properties of dark grey, moist, very dense, fine to medium grained Silty Sand.	+>>>>>>					30/60 N>50	SPT
R	EMARK:	s						_	_			LOGGED BY	
								_	_			. JA	



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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No ___BH108___

SHEET __5__ of __5__

REFERENCE No ___11467___

	JECT				Road Section 4							467769 6 5, 7066640	
					Overpass					— – TADTED		OORDINATES <u>467758.6 E; 7866518.</u>	<u> </u>
JOB					HEIGHT DATUM <u>AHD</u> BEARING _							DRILLER Cairns Drilling	 1
DEPTH (m)	R.L. (m)	R VG H BORING DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION		П	T	INTACT STRENGTH	DEFECT	GRAPHIC LOG	ADDITIONAL DATA	S
40	-25.83	CASSI COR COR	CORE REC %	SAM		<u>E</u>	USC	WEA	IIIIII 1¥±≊¬⊰⊒	- 20 - 60 - 200 - 200	GRA	TEST RESULTS	SAMPLE
- - - - -	-26.38		(0)		XW: (Cont'd) MW: Dark brown to grey, fine to medium	/ \	xw					30/50 N>50'	SPT
- - - 41 - - - - - -			100		grained, massive, medium to high strength. Defects: -Joint at 10°-20° (7-8/m) -Joint at 40°-60° (3-4/m) -Joint at 70°-80° (2/m)	+ + + + + + + + + + + + + + + + + + + +						□- HW Cly Zone Is(50) = 1.37MPa	0 -
- 42 - - - - - - -			(0)		Defects are generally closely spaced, planar, open or closed, rough, iron stained and clay infilled.	+ + + + + + + + + + + + + + + + + + + +	MW	v				Is(50) = 0.77MPa Is(50) = 0.17MPa	0 -
- -43 - - - -	-29.38		100			+					××××	UCS = 2.60 MPa Is(50) = 1.68MPa Is(50) = 0.96MPa	0 -
					Borehole terminated at 43.55m								
R	EMARK	S										LOGGED BY JA	
												-	

CORE PHOTO LOG

DEPARTMENT OF TRANSPORT & MAIN ROADS Geotechnical Branch



Project Name	Townsville Ring Road Section 4		
Project No	FG 6020	Date	12/04/13
Borehole No	BH 108	TMR H No	11467
Location	Kalynda Parade Overpass	Start Depth (m)	40.55
Detail	Pier 3 (Left)	Finish Depth (m)	43.55
Chainage		Submitted By	MS
			egg (
The second second		1 x 1 / 7 3	