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 as follows: "(c) State of Queensland (Department of Transport and Main Roads) 2020, licensed under the CC BY 4.0 Licence". 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/



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

ENGINEERINGBOREHOLE LOG

BOREHOLE No	BH106
SHEET	_1_ of _5_
REFERENCE No	11465

PRO	JECT	_To	<u>wn</u>	s <u>vi</u> lle R	ing F	Road Section 4						
LOCA	ATION	<u>_Ka</u>	lyn	<u>da Para</u>	ade (<u> </u>					С	OORDINATES 467742.0 E; 7866499.6 N
PRO	JECT No	_FG	<u>60</u>	20		SURFACE R.L. <u>14</u> .16m PLUNGE _				DATE STARTED	4/4/	13 GRID DATUM <u>GDA 94</u>
JOB I	No	<u>26</u>	<u>8/1</u>	<u>0M/5</u>		HEIGHT DATUM <u>AHD</u> BEARING _				DATE COMPLETED	9/4/	13 DRILLER <u>Cairns Drilling</u>
DEPTH (m)	R.L. (m)	AUGER CASING MASH RORING	CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	JSC	WEATHERING	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS RAWLES SAW TEST RESULTS
- 0	13.96			NLC //	0,	Silty SAND (TOPSOIL)	7/1/2.	_1			+	-
- - - - - - - - - 1 -						Dark brown, slightly moist, loose. IFine grained sand, some tree roots. Clayey SAND Brown, slightly moist, dense. Fine to medium grained sand.						4,15,24 N=39
- 2					В	Becoming very dense.						15,27,31 N>50
- - - - - - - 3 - -					С	Medium to coarse grained sand.		(Si	C)	± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ±		26,30/100 N>50 SPT
 - - - 4 - - -					D	Brown to orange. Trace gravel.						19,29,30/120 N>50 SPT
 - - - - - 5 - - - -	8.66				Е	Silty SAND		_				19,28,30/115 N>50
- 6 - 6 					F	Brown, moist, very dense. Fine grained sand.						30/130 N>50
- - - - - - 8 - - - - - - -					G	Becoming dense. Fine to medium grained sand.		(SI	M)			11,18,22 N=40 SPT
- -9 - - - - - - - - -					Н	Becoming pale brown, very dense with medium to coarse grained sand.						10,23,30/120 N>50 SPT
R	EMARK	s						_	_			_ LOGGED BY
		_						_	_			- VP/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 11:45

ENGINEERINGBOREHOLE LOG

BOREHOLE No	BH106
SHEET	_2_ of _5_
REFERENCE No	11465

PROJE	CT	<u>Tow</u>	<u>nsville</u> R	ing F	<u> </u>								
LOCAT	ION	<u>Kaly</u>	<u>nda Para</u>	ade (Overpass			_			COO	RDINATES 467742.0 E; 7866499.6	<u>N</u>
PROJE	CT No	<u>FG6</u>	020		SURFACE R.L. <u>14.16m</u> PLUNGE _				DATE STARTE	ED _	<u>4/4/13</u>	GRID DATUM <u>GDA 94</u>	
JOB No)	268/	<u>10M/5</u>		HEIGHT DATUM <u>AHD</u> BEARING _			ı	DATE COMPLETE	ED _	9/4/13	DRILLER <u>Cairns Drilling</u>	
PTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD ()% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHEKING	INTACT DEFE STRENGTH SPACI (mm	ECT ING (n) 0005	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
-				J	Silty SAND (Cont'd) Becoming pale brown to bown and dense.							8,19,24 N=43	SPT -
11 -					Becoming very dense. Some iron staining.							14,28,30/100	-
- - - - - - 13				К								N>50	SPT -
				L								12,25,30/110 N>50	SPT -
- 15 				М			(SM	1)				9,18,30/150 N>50	SPT -
- - - - - - - - - - - - - - - - - - -				N	Becoming dense with medium to coarse grained sand.							10,19,29 N=48	SPT -
18 19				Р	Fine to medium grained sand.							8,15,26 N=41	SPT -
				Q	Some medium to coarse grained sand layers sizing up to 100m.				+			7,16,28 N=44	SPT -
REM	MARKS			 		 		 				LOGGED BY VP/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 11:45

ENGINEERINGBOREHOLE LOG

BOREHOLE No	BH106
SHEET	_3_ of _5_
REFERENCE No	11465

PRO	IECT	Townsville Ring Road Section 4										
LOCA	TION					<u>Overpass</u>					C	OORDINATES 467742.0 E; 7866499.6 N
PRO.	IECT No	_ <u>FG</u>	<u>60</u>	20		SURFACE R.L. 14.16m PLUNGE				DATE STARTED	<u>4/4/</u> 1	3 GRID DATUM <u>GDA 9</u> 4
JOB 1						HEIGHT DATUM <u>AHD</u> BEARING						
DEPTH (m)	R.L. (m)	VÜGER SASING WASH BORING	SORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND SAMPLES TEST RESULTS
20	-5.84	1		REC %	0)	Silty SAND (Cont'd)			>	 	0	W F
- 21					R	Becoming very dense. Fine to medium grained sand.						13,21,30/135 N>50 SPT =
- 23					S	Becoming medium dense to dense, medium to coarse grained. Occasional minor interbeds of sandy clay.		(SN	Л)			11,14,14 N=28 SPT
- 24 - 24 	-11.04				Т							10,15,16 N=31
- - - - - - - - - - - - - - - - - - -					U	Sandy SILT Pink brown, grey, moist, hard. Low to medium plasticity, fine to medium grained sand, trace fine gravel sizing up to 10 mm and sub-angular.						13,18,25 N=43 SPT
- - - - - - - - - - - - - - - - - - -					V			(ML	_)			16,27,30/120 N>50 SPT =
- 29					W							19,30/115 N>50 SPT =
R	EMARK	s 							 		·	LOGGED BY VP/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 11:45

ENGINEERINGBOREHOLE LOG

BOREHOLE No	BH106
SHEET	_4_ of _5_
REFERENCE No	11465

PRO	IECT	_T	<u>own</u>	s <u>ville R</u>	ing F	Road Section 4							
LOCA	ATION	_K	alyn	<u>ida Para</u>	ade (<u>Overpass</u>					CO	ORDINATES <u>467742.0 E; 7866499.6</u>	<u> </u>
PRO	IECT No	<u>_F</u>	<u> 360</u>	020		SURFACE R.L. <u>14.16m</u> PLUNGE				DATE STARTED _	<u>4/4/13</u>	GRID DATUM GDA 94	
JOB I	No	_26	<u>88/1</u>	<u> 10M/5</u>		HEIGHT DATUM <u>AHD</u> BEARING				DATE COMPLETED _	<u>9/4/</u> 13	DRILLER <u>Cairns Drilling</u>	
S DEPTH (m)	R.L. (m)		WASH BORING CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT DEFECT STRENGTH SPACING (mm) UNITED TO SPACING (mm) UNITED TO SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
-					Х	Sandy SILT (Cont'd)						16,30/120 N>50	SPT]
-31													- - - - - - - - - - - - - - - - - - -
-32					Y			(MI	L)			13,22,30/150 N>50	SPT -
‡					Z					‡		9,15,20 N=35	SPT
-34	-20.34											Rock Roller used from 34.5m to 40m	- - - - - - - - -
-35					AA	Silty SAND (Residual) Pale brown, grey, patches of orange-brown mottling, moist, dense. Fine grained sand.		(SN	M)			9,18,25 N=43	SPT
- 37 -	-22.84	_			АВ	Granite	+					15,27,30/115 N>50	SPT -
- 38					AC	Medium to coarse grained, intrusive, igneous rock of felsic composition. XW: Generally exhibits the engineering properties of a pale grey to orange/brown, moist, very dense, Gravelly Silty SAND. Medium to coarse grained sand.	_ +	×v	N			30/110 N>50	SPT
- - - 39 - - - - - - - - - - - - - - - -	-25.84				AD		++++++					30/40 N>50	SPT
R	EMARK	s_										LOGGED BY	
		_										VP/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 __BH106__

SHEET __5_ of _5_

REFERENCE No __11465___

	JECT				Road Section 4			-					
					Overpass 44.46** PHINOS					— —		OORDINATES 467742.0 E; 7866499.6	<u> </u>
					SURFACE R.L. 14.16m PLUNGE _								
JOB	No	268/1	10101/5	- — -	HEIGHT DATUM <u>AHD</u> BEARING _			ı	DATE COM	PLETED _	9/ <u>4/</u> 1	3 DRILLER <u>Cairns</u> <u>Drilling</u>	L
DEPTH (m)	R.L. (m)	R VG H BORING DRILLING	RQD ()%	Ē	MATERIAL	-0GY	CNIGHT	HEKING:	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND	ES
실 40	-25.84	AUGE CASIN WASH CORE	CORE REC %	SAMPLE	DESCRIPTION	- ГІТНОГОСУ	USC	WEA	ZTZJZ	200 200 1 200 1 200	GRAPI	TEST RESULTS	SAMPLES
			(0) 100 (13)		MW: Brown to orange/brown, medium to coarse grained, massive, generally low to medium strength, some high strength zones. Defects: -Joint at 20° (6-7/m) -Joint at 40° (1-2/m) -Joint at 60°-70° (1-2/m) -HW clayey zones sizing up to 150mm. Defects are mainly closely spaced, planar or irregular, rough, open or tight, clean or thinnly clay infilled.	+ + + + + + + + + + + + + + + + + + + +	MW					J, Ir, R, O, Cly. Is(50) = 2.33MPa J, 60°, PI, T, SR, Cn. Is(50) = 0.40MPa HW Cly Zone J, 20°, PI, T, Clnf Is(50) = 0.21MPa Is(50) = 0.89MPa Is(50) = 0.14MPa Is(50) = 1.08MPa	0 -
- 42	-28.84		100			+						- HW Cly Zone	-
					Borehole terminated at 43m								
	EMARK	 S _					_					LOGGED BY	
ĸ												VP/JA	

CORE PHOTO LOG

DEPARTMENT OF TRANSPORT & MAIN ROADS Geotechnical Branch 35 Butterfield Street, HERSTON Qld 4006 Phone 07 3066 3336



Project Name Townsville Ring Road Section 4 Project No FG 6020 Date 09/04/13 Borehole No BH 106 TMR H No 11485 Location Kalynda Parade Overpass Start Depth (m) 40.00 Detail Pier 2 (Left) Finish Depth (m) 43.00 Chainage Remarks Submitted By MS 0 100 200 300 400 500 600 700 SCALE 1:5				
Borehole No BH 106				_
Location Kalynda Parade Overpass Start Depth (m) 40.00 Detail Pier 2 (Left) Finish Depth (m) 43.00 Chainage Remarks Submitted By MS 0 100 200 300 400 500 600 700				
Detail Pier 2 (Left) Finish Depth (m) 43.00 Chainage Remarks Submitted By MS MS MS MS MS MS MS M				
Chainage Remarks Submitted By MS				
0 100 200 300 400 500 600 700		Pier 2 (Left)		
0 100 200 300 400 500 600 700			Submitted By	MS
0 100 200 300 400 500 600 700	Remarks			
0 100 200 300 400 500 600 700				
0 100 200 300 400 500 600 700	1900 T		W (V)	40.7
0 100 200 300 400 500 600 700		THE PARTY OF THE P		100
0 100 200 300 400 500 600 700		3		
			124	211
		7 - {	THE RESERVE	Ho.
	0 400	000 000	400 500 000	700
SCALE 1:5	100	200 300	400 500 600	700
SCALE 1:5				
		SCALE	= 1:5	