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# ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH102**  
SHEET **1** of **5**  
REFERENCE No **11461**

PROJECT Townsville Ring Road Section 4  
LOCATION Kalynda Parade Overpass COORDINATES 467716.2 E; 7866465.9 N  
PROJECT No FG6020 SURFACE R.L. 14.79m PLUNGE \_\_\_\_\_ DATE STARTED 15/3/13 GRID DATUM GDA 94  
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 19/3/13 DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	14.79												
14.49						<b>Silty SAND (TOPSOIL)</b> Pale brown, moist, loose. Fine grained. Some tree roots.						LL=35% PI=19.4% LS=10.2% 4,9,11 N=20	SPT
					A	<b>Sandy CLAY</b> Pale brown, grey, moist, very stiff. Low plasticity. Trace gravel.	(CL)						
13.29					B	<b>Clayey SAND</b> Pale brown / pale grey, dry, very dense. Fine grained sand. Some gravel.	(SC)					20,30/75,FB N>50	SPT
12.29					C	<b>Sandy CLAY</b> Pale grey, brown, moist, hard. Low to medium plasticity. Some white medium gravel.						LL=34.4% PI=16.4% LS=9.4% 14,26,30/60 N>50	SPT
					D							30/150 N>50	SPT
					E	High content of silt.	(CL-CI)					26,30/90 N>50	SPT
					F							LL=35% PI=11.2% LS=7.8% 27,30/75 N>50	SPT
					G	Relatively high content of fine to medium grained sand.						21,30/115 N>50	SPT
6.79					H	<b>Sandy SILT</b> Pale grey, brown, moist, very stiff to hard. Low plasticity. Some clay. Trace fine gravel.	(ML)					5,8,10 N=18	SPT
10													

REMARKS \_\_\_\_\_

LOGGED BY  
VP

# ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH102  
SHEET 2 of 5  
REFERENCE No 11461

PROJECT Townsville Ring Road Section 4  
LOCATION Kalynda Parade Overpass COORDINATES 467716.2 E; 7866465.9 N  
PROJECT No FG6020 SURFACE R.L. 14.79m PLUNGE \_\_\_\_\_ DATE STARTED 15/3/13 GRID DATUM GDA 94  
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 19/3/13 DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	4.79								EH VH H M J VL EL	20 60 200 600 2000			
11					J	Sandy SILT (Cont'd)						LL=42% PI=16.2% LS=11% 9,17,27 N=44	SPT
12					K							4,11,17 N=28	SPT
13							(ML)						
14					L							LL=41.6% PI=21.6% LS=12.4% 11,20,30 N=50	SPT
15					M	High content of sand.						12,25,28 N>50	SPT
16	-0.71					Silty SAND Pale grey, brown, moist, medium dense. Fine to coarse grained. Low clay content.							
17					N		(SM)					9,11,13 N=24	SPT
18	-3.01				P	Clayey SAND Grey, brown, moist, very dense. Fine to coarse grained sand. Trace gravel.						15,24,30/130 N>50	SPT
19							(SC)						
20	-5.21				Q							16,28,30/140 N>50	SPT

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# ENGINEERING BOREHOLE LOG

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BOREHOLE No BH102  
SHEET 3 of 5  
REFERENCE No 11461

PROJECT Townsville Ring Road Section 4  
LOCATION Kalynda Parade Overpass COORDINATES 467716.2 E; 7866465.9 N  
PROJECT No FG6020 SURFACE R.L. 14.79m PLUNGE \_\_\_\_\_ DATE STARTED 15/3/13 GRID DATUM GDA 94  
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Borehole Log														SAMPLES	TESTS
DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS		
20	-5.21														
21					R	<b>Silty SAND</b> Pale grey, pale brown, moist, dense. Fine to medium grained sand. Some clay.							10,14,16 N=30	SPT	
22															
23				S											
24					T	Becoming fine to coarse grained.							12,19,23 N=42	SPT	
25	-10.31														
26					U	<b>Silty CLAY</b> Pale greyish brown to pale brownish grey, moist, hard. Medium plasticity.							MC = 18% LL=42.8% PI=24.8% LS=13.6% 14,26,30/120 N>50	SPT	
27				V	Some fine to medium grained sand.										
28															
29					W								10,22,30 N>50	SPT	
30															

REMARKS \_\_\_\_\_

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BOREHOLE No BH102  
SHEET 4 of 5  
REFERENCE No 11461

PROJECT Townsville Ring Road Section 4  
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DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
30	-15.21													
31					X	<b>Silty CLAY (Cont'd)</b> Trace to minor sand.							12,15,24 N=39	SPT
32					Y	Some orange mottling.							LL=39% PI=19.2% LS=11.4% 17,30/120 N>50	SPT
33					Z	Some dark grey mottling.							18,30/150,30/100 N>50	SPT
34														
35					AA	Becoming pale yellow / grey							MC = 22.2% LL=36% PI=17.2% LS=8.8% 8,15,20 N=35	SPT
36					AB								13,19,30/110 N>50	SPT
37						<b>GRANITE</b> Medium to coarse grained, intrusive igneous rock of felsic composition. <b>XW:</b> Generally exhibits engineering properties of a pale grey, yellow, moist, very dense Clayey Silt.								
38					AC	<b>MW:</b> Pale red, pink, medium to coarse grained, massive, medium to high strength. Defects: - Joint at 25° (2/m) - Joint at 40° (2/m) - Joint at subvertical (2/m)  Defects are generally medium to widely spaced, planar or irregular, tight or open, rough and weathered.							10/0 N>50	SPT
39													Is(50) = 0.36MPa UCS = 2.33 MPa  Is(50) = 0.26MPa Is(50) = 2.22MPa Is(50) = 0.42MPa	o o o o
40						<b>SW:</b> Red, pink to grey, brown, medium to coarse grained, massive, generally high to very high strength. Some medium & extremely high strength zones.							Is(50) = 0.56MPa UCS = 20.8 MPa	o

REMARKS \_\_\_\_\_

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BOREHOLE No BH102  
SHEET 5 of 5  
REFERENCE No 11461

PROJECT Townsville Ring Road Section 4  
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										EH	VH	H	M	L	EL	20	60	200	600			
40	-25.21					SW: (Cont'd) Defects: - Joint at 25° (2/m) - Joint at 60° (2/m) Defects are generally medium spaced, planar or irregular, close, or tight, rough and weathered.	+	+	SW												Is(50) = 8.87MPa	o
-25.71			100			Borehole terminated at 40.5m																

REMARKS \_\_\_\_\_

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# CORE PHOTO LOG

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



Department of  
Transport and Main Roads

Project Name	Townsville Ring Road Section 4		
Project No	FG 6020	Date	19/03/13
Borehole No	BH 102	TMR H No	11461
Location	Kalynda Parade Overpass	Start Depth (m)	37.50
Detail	Abutment A (Left)	Finish Depth (m)	40.50
Chainage		Submitted By	BW
Remarks			

