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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH604
SHEET 1 of 5
REFERENCE No 11573

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467173.3 E; 7867021.7 N
PROJECT No FG 6020 SURFACE R.L. 16.54m PLUNGE _____ DATE STARTED 2/9/13 GRID DATUM MGA94 Zone 55
JOB No _____ HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 3/9/13 DRILLER Cairns Drilling Pty Ltd

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	16.54													
0	16.24					Sandy SILT (Topsoil): Pale brown, dry, firm.								
						Sandy Clayey SILT: Pale brown, mainly dry to moist, hard.								
1					A								16,21,32 N>50	SPT
2					B	Colour change to pale grey, brown.							12,18,25 N=43	SPT
3					C	High clay content	(ML)						13,20,30/130 N>50	SPT
4					D	Becoming brown, orange. Thin layer of very dense, Silty SAND. Fine to medium grained sand.							30/50 N>50	SPT
5					E								15,30/130 N>50	SPT
6	10.84					Clayey SAND: Brown, moist, very dense. Fine to medium grained sand.								
					F								14,30/150 N>50	SPT
7														
8					G	Fine to coarse grained sand.	(SC)						13,22,30/120 N>50	SPT
9														
10					H								20,26,30/100 N>50	SPT

REMARKS _____

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BOREHOLE No BH604
SHEET 2 of 5
REFERENCE No 11573

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467173.3 E; 7867021.7 N
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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
10	6.54												
10	6.54					Clayey SAND: (Cont'd)	(SC)						
11	6.04					Sandy SILT: Pale grey-brown, moist, hard.							
11					I	Some Silty SAND layers throughout.						15,15,18 N=33	SPT
12													
13					J							12,18,22 N=40	SPT
14					K	Low sand content.						10,18,32 N=50	SPT
15							(ML)						
16					L							6,14,28 N=42	SPT
17					M	Becoming Sandy Clayey SILT. Some sand lenses.						7,16,30 N=46	SPT
18						Zones of Sandy CLAY. Colour change to orange brown.							
19					N							6,13,30 N=43	SPT
20													

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BOREHOLE No BH604
SHEET 3 of 5
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PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467173.3 E; 7867021.7 N
PROJECT No FG 6020 SURFACE R.L. 16.54m PLUNGE _____ DATE STARTED 2/9/13 GRID DATUM MGA94 Zone 55
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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
20	-3.46													
20					P	Sandy SILT: (Cont'd)							8,14,25 N=39	SPT
21														
22					Q	Colour change to pale grey-brown.							11,17,18 N=35	SPT
23					R	Becoming very stiff. Low content of sand.							10,13,16 N=29	SPT
24														
25					S	Becoming hard.							12,20,23 N=43	SPT
26					T	Becoming orange brown.							10,21,30/130 N>50	SPT
27														
28					U	Colour change to orange brown.							11,22,30/130 N>50	SPT
29					V	Very low content of sand.							11,22,30/110 N>50	SPT
30														

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BOREHOLE No **BH604**
SHEET **4** of **5**
REFERENCE No **11573**

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467173.3 E; 7867021.7 N
PROJECT No FG 6020 SURFACE R.L. 16.54m PLUNGE _____ DATE STARTED 2/9/13 GRID DATUM MGA94 Zone 55
JOB No _____ HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 3/9/13 DRILLER Cairns Drilling Pty Ltd

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	-13.46					Sandy SILT: (Cont'd)							
31					W		(ML)					12,26,30/110 N>50	SPT
32	-15.76				X	Clayey SAND (Residual): Orange-brown, moist, very dense. Fine to coarse grained. Some HW rock fragments.						12,18,30/80 N>50	SPT
33					Y		(SC)					30/120 N>50	SPT
34	-17.66				Z	Silty CLAY (Residual): Pale grey to pale brown, moist, hard. Mainly low to intermediate plasticity. Some fine grained HW rock fragments.						10,16,26 N=42	SPT
35					AA		(CL-CI)					15,19,23 N=42	SPT
36					AB	GRANITE Medium to coarse grained, intrusive, igneous rock of felsic composition. XW: Generally exhibits the engineering properties of an orange, pink, grey, moist to dry, very dense, Clayey SAND.						30/60 N>50	SPT
37					AC		XW					30/40 N>50	SPT
38	-21.26												
39													
40													

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BOREHOLE No **BH604**
SHEET **5** of **5**
REFERENCE No **11573**

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467173.3 E; 7867021.7 N
PROJECT No FG 6020 SURFACE R.L. 16.54m PLUNGE _____ DATE STARTED 2/9/13 GRID DATUM MGA94 Zone 55
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DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD () %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
40	-23.46											
41	-24.49		(14)	AD	GRANITE XW: (Cont'd). MW: Pink, orange, grey, medium to coarse grained, massive, medium strength. Defects: -Joints at 60° (2/m) -Joints at 75°-85° (6/m) Defects are generally close to medium spaced, planar, rough, open, weathered and iron stained. HW: Pink, orange, grey, medium to coarse grained, massive, low strength. XW zones with extremely low to very low strength throughout. Defects: -Joints at 5°-10° (1/m) -Joint at subvertical (<1/m) Defects are mainly extremely close to closely spaced and generally planar, rough, open, weathered and clay infilled.	XW MW HW SW					30/30 N>50	SPT
42	-25.19		100 (0)									
43			35 (0)									
44	-27.36		100 (34)									
45												
46	-29.66		100 (20)									
47	-30.46		100		SW: Orange, grey, medium to coarse grained, massive, medium to high strength. Defects: -Joints at 20°-30°(1/m) -Joints at 80°-90° (4/m) Defects are generally planar, rough, open and clay coated. Borehole terminated at 47m							
48												
49												
50												

REMARKS _____

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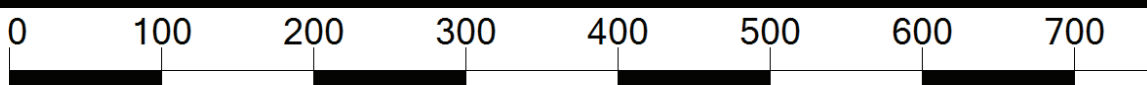
CORE PHOTO LOG

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	3/9/13
Borehole No	BH 604	TMR H No	11573
Location	Dalrymple Overpass	Start Depth (m)	41.03
Detail		Finish Depth (m)	47.00
Chainage		Submitted By	J. Lopez
Remarks			



SCALE 1:5