ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No **BH601**
SHEET 1 of 5
REFERENCE No **11570**

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467143.7 E; 7867017.0 N
PROJECT No FG 6020 SURFACE R.L. 16.62m PLUNGE ____ DATE STARTED 5/9/13 GRID DATUM MGA94 Zone 55
JOB No ____ HEIGHT DATUM AHD BEARING ____ DATE COMPLETED 7/9/13 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 (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
0	16.62				**Sandy SILT (Topsoil):** Pale brown, dry, stiff. Some grass roots.									
	16.32				**Sandy SILT:** Pale brown, dry to moist, hard.									
1				A								12,21,28 N=49		SPT
2				B	Colour change to grey brown. Some fine to medium gravel.							12,22,31 N>50		SPT
3				C			(ML)					11,21,35 N>50		SPT
4				D								30/50 N>50		SPT
5				E	Becoming yellow, brown, grey.							30/150 N>50		SPT
6	10.42				**Silty SAND:** Orange brown, pale grey, moist, very dense.									
7				F	Fine to medium grained sand.							14,25,30 N>50		SPT
8				G	Some coarse sand.		(SM)					16,30/140 N>50		SPT
9	7.32				**Sandy SILT:** Grey to brown, moist, hard.									
10				H			(ML)					8,15,21 N=36		SPT

REMARKS **Standpipe Piezometer Installed.**

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Queensland Government

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH601
SHEET 2 of 5
REFERENCE No 11570

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467143.7 E; 7867017.0 N
PROJECT No FG 6020 SURFACE R.L. 16.62m PLUNGE DATE STARTED 5/9/13 GRID DATUM MGA94 Zone 55
JOB No HEIGHT DATUM AHD BEARING DATE COMPLETED 7/9/13 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 (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
10	6.62				**Sandy SILT:** (Cont'd)									
11				I	Becoming pale grey to brown.							11,18,30 N=48		SPT
12							(ML)							
13				J	Low content of sand.							8,18,30 N=48		SPT
14	2.62			K	**Sandy CLAY:** Pale grey, brown, moist, very stiff. Low to intermediate plasticity.							3,8,11 N=19		SPT
15														
16				L	Becoming hard.		(CL-CI)					9,15,23 N=38		SPT
17	-0.58			M	**Sandy SILT:** Pale grey to brown, moist, hard.							9,14,25 N=39		SPT
18														
19				N	Low content of Sand.		(ML)					11,20,30/110 N>50		SPT
20														

REMARKS **Standpipe Piezometer Installed.**

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BOREHOLE No BH601
SHEET 3 of 5
REFERENCE No 11570

PROJECT Townsville Ring Road Section 4 Dalrymple Overpass
LOCATION Dalrymple Overpass COORDINATES 467143.7 E; 7867017.0 N
PROJECT No FG 6020 SURFACE R.L. 16.62m PLUNGE DATE STARTED 5/9/13 GRID DATUM MGA94 Zone 55
JOB No HEIGHT DATUM AHD BEARING DATE COMPLETED 7/9/13 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 (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
20	-3.38			O	**Sandy SILT:** (Cont'd)		(ML)					12,21,30/130 N>50		SPT
21	-4.38			P	**Clayey SAND:** Pale grey to brown, moist, medium dense. Fine to medium grained sand.		(SC)					7,12,13 N=25		SPT
22	-5.58			Q	**Sandy SILT:** Pale grey to brown, moist, very stiff.							5,9,16 N=25		SPT
23				R	High content of sand. Becoming hard.							6,19,30/120 N>50		SPT
24				S	26.0m: Layer of very dense Silty SAND. Sand is fine to medium grained.		(ML)					15,30/120 N>50		SPT
25				T	Low content of sand.							8,13,19 N=32		SPT
26				U	Colour change to orange brown, pale grey. Becoming Clayey SILT.							13,30/150 N>50		SPT
27														
28														
29														
30														

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BOREHOLE No **BH601**
SHEET 4 of 5
REFERENCE No **11570**

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30	-13.38				**Sandy SILT:** (Cont'd)									
				V	30.5m: Becoming Silty SAND. Colour change to orange brown. Very fine grained sand.		(ML)					14,30/140 N>50		SPT
31														
	-15.38													
32				W	**Clayey SAND (Residual):** Orange, brown, grey, very dense. Fine to coarse grained sand. Some fine to medium gravel.							27,30/130 N>50		SPT
33														
				X	Becoming dense.		(SC)					8,17,19 N=36		SPT
34														
35				Y	Becoming very dense.							30/80 N>50		SPT
	-19.08													
36					**Clayey Sandy SILT (Residual):** Yellow, orange, brown, moist, hard.									
				Z								30/90 N>50		SPT
37														
38				AA	Becoming Sandy Clayey SILT. Some coarse, angular HW rock fragments. Colour change to brown, dark grey.		(ML)					30/70 N>50		SPT
39														
				AB	Becoming Silty SAND.							30/50 N>50		SPT
40														

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40	-23.38				**Clayey Sandy SILT:** (Cont'd)									
41				AC	Becoming Clayey Sandy SILT. Colour changed to pale grey to white. Some coarse, angular XW rock fragments.		(ML)					19,30/140 N>50		SPT
42				AD								30/90 N>50		SPT
	-25.88				**MICROGRANITE** **Medium grained, intrusive, igneous rock of felsic composition.** **XW:** Generally exhibits engineering properties of an orange, pink, moist, very dense, Clayey SAND.									
43					Fine to medium grained sand. Some HW rock fragments.		XW							
44	-27.43		(0) 100 (29)	AE	**SW:** Pink, orange, fine to medium grained, massive, high strength.							30/30 N>50 Broken Zone 44.2m: Partial water loss.		SPT
45					Defects: -Joints at 0°-5° (1/m) -Joints at 15°-25° (2/m) -Joints at 60°-70° (2-3/m) -Joints at 80° (2/m) Defects are generally medium spaced, planar, rough, open and clay coated.		SW							
46														
	-30.13		100											
47					Borehole terminated at 46.75m									
48														
49														
50														

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CORE PHOTO LOG

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

Queensland Government

Department of Transport and Main Roads

Project Name	**Townsville Ring Road Section 4**		
Project No	FG 6020	Date	9/9/13
Borehole No	BH 601	TMR H No	11570
Location	Dalrymple Overpass	Start Depth (m)	44.03
Detail		Finish Depth (m)	46.75
Chainage		Submitted By	J. Lopez
Remarks			

0 100 200 300 400 500 600 700

SCALE 1:5

GEOT043/1