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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH310
SHEET 1 of 4
REFERENCE No 11488

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge COORDINATES 464699.3 E; 7871591.0 N
PROJECT No FG6020 SURFACE R.L. 13.06m PLUNGE DATE STARTED 3/5/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 4/5/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER CASING 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
									EH	VH	H	M	J	VL				
0	13.06																	
12.86						Sandy CLAY (TOPSOIL) Dark brown, moist, soft. Medium plasticity.												
					A	Sandy CLAY Dark brown, moist, very stiff. Medium to high plasticity. Fine grained sand.	(CI-CH)									5,7,10 N=17	SPT	
12.06					B	Silty SAND Brown orange, moist, medium dense to dense. Fine grained sand.	(SM)									10,16,14 N=30	SPT	
10.56					C	Sandy SILT Dark brown, moist, hard. Low plasticity. Fine grained sand. Sand content increasing and becoming silty sand in parts.	(ML)									9,13,29 N=42	SPT	
9.56					D	Silty SAND Dark brown to brown speckled with white, moist, dense to very dense. Medium to coarse grained sand.										25,30/90mm N>50	SPT	
					E											23,30/100mm N=50	SPT	
					F	Becoming brown.										30/135mm N=50	SPT	
					G	Thin gravel bed, fine grained, subrounded.	(SM)									24,21,24 N=45	SPT	
					H											19,30,20 N=50	SPT	
10	3.06																	

14/06/13

QLD_DMR_LIB_01A.GLB Log A_ENG ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNVILLE RING ROAD 4 STONY CREEK.GPJ <<DrawingFile>> Datagel CPT Tool gINT Add-In 17/10/2013 11:55

REMARKS Standpipe piezometer installed.

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JA

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH310
SHEET 2 of 4
REFERENCE No 11488

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge COORDINATES 464699.3 E; 7871591.0 N
PROJECT No FG6020 SURFACE R.L. 13.06m PLUNGE DATE STARTED 3/5/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 4/5/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER CASING 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
									EH	VH	H	M	J	VL				
10	3.06				J	Sandy SILT Pale brown, moist, very stiff. Low plasticity. Fine grained sand. Grading into silty sand with depth.	(ML)									8,10,12 N=22	SPT	
11																		
12	1.56				K	Silty SAND Brown, moist, dense. Fine grained sand.										6,12,19 N=31	SPT	
13					L											9,13,19 N=32	SPT	
14																		
15					M	Becoming medium to coarse grained sand.	(SM)									14,16,22 N=38	SPT	
16					N											12,15,21 N=36	SPT	
17																		
18	4.44				O	Sandy SILT Pale brown, moist, very stiff to hard. Low plasticity. Fine grained sand.	(ML)									12,21,24 N=45	SPT	
19	6.24				P	Clayey SILT Pale brown, moist, very stiff.	(ML)									11,10,11 N=21	SPT	
20	6.94					(See over)												

REMARKS Standpipe piezometer installed.

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH310
SHEET 3 of 4
REFERENCE No 11488

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge COORDINATES 464699.3 E; 7871591.0 N
PROJECT No FG6020 SURFACE R.L. 13.06m PLUNGE DATE STARTED 3/5/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 4/5/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER CASING 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
									EH	VH	H	M	J				
20	-6.94					Clayey SILT (Cont'd) Low plasticity. Trace of fine grained sand. Sand content increasing slightly. Becoming clayey silt, orange brown mottling.	(ML)								7,8,10 N=18	SPT	
22	-8.94				R	Sandy SILT (RESIDUAL) Pale brown to brown, moist, hard. Low plasticity. Fine grained sand.	(ML)								14,16,23 N=39	SPT	
24	-10.44				S	TUFF Fine to medium grained, pyroclastic rock. XW: Exhibits the engineering properties of pale grey, moist, hard, sandy silt. Low plasticity. Fine to medium grained sand.	XW								30/125mm N>50	SPT	
25	-11.97				T	SW: Grey brown to pink, massive, medium to high strength. Fine to medium grained sand, becoming coarse grained in parts. Fine grained altered zones and inclusions throughout. Defects: - Clayey broken zone <400mm - Joint @ 10°-20° (4/m) - Joint @ 40°-50° (2/m) - Joint @ 70°-80° (1-2/m) Defect spacing is mainly close to medium. Defect surfaces are generally planar or irregular, rough, open, clay infilled.	SW							30/30mm N>50	SPT		
26					(0) 100 100 (0) (0) 100 (21)										Is(50) = 1.70MPa CS=45.7MPa	o	
27					100 (14)										Is(50) = 2.56MPa	o	
28					100 (0)										Is(50) = 0.29MPa	o	
29					100 (85) 100 100 (0) (0)										Is(50) = 0.48MPa Is(50) = 1.14MPa Is(50) = 0.59MPa	o o o	
30	-16.94																

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No	<u>BH310</u>
SHEET	<u>4</u> of <u>4</u>
REFERENCE No	<u>11488</u>

PROJECT Townsville Ring Road Section 4 _____
 LOCATION Stony Creek Bridge _____ COORDINATES 464699.3 E; 7871591.0 N _____
 PROJECT No FG6020 SURFACE R.L. 13.06m PLUNGE _____ DATE STARTED 3/5/13 GRID DATUM GDA 94 _____
 JOB No 268/10M/5 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 4/5/13 DRILLER Saxon Drilling _____

DEPTH (m)	R.L. (m)	AUGER CASING 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
									EH	VH	H	M	L	VL	EL	20	60			
30	-16.94					TUFF SW: (Cont'd)	SW												Is(50) = 3.22MPa UCS=33.10MPa	0
31	-18.04		100			Borehole terminated at 31.1m														
32																				
33																				
34																				
35																				
36																				
37																				
38																				
39																				
40																				

QLD_DMR_LIB_01A.GLB Log A_ENG ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNVILLE RING ROAD 4 STONY CREEK.GPJ <<DrawingFile>> Datagel CPT Tool.gint Add-in 17/10/2013 11:55

REMARKS Standpipe piezometer installed. _____

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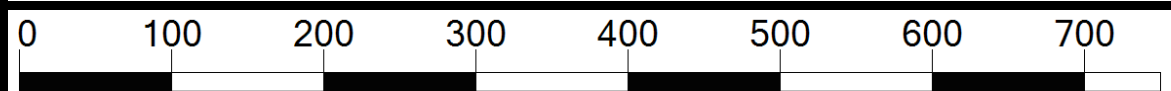
CORE PHOTO LOG

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	04/05/13
Borehole No	BH 310	TMR H No	11488
Location	Stony Creek Bridge	Start Depth (m)	25.10
Detail	Abutment B (Left)	Finish Depth (m)	31.10
Chainage		Submitted By	MS
Remarks			



SCALE 1:5