ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No **BH56**
SHEET 1 of 2
REFERENCE No **H11095**

PROJECT Moreton Bay Rail Link
LOCATION Halpine Lake Bridge 9, Abutment A, Ch.6000 COORDINATES 502868.4 E; 6986475.0 N
PROJECT No FG5921 SURFACE R.L. 17.00m PLUNGE DATE STARTED 21/7/11 GRID DATUM MGA94 Zone 56
JOB No 250/120/3 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/7/11 DRILLER R&D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	AUGER / 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	17.00				**Silty SAND (Topsoil)** Dark grey, moist, soft.							Based on Driller's logs only		
	16.40				**Sandy SILT (Residual)** Yellow red brown, moist, stiff to very stiff.									
1				A	Sand fraction fine to medium grained; ferrigenous iron stained nodules <10mm.							3,5,6 N=11		SPT
					Becoming more sandy below 2m depth.		(CL-ML)							
2				B								5,7,8 N=15		SPT
3	14.00											Minor clay fraction and iron staining throughout.		
				C	**SANDSTONE** **Fine to medium grained, massive, poorly cemented sedimentary rock mainly comprising of sand sized particles**		XW					16,27,30/110mm N>50		SPT
	13.50				**XW:** Generally exhibits engineering properties of yellow and grey, moist, fine to medium grained, mainly medium dense silty sand.									
4			75		**HW:** White grey and red brown, fine to medium grained, massive with slightly laminated, very low to low strength.									
5			54		Contains highly iron stained bands below 5.6m depth.									
			100		Occasional subangular, high strength quartzitic gravel sizing <40mm; soft clay bands between 6m - 7.5m approx. 200mm thick.						BZ with CLy infill			
											Highly FeSt			
6			100		Broken zone below 5.3m approx. 350mm long.						Soft CLy bands	Is(50) = 0.72MPa Is(50) = 0.42MPa		x o
					Defects: - Drilling-induced bedding / lamination partings @ 0-5° (2-3/m) - Joint @ 20° (1/m) - Joint @ 45° (2-3/m)		HW							
7												Is(50) = 0.50MPa Is(50) = 0.52MPa		x o
			100		Defect surfaces are close to medium spaced, irregular, slightly rough, open, closed, clay infilled or iron stained.									
8					Contains ferruginous iron stained bands throughout.							Is(50) = 0.17MPa Is(50) = 0.15MPa DD = 2.02t/m^3; WD = 2.22t/m^3; MC = 9.8%; UCS - 1.4 MPa Is(50) = 0.06MPa Is(50) = 0.13MPa		x o UCS x o
												J, 45°, Cly infill		
9			100									Is(50) = 0.08MPa Is(50) = 0.16MPa		x o
												J, 20°, Carb infill Is(50) = 0.86MPa Is(50) = 1.05MPa		x o
10					**(See over)**									

QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5921 MORETON BAY RAIL LINK.GPJ <<DrawingFile>> Datgel CPT Tool gINT Add-In 06/10/2011 14:46

REMARKS

LOGGED BY
BW/LVD

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10	7.00				**SANDSTONE** **HW:** (Cont'd)						Is(50) = 0.14MPa Is(50) = 0.06MPa	x o
			100				HW					
11												
	5.40		100								BZ with coarse sand	
					MW: Mottled yellow red grey, fine to medium grained, massive and laminated, low to medium strength. HW, very low strength bands below 14.4m, approx. 900mm long; iron staining along lamination. Dark black carbonaceous (coal seams) bands below 14.75m, approx. 250mm long.						DD = 2.08t/m^3; WD = 2.24t/m^3; MC = 7.4%; UCS - 2.1MPa	UCS
12											Is(50) = 0.26MPa Is(50) = 0.24MPa	x o
											J, 20°	
											Is(50) = 0.20MPa Is(50) = 0.13MPa	x o
13			100				MW					
											Is(50) = 0.29MPa Is(50) = 0.18MPa	x o
14											J, 45°, Fest	
			100									
											HW, very low strength Carb bands	
15	2.00				**Interbedded MUDSTONE and SILTSTONE** **SW:** Dark grey to black, fine grained, laminated, mainly high strength. Contains thin bands of coal seams below 17m. Defects: - Drilling-induced lamination and bedding partings @ 0-5° (3-4/m) - Joint @ 20° (1-2/m) Defect surfaces are planar and irregular, smooth and slightly rough, open and closed, clay or carbonaceous infill.						Is(50) = 0.88MPa Is(50) = 1.49MPa Is(50) = 1.08MPa Is(50) = 3.35MPa	x o x o
			100									
16											3 x Js, 20°	
17							SW					
			100								Is(50) = 0.48MPa Is(50) = 1.43MPa	x x
											Is(50) = 0.42MPa Is(50) = 2.12MPa Is(50) = 0.93MPa Is(50) = 4.23MPa Is(50) = 0.86MPa Is(50) = 3.49MPa	o x o x o x
18												UCS
	-1.50		100								DD = 2.48t/m^3; WD = 2.54t/m^3; MC = 2.6%; UCS - 21.7MPa	
					Borehole terminated at 18.5m							
19												
20												

REMARKS

LOGGED BY
BW/LVD

Project Name	**Moreton Bay Rail Link (MBRL)**		
Project No	FG5921	**Date**	21/07/11
Borehole No	BH 56	**TMR H No**	
Location	Halpine Lake Rail Bridge	**Start Depth (m)**	3.50
Detail	Abutment A Structure	**Finish Depth (m)**	18.50
Chainage	6006	**Submitted By**	BW
Remarks			

CORE PHOTO LOG
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GEOT043/1

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Borehole No	BH 56	**TMR H No**	
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Chainage	6006	**Submitted By**	BW
Remarks