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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH112

SHEET 1 of 4

REFERENCE No H10908

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra

LOCATION Little Doris Creek (Bridge BR17) COORDINATES 498359.1 E; 6950959.0 N

PROJECT No FG5779 SURFACE R.L. 3.15m PLUNGE -90° DATE STARTED 16/11/10 GRID DATUM GDA94

JOB No 140/U16/902 HEIGHT DATUM AHD BEARING DATE COMPLETED 18/11/10 DRILLER R&D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH						DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
								EH	VH	H	M	L	VL				
0	3.15														Non destructive digging Based on Drillers logs only		
1.55					A	Silty CLAY (Alluvium) Dark grey, moist, very soft soft to firm									su>50kPa p'c=300kPa OCR=9.8	U100	
					B	Medium plasticity; high organic content.									1,1,1 N=2	SPT	
							CI								inferred GWT		
					C										HW N<1	SPT	
-0.55					D	Silty SAND (Alluvium) Pale grey, moist, loose to medium dense. Sand fraction fine to medium grained. Becoming medium grained below 6.0m depth.									1,1,4 N=5	SPT	
					E		(SM)								5,8,7 N=15	SPT	
					F										Wet 7,8,6 N=14	SPT	
-3.35					G	Silty CLAY (Residual) Mottled brown to grey, moist, stiff to very stiff. Mainly high plasticity. Minor red iron concretionary nodules below 7.0m depth in sample (G) only									4,5,8 N=13	SPT	
					H		(CH)								6,10,14 N=24	SPT	
					J										5,8,15 N=23	SPT	
10						(See over)											

REMARKS _____

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BOREHOLE No BH112
SHEET 2 of 4
REFERENCE No H10908

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra
LOCATION Little Doris Creek (Bridge BR17) COORDINATES 498359.1 E; 6950959.0 N
PROJECT No FG5779 SURFACE R.L. 3.15m PLUNGE -90° DATE STARTED 16/11/10 GRID DATUM GDA94
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DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	-6.85				K	Silty CLAY (Residual) (Cont'd)	(CH)				7,12,15 N=27	SPT
11	-7.65				L	MUDSTONE FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF CLAY AND SILT SIZED PARTICLES. XW: Generally exhibits engineering properties of mottled grey-brown, moist, hard silty clay.	XW				10,16,21 N=37	SPT
12					M	Medium to high plasticity; minor traces of fine grained sand in parts.					9,16,22 N=38	SPT
13	-9.55				N	SANDSTONE FINE TO COARSE GRAINED POORLY CEMENTED SEDIMENTARY ROCK MAINLY COMPRISING SAND SIZE PARTICLES. XW: Generally exhibits engineering properties of yellow-orange, moist, dense to very dense silty sand.	XW				14,23,24 N=47	SPT
14					P	Sand fraction mainly fine grained.					19,24,27 N>50	SPT
15	-11.85				(100)	CLAYSTONE FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF CLAY SIZED PARTICLES. HW: Mottled brown, massive, fine grained, mainly very low to low strength.						
16					100	Red iron staining up to 17.0m depth.						
17					(98)	Generally defects are rare - Drilling induced lamination partings @ 5-10° (3/m) Becoming grey below 17.0m depth	HW				Numerous drilling induced fractures.	
18					100						Displays cracking on drying	
19					(44)							
20	-16.85				100							
					28							
					(75)						Is(50) = 0.04MPa	o

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BOREHOLE No BH112
 SHEET 3 of 4
 REFERENCE No H10908

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra
 LOCATION Little Doris Creek (Bridge BR17) COORDINATES 498359.1 E; 6950959.0 N
 PROJECT No FG5779 SURFACE R.L. 3.15m PLUNGE -90° DATE STARTED 16/11/10 GRID DATUM GDA94
 JOB No 140/U16/902 HEIGHT DATUM AHD BEARING DATE COMPLETED 18/11/10 DRILLER R&D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS		
													EH	VH
20	-16.85		100			MUDSTONE FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF CLAY SIZED PARTICLES. MW: Dark grey to black, massive, fine grained, mainly very low to low strength. Generally defects are rare - Drilling induced lamination partings @ 5-10° (1/m) - Joint @ 20° (1/m) Defects are medium to wide spaced, planar and undulating, smooth and slickensided, closed with clay infill or clean.	MW				Is(50) = 0.05MPa	x		
			(93)									Is(50) = 0.08MPa Is(50) = 0.08MPa	x o	
21			100									Claystone interbeds app. 150mm thick.		
			(53)									Joint @ 20° Clay seams	x o	
22			88			SANDSTONE MW: Mottled grey, massive, fine to medium grained, mainly very low strength. Occasional interbeds of clayey siltstone in parts. Generally defects are rare. - Drilling induced bedding partings @ 5-10° (2/m) Defects are medium spaced, slightly rough, irregular, open and clean or sand infill. Becoming fine grained below 24.9 - 27.0m.	MW							
23	-19.95		(68)									Highly fractured zone.		
			100									Loose sand (XW)	x o	
24			(90)											
			100										Is(50) = 0.05MPa Is(50) = 0.05MPa	x o
25			(87)									Gravelly sand (XW)	DD = 1.76t/m ³ ; WD = 2.05t/m ³ ; MC = 15.3%; UCS=3902KPa Is(50) = 0.03MPa Is(50) = 0.06MPa	x o
26			100								Is(50) = 0.05MPa Is(50) = 0.05MPa	x o		
27			(0)							BZ				
28			21											
			(0)								Possible XW sandstone.			
29			0											
30	-26.85										Clayey sand			

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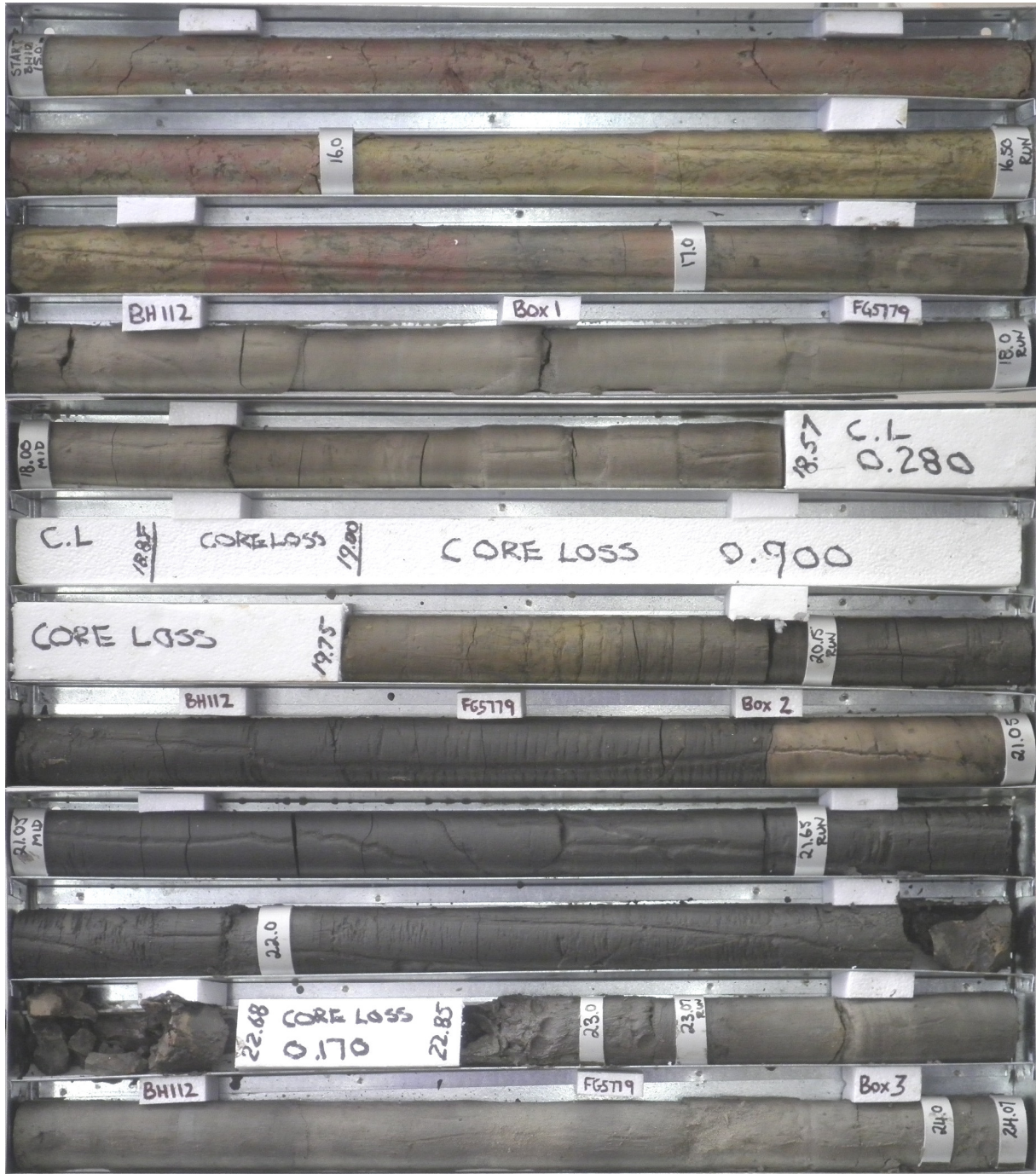
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DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD () %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
30	-26.85				Q	HW: Generally exhibits engineering properties of grey, wet, medium to coarse grained very dense highly erodable gravelly sand. Becoming coarse grained erodable sand below 31.5m depth.	HW				30/100mm N>50 High strength erodable gravelly sand up to 32m depth.	SPT
32	-28.85				R						30/90mm N>50	SPT
33	-30.26				S	MUDSTONE HW: Generally exhibits engineering properties of dark grey to black, moist, hard silty clay.	HW				17,27,30/115mm N>50	SPT
34						Borehole terminated at 33.415m						
35												
36												
37												
38												
39												
40												

REMARKS _____

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Project: **Ipswich Motorway Upgrade - Rocklea to Darra**
Borehole No: **BH 112**
Start Depth: 15.0m
Finish Depth: 29.90m
Project No: FG5779
H No: H10908



SCALE 1:5

F:GEO403/1

Project: **Ipswich Motorway Upgrade - Rocklea to Darra**
Borehole No: **BH 112**
Start Depth: 15.0m
Finish Depth: 29.90m
Project No: FG5779
H No: H10908



SCALE 1:5

F:GEOT043/1