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# BOREHOLE LOG

CLIENT: AECOM Australia Pty Ltd  
 PROJECT: Cross River Rail - Phase 1  
 LOCATION: Noble Street, Fairfield

SURFACE LEVEL: 20.4 m AHD  
 EASTING: 502768  
 NORTHING: 6958035  
 DIP/AZIMUTH: -90°/-

BORE No: CRR103  
 PROJECT No: 74321.00  
 DATE: 15 April 2010  
 SHEET 2 OF 4

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)	Discontinuities	Sampling & In Situ Testing							
			EW	HW	NW	SW	FS		FR	Ex Low	Very Low	Low	Medium				High	Very High	Ex High	B	J	S	D	Type
5.0		banded														4.89m: J, 10°, pl, sm, cf 7mm								PL(A) = 2.7MPa PL(D) = 0.9MPa
15		- becoming very low to medium strength, moderately to slightly weathered, clay seams to 15mm at 30-50mm spacings to 5.08m														5.07m: B, 10°, pl, sm, cf 10mm								
		- becoming medium strength, moderately weathered, slightly fractured, orange-brown														subhorizontal drill breaks at 100-300mm spacings								
		- becoming medium strength														5.4m: B, sm, un, ro, cc, ag 5.43m								
		- 5mm clay seam														5.6m: B, 10°, pl, sm, cf 5mm					C	100	57	
		- 8mm clay seam														5.76m: J, 30°, pl, sm, cc								
		- 80mm extremely low strength band														5.8m: J, 30°, pl, sm, cc								
		- becoming low strength, moderately to slightly weathered														5.83m: J, sv, un, ro, lim, to 6.05m								
		- becoming very low strength														6.09m: J, 30°, pl, sm, cc								
		- becoming low, highly to moderately weathered, medium to coarse grained sandstone														6.12m: J, 50°, un, ro, lim								
		- becoming low, highly to moderately weathered, medium to coarse grained sandstone														6.15m: J, sv, un, ti, lim, to 6.25m								
		- 100mm low to medium strength, highly to moderately weathered, fractured, orange-brown, fine to coarse breccia interbed														6.28m: J, 70°, un, ro, lim								
		- becoming very low to low strength														6.41m: J, 45°, un, ro, lim								
		CORE LOSS														6.43m: frg to 6.5m, di								
		CONGLOMERATE - medium to high strength, highly to moderately weathered, fractured, orange-brown, fine to coarse grained conglomerate														6.45m: J, sv, un, ro, cf 10mm, to 6.70m								PL(A) = 0.6MPa PL(D) = 0.4MPa
		- becoming low to medium strength														6.5m: CORE LOSS: 30mm								
		- becoming extremely low strength														6.85m: J, sv, un, ro, cf 10mm, to 7.10m								
		- becoming low to medium strength														7.09m: J, 55°, un, sm								
		- becoming low to medium strength														7.38m: J, sv, un, ro, cf 10mm, to 8.00m								
		- becoming low strength, moderately weathered														7.73m: J, 25°, pl, ro					C	98	91	
		- becoming low to medium strength														7.85m: J, 30°, un, ro, cf								
		- becoming medium strength														8.85m: frg to 9.0m, di								
		- becoming very low to low strength, highly weathered														9.14m: J, 45°, un, ro, cc								
		- becoming very low strength														9.7m: frg to 10m, di								
		- 40mm clay band																						
		- 10mm clay seam																						
																					C	100	100	

RIG: MD300

DRILLER: Taberner

LOGGED: MAH

CASING: HW to 3.5m

TYPE OF BORING: Auger 0.00-3.80m, NMLC Core 3.80-20.00m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength (s(50) MPa)
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		≡	Water level

CHECKED
Initials: <i>CEB</i>
Date: <i>24/6/10</i>



**Douglas Partners**  
 Geotechnics • Environment • Groundwater

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**LOCATION:** Noble Street, Fairfield

**SURFACE LEVEL:** 20.4 m AHD  
**EASTING:** 502768  
**NORTHING:** 6958035  
**DIP/AZIMUTH:** -90°/-

**BORE No:** CRR103  
**PROJECT No:** 74321.00  
**DATE:** 15 April 2010  
**SHEET 3 OF 4**

RL	Depth (m)	Description of Strata	Degree of Weathering				Graphic Log	Rock Strength					Water	Fracture Spacing (m)	Discontinuities		Sampling & In Situ Testing			
			EW	HW	SW	FR		Ex Low	Very Low	Low	Medium	High			Very High	Ex High	B - Bedding	J - Joint	Type	Core Rec. %
	10.0	CONGLOMERATE (as before) - becoming moderately weathered, grey and yellow-brown mottled													10.15m: J, 45°, pl, sm, cf 4mm 10.3m: frg to 10.5m, di 10.37m: J, 45°, un, sm, lim, cc					
	11	- becoming moderately to slightly weathered														C	100	100	PL(A) = 0.02MPa	
	12.0	CORE LOSS													12m: CORE LOSS: 300mm					
	12.3	- becoming extremely low strength, moderately weathered - becoming very low strength														C	63	37		
	12.8	CORE LOSS													12.6m: J, 60°, un, ro 12.8m: CORE LOSS: 300mm					
	13.1	- becoming slightly weathered																		
	14	- becoming moderately weathered  - becoming slightly weathered													13.26m: J, 20°, un, ti, lim	C	86	73		
	14.95	- high strength zone																	PL(A) = 0.03MPa PL(D) = 0.04MPa  PL(A) = 1.56MPa PL(D) = 1.23MPa	

**RIG:** MD300      **DRILLER:** Taberner      **LOGGED:** MAH      **CASING:** HW to 3.5m  
**TYPE OF BORING:** Auger 0.00-3.80m, NMLC Core 3.80-20.00m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**REMARKS:** PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep      ▽ Water level

CHECKED
Initials: <i>CRB</i>
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			EW	HW	NW	SW	FS		FR	Ex Low	Very Low	Low	Medium			High	Very High	Ex High	B - Bedding	J - Joint	Type	Core Rec. %
	15.0	SILTSTONE - extremely low strength, extremely weathered, fractured, grey, siltstone																				
		- becoming extremely low to very low strength banded, slightly to moderately weathered																				
	16																					
		- becoming slightly carbonaceous																				
	17																					
		- becoming low strength, fresh, bedding subhorizontal																				
		- becoming low strength																				
	18																					
		- becoming extremely low strength, moderately weathered, crush zone to 19.65m																				
		- 20mm clay seam																				
		- 50mm clay band																				
	19																					
		- becoming low to medium strength																				
		- bedding at 10°																				
	19.98																					

Bore discontinued at 19.98m

**RIG:** MD300      **DRILLER:** Taberner      **LOGGED:** MAH      **CASING:** HW to 3.5m  
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**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
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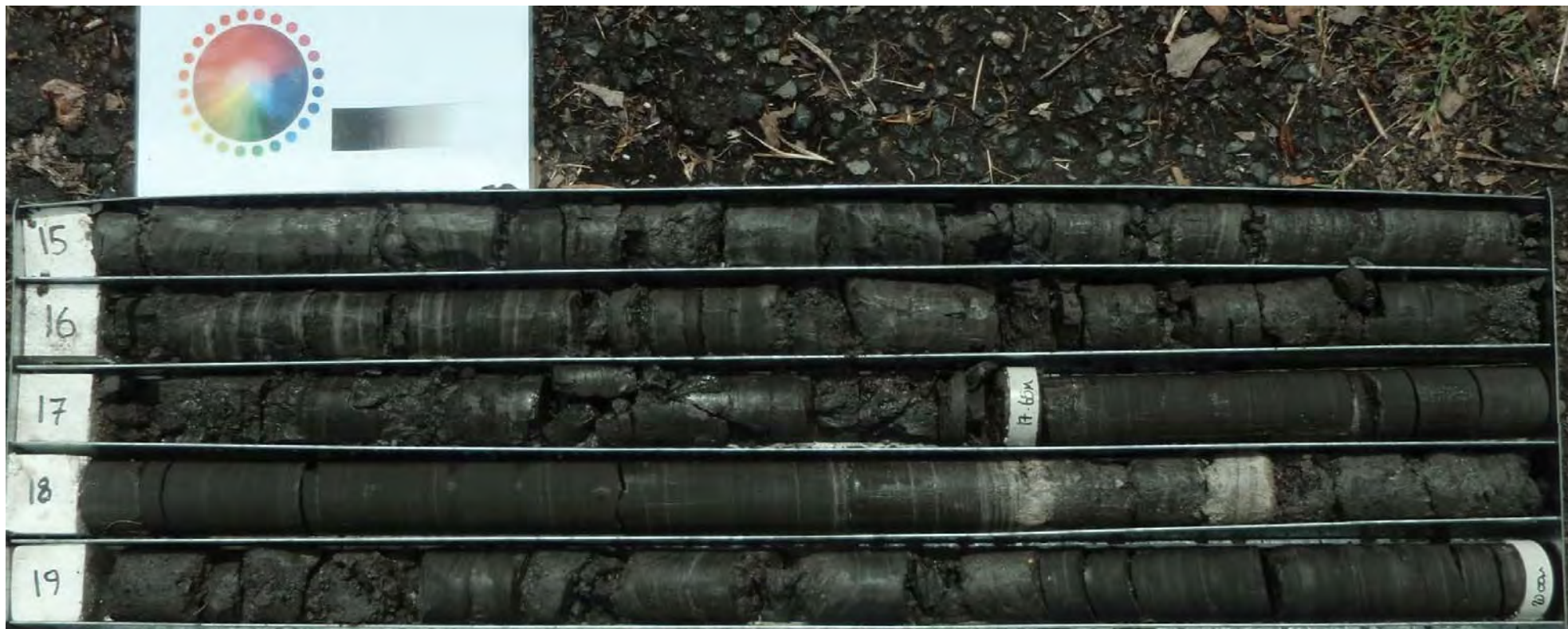
SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	Δ	Water seep
		≡	Water level

CHECKED
Initials: <i>MB</i>
Date: 24/6/10









CROSS RIVER RAIL – PHASE 1 GEOTECHNICAL INVESTIGATION

BORE CRR103

Project 74321.00