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GEOTECHNICAL
BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **CRR916**

Sheet 1 of 2

REFERENCE No **H13116**

PROJECT	Cross River Rail (CRR) Project - Additional Geotechnical Investigation				
LOCATION	Fairfield Station			COORDINATES 502781.9 E; 6957120.6 N	
PROJECT No	FG6470	SURFACE RL	14.46m	PLUNGE	90°
				DATE STARTED	11/07/2018
				GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	13/07/2018
				DRILLER	Geodrill

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CORE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
					Sandy CLAY (Fill) Brown, moist, firm to stiff. High plasticity. Fine to coarse grained sand.					0.25m: Rootlets to 0.25m	
				A		(CH)					DIST
1	13.36										
	13.11			B	PHYLLITE (DCy) XW: Recovered as, pale, brown, pale orange, moist, very dense, fine to medium grained Clayey SAND, with trace Gravel.	XW				16, 30/40 mm	SPT
2					PHYLLITE (DC) HW: Grey with orange staining, fine grained, foliated, low to mainly medium strength.						
				C	-FP: 70-90, (5/m), Un/Ro-Sm, CD-Tl, FeSt, Cly Vn	HW				14, 30/40 mm LL=40% PI= 22% MC=6.3% LS= 8%	SPT
3			(0)							Is(50)=0.12 MPa Is(50)=0.03 MPa	D (3.19m) A (3.20m)
			100 (0)								
4			88 (0)								
			100 (0)			XW					
					4.82m - 5.70m: Frequent Qz seams up to 160mm thick, throughout.	HW				4.63m-4.68m: BZ 4.71m-4.78m: BZ	
5			100 (23)								
						HW					
6			100 (0)								
						XW					
			68 (0)			HW					
7			100 (23)							7.04m-7.06m: BZ	Is(50)=0.03 MPa Is(50)=0.02 MPa
						HW				7.45m-7.52m: BZ	D (6.93m) A (6.94m)
8			100 (0)							Is(50)=0.36 MPa Is(50)=0.29 MPa	D (7.70m) A (7.71m)
						XW					
			100 (0)			HW					
9	4.96									9.37m-9.40m: BZ	
						HW					
	4.46		100 (46)		PHYLLITE (DC) MW:	MW				Is(50)=0.35 MPa Is(50)=0.22 MPa	D (9.80m) A (9.81m)

Continued on next sheet

REMARKS: DCy - Bunya Phyllite. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	ND	S.Foley



GEOTECHNICAL
BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **CRR916**

Sheet 2 of 2

REFERENCE No **H13116**

PROJECT	Cross River Rail (CRR) Project - Additional Geotechnical Investigation								
LOCATION	Fairfield Station				COORDINATES 502781.9 E; 6957120.6 N				
PROJECT No	FG6470	SURFACE RL	14.46m	PLUNGE	90°	DATE STARTED	11/07/2018	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°	DATE COMPLETED	13/07/2018	DRILLER	Geodrill

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CORE DRILLING	RQD () % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH										DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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11	2.86		97 (25)		PHYLLITE (DCy) MW: Cont'd. Dark grey with pale orange staining, fine grained, foliated, high strength. FP: 20-50, (5/m), Un/Ro-Sm, TI-CD, FeSt, Cly Vr. From 10.30m: reduction in iron staining		MW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

REMARKS: DCy - Bunya Phyllite. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	ND	S.Foley

Detailed Discontinuity Description Log

This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

Project Name		Cross River Rail - Stage 2				Project No.		FG6470	
Site ID / Borehole No.		CRR916				Surface RL			
Geologist		Nick Dewar				Date		30/08/2018	
						Page		1	of
									5
Traverse Chainage; or Down hole depth (rock core)	Type LP / BP / FP / J etc.	Dip ° / Dip Direction °; or Angle ° from horizontal (rock core)	Planarity Stp / Un / Pl	Roughness Ro / Sm / SI	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
2.7-2.83								HFZ	
2.83-2.92								HFZ	
2.92	FP	30	Un	Sm	V	OP	Vr/St		Cly/Fe
2.95	FP	40	Un	Sm	V	TI/CD	St		Fe
2.98	FP	50	Un	Sm	V	CD	St		Fe
3.01-3.09	J	90	Un	Sm	V	CD	Vr		Cly
3.06	FP	70	Un	Sm	V	OP	St		Fe
3.09	FP	30	Pl	Sm	VIII	OP	Vr		Cly
3.11	FP	50	Pl	Sm	VIII	OP	St		Fe
3.20	FP	40	Un	Sm	V	OP	St		Fe
3.19-3.24	FP	70	Un	Sm	V	OP	St		Fe
3.24-3.36								HFZ	
3.36-3.45									Core Loss
3.45	FP	60	Un	Sm	V	OP	St		Fe
3.50									
3.46-3.59	FP	70	Un	Sm	V	OP	St		Fe
3.56	J	30	Un	Sm	V	OP	St		Fe
3.58-3.66	FP	60	Pl	Sm	VIII	OP	St		Fe
3.66	FP	60	Pl	Sm	VIII	TI	St		Fe
3.71-3.83	FP	55	Un	Sm	V	OP	St		Fe
3.81-3.92	FP	80	Un	Sm	V	OP	Ct		Cly
3.92-3.99	FP	80	Un	Sm	V	OP/FL	Ct		Cly
4-4.28								HFZ	
4.28	FP	10	Un	Sm	V	OP	Vr		Cly
4.31	FP	20	Un	Sm	V	OP	Vr		Cly
4.31-4.37								HFZ	
4.37	FP	60	Un	Sm	V	OP	St		Fe
4.39	FP	50	Un	Sm	V	OP	St		Fe
4.41	FP	50	Un	Sm	V	OP	Vr		Cly
4.43	FP	60	Un	Sm	V	OP	St		Fe
4.45	FP	50	Un	Sm	V	OP	St		Fe

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)

F:GEOT 533/9 – 2014

Detailed Discontinuity Description Log

This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

Project Name		Cross River Rail - Stage 2				Project No.	FG6470		
Site ID / Borehole No.		CRR916				Surface RL			
Geologist		Nick Dewar				Date	30/08/2018		
						Page	2	of	5
4.44-4.52	J	60	Pl	Sm	VIII	OP	Vr		Cly
4.52	FP	20	Un	Sm	V	OP	St		Fe
4.53	FP	30	Un	Sm	V	OP	St		Fe
4.57	FP	30	Stp	Sm	II	TI	St		Fe
4.63-4.67	SM	50	Un	Sm	V	OP/FL			Cly, 10mm
4.72	FP	10	Un	Sm	V	OP	Vr		Cly
4.72-4.78								HFZ	
4.82	FP	40	Un	Sm	V	OP	Cn		
4.85	FP	30	Un	Sm	V	OP	Vr		Cly
4.87-4.9	J	60	Pl	Sm	VIII	OP	Cn		
4.92	J	50	Un	Sm	V	OP	Cn		
4.96	FP	5	Pl	Sm	VIII	OP	Vr		Cly
4.96-4.97								HFZ	
4.97	FP	0	Un	Sm	V	OP	Vr		Cly
5.01	FP	70	Un	Sm	V	OP	Cn		
5.02	FP	40	Stp	Sm	II	OP	Cn		
5.08	FP	60	Un	Sm	V	OP	Vr		Cly
5.08-5.2								HFZ	
5.20	FP	40	Un	Sm	V	OP	Cn		Qz
5.30	FP	50	Stp	Sm	II	TI	Cn		Qz
5.43	FP	40	Stp	Sm	II	TI	Cn		Qz
5.45	FP	50	Un	Sm	V	OP			Qz
5.54	FP	40	Un	Sm	V	OP	Vr		Cly, Qz
5.55	J	20	Un	Sm	V	OP	Cn		
5.58								HFZ	
5.64	FP	50	Un	Sm	V	OP	St		Fe
5.70	FP	50	Un	Sm	V	OP	St		Fe
5.76	FP	15	Un	Sm	V	OP	St		Fe
5.77	FP	20	Un	Sm	V	OP	St		Fe
5.81	FP	10	Un	Sm	V	OP	St		Cly, Fe
5.85-5.89	FP	50	Un	Sm	V	OP	St		Fe
5.90	FP	0	Un	Sm	V	OP	St		Fe
5.93	FP	50	Pl	Sm	VIII	OP	St		Fe
5.96-6.00								HFZ	
6.00-6.23									core loss
6.23-6.35								HFZ	
6.35	FP	10	Un	Sm	V	OP	St		Fe

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)

F:GEOT 533/9 – 2014

Detailed Discontinuity Description Log

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Project Name		Cross River Rail - Stage 2				Project No.		FG6470	
Site ID / Borehole No.		CRR916				Surface RL			
Geologist		Nick Dewar				Date		30/08/2018	
						Page		3	of
									5
6.37	FP	50	Pl	Sm	VIII	OP	St		Fe
6.37-6.45								HFZ	
6.45								HFZ	
6.50	FP	20	Pl	Sm	VIII	TI/CD	St		Fe
6.59	FP	70	Un	Sm	V	FL	Ct		Cly, 7mm
6.59-6.78								HFZ	
6.78	FP	20	Un	Sm	V	OP	St		Fe
6.79	FP	40	Pl	Sm	VIII	OP	St		Fe
6.80	FP	30	Un	Sm	V	OP	St		Fe
6.82	FP	0	Stp	Sm	II	OP	St		Fe
6.84	FP	5	Stp	Sm	II	OP	St		Fe
6.89	FP	50	Un	Sm	V	OP	St		Fe
6.89-6.94	FP	30	Un	Sm	V	OP	St		Fe
7.00	FP	30	Un	Sm	V	OP	St		Fe
7.03	FP	20	Un	Sm	V	OP	Vr		Cly
7.05	FP	30	Pl	Sm	VIII	OP	St		Fe
7.12	FP	10	Un	Sm	V	OP	St		Fe
7.18	FP	50	Pl	Sm	VIII	OP	St		Fe
7.20	FP	40	Pl	Sm	VIII	OP	Cn		
7.26	FP	40	Pl	Sm	VIII	OP	St		Fe
7.31	FP	40	Pl	Sm	VIII	OP	St		Fe
7.39	FP	30	Un	Sm	V	OP	St		Fe
7.47	FP	20	Un	Sm	V	OP	St		Fe
7.47-7.52								HFZ	
7.52	FP	30	Un	Sm	V	OP	St		Fe
7.60	FP	0	Un	Sm	V	TI/CD	St		Fe
7.64	FP	30	Un	Sm	V	OP	Cn		Qz
7.65	FP	5	Un	Sm	V	OP	St		Fe
7.88	FP	0	Un	Sm	V	TI	St		Fe
7.89	FP	30	Un	Sm	V	OP	St		Fe
7.90	FP	30	Pl	Sm	VIII	OP	St		Fe
7.97	FP	60	Un	Sm	V	OP	St		Fe
7.85-8.03	FP	70	Un	Sm	V	TI	St		Fe
8.05	FP	10	Un	Sm	V	OP	St		Fe
807-8.12	FP	50	Stp	Sm	II	OP	St		Fe
8.12	FP	10	Un	Sm	V	OP	St		Fe
8.12-8.18								HFZ	

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)

F:GEOT 533/9 – 2014

Detailed Discontinuity Description Log

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Project Name						Cross River Rail - Stage 2				Project No. FG6470	
Site ID / Borehole No.						CRR916				Surface RL	
Geologist						Nick Dewar				Date	
										30/08/2018	
										Page	
										4 of 5	
8.24	FP	40	Un	Sm	V	TI	Cn				
8.25	FP	50	PI	Sm	VIII	OP	St			Fe	
8.24-8.32	FP	50	PI	Sm	VIII	OP	St			Fe	
8.29	FP	70	Un	Sm	V	TI	St			Fe	
8.38	FP	70	Un	Sm	V	TI	St			Fe	
8.37	FP	60	Un	Sm	V	OP	Vr			Cly	
8.41	FP	30	Un	Sm	V	OP	St			Fe	
8.43-8.50	FP	80	Un	Sm	V	OP	St			Fe	
8.5-8.53										HFZ	
8.53	FP	70	Un	Sm	V	OP	St/Vr			Fe/Cly	
8.56	FP	30	PI	Sm	VIII	TI	St			Fe	
8.60	FP	60	PI	Sm	VIII	OP	St			Fe	
8.62	FP	10	Stp	Sm	II	OP	St			Fe	
8.62-8.70										HFZ	
8.7-8.83										HFZ	
8.83	FP	20	Un	Sm	V	OP	St			Fe	
8.86	FP	40	Un	Ro	IV	OP	Vr/St			Cly/Fe	
8.88	FP	10	Un	Ro	IV	OP	Vr/St			Cly/Fe	
8.91	FP	10	Un	Ro	IV	OP	Vr/St			Cly/Fe	
8.95	FP	20	Un	Sm	V	OP	Vr/St			Cly/Fe	
8.99	FP	30	Un	Sm	V	OP	St			Fe	
9.04	FP	20	Un	Sm	V	OP	St			Fe	
9.04-9.08										HFZ	
9.08	FP	40	Un	Sm	V	OP	St			Fe	
9.11	FP	10	Stp	Sm	II	CD/TI	St			Fe	
9.17	FP	30	PI	Sm	VIII	OP	St			Fe	
9.22	FP	30	Un	Sm	V	OP	St			Fe	
9.30	FP	50	Un	Sm	V	OP	St			Fe	
9.37-9.41	CS	50	Un	Sm	V	FL	Ct			Cly	
9.44	FP	50	Un	Sm	V	OP	St			Fe	
9.45-9.46										HFZ	
9.46	FP	40	PI	Sm	VIII	OP	St			Fe	
9.48	FP	40	PI	Sm	VIII	OP	St			Fe	
9.52-9.60	FP	80	Stp	Sm	II	TI	St			Fe	
9.55-9.6	FP	50	Un	Sm	V	OP	Vr			Cly	
9.61	FP	50	PI	Sm	VIII	OP	St			Fe	
9.62	FP	50	PI	Sm	VIII	OP	Cn				

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)

F:GEOT 533/9 – 2014

[illegible]

F:GEOT 533/9 – 2014



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STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **CRR916**

Sheet 1 of 2

PIEZOMETER No **CRR916**

PROJECT Cross River Rail (CRR) Project - Additional Geotechnical Investigation

LOCATION Fairfield Station

COORDINATES 502781.9 E; 6957120.6 N

PROJECT No FG6470

SURFACE RL 14.46m

PLUNGE 90°

DATE STARTED 11/07/2018

GRID DATUM MGA94

JOB No

HEIGHT DATUM AHD

BEARING °

DATE COMPLETED 13/07/2018

DRILLER Geodrill

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Piezometer Construction Details		
				Depth (m) / RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
1	13.36		Sandy CLAY (Fill) Brown, moist, firm to stiff. High plasticity. Fine to coarse grained sand.			
2	13.11		PHYLLITE (DCy) XW: Recovered as, pale, brown, pale orange, moist, very dense, fine to medium grained Clayey SAND, with trace Gravel. PHYLLITE (DC) HW: Grey with orange staining, fine grained, foliated, low to mainly medium strength. -FP: 70-90, (5/m), Un/Ro-Sm, CD-Tl, FeSt, Cly Vn			Grout: Cement / Bentonite Mix
3				3.00m / 11.46 AHD		
4				4.00m / 10.46 AHD		Bentonite Pellet Sea
5			4.82m - 5.70m: Frequent Qz seams up to 160mm thick, throughout.			
6						
7						Filter: Washed / Graded Sand
8						
9				8.60m / 5.86 AHD		Top of Slotted Pipe
	4.96					
	4.46		PHYLLITE (DC) MW:			

Continued on next sheet

REMARKS: DCy - Bunya Phyllite. Standpipe piezometer installed.

LOGGED BY

REVIEWED BY

ND

S.Foley



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STANDPIPE PIEZOMETER
INSTALLATION LOG

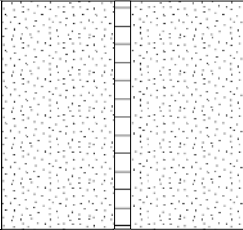
FOR GEOTECHNICAL TERMS AND
SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **CRR916**

Sheet 2 of 2

PIEZOMETER No **CRR916**

PROJECT	Cross River Rail (CRR) Project - Additional Geotechnical Investigation				
LOCATION	Fairfield Station		COORDINATES 502781.9 E; 6957120.6 N		
PROJECT No	FG6470	SURFACE RL	14.46m	PLUNGE	90°
				DATE STARTED	11/07/2018
				GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
				DATE COMPLETED	13/07/2018
				DRILLER	Geodrill

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Piezometer Construction Details		
				Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
11	2.86		PHYLLITE (DCy) MW: Cont'd. Dark grey with pale orange staining, fine grained, foliated, high strength. FP: 20-50, (5/m), Un/Ro-Sm, TI-CD, FeSt, Cly Vr. From 10.30m: reduction in iron staining	11.60m / 2.86 AHD		
12			Borehole completed at 11.60m			
13						
14						
15						
16						
17						
18						
19						

REMARKS: DCy - Bunya Phyllite. Standpipe piezometer installed.	LOGGED BY	REVIEWED BY
	ND	S.Foley

CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Project Name	Cross River Rail CRR 2018 – Geotechnical Investigation		
Project No.	FG6470	Date	11/07/2018
Borehole No.	CRR916	Reference No.	H13116
Location	Fairfield station	Start Depth (m)	2.70
Submitted By	J. Armstrong	Finish Depth (m)	11.60

