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**GEOTECHNICAL
BOREHOLE LOG**

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

BOREHOLE No **CRR710**

Sheet 1 of 6

REFERENCE No **H12936**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Bell Street	COORDINATES 503468.6 E; 6960481.5 N			
PROJECT No	FG6470	SURFACE RL	16.17m	PLUNGE	90°
		DATE STARTED	03/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
		DATE COMPLETED	11/10/2017	DRILLER	Schneider

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	
												EH
0.00m-2.00m					Clayey Gravelly SAND (Fill) Grey, moist. Fine to coarse grained. Fine grained, sub angular to sub rounded gravel.	(SP)				0.00m-2.00m: Non destructive drilling		
2.00m	13.92		(0) 100	A	TUFF (Rif) SW: Orange pale grey, fine grained, massive, high to very strength. with iron staining. Gravel clasts up to 20mm in a fine grained matrix. -Js: 0°-15° (5/m), Un/Sm, OP, FeSt-Cn -Js: 75°-80° (1/m), Un/Sm, CD, FeSt-Cn	SW	H	C	2.42m-2.50m: HFZ 2.90m-3.00m: HFZ 3.19m-3.25m: CZ, Cly	31/115mm hb MC=20.4% <75µm= 17%	SPT	
3.00m			100 (16)			HW	H	C		Is(50)=1.80 MPa Is(50)=2.90 MPa	D (3.35m) A (3.36m)	
4.00m			100 (71)			XW	M	VC	3.58m-3.60m: CZ, Cly 3.69m-3.70m: CZ, Cly 3.75m-4.18m: XW			
5.00m			100 (35)			SW	L	C		Is(50)=3.30 MPa Is(50)=4.40 MPa	D (4.83m) A (4.84m)	
6.00m							M	VC		Is(50)=4.80 MPa Is(50)=2.00 MPa	D (5.39m) A (5.41m)	
7.00m	8.42				TUFF (Rif) FR: Grey, some pale purple, fine grained, massive, high to very high strength. Clasts up to 5mm in a fine grained matrix. -Js: 0°-15° (1/m), Un/Sm-Ro, OP, Cn or Cly Vr -Js: 75°-90° (1/m), Un/Sm, TI-OP, Cn	FR	H-VH	M		Is(50)=1.90 MPa Is(50)=1.90 MPa	D (7.39m) A (7.40m)	
8.00m			100 (45)				C	C		Is(50)=1.90 MPa Is(50)=3.50 MPa	D (8.91m) A (8.92m)	
9.00m	6.17						C	C				

Continued on next sheet

REMARKS: CAI = Average Cerchar abrasivity index (HRC=55). Rif - Brisbane Tuff

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ZC	S. Foley



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**GEOTECHNICAL
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BOREHOLE No **CRR710**

Sheet 2 of 6

REFERENCE No **H12936**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Bell Street	COORDINATES 503468.6 E; 6960481.5 N			
PROJECT No	FG6470	SURFACE RL	16.17m	PLUNGE	90°
		DATE STARTED	03/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
		DATE COMPLETED	11/10/2017	DRILLER	Schneider

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								
												EH		VC		M		W	
												VH	H	M	L	VI	EL	EC	C
11			100 (100)		TUFF (Rif) FR: Cont'd.	FR				Is(50)=4.30 MPa Is(50)=4.30 MPa	D (10.90m) A (10.92m)								
12			100 (65)							Is(50)=1.60 MPa Is(50)=1.50 MPa	D (11.90m) A (11.92m)								
13			100 (74)																
14											Is(50)=3.10 MPa Is(50)=4.50 MPa	D (13.90m) A (13.92m)							
15			100 (0)																
15			100 (79)								Is(50)=5.80 MPa Is(50)=4.70 MPa	D (15.40m) A (15.42m)							
16																			
17											Is(50)=3.30 MPa Is(50)=4.10 MPa	D (16.55m) A (16.56m)							
18			100 (65)								Is(50)=4.80 MPa Is(50)=5.80 MPa	D (17.92m) A (17.94m)							
19																			
	-3.83										Is(50)=6.00 MPa Is(50)=4.90 MPa	D (19.80m) A (19.82m)							

14.66m: Brazilian Tensile Strength = 6.13MPa

Continued on next sheet

REMARKS: CAI = Average Cerchar abrasivity index (HRC=55). Rif - Brisbane Tuff

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BOREHOLE No **CRR710**

Sheet 3 of 6

REFERENCE No **H12936**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Bell Street	COORDINATES 503468.6 E; 6960481.5 N			
PROJECT No	FG6470	SURFACE RL	16.17m	PLUNGE	90°
		DATE STARTED	03/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
		DATE COMPLETED	11/10/2017	DRILLER	Schneider

DEPTH (m)	R.L. (m)	FAUGER CASING WASHBORING CONE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
													EH
21			100 (74)			TUFF (Rif) FR: Cont'd.				M		Is(50)=2.00 MPa Is(50)=3.70 MPa	D (20.44m) A (20.45m)
22												Is(50)=2.60 MPa Is(50)=4.70 MPa	D (21.68m) A (21.69m)
23									H-VH				
24			100 (62)									Is(50)=4.80 MPa Is(50)=4.30 MPa	D (23.82m) A (23.84m)
25							FR					Is(50)=2.50 MPa Is(50)=1.40 MPa	D (24.70m) A (24.80m)
26			100 (82)										
27												Is(50)=4.90 MPa Is(50)=5.30 MPa	D (26.62m) A (26.63m)
28												UCS=56.00 MPa E=23.9 GPa v= 0.089 Is(50)=5.30 MPa Is(50)=4.90 MPa	(27.55m) A (27.67m) D (27.69m)
29			100 (47)									Is(50)=5.10 MPa Is(50)=4.50 MPa	A (29.20m) D (29.25m)

24.30m: 100% Water loss

Continued on next sheet

REMARKS: CAI = Average Cerchar abrasivity index (HRC=55). Rif - Brisbane Tuff

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BOREHOLE No **CRR710**

Sheet 6 of 6

REFERENCE No **H12936**

PROJECT	Cross River Rail CRR2017 - Additional Geotechnical Investigation				
LOCATION	Bell Street	COORDINATES 503468.6 E; 6960481.5 N			
PROJECT No	FG6470	SURFACE RL	16.17m	PLUNGE	90°
		DATE STARTED	03/10/2017	GRID DATUM	MGA94
JOB No		HEIGHT DATUM	AHD	BEARING	°
		DATE COMPLETED	11/10/2017	DRILLER	Schneider

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				
												EH		EC	
												VH	H	VC	C
	-34.68		100 (%)		TUFF (Rif) FR: Cont'd.	FR				Is(50)=0.17 MPa Is(50)=0.42 MPa	D (50.12m) A (50.13m)				
51					Borehole completed at 50.85m										
52															
53															
54															
55															
56															
57															
58															
59															

REMARKS: CAI = Average Cerchar abrasivity index (HRC=55). Rif - Brisbane Tuff	LOGGED BY	REVIEWED BY
	ZC	S. Foley

Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	11/10/2017
Borehole No.	CRR710	Reference No.	H12936
Location	Bell Street	Start Depth (m)	2.25
Submitted By	M. de Gee	Finish Depth (m)	50.85



Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	11/10/2017
Borehole No.	CRR710	Reference No.	H12936
Location	Bell Street	Start Depth (m)	2.25
Submitted By	M. de Gee	Finish Depth (m)	50.85



CORE PHOTO LOG
 DEPARTMENT OF TRANSPORT AND MAIN ROADS
 GEOTECHNICAL SECTION



Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	11/10/2017
Borehole No.	CRR710	Reference No.	H12936
Location	Bell Street	Start Depth (m)	2.25
Submitted By	M. de Gee	Finish Depth (m)	50.85



Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	11/10/2017
Borehole No.	CRR710	Reference No.	H12936
Location	Bell Street	Start Depth (m)	2.25
Submitted By	M. de Gee	Finish Depth (m)	50.85



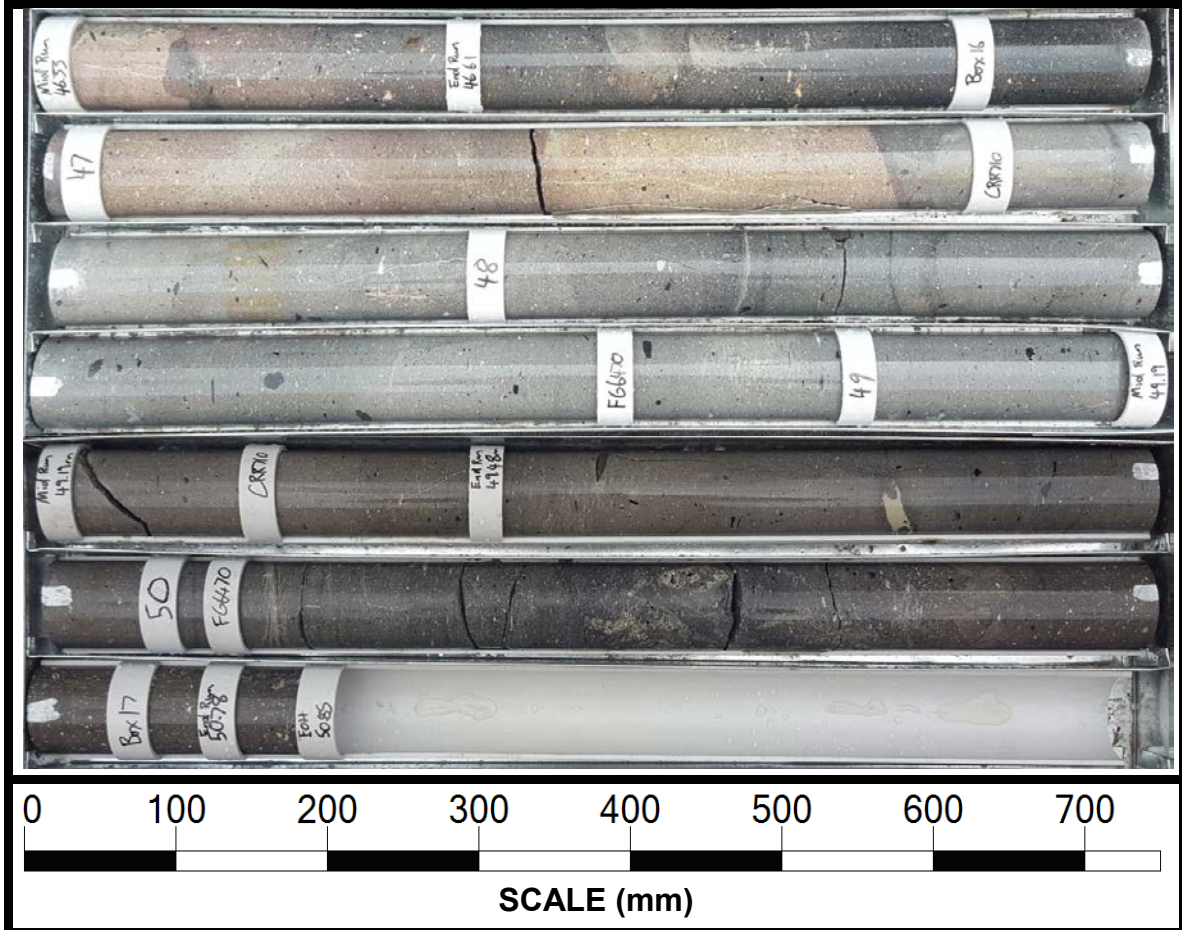
Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	11/10/2017
Borehole No.	CRR710	Reference No.	H12936
Location	Bell Street	Start Depth (m)	2.25
Submitted By	M. de Gee	Finish Depth (m)	50.85



CORE PHOTO LOG
 DEPARTMENT OF TRANSPORT AND MAIN ROADS
 GEOTECHNICAL SECTION



Project Name	Cross River Rail CRR2017 – Geotechnical Investigation		
Project No.	FG6470	Date	11/10/2017
Borehole No.	CRR710	Reference No.	H12936
Location	Bell Street	Start Depth (m)	2.25
Submitted By	M. de Gee	Finish Depth (m)	50.85



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				Project No.		F66470	
Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		1	of 8
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
2.31	J	10	Un	Ro	V	OP	Cn		
2.41								HFZ	
2.5	J	5	Un	Ro	V	OP	Cn		
2.55	J	30	Un	Ro	V	OP	St		Fe
2.55	J	85	Un	Ro	V	CD	St		Fe
2.79	J	30	Un	Ro	V	CD	St		Fe
2.87								HFZ	
3.00	J	30	Un	Ro	V	OP	St		Fe
3.08	J	5	Un	Ro	V	CD	St		Fe
3.10	J	15	Un	Ro	V	OP	St		Fe
3.18								CZ	Cly
3.25	J	15	Un	Ro	V	OP	Cn		
3.27	J	30	Un	Ro	V	OP	Cn		
3.31	J	5	Un	Ro	V	OP	Cn		
3.50	J	5	Un	Ro	V	OP	Cn		
3.55								CZ	Cly
3.58	J	0	Un	Ro	V	OP	Cn		
3.65								CZ	Cly
3.66	J	20	Pl	Ro	VIII	TI	Vr		Cly
3.75								XLN/ Zone	Cly
4.18	J	20	Un	Ro	V	TI	Vr		Fe
4.23	J	20	Un	Ro	V	OP	St		Fe
4.33	J	20	Un	Ro	V	OP	St		Fe
4.35	J	20	Un	Ro	V	TI	St		Fe
4.37	J	5	Un	Ro	V	OP	St		Fe
4.43	J	18	Pl	Ro	V	CD	St		Fe
4.46	J	5	Un	Ro	V	OP	St		Fe
4.91	J	5	Un	Ro	V	CD	St		Fe
4.93	J	5	Un	Ro	V	CD	St		Fe
4.95	J	10	Un	Ro	V	CD	St		Fe
5.02	J	0	Un	Ro	V	CD	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				Project No.		F66470	
Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		2 of 8	
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
5.05	J	15	Un	Ro	V	CD	St		Fe
5.05	J	70	Un	Ro	V	CD	St		Fe
5.14	J	10	Un	Ro	V	CD	St		Fe
5.48	J	10	Un	Ro	V	CD	St		Fe
5.52	J	10	Un	Ro	V	CD	St		Fe
5.55	J	5	Un	Ro	V	OP	St		Fe
5.62	J	25	Un	Ro	V	OP	St		Fe
5.64	J	10	Un	Ro	V	CD	St		Fe
5.71	J	35	Un	Ro	V	CD	St		Fe
6.10	J	85	Un	Ro	V	CD	Cn		
6.47	J	20	Un	Ro	V	CD	St		Fe
6.58	J	60	Un	Ro	V	CD	St		Fe
6.64	J	5	Un	Ro	V	OP	St		Fe
6.76	J	10	Un	Ro	V	CD	St		Fe
7.07	J	80	Un	Ro	V	TI	St		Fe
7.17	J	25	Un	Ro	V	OP	St		Fe
7.19	J	5	Un	Ro	V	CD	St		Fe
7.54	J	0	Pl	Ro	VIII	CD	St		Fe
7.55	J	5	Un	Ro	V	TI	St		Fe
7.57	J	30	Un	Ro	V	TI	St		Fe
7.66	J	30	Un	Ro	V	CD	St		Fe
7.83	J	20	Un	Ro	V	CD	Cn		
7.99	J	20	Un	Ro	V	TI	Cn		
8.02	J	5	Un	Ro	V	OP	Cn		
8.04	J	65	Un	Ro	V	OP	Cn		
8.17	J	80	Un	Ro	V	OP	Cn		
9.18	J	85	Un	Ro	V	CD	Cb		
9.23	J	5	Un	Ro	V	OP	Cn		
9.23	J	85	Un	Ro	V	CD	Cn		
9.94	J	10	Un	Ro	V	OP	Cn		
10.12	J	75	Un	Ro	V	CD	Cn		Fe

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

F:GEOT 533/9 – 2014

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Project Name		Cross River Rail				Project No.		F66470	
Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		3 of 8	
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
10.94	J	5	Un	Ro	IV	CD	St		Fe
10.95	J	5	Un	Ro	IV	OP	St		Fe
10.97	J	5	Un	Ro	IV	CD	St		
11.00	J	75	Un	Ro	IV	CD	St		
11.19	J	5	Un	Ro	IV	OP	Cn		
11.82	J	5	Un	Ro	IV	OP	Cn		
12.11	J	5	Un	Ro	IV	OP	Cn		
12.27	J	5	Un	Ro	IV	OP	Cn		
12.60	J	80	Pl	Ro	VII	OP	St		Fe
12.68	J	40	Un	Ro	V	OP	St		Fe
12.68	J	80	Pl	Ro	VII	OP	St		Fe
13.09	J	5	Un	Ro	IV	OP	St		Fe
13.39	J	5	Un	Ro	IV	OP	Cn		
13.78	J	50	Un	Ro	IV	OP	St		Fe
13.91	J	0	Un	Ro	IV	OP	Cn		
14.04	J	10	Un	Ro	IV	OP	Cn		
14.13	J	10	Un	Ro	IV	OP	Cn		
14.57	J	5	Un	Ro	IV	CD	St		Carb/Ca
14.62	J	5	Un	Ro	IV	OP	Cn		
14.90	J	2	Un	Ro	IV	OP	Cn		
15.02	J	80	Un	Ro	IV	OP	St		Fe
15.09	J	5	Un	Ro	IV	OP	Cn		
15.12	J	10	Un	Ro	IV	OP	Cn		
15.15	J	5	Un	Ro	IV	OP	Cn		
15.15	J	80	Un	Ro	IV	CD	St		Fe
15.35	J	12	Un	Ro	IV	OP	Cn		
15.35	J	90	Pl	Ro	VII	CD	Cn		
15.60	J	5	Un	Ro	IV	OP	Cn		
15.65	J	10	Un	Ro	IV	OP	Cn		
15.65	J	90	Un	Ro	IV	CD	Cn		
16.16	J	20	Un	Ro	IV	CD	St		

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

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Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		4 of 8	
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
16.64	J	5	Un	Ro	IV	CD	Cn		
16.95		10	Un	Ro	IV	OP	St		Fe
17.08	J	10	Un	Ro	IV	CD	Cn		
17.30	J	75	Un	Ro	IV	CD	Cn		
17.51	J	15	Un	Ro	IV	CD	Cn		
17.61	J	5	Un	Ro	IV	OP	Cn		
17.75	J	15	Un	Ro	IV	CD	Cn		
17.87	J	5	Un	Ro	IV	OP	Cn		
18.03	J	0	Un	Ro	IV	OP	Cn		
18.16	J	0	Un	Ro	IV	OP	Cn		
18.25	J	5	Un	Ro	IV	OP	Cn		
18.34	J	10	Un	Ro	IV	CD	Cn		
18.34	J	75	Un	Ro	IV	CD	Cn		
18.36	J	2	Un	Ro	IV	CD	Cn		
18.36	J	70	Un	Ro	IV	CD	Cn		
18.46	J	15	Un	Ro	IV	CD	Cn		
18.53	J	20	Un	Ro	IV	OP	Cn		
19.02	J	75	Un	Ro	IV	TI	Cn		
19.22	J	20	Un	Ro	IV	OP	Cn		
19.22	J	80	Un	Ro	IV	TI	Cn		
19.79	J	15	Pl	Ro	VII	CD	Cn		
20.35	J	18	Un	Ro	IV	CD	Cn		
20.38	J	2	Un	Ro	IV	CD	Cn		
21.24	J	2	Un	Ro	IV	OP	Cn		
21.35	J	40	Pl	Ro	VII	CD	Cn		
21.81	J	60	Un	Ro	IV	CD	Cn		
22.04	J	5	Un	Ro	IV	OP	Cn		
22.31	J	20	Un	Ro	IV	CD	Cn		
22.60	J	70	Un	Ro	IV	OP	Cn		
22.78	J	5	Un	Ro	IV	OP	Cn		
23.23	J	50	Pl	Ro	VII	OP	Cn		

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

F:GEOT 533/9 – 2014

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Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		5 of 8	
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
23.31	J	30	Pl	Ro	VII	CD	Cn		
23.50	J	30	Un	Ro	IV	OP	Cn		
23.50	J	85	Un	Ro	IV	OP	Cn		
23.75	J	20	Pl	Ro	VII	OP	Cn		
24.00	J	80	Un	Ro	IV	CD	Cn		
24.15	J	80	Un	Ro	IV	OP	Cn		
24.31	J	50	Un	Ro	IV	OP	Cn		
24.39	J	85	Un	Ro	IV	CD	Cn		
24.91	J	50	Pl	Ro	VII	OP	Cn		
25.00	J	50	Pl	Ro	VII	CD	Cn		
25.13	J	80	Un	Ro	IV	OP	Cn		
25.44	J	20	Un	Ro	IV	OP	Cn		
25.95	J	10	Un	Ro	IV	OP	Cn		
26.19	J	0	Pl	Ro	VII	OP	Cn		
26.24	J	10	Un	Ro	IV	OP	Cn		
26.90	J	30	Un	Ro	IV	CD	Cn		
26.93	J	50	Un	Ro	IV	CD	Cn		
27.04	J	80	Un	Ro	IV	CD	Cn		
27.32	J	85	Un	Ro	IV	CD	Cn		
27.42	J	20	Un	Ro	IV	OP	Cn		
27.42	J	80	Un	Ro	IV	Cd	Cn		
27.68	J	20	Un	Ro	IV	CD	Cn		
28.75	J	80	Un	Ro	IV	CD	Cn		
28.82	J	75	Un	Ro	IV	CD	Cn		
29.07	J	5	Pl	Ro	VII	CD	Cn		
29.31	J	25	Un	Ro	IV	CD	Cn		
29.41	J	50	Un	Ro	IV	CD	Cn		
29.43	J	50	Un	Ro	IV	CD	Cn		
29.72	J	5	Un	Ro	IV	CD	Cn		
29.81	J	30	Un	Ro	IV	CD	Cn		
29.91	J	80	Un	Ro	IV	CD	Cn		

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				Project No.		F66470	
Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		6 of 8	
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
30.28	J	80	Un	Ro	IV	CD	Cn		
30.80	J	10	Un	Ro	IV	CD	Cn		
30.90	J	10	Un	Ro	IV	OP	Cn		
30.97	J	70	Un	Ro	IV	OP	Cn		
31.16	J	15	Un	Ro	IV	CD	Cn		
31.30	J	30	Un	Ro	IV	CD	Cn		
31.80	J	30	Un	Ro	IV	CD	Cn		
31.94	J	50	Un	Ro	IV	CD	Cn		
32.00	J	50	Un	Ro	IV	CD	Cn		
32.08	J	30	Un	Ro	IV	CD	Cn		
32.19	J	10	Un	Ro	IV	CD	Cn		
32.27	J	40	Un	Ro	IV	CD	Cn		
32.33	J	20	Un	Ro	IV	CD	Cn		
32.64	J	60	Un	Ro	IV	OP	Cn		
32.75	J	70	Un	Ro	IV	OP	Cn		
32.90	J	70	Un	Ro	IV	OP	Cn		
33.05	J	70	Un	Ro	IV	OP	Cn		
33.30	J	80	Un	Ro	IV	OP	Cn		
34.18	J	70	Un	Ro	IV	OP	Cn		
34.37	J	80	Stp/Un	Ro	I / IV	OP	Cn		
34.58	J	75	Un	Ro	IV	CD	Cn		
34.72	J	10	Un	Ro	IV	OP	Cn		
35.10	Js		Un	Ro	IV	OP	Cn	HFZ	70mm
35.18	J	0	Un	Ro	IV	OP	Cn		
35.36	J	0	Un	Ro	IV	OP	Cn		
35.63	J	10	Un	Ro	IV	OP	Cn		
35.71	J	12	Un	Ro	IV	OP	Cn		
35.74	J	0	Un	Ro	IV	OP	Cn		
35.90	J	5	Un	Ro	IV	OP	Cn		
36.13	J	5	Un	Ro	IV	OP	Cn		
36.17	J	5	Un	Ro	IV	TI	Cn		

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

F:GEOT 533/9 – 2014

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Site ID / Borehole No.		CRR710				Surface RL		28.60	
Geologist		Z.C.				Date		27/11/2017	
						Page		7	of 8
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹ SZ / CZ / HFZ / AZ	Other
36.40	J	75	Un	Ro	IV	CD	Cn		
37.19	J	5	Un	Ro	IV	OP	Cn		
37.62	J	75	Un	Ro	IV	CD	Cn		
38.39	J	5	Un	Ro	IV	OP	Cn		
38.51	J	0	Un	Ro	IV	OP	Cn		
38.85	J	10	Un	Ro	IV	OP	Cn		
38.96	J	5	Un	Ro	IV	OP	Cn		
39.30	J	75	Un	Ro	IV	CD	Cn		
40.03	J	20	Stp	Ro	I	OP	Cn		
40.09	J	50	Un	Ro	IV	CD	Cn		
40.15	J	60	Un	Ro	IV	CD	Cn		
40.53	J	15	Un	Ro	IV	CD	Cn		
40.71	J	10	Un	Ro	IV	OP	Cn		
40.86	J	10	Un	Ro	IV	OP	Cn		
40.92	J	5	Un	Ro	IV	TI	Cn		
41.12	J	20	Un	Ro	IV	CD	Cn		
41.19	J	5	Un	Ro	IV	OP	Cn		
41.52	J	75	Un	Ro	IV	CD	Cn		
41.73	J	5	Un	Ro	IV	OP	Cn		
41.73	J	60	Un	Ro	IV	CD	Cn		
41.92	J	80	Un	Ro	IV	Cd	Cn		
42.42	J	30	Un	Ro	IV	OP	Cn		
43.06	J	70	Un	Ro	IV	OP	Cn		
43.11	J	80	Un	Ro	IV	CD	Cn		
43.38	J	30	Un	Ro	IV	OP	Cn		
43.53	J	10	Un	Ro	IV	OP	Cn		
43.66	J	10	Un	Ro	IV	OP	Cn		
43.88	J	30	Un	Ro	IV	OP	Cn		
43.91	J	70	Un	Ro	IV	CD	Cn		
44.20	J	50	Un	Ro	IV	OP	Cn		
44.38	J	15	Un	Ro	IV	TI	Cn		

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

F:GEOT 533/9 – 2014

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Site ID / Borehole No.		CRR710				Surface RL		28.60		
Geologist		Z.C.				Date		27/11/2017		
						Page		8	of	8
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 / Sl	Roughness Class I to IX	Aperture CD / OP / FL / TI	Infilling Cn / St / Vr / Ct ¹	Zones ¹		Other
								SZ / CZ / HFZ / AZ		
44.46	J	0	Un	Ro	IV	OP	Cn			
44.50	J	80	Un	Ro	IV	TI	Cn			
44.66	J	80	Un	Ro	IV	TI	Cn			
45.06	J	85	Un	Ro	IV	CD	Cn			
45.42	J	55	Un	Ro	IV	TI	Cn			
45.81	J	40	Un	Ro	IV	CD	Cn			
45.93		20	Un	Ro	IV	TI	Cn	CZ		50mm
46.09	J	10	Un	Ro	IV	OP	Cn			
46.61	J	5	Un	Ro	IV	OP	Cn			
47.07	J	90	Un	Ro	IV	CD	Cn			
47.30	J	10	Un	Ro	IV	OP	Cn			
47.30	J	80	Un	Ro	IV	TI	Cn			
47.71	J	80	Un	Ro	IV	CD	Cn			
48.10	J	10	Un	Ro	IV	CD	Cn			
48.17	J	10	Un	Ro	IV	CD	Cn			
48.24	J	10	Un	Ro	IV	OP	Cn			
48.27	J	10	Un	Ro	IV	CD	Cn			
49.19	J	30	Un	Ro	IV	OP	Cn			
49.48	J	5	Un	Ro	IV	OP	Cn			
49.56	J	80	Un	Ro	IV	TI	Cn			
50.10	J	0	Un	Ro	IV	OP	Cn			
50.20	J	50	Un	Ro	IV	OP	Cn			
20.23	J	10	Un	Ro	IV	OP	Cn			
20.38	J	10	Un	Ro	IV	OP	Cn			
50.45	J	10	Un	Ro	IV	OP	Cn			
50.78		15	Un	Ro	IV	OP	Cn			

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

F:GEOT 533/9 – 2014