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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR708**

Sheet 1 of 5

REFERENCE No **H12934**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street — COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 — SURFACE RL 17.83m — PLUNGE 90° — DATE STARTED 03/11/2017 — GRID DATUM MGA94

JOB No — HEIGHT DATUM AHD — BEARING ° — DATE COMPLETED 10/11/2017 — DRILLER Schneider

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (EC VC C M W VW EW)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
	17.78				ASPHALT (Fill)					0.00m-1.70m: Non destructive drilling	
					Gravelly SAND (Fill) Pale grey brown, wet, loose to medium dense. Fine grained sand, medium grained sub angular gravel.		(SP)				
1	16.83				Sandy CLAY (Fill) Orange brown, wet, soft to firm. Fine grained sand, sub angular. Trace of organic matter. High plasticity.		(CH)				
	16.23				TUFF (Rif) XW: Recovered as Gravelly Silty SAND, orange grey, moist, very dense.		XW				
2				A						30/140mm hb LL=41% PI= 23% MC=12.6% LS= 8% <75µm= 29%	SPT
	14.83		(9)		TUFF (Rif) MW: Grey orange, fine to medium grained gravel size clasts within fine grained matrix, massive, mainly medium to high strength. Gravel clasts are subangular. -Js: 5°-30° (20/m), Pl/Ro, OP, FeSt.		SW	MH	VC		A (3.29m) D (3.31m)
3				CORE LOSS						Is(50)=1.20 MPa Is(50)=0.56 MPa	
							SW			3.85m-3.90m: XW	
4			94				HW	M	VC	4.21m-4.58m: HFZ	
			(30)				MW				
							XW		FE	4.85m-5.25m: HFZ 4.95m-4.97m: Sandy Clay seam	
5				CORE LOSS							
							SW	H	VC	Is(50)=0.95 MPa Is(50)=1.80 MPa	A (5.61m) D (5.65m)
								M			
6			93							Is(50)=0.94 MPa	A (6.10m)
			(0)	CORE LOSS			MW	M	VC		
			71								
			(0)	CORE LOSS			MW	M	VC		
			73								
7			(0)	CORE LOSS							
							MW	M	VC		
			89							7.90m-8.10m: HFZ	
8			(22)								
			100							Is(50)=0.46 MPa Is(50)=0.80 MPa	D (8.42m) A (8.49m)
	9.15		(83)							8.61m-8.67m: HFZ	
					TUFF (Rif) FR: Pale blue grey, fine grained, massive, high strength. Fine to coarse grained sub angular clasts within a fine grained matrix. -Js: 0°-20° (1-3/m), Pl/Ro, OP, Cn					Is(50)=1.50 MPa Is(50)=2.50 MPa	D (8.84m) A (8.87m)
9							FR		W		
			100							Is(50)=2.40 MPa Is(50)=3.10 MPa	D (9.34m) A (9.36m)
			(99)								
	7.83										

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR708**

Sheet 2 of 5

REFERENCE No **H12934**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street

COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 | SURFACE RL 17.83m | PLUNGE 90° | DATE STARTED 03/11/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 10/11/2017 | DRILLER Schneider

DEPTH (m)	R.L. (m)	RQD ( ) % / CORE REC %	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
11		100 (99)	TUFF (Rif) FR: Cont'd.				M	Is(50)=1.40 MPa Is(50)=2.50 MPa	D (10.12m) A (10.15m)
12		100 (99)						Is(50)=1.90 MPa Is(50)=2.20 MPa	D (11.50m) A (11.60m)
13								Is(50)=2.10 MPa Is(50)=2.50 MPa	D (13.11m) A (13.19m)
14									
15		100 (100)			FR			Is(50)=2.50 MPa Is(50)=2.50 MPa	A (15.33m) D (15.38m)
16							W		
17									
18		100 (100)						Is(50)=1.40 MPa Is(50)=2.20 MPa	D (17.64m) A (17.70m)
19									
	-2.17	100 (97)						Is(50)=3.00 MPa Is(50)=1.30 MPa	A (19.90m) D (19.95m)

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR708**

Sheet 3 of 5

REFERENCE No **H12934**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street

COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 | SURFACE RL 17.83m | PLUNGE 90° | DATE STARTED 03/11/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 10/11/2017 | DRILLER Schneider

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (EC VC C M W VW EW)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
21			100 (99)		TUFF (Rif) FR: Cont'd.					Is(50)=1.80 MPa Is(50)=1.70 MPa	A (21.39m) D (21.45m)
22											
23											
24			100 (84)							Is(50)=0.46 MPa Is(50)=2.30 MPa	D (23.62m) A (23.66m)
25							FR	H			
26										Is(50)=1.30 MPa Is(50)=2.20 MPa	D (25.37m) A (25.40m)
27			100 (100)		From 27.0m: Becomes pale blue grey and grey.					Is(50)=1.10 MPa Is(50)=1.90 MPa	D (26.85m) A (26.91m)
28											
29	-12.17									Is(50)=2.50 MPa Is(50)=2.50 MPa 29.09m-29.25m: Brazilian Tensile Strength = 5.51 MPa Is(50)=3.00 MPa Is(50)=3.00 MPa 29.46m-29.61m: CAI=0.44	D (28.39m) A (28.44m) D (29.33m) A (29.38m)

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR708**

Sheet 4 of 5

REFERENCE No **H12934**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street

COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 | SURFACE RL 17.83m | PLUNGE 90° | DATE STARTED 03/11/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 10/11/2017 | DRILLER Schneider

DEPTH (m)	R.L. (m)	RQD ( ) % / CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USCS WEATHERING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
		100 (92)		TUFF (Rif) FR: Cont'd.		Is(50)=1.80 MPa Is(50)=2.30 MPa	D (30.15m) A (30.20m)
						UCS=29.90 MPa E=8.56 GPa v= 0.026 Is(50)=2.80 MPa Is(50)=2.90 MPa	(30.64m) A (30.82m) D (30.85m)
31						31.50m-31.66m: CAI=0.48	
						Is(50)=2.50 MPa Is(50)=2.20 MPa	D (31.82m) A (31.94m)
32						32.09m-32.25m: Slake Durability Index Test	
		100 (97)					
33						Is(50)=2.60 MPa Is(50)=2.30 MPa	D (32.95m) A (32.97m)
34						Is(50)=1.60 MPa Is(50)=1.60 MPa	D (34.05m) A (34.07m)
						34.33m-34.50m: CAI=0.82	
35					FR	Is(50)=1.60 MPa Is(50)=2.50 MPa	D (34.95m) A (34.96m)
		100 (99)		From 35.7m: Becomes dark grey and grey. -Js: 0°-10° (1/m), Pl/Ro, OP, Cn.			
36						Is(50)=0.09 MPa Is(50)=1.70 MPa	D (35.96m) A (35.97m)
37						Is(50)=2.90 MPa Is(50)=2.30 MPa	D (36.91m) A (36.92m)
38							
		100 (90)					
39						Is(50)=0.47 MPa Is(50)=1.40 MPa	D (39.30m) A (39.32m)
	-22.17					UCS=26.60 MPa E=19.7 GPa v= 0.089 Is(50)=0.96 MPa Is(50)=0.55 MPa	(39.60m) D (39.82m) A (39.83m)

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR708**

Sheet 5 of 5

REFERENCE No **H12934**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street

COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 | SURFACE RL 17.83m | PLUNGE 90° | DATE STARTED 03/11/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 10/11/2017 | DRILLER Schneider

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (EC VC C M W VW EW)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
41			100 (95)		TUFF (Rif) FR: Cont'd.		FR		w	Is(50)=1.60 MPa Is(50)=2.10 MPa	D (41.72m) A (41.73m)
42											
43	-25.27		100		Borehole completed at 43.10m						
44											
45											
46											
47											
48											
49											

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR708**

Sheet 1 of 5

PIEZOMETER No **CRR708**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 SURFACE RL 17.83m PLUNGE 90° DATE STARTED 03/11/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 10/11/2017 DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION
	17.78		ASPHALT(Fill)
			Gravelly SAND(Fill) Pale grey brown, wet, loose to medium dense. Fine grained sand, medium grained sub angular gravel.
1	16.83		Sandy CLAY(Fill) Orange brown, wet, soft to firm. Fine grained sand, sub angular. Trace of organic matter. High plasticity.
	16.23		TUFF Recovered as Gravelly Silty SAND, orange grey, moist, very dense.
2			
3	14.83		TUFF Grey orange, fine to medium grained gravel size clasts within fine grained matrix, massive, mainly medium to high strength. Gravel clasts are subangular. -Js: 5°-30° (20/m), Pl/Ro, OP, FeSt.
4			
5			
6			
7			
8			
	9.15		TUFF Pale blue grey, fine grained, massive, high strength. Fine to coarse grained sub angular clasts within a fine grained matrix. -Js: 0°-20° (1-3/m), Pl/Ro, OP, Cn
9	7.83		

Standpipe Construction Details

Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR708**

Sheet 2 of 5

PIEZOMETER No **CRR708**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street

COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 | SURFACE RL 17.83m | PLUNGE 90° | DATE STARTED 03/11/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 10/11/2017 | DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details: Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
11			TUFF Cont'd.			
12						
13						
14						
15						Grout: Cement / Bentonite mix
16						
17						
18						
19						
	-2.17					

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR708**

Sheet 3 of 5

PIEZOMETER No **CRR708**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street

COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 | SURFACE RL 17.83m | PLUNGE 90° | DATE STARTED 03/11/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 10/11/2017 | DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details: Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
21			TUFF Cont'd.			
22						
23						
24						
25						
26						
27			From 27.0m: Becomes pale blue grey and grey.			
28						
29						
	-12.17					

Continued on next sheet

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR708**

Sheet 4 of 5

PIEZOMETER No **CRR708**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 SURFACE RL 17.83m PLUNGE 90° DATE STARTED 03/11/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 10/11/2017 DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION
31			TUFF Cont'd.
32			
33			
34			
35			
36			From 35.7m: Becomes dark grey and grey. -Js: 0°-10° (1/m), Pl/Ro, OP, Cn.
37			
38			
39			
	-22.17		

Continued on next sheet

Standpipe Construction Details

Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
34.10m / -16.27 AHD		
35.10m / -17.27 AHD		Bentonite Seal
37.10m / -19.27 AHD		Top of Slotted Pipe
		Filter: Washed / Graded Sand

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

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STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR708**

Sheet 5 of 5

PIEZOMETER No **CRR708**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Lockerbie Street COORDINATES 503442.5 E; 6960158.2 N

PROJECT No FG6470 SURFACE RL 17.83m PLUNGE 90° DATE STARTED 03/11/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 10/11/2017 DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Construction Details: Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
41			TUFF Cont'd.			
42						
43	-25.27		Borehole completed at 43.10m	43.10m / -25.27 AHD		
44						
45						
46						
47						
48						
49						

REMARKS: Rip - Aspley Formation. Rif - Brisbane Tuff. Standpipe piezometer installed.

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TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

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DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

Project Name	**Cross River Rail CRR2017 – Geotechnical Investigation**		
Project No.	FG6470	Date	10/11/2017
Borehole No.	CRR708	Reference No.	H12934
Location	Lockerbie Street	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.10

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CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

Project Name	**Cross River Rail CRR2017 – Geotechnical Investigation**		
Project No.	FG6470	Date	10/11/2017
Borehole No.	CRR708	Reference No.	H12934
Location	Lockerbie Street	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.10

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CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

Project Name	**Cross River Rail CRR2017 – Geotechnical Investigation**		
Project No.	FG6470	Date	10/11/2017
Borehole No.	CRR708	Reference No.	H12934
Location	Lockerbie Street	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.10

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DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

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Project Name	**Cross River Rail CRR2017 – Geotechnical Investigation**		
Project No.	FG6470	Date	10/11/2017
Borehole No.	CRR708	Reference No.	H12934
Location	Lockerbie Street	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.10

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GEOTECHNICAL SECTION

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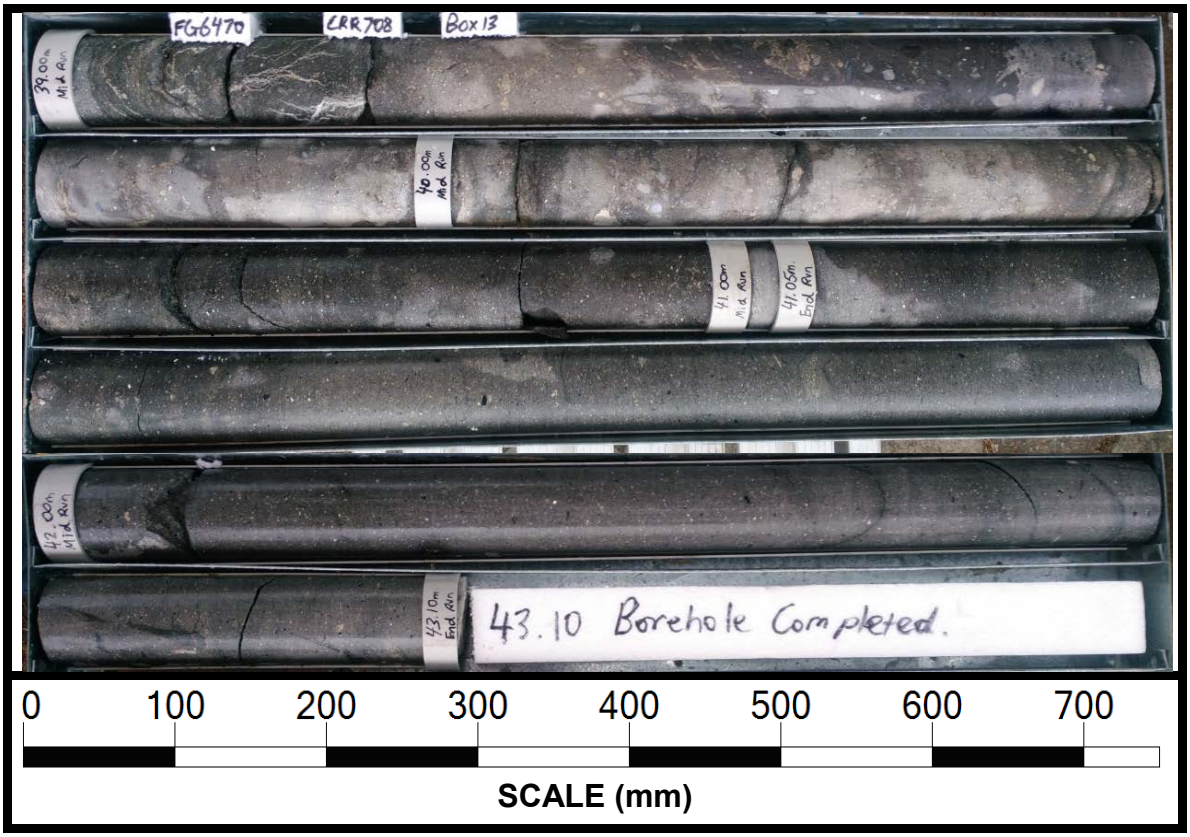
Project Name	**Cross River Rail CRR2017 – Geotechnical Investigation**		
Project No.	FG6470	Date	10/11/2017
Borehole No.	CRR708	Reference No.	H12934
Location	Lockerbie Street	Start Depth (m)	3.00
Submitted By	M. de Gee	Finish Depth (m)	43.10



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Detailed Discontinuity Description Log

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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 sho 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.	FG6470
Site ID / Borehole No.	CRR708	Surface RL	17.87
Geologist	H.A.	Date	3/11/2017
		Page	1 of 4

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 / Tl	Infilling Cn / St / Vr / Ct [1]	Zones [1] SZ / CZ / HFZ / AZ	Other
3.06	J	10	Pl	Ro	VII	OP	St		Fe
3.13	J	15	Pl	Ro	VII	OP	St		Fe
3.16	J	5	Pl	Ro	VII	OP	St		Fe
3.24	J	10	Pl	Ro	VII	OP	St		Fe
3.37	J	15	Pl	Ro	VII	OP	St		Fe
3.51	J	50	Pl	Ro	VII	FL	Vr		Cly
3.62	J	20	Pl	Ro	VII	OP	St		Fe
3.67	J	20	Pl	Ro	VII	OP	St		Fe
3.99	J	10	Pl	Ro	VII	OP	St		Fe
4.05	J	5	Pl	Ro	VII	OP	St		Fe
4.08	J	90	Pl	Ro	VII	OP	St		Fe
4.15	J	45	Pl	Ro	VII	OP	St		Fe
4.25	J	30	Pl	Ro	VII	OP	St	HFZ	Fe
4.35	J	90	Pl	Ro	VII	OP	St	HFZ	Fe
4.40	J	45	Pl	Ro	VII	OP	St	HFZ	Fe
4.50	J	10	Pl	Ro	VII	OP	St	HFZ	Fe
4.75	J	15	Pl	Ro	VII	OP	St		Fe
4.77	J	15	Pl	Ro	VII	OP	St		Fe
4.90	J	90	Pl	Ro	VII	OP	St	HFZ	Fe
4.96	J	45	Pl	Ro	VII	FL		SZ	*
* Sandy clay 20mm									
5.00	J	45	Pl	Ro	VII	OP	St	HFZ	Fe
5.06	J	10	Pl	Ro	VII	OP	St	HFZ	Fe
Core Loss 5.15m - 5.25m									
5.38	J	2	Pl	Ro	VII	OP	St		Fe
5.47	J	1	Pl	Ro	VII	OP	St		Fe
5.52	J	2	Pl	Ro	VII	Tl	St		Fe
5.75	J	5	Pl	Ro	VII	OP	St		Fe
5.77	J	2	Pl	Ro	VII	OP	St		Fe
5.83	J	3	Pl	Ro	VII	OP	St		Fe
5.87	J	5	Pl	Ro	VII	OP	St		Fe

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

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Detailed Discontinuity Description Log

Queensland Government

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Project Name	Cross River Rail	Project No.	FG6470
Site ID / Borehole No.	CRR708	Surface RL	17.87
Geologist	H.A.	Date	3/11/2017
		Page	2 of 4

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 / Tl	Infilling Cn / St / Vr / Ct [1]	Zones [1] SZ / CZ / HFZ / AZ	Other
5.95	J	5	Pl	Ro	VII	OP	St		Fe
5.97	J	2	Pl	Ro	VII	OP	St		Fe
6.05	J	5	Pl	Ro	VII	OP	St		Fe
6.08	J	5	Pl	Ro	VII	OP	St		Fe
6.13	J	10	Pl	Ro	VII	OP	St		Fe
6.19	J	5	Pl	Ro	VII	OP	Vr		Clay
6.32	J	5	Pl	Ro	VII	OP	Vr		Fe
6.35	J	20	Pl	Ro	VII	OP	St		Fe
6.38	J	5	Pl	Ro	VII	OP	St		Fe
6.51	J	5	Pl	Ro	VII	OP	St		Fe
6.54	J	5	Pl	Ro	VII	OP	St		Fe
6.72	J	5	Pl	Ro	VII	OP	St		Fe
6.81	J	5	Pl	Ro	VII	OP	St		Fe
6.85	J	10	Pl	Ro	VII	OP	St		Fe
6.90	J	10	Pl	Ro	VII	OP	St		Fe
7.09	J	5	Pl	Ro	VII	OP	St		Fe
7.15	J	10	Pl	Ro	VII	OP	St		Fe
7.20	J	10	Pl	Ro	VII	OP	St		Fe
7.26	J	5	Pl	Ro	VII	OP	St		Fe
7.31	J	10	Pl	Ro	VII	OP	St		Fe
7.36	J	5	Pl	Ro	VII	OP	St		Fe
7.43	J	30	Pl	Ro	VII	OP	St		Fe
7.47	J	15	Pl	Ro	VII	OP	St		Fe
7.53	J	2	Pl	Ro	VII	OP	St		Fe
7.59	J	5	Pl	Ro	VII	Tl	St	HFZ	Fe
7.67	J	10	Pl	Ro	VII	OP	St		Fe
7.73	J	2	Pl	Ro	VII	OP	St		Fe
7.82	J	15	Pl	Ro	VII	OP	St	HFZ	Fe
7.88	J	10	Pl	Ro	VII	OP	St	HFZ	Fe
7.97	J	10	Pl	Ro	VII	OP	St	HFZ	Fe
8.02	J	5	Pl	Ro	VII	OP	St		Fe

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

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Project Name	Cross River Rail	Project No.	FG6470
Site ID / Borehole No.	CRR708	Surface RL	17.87
Geologist	H.A.	Date	3/11/2017
		Page	3 of 4

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 / Tl	Infilling Cn / St / Vr / Ct [1]	Zones [1] SZ / CZ / HFZ / AZ	Other
8.07	J	15	Pl	Ro	VII	OP	St		Fe
8.19	J	20	Pl	Ro	VII	OP	St		Fe
8.30	J	10	Pl	Ro	VII	OP	St		Fe
8.38	J	10	Pl	Ro	VII	OP	St		Fe
8.52	J	20	Pl	Ro	VII	Tl	St		Fe
8.62	J	5	Pl	Ro	VII	OP	St	HFZ	
8.64	J	5	Pl	Ro	VII	OP	St	HFZ	
8.67	J	5	Pl	Ro	VII	OP	St	HFZ	
9.90	J	2	Pl	Ro	VII	OP	St		Fe
10.20	J	20	Pl	Ro	VII	OP	St		Fe
10.35	J	5	Pl	Ro	VII	OP	Cn		
10.94	J	10	Pl	Ro	VII	OP	Cn		
11.60	J	2	Pl	Ro	VII	OP	Cn		
11.93	J	5	Pl	Ro	VII	OP	Cn		
12.08	J	2	Pl	Ro	VII	OP	Cn		
13.79	J	30	Pl	Ro	VII	OP	Cn		
14.89	J	15	Pl	Ro	VII	OP	Cn		
15.03	J	40	Pl	Ro	VII	OP	Cn		
15.09	J	30	Pl	Ro	VII	OP	Cn		
16.30	J	20	Pl	Ro	VII	OP	Cn		
18.12	J	10	Pl	Ro	VII	OP	Cn		
19.62	J	5	Pl	Ro	VII	OP	Cn		
19.74	J	5	Pl	Ro	VII	OP	Cn		
20.33	J	10	Pl	Ro	VII	OP	Cn		
20.53	J	20	Pl	Ro	VII	OP	Cn		
21.34	J	3	Pl	Ro	VII	OP	Cn		
22.33	J	10	Pl	Ro	VII	OP	Cn		
22.53	J	20	Pl	Ro	VII	OP	Cn		
23.43	J	2	Pl	Ro	VII	OP	Cn		
23.69	J	35	Pl	Ro	VII	OP	Cn		
24.32	J	50	Pl	Ro	VII	OP	Cn		

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

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Project Name	Cross River Rail	Project No.	FG6470
Site ID / Borehole No.	CRR708	Surface RL	17.87
Geologist	H.A.	Date	3/11/2017
		Page	4 of 4

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 / Tl	Infilling Cn / St / Vr / Ct [1]	Zones [1] SZ / CZ / HFZ / AZ	Other
24.44	J	2	Pl	Ro	VII	OP	Cn		
24.98	J	50	Pl	Ro	VII	Tl	Vr		Clay
25.56	J	5	Pl	Ro	VII	OP	Cn		
25.63	J	10	Pl	Ro	VII	OP	Cn		
26.65	J	45	Pl	Ro	VII	Tl	Vr		Clay
26.69	J	65	Pl	Ro	VII	Tl	Cn		
28.94	J	25	Pl	Ro	VII	OP	Cn		
31.11	J	45	Pl	Ro	VII	OP	Cn		
32.04	J	50	Pl	Ro	VII	OP	Cn		
32.35	J	10	Pl	Ro	VII	OP	Cn		
33.68	J	55	Pl	Ro	VII	OP	Cn		
34.55	J	35	Pl	Ro	VII	OP	Cn		
35.69	J	5	Pl	Ro	VII	OP	Cn		
36.17	J	10	Pl	Ro	VII	OP	Cn		
36.19	J	5	Pl	Ro	VII	OP	Cn		
36.32	J	2	Pl	Ro	VII	OP	Cn		
37.68	J	5	Pl	Ro	VII	OP	Cn		
39.08	J	45	Stp	Ro	I	OP	Cn		
39.21	J	15	Pl	Ro	VII	OP	Cn		
40.06	J	2	Pl	Ro	VII	OP	Cn		
40.23	J	20	Pl	Ro	VII	OP	Cn		
40.59	J	45	Pl	Ro	VII	OP	Cn		
40.65	J	50	Pl	Ro	VII	OP	Cn		
40.80	J	2	Pl	Ro	VII	OP	Cn		
41.32	J	2	Pl	Ro	VII	OP	Cn		
42.09	J	5	Pl	Ro	VII	OP	Cn		
42.65	J	35	Pl	Ro	VII	OP	Cn		
42.88	J	20	Pl	Ro	VII	OP	Cn		

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

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