FINAL 02/03/2018

Queensland Government

GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR730**

Sheet 1 of 2

REFERENCE No **H12956**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION RNA showgrounds

COORDINATES 502976.5 E; 6963669.6 N

PROJECT No FG6470 | SURFACE RL 9.85m | PLUNGE 90° | DATE STARTED 26/09/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 26/09/2017 | 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
0					Gravelly SAND (Fill) Grey, moist to dry. Fine to coarse grained. Fine grained, sub angular gravel.		(SP)			0.00m-1.50m: Non destructive drilling	
1	8.35			A	Sandy CLAY (Fill) Brown mottled orange red, moist, soft to firm. High plasticity. Fine grained sand.		(CH)			2, 2, 2 N=4	SPT
2	7.70		(71)		TUFF (Rif) SW: Orange white, pale purple mottled brown and grey, fine to coarse gravel sized clasts in fine grained matrix, massive, high strength. Some iron staining; clasts are typically 2mm-5mm, sub angular. -Js: 0°-10° (5/m), Un/Sm, OP, FeSt -J: 80°-90° (1/m), Un/Sm, OP-CD, Ct-FeSt 4.45-4.76: Iron staining			H / C		Su(PP)=50 kPa 2.43m-2.47m: HW 2.78m-2.80m: HW	
3							SW		M	Is(50)=0.79 MPa Is(50)=2.30 MPa	D (2.64m) A (2.65m)
4										Is(50)=2.10 MPa Is(50)=2.80 MPa	D (3.60m) A (3.61m)
5			100 (76)				MW			Is(50)=0.19 MPa Is(50)=1.50 MPa	D (4.15m) A (4.17m)
6									M	Is(50)=1.80 MPa Is(50)=2.80 MPa	D (5.30m) A (5.31m)
7							SW	H	C	UCS=46.80 MPa E=9.42 GPa v= 0.067 Is(50)=1.50 MPa Is(50)=1.60 MPa Is(50)=2.50 MPa Is(50)=2.10 MPa	(6.14m) D (6.30m) A (6.31m) D (6.90m) A (6.92m)
8			100 (79)						M / C	Is(50)=1.90 MPa Is(50)=2.50 MPa	D (7.62m) A (7.63m)
9									M	Is(50)=2.10 MPa Is(50)=1.90 MPa	D (8.42m) A (8.43m)
	-0.15								C	Is(50)=2.10 MPa Is(50)=3.60 MPa UCS=50.60 MPa E=8.8 GPa v= 0.095 Is(50)=1.10 MPa Is(50)=3.40 MPa	D (9.11m) A (9.12m) (9.40m) D (9.56m) A (9.57m)

Continued on next sheet

REMARKS: Rif - Brisbane Tuff. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
ZC	S. Foley

Queensland Government

GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR730**

Sheet 2 of 2

REFERENCE No **H12956**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION RNA showgrounds

COORDINATES 502976.5 E; 6963669.6 N

PROJECT No FG6470 | SURFACE RL 9.85m | PLUNGE 90° | DATE STARTED 26/09/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 26/09/2017 | 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
	-0.28		100		TUFF (Rif) SW: Cont'd. Borehole completed at 10.13m		SW				
11											
12											
13											
14											
15											
16											
17											
18											
19											

REMARKS: Rif - Brisbane Tuff. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
ZC	S. Foley

FINAL 06/03/2018

Queensland Government

STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR730**

Sheet 1 of 2

PIEZOMETER No **CRR730**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION RNA showgrounds COORDINATES 502976.5 E; 6963669.6 N

PROJECT No FG6470 SURFACE RL 9.85m PLUNGE 90° DATE STARTED 26/09/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 26/09/2017 DRILLER Schneider

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION
0			Gravelly SAND(Fill) Grey, moist to dry. Fine to coarse grained. Fine grained, sub angular gravel.
1	8.35		
			Sandy CLAY(Fill) Brown mottled orange red, moist, soft to firm. High plasticity. Fine grained sand.
2	7.70		
			TUFF Orange white, pale purple mottled brown and grey, fine to coarse gravel sized clasts in fine grained matrix, massive, high strength. Some iron staining; clasts are typically 2mm-5mm, sub angular. -Js: 0°-10° (5/m), Un/Sm, OP, FeSt -J: 80°-90° (1/m), Un/Sm, OP-CD, Ct-FeSt 4.45-4.76: Iron staining
3			
4			
5			
6			
7			
8			
9			
	-0.15		

Standpipe Construction Details

Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
5.13m / 4.72 AHD		Grout: Cement / Bentonite mix
6.13m / 3.72 AHD		Bentonite Seal
7.13m / 2.72 AHD		Top of Slotted Pipe
		Filter: Washed / Graded Sand

Continued on next sheet

REMARKS: Rif - Brisbane Tuff. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
ZC	S. Foley

FINAL 06/03/2018

Queensland Government

STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR730**

Sheet 2 of 2

PIEZOMETER No **CRR730**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION RNA showgrounds

COORDINATES 502976.5 E; 6963669.6 N

PROJECT No FG6470 | SURFACE RL 9.85m | PLUNGE 90° | DATE STARTED 26/09/2017 | GRID DATUM MGA94

JOB No | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 26/09/2017 | 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
	-0.28		TUFF	10.13m / -0.28 AHD		
			Cont'd.			
			Borehole completed at 10.13m			

11 12 13 14 15 16 17 18 19

REMARKS: Rif - Brisbane Tuff. Standpipe piezometer installed.

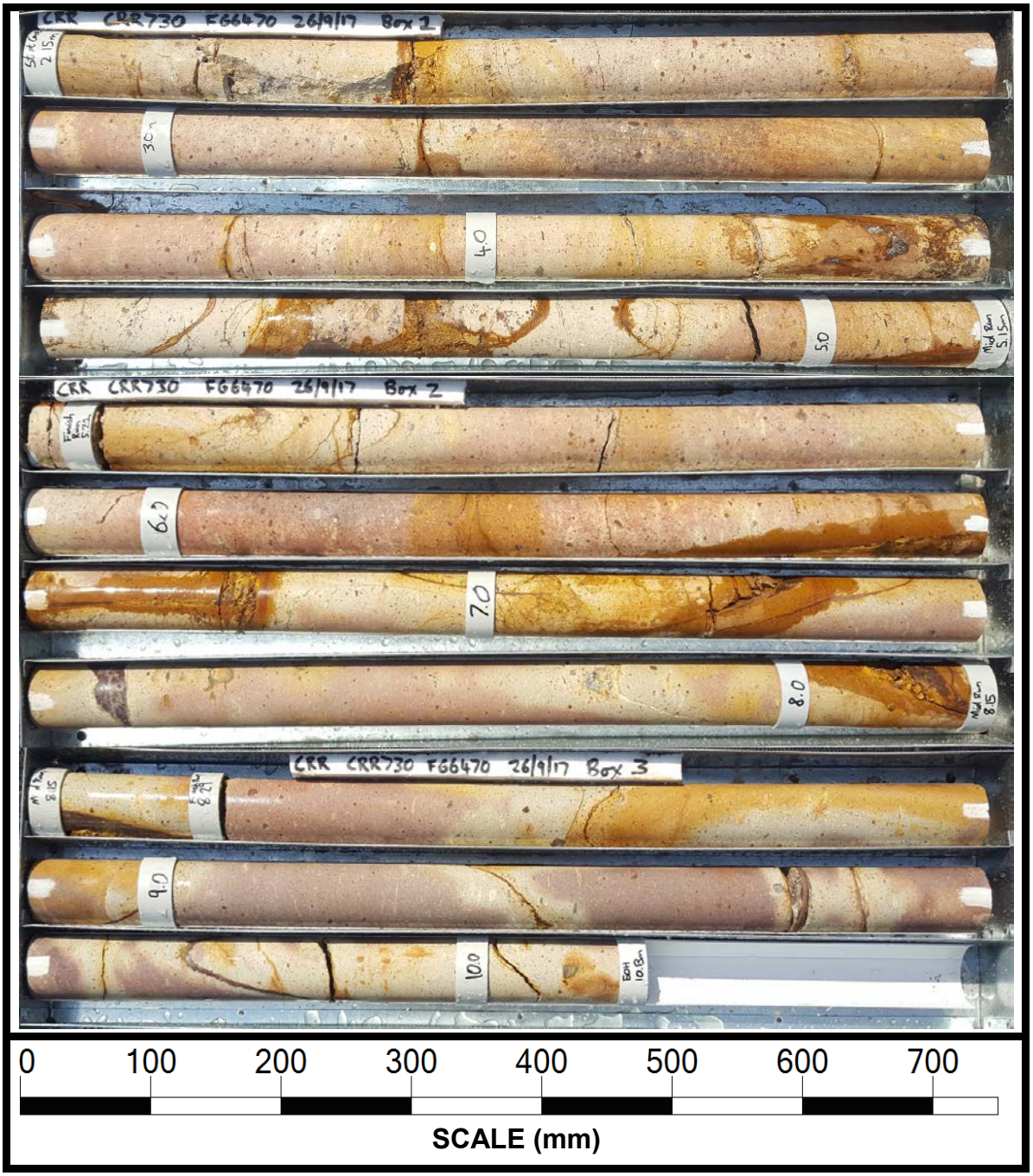
LOGGED BY	REVIEWED BY
ZC	S. Foley

TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

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	26/09/2017
Borehole No.	CRR730	Reference No.	H12956
Location	RNA Showgrounds	Start Depth (m)	2.15
Submitted By	M. de Gee	Finish Depth (m)	10.13



Detailed Discontinuity Description Log

Queensland Government

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.**	**FG6470**
Site ID / Borehole No.	**CRR730**	**Surface RL**	**9.85**
Geologist	**Z.C.**	**Date**	**26/01/2017**
		Page	**1 of 2**

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
2.15	J	80	Un	Sm	V	OP	Cn		
2.28	J	10	Un	Sm	V	OP	Cn	CZ, 20mm	
2.45	J	8	Un	Sm	V	Tl	St	CZ, 40mm	Fe, Cly
2.51	J	10	Un	Sm	V	CD	Cn		
2.59	J	10	Un	Sm	V	OP	Cn		
2.78	J	20	Un	Ro	IV	Tl	St	CZ, 10mm	Fe, Cly
3.21	J	10	Un	Sm	V	OP	St		
3.80	J	5	Un	Sm	V	Tl	St		Fe
4.12	J	12	Un	Sm	V	CD	Cn		
4.21	J	15	Un	Sm	V	CD	St		Fe
4.69	J	10	Un	Ro	IV	CD	St		Fe
4.95	J	20	Un	Sm	V	OP	Cn		
5.00	J	90	Pl	Sm	VIII	CD	St		Fe
5.17	J	5	Un	Sm	V	OP	Cn		
5.21	J	5	Un	Sm	V	OP	Cn		
5.40	J	5	Un	Sm	V	OP	Cn		
5.60	J	12	Un	Sm	V	OP	Cn		
6.04	J	10	Un	5m	V	CD	Cn		
6.23	J	5	Un	Sm	V	OP	St		Fe
6.35	J	18	Un	Sm	V	OP	Cn		
6.58	J	85	Pl	Sm	VII	CD	St		Fe
6.80	J	10	Un	Ro	IV	CD	St		Fe
7.18	J	70	Pl	Sm	VIII	OP	St		Fe
7.33	J	70	Un	Sm	V	CD	St		Fe
7.85	J	70	Pl	Sm	VIII	CD	Cn		
8.10	J	70	Un	Ro	IV	OP	St		Fe
8.29	J	3	Un	Sm	V	OP	Cn		
8.56	J	35	Un	Sm	V	OP	St		Fe
9.29	J	45	Pl	Sm	VIII	OP	St		Fe
9.49	J	10	Un	Sm	V	OP	Cn		
9.51	J	10	Un	Sm	V	OP	Cn		

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

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 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.**	**FG6470**		
Site ID / Borehole No.	**CRR730**	**Surface RL**	**9.85**		
Geologist	**Z.C.**	**Date**	**26/01/2017**		
		Page	**2**	**of**	**2**

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
9.72	J	10	Un	Sm	V	OP	St		Fe
9.78	J	80	Pl	Sm	VIII	OP	St		Fe
9.89	J	10	Un	Sm	V	OP	St		Fe
9.89	J	80	Pl	Sm	VIII	CD	St		Fe
10.04	J	40	Un	Sm	V	OP	St		Fe
10.04	J	85	Un	Sm	V	CD	St		Fe

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