FINAL 02/03/2018

Queensland Government

GEOTECHNICAL BOREHOLE LOG

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

BOREHOLE No **CRR701**

Sheet 1 of 2

REFERENCE No **H12927**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Dutton Park Station (QR land)/Portal (southern) COORDINATES 503099.1 E; 6958526.9 N

PROJECT No FG6470 SURFACE RL 19.93m PLUNGE 90° DATE STARTED 19/10/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 21/09/2017 DRILLER Geodrill

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					Sandy Clayey GRAVEL (Fill) Dark grey and brown, dry, loose. Fine to coarse grained, sub angular to sub rounded. Medium plasticity fines.		(GC)				
1	18.73			A	Gravelly Clayey SAND (Fill) Dark grey, dry, loose. Fine to coarse grained. Low to medium plasticity clay. Fine to medium gravel, sub angular to sub rounded gravel.					5, 5, 3 N=8	SPT
2											
3				B			(SC)			3, 4, 3 N=7	SPT
4	15.73			C	CLAY with Gravel (Alluvium) Pale grey with orange brown, moist, soft to firm. Medium plasticity. With fine to medium grained, angular to sub angular gravel, trace sand.					1, 2, 2 N=4	SPT
5											
6				D	From 5.5m: Becoming stiff		(CI)			2, 5, 6 N=11	SPT
7	12.93			E	Silty CLAY (Residual) Pale grey, moist, very stiff. High plasticity. Trace fine grained, angular to sub angular, gravel.					5, 7, 10 N=17	SPT
8					From 8.15m: becoming pale yellow, hard.		CH				
9				F						11, 18, 28 N=46 LL=72% PI= 52% MC=14% LS= 14% <75µm= 94%	SPT
	9.93										

Continued on next sheet

REMARKS: Rip - Aspley Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
GP	S. Foley

FINAL 02/03/2018

Queensland Government

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JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 21/09/2017 DRILLER Geodrill

DEPTH (m)	R.L. (m)	RQD ( ) % / CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USCS WEATHERING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
11			G	Silty CLAY (Residual) Cont'd.	CH	18, 30/130mm LL=61% PI= 40% MC=21.3% LS= 16% <75µm= 93%	SPT
	8.40		H	CLAY trace Sand (Residual) Pale grey, dry to moist, hard. High plasticity, medium grained sand.		14, 28, 32/90mm	SPT
13			I		CH	14, 27, 30/130mm LL=72% PI= 53% MC=10.2% LS= 16% <75µm= 88%	SPT
14			J			30/130mm	SPT
15	4.93	(100)		SILTSTONE (Rip) XW: Recovered as CLAY: Pale grey, moist to wet, hard. Friable, low to medium plasticity.	XW		
16		100 (100)					
17		100 (33) 100 (50)				21/09/2017	
18	2.23			SANDSTONE (Rip) MW: Pale grey, fine to coarse grained, indistinctly bedded, generally medium to high strength.	MW	17.75m-17.81m: BP: 20°, Pl/Ro, OP, Cn 18.00m-18.10m: -J: 70°, Stp/Ro, OP, Cn.	Is(50)=0.28 MPa Is(50)=0.76 MPa Is(50)=1.10 MPa Is(50)=0.13 MPa
	1.78	100		Borehole completed at 18.15m			D (17.74m) A (17.75m) D (17.94m) A (17.95m)
19							

INTACT STRENGTH: EH VH H M L VL EL — DEFECT SPACING: EC VC C M W VW EW

REMARKS: Rip - Aspley Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
GP	S. Foley

TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

FINAL 06/03/2018

Queensland Government

STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR701**

Sheet 1 of 2

PIEZOMETER No **CRR701**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Dutton Park Station (QR land)/Portal (southern) COORDINATES 503099.1 E; 6958526.9 N

PROJECT No FG6470 SURFACE RL 19.93m PLUNGE 90° DATE STARTED 19/10/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 21/09/2017 DRILLER Geodrill

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			Sandy Clayey GRAVEL(Fill) Dark grey and brown, dry, loose. Fine to coarse grained, sub angular to sub rounded. Medium plasticity fines.			
1	18.73		Gravelly Clayey SAND(Fill) Dark grey, dry, loose. Fine to coarse grained. Low to medium plasticity clay. Fine to medium gravel, sub angular to sub rounded gravel.			
2						
3						
4	15.73		CLAY with Gravel(Alluvium) Pale grey with orange brown, moist, soft to firm. Medium plasticity. With fine to medium grained, angular to sub angular gravel, trace sand. From 5.5m: Becoming stiff			Grout: Cement / Bentonite mix
5						
6						
7	12.93		Silty CLAY(Residual) Pale grey, moist, very stiff. High plasticity. Trace fine grained, angular to sub angular, gravel. From 8.15m: becoming pale yellow, hard.			
8						
9	9.93					

Continued on next sheet

REMARKS: Rip - Aspley Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
GP	S. Foley

TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

FINAL 06/03/2018

Queensland Government

STANDPIPE INSTALLATION LOG

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

BOREHOLE No **CRR701**

Sheet 2 of 2

PIEZOMETER No **CRR701**

PROJECT Cross River Rail CRR2017 - Additional Geotechnical Investigation

LOCATION Dutton Park Station (QR land)/Portal (southern) COORDINATES 503099.1 E; 6958526.9 N

PROJECT No FG6470 SURFACE RL 19.93m PLUNGE 90° DATE STARTED 19/10/2017 GRID DATUM MGA94

JOB No HEIGHT DATUM AHD BEARING ° DATE COMPLETED 21/09/2017 DRILLER Geodrill

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION
11			Silty CLAY(Residual) Cont'd.
	8.40		
12			CLAY trace Sand(Residual) Pale grey, dry to moist, hard. High plasticity, medium grained sand.
13			
14			
	4.93		
15			SILTSTONE Recovered as CLAY: Pale grey, moist to wet, hard. Friable, low to medium plasticity.
16			
17			
	2.23		
18			SANDSTONE Pale grey, fine to coarse grained, indistinctly bedded, generally medium to high strength.
	1.78		Borehole completed at 18.15m
19			

Standpipe Construction Details

Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.00m	Backfill Details
10.60m / 9.33 AHD		
		Bentonite Seal
11.60m / 8.33 AHD		
12.00m / 7.93 AHD		Top of Slotted Pipe
		Filter: Washed / Graded Sand
21/09/2017		
18.00m / 1.93 AHD		
18.15m / 1.78 AHD		Drill Cuttings

REMARKS: Rip - Aspley Formation. Standpipe piezometer installed.

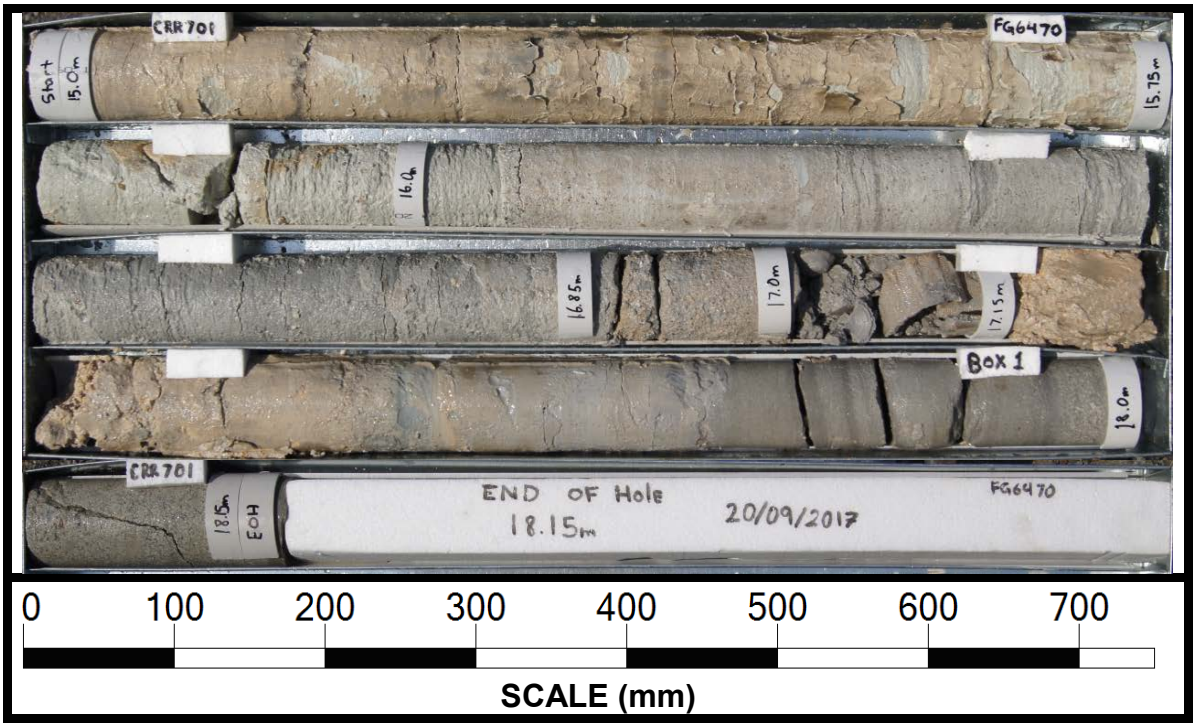
LOGGED BY	REVIEWED BY
GP	S. Foley

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	21/09/2017
Borehole No.	CRR701	Reference No.	H12927
Location	Dutton Park Station	Start Depth (m)	15
Submitted By	M. de Gee	Finish Depth (m)	18.15



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.	**CRR701**					**Surface RL**	**19.93**		
Geologist	**GP**					**Date**	**21/09/2017**		
						Page	**1**	**of**	**1**

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
16.88	handling break								
16.9	handling break								
17-17.15	handling break								
17.75	BP	20	Pl	Ro	VII	OP	Cn		
17.81	BP	20	Pl	Ro	VII	OP	Cn		
17.87	DI								
18.00-18.10	J	70	Stp	Ro	I	OP	Cn		

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