COPYRIGHT NOTICE

This geotechnical log and its associated data (the Document) is licensed by the Cross River Rail Delivery Authority under the <u>Creative Commons Attribution 4.0 Licence</u> (CC BY 4.0). When reusing the Document, in whole or in part, please attribute as follows: "(c) Cross River Rail Delivery Authority 2023, licensed under the CC BY 4.0 Licence, prepared by Douglas Partners". This licence does not apply to logos or trademarks.

LIMITATION OF LIABILITY

The CC BY 4.0 Licence contains a comprehensive Disclaimer of Warranties and Limitation of Liability. In addition, please note that this Document was prepared for the Cross River Rail Delivery Authority use only. Reuse of the Document by anyone for any other purpose could result in error and/or loss. You should obtain professional advice before making decisions based on the contents of the Document.

When reproducing any part of this Document, you must also reproduce this limitation of liability notice in addition to the italicised attribution statement above.

Retrieved from the Queensland Geotechnical Database http://qgd.org.au/

CLIENT: AECOM Australia Pty Ltd PROJECT: Cross River Rail - Phase 1 LOCATION: Cornwall Street, Fairfield

SURFACE LEVEL: 30 m AHD **EASTING:** 502687 **NORTHING:** 6958186 DIP/AZIMUTH: -90°/--

BORE No: CRR101 **PROJECT No: 74321.00 DATE: 13 April 2010** SHEET 1 OF 6

	De=#	Description	Degree o	f 일은 _	Rock Strength	<u>ا</u>	Fracture Spacing	Discontinuities				n Situ Testing
ᇎ	Depth (m)	of	Weatherin	rap	Ex Low Very Low Medium High Very High Ex High	Water	(m)	B - Bedding J - Joint	Туре	9 % 5 %	RQD %	Test Results &
		Strata	EW HW MW SW FS	F. O	Ex Low Very Low Medium High Very High Ex High	7 100	0.05 0.10 1.00	S - Shear D - Drill Break	Ţ	ပိမ္မ	Σ°	Comments
	0.04	Bitumen	1 1 1 1	<u>ا</u> ن								
.	0.15	50100										
-	0.25	FILLING - moderately compacted, grey sandy gravel filling with some silt, moist										
	0.7	SILTY CLAY - very stiff to hard, orange-brown and pink-brown mottled, low to medium plasticity, silty clay with some fine to medium grained sand, moist (residual tuff)	440 A 100 A			· · · · · · · · · · · · · · · · · · ·		(See attached sheet for abbreviations)				
29	-1	TUFF - extremely low to low strength, highly weathered, pink-grey and orange-brown						abbreviations)				
-		mottled, tuff becoming brown and grey mottled							s			30/145mm
	. 1.18	TUFF - very low strength, highly to	1 1	\ \ \			7	1.18m: J, sv, un, sm, cf 3mm, to 1.30m				1000
	•	moderately weathered, fractured, orange-brown, tuff, subhorizontal flattening lineation and flow banding	Trans. Tr	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1		1.24m: J, 30°, un, sm, lim 1.41m: J, 70°, un, sm, cf	С	100	22	
		becoming extremely low strength, highly weathered, grey and orange-brown mottled			The same than th		The state of the s	3mm Defects generally overprinted by pervasive weathering 1.77m: J, 60°, un, sm, cc				
28	-2	becoming highly to moderately weathered, slightly fractured, grey and red-brown mottled					100 Company (100 C	1.77m. 3, 60 , un, sm, cc				
*		- becoming grey				man many many many many many hapan sama	The control of the co		С	100	0	
27	-3	- becoming grey and purple-grey mottled	and the property of the proper						A CONTRACTOR OF THE PERSON OF			
	-	- 200mm extremely low to very low strength band, becoming fractured		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				3.48m: J, 70°, un, sm, \lim 3.54m: J, 70°, pl, sm				
26	- 4 -	- 150mm low to medium strength, moderately weathered band becoming highly weathered						3.9m: J, 30°, pl, sm, cc 3.91m: frg to 4.00m, di 4m: J, sv, un, lim, to 4.16m 4.2m: frg to 4.46m, di	С	100	28	
		- 130mm medium strength band				*******		4.53m: J, sv, un, sm, cf 3mm, to 4.70m 4.7m: J, 25°, un, s, cc,	11111111111111111111111111111111111111			
-	4,85	SANDSTONE (see below)	**************************************					lim				

LOGGED: MAH CASING: HW to 1.1m RIG: MD300 **DRILLER:** Taberner

TYPE OF BORING: Auger 0.00-1.18m, NMLC Core 1.18-30.00m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND
pp Pocket penetrometer (kPa)
plo lonisation detector
Standard penetration test
standard penetration test
PL Point load strength Is(50) MPa
V Shear Vane (kPa)
V Water seep
Water level SAMPi
Auger sample
Disturbed sample
Bulk sample
Tube sample (x mm dia.)
Water sample
Core drilling





CLIENT: AECOM Australia Pty Ltd PROJECT: Cross River Rail - Phase 1 LOCATION: Cornwall Street, Fairfield

SURFACE LEVEL: 30 m AHD **EASTING:** 502687 **NORTHING:** 6958186 DIP/AZIMUTH: -90°/--

BORE No: CRR101 **PROJECT No: 74321.00 DATE:** 13 April 2010 **SHEET** 2 OF 6

		Description	Degree of Weathering	Rock Strength	Fracture Spacing	Discontinuities				In Situ Testing
R	Depth (m)	of Strata	Degree of Weathering	Graph Log Ex Low Very Low Medium High	Water (m) Spacing (m) Spacing	B - Bedding J - Joint S - Shear D - Drill Break	Туре	Core	%	Test Results &
25	5.0	CORE LOSS	WW W & E	\$ 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.00	5m: CORE LOSS: 750mm				Comments
24	5.75 6 	SANDSTONE - extremely low strength, extremely weathered, slightly fractured, grey, fine to medium sandstone, bedding at 15°				5.88m: frg to 6.00m, di 6.32m: J, 65°, un, sm 6.42m: J, 60°, un, sm, cc	С	71	7	
23	7	- 200mm medium strength, moderately weathered, orange-brown band, bedding at 25° bedding at 10°				6.55m: frg to 6.80m, di 7.14m: J, 60°, pl, sm, cc 7.27m: J, 45°, un, sm, cc			The second secon	PL(A) = 0.41MPa PL(D) = 0.39MPa
	7.55 7.6	- trace of thin carbonaceous laminae BRECCIA (see below)				7.4m: J, 60°, pl, sm, cc 7.47m: J, 30°, pl, sm, cc 7.6m: CORE LOSS: 300mm				
22	- 7.9 -8 -	CORE LOSS BRECCIA - extremely low strength, highly weathered, slightly fractured, grey, fine to medium breccia, clasts of quartz, sandstone and meta-arenite, subhorizontal clast orientation				8.39m: J, 60°, pl, ro	erredit/Atti-man		· ·	
	9	becoming generally medium to coarse conglomerate - becoming fractured	The state of the s	200		8.73m: J, 45°, un, ro 8.81m: J, 50°, un, ro 8.9m: J, 45°, pl, ro 8.95m: J, 55°, un, sm	С	84	0	
Z Z	-	- becoming slightly fractured		000		9.05m: J, 45°, un, sm 9.15m: J, 30°, un, sm, lim 9.22m: J, 60°, un, sm 9.32m: frg to 9.50m, di	The state of the s	TOTAL	dentity and the same	
-	And the state of t	becoming very low to low strength, moderately weathered, slightly fractured, grey and		0011111		9.67m: J, 70°, pl, ro	С	100	21	

LOGGED: MAH CASING: HW to 1.1m RIG: MD300 **DRILLER:** Taberner

TYPE OF BORING: Auger 0.00-1.18m, NMLC Core 1.18-30.00m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

	SAMPLING &	IN	211	שו ט	อแพษ	LEGENU
ile				PP	Pocket	penetrometer

pp Pocket penetrometer (kPa)
PiD Photo ionisation detector
S Standard penetration test
PL Point load strength is(50) MPa
V Shear Vane (kPa)
D Water seep Water level Auger sample
Disturbed sample
Bulk sample
Tube sample (x mm dia.)
Water sample
Core drilling

CHECKED Initials: Date: 246 10



CLIENT: AECOM Australia Pty Ltd PROJECT: Cross River Rail - Phase 1 LOCATION: Cornwall Street, Fairfield

SURFACE LEVEL: 30 m AHD **EASTING:** 502687 NORTHING: 6958186 DIP/AZIMUTH: -90°/--

BORE No: CRR101 PROJECT No: 74321.00 **DATE: 13 April 2010** SHEET 3 OF 6

П	[Description	Degree of Weathering	<u>.</u> 2	Rock Fracture		Sa			n Situ Testing
屋	Depth (m)	of	Degree of Weathering	raph	Strength Shacing Shacing (m) S	B - Bedding J - Joint	Type	ore	RQD %	Test Results &
		Strata	EW HW SW FS	O	Ex Low Very Lo Low Medium High Very High Ex High 0.01 0.05	g S - Shear D - Drill Break	1	ပည္ဆိ	Χ,	Comments
2	. 10.17	orange-brown mottled - becoming low strength, \orange-brown SANDSTONE - extremely low to yery low strength, highly				10.29m; 1.60° up am				
	10.4	weathered, fractured, grey, fine to medium sandstone, bedding at 10° BRECCIA - extremely low to very low strength, highly weathered, slightly fractured, grey, medium to coarse breccia				10.38m: J, 60°, un, sm, cc 10.77m: J, 65°, pl, ro				
19	- 11					11m: J, 60°, un, ro 11.1m: J, sv, un, ro, to 11.40m	C	100	21	
		- becoming orange-brown	Appendix to the Committee of the Committ	200		1 11 56m: 1 60° nl ro				
		- becoming extremely low strength				11.7m: J, 70°, pl, ro				
- 18	-12 12.0	- 100mm medium to high strength band SANDSTONE - very low strength, highly to moderately weatherd,	THE PERSON NAMED IN T	37		and the control of th				
	- 12.5	slightly fractured, grey and orange-brown mottled, medium to coarse sandstone becoming extremely low strength, extremely weathered, grey and pink-grey mottled, fine to medium sandstone becoming very low strength, highly to moderately weathered,		000		lim 12.52m: J, 45°, un, ro, lim	741474		and the second s	
, 11	- 13	grey and orange-brown mottled, medium to coarse sandstone BRECCIA - very low strength, highly to moderately weathered, slightly fractured, orange-brown and grey mottled, fine to medium breccia, subhorizontal clast orientation becoming low strength, highly to				1	C	100	88	
9	13.8	moderately weathered, orange-brown and grey mottled, fine becoming fine to coarse SANDSTONE - low strength, highly weathered, fractured,		00		1 13.78m: J, 30°, un, ro				
	17 14,0	breccia BRECCIA - very low strength, highly weathered, slightly fractured, orange-brown, fine to coarse		000		14.05m: J, 10°, pl, sm	LAE LAE LAE	 		PL(D) = 0.15MPa PL(D) = 0.05MPa PL(A) = 0.03MPa PL(A) = 0.09MPa
*		becoming slightly weathered, grey with orange-brown staining, fine to coarse becoming fine to coarse		000		14.43m: J, 30°, pl, ro	C	100	83	1.225 MPa
-	- -	becoming fine to medium	a transmitted and a second and	30		14.77m: J, 30°, un, ro 14.87m: J, 20°, un, ro				

LOGGED: MAH CASING: HW to 1.1m **DRILLER:** Taberner **RIG: MD300**

TYPE OF BORING: Auger 0.00-1.18m, NMLC Core 1.18-30.00m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND
pp Pocket penetrometer (kPa)
lee PID Photo ionisation detector
S Standard penetration test
pp Point load strength 1s(50) MPa
V Shear Vane (kPa)
V Water seep
Water seep
Water level Auger sample
Disturbed sample
Bulk sample
Tube sample (x mm dia.)
Water sample
Core drilling





CLIENT: AECOM Australia Pty Ltd PROJECT: Cross River Rail - Phase 1 LOCATION: Cornwall Street, Fairfield

SURFACE LEVEL: 30 m AHD **EASTING:** 502687 NORTHING: 6958186 DIP/AZIMUTH: -90°/--

BORE No: CRR101 PROJECT No: 74321.00 DATE: 13 April 2010 SHEET 4 OF 6

		Description	Degree of Weathering ♀	Rock Strength	Fracture	Discontinuities				n Situ Testing
곱	Depth (m)	of Strata	Meathering Side O	Ex Low Very Low Low Medium High Very High Very High Ex High Water	Spacing (m)	B - Bedding J - Joint S - Shear D - Drill Break	Туре	Core Rec. %	Rab %	Test Results & Comments
91	15.0	becoming low strength, highly to moderately weathered, orange-brown, fine to coarse breccia				15.18m: J, 45°, un, ro	С	100	83	0000
	15.65 - 16	SANDSTONE - extremely low strength, highly weathered, fractured, grey, fine sandstone, bedding at 10°				15.65m: B, 10°, un, sm				
		- 50mm clay band - becoming very low strength - 70mm extremely low strength band - extremely low strength siltstone laminae to 7mm at 5-15mm spacings to 17.50m				16.39m: J, 20°, pl, sm, cc				PL(A) = 0.05MPa PL(D) = 0.08MPa
13	- - 17 -	- becoming low strength, fractured				16.79m: J, 65°, pl, sm, cc 17.08m: J, 60°, pl, sm 17.21m: J, 60°, pl, sm, cc		And a control of the	The state of the s	PL(A) = 2.7MPa PL(D) = 0.9MPa
	- 17.5 - 17.85	\ low strength sandstone laminae to				17.33m: J, 60°, un, sm, cc 17.48m: B, 20°, pl, ti 17.62m: J, 60°, pl, sm	С	100	70	PL(A) = 0.29MPa PL(D) = 0.24MPa
12	- 18	5mm at 50-100mm spacing to 17.85m SANDSTONE - extremely low strength, moderately to slightly weathered, slightly fractured, grey, fine to medium sandstone, bedding at 10°, siltstone laminae to 3mm at 5-10mm spacings to 18.00m becoming very low strength,				17.91m: J, 45°, pl, sm 18.24m: J, 65°, un, sm 18.45m: J, 45°, pl, sm		milyton and an analysis of the state of the	T T T T T T T T T T T T T T T T T T T	
-=	18.95	slightly weathered becoming low strength becoming medium strength with some medium to coarse tuff derived sand (predominantly plagioclase crystals)				18.63m: J, 60°, pl, ro 18.67m: J, 60°, pl, ro 18.95m: sharp contact	mit de la companya de			PL(A) = 0.84MPa PL(D) = 0.83MPa
- Language		becoming medium to high strength TUFF - extremely low strength, extremely weathered, fractured, grey tuff, slightly reworked very low strength, moderately to slightly weathered, slightly fractured, green-grey, tuff, flattening lineation at 10°, lithics of				19.25m: J, 10°, pl, sm, cc 19.48m: J, 30°, pl, sm, cf 4mm	C	100	97	
-		meta-arenite and tuff to 10mm, flattened pumice clasts to 30mm becoming low strength, slightly								PL(A) = 1.4MPa

LOGGED: MAH CASING: HW to 1.1m RIG: MD300 **DRILLER:** Taberner

TYPE OF BORING: Auger 0.00-1.18m, NMLC Core 1.18-30.00m WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND
pp Pocket penetrometer (kPa)
pp Pocket penetrometer (kPa)
Photo ionisation detector
S Standard penetration test
S PL Point load strength (st;50) MPa
V Shear Vane (kPa)
D Water seep Water level Auger sample
Disturbed sample
Bulk sample
Tube sample (x mm dia.)
Water sample
Core drilling





CLIENT: AECOM Australia Ptv Ltd PROJECT: Cross River Rail - Phase 1 LOCATION: Cornwall Street, Fairfield

SURFACE LEVEL: 30 m AHD **EASTING:** 502687 NORTHING: 6958186 DIP/AZIMUTH: -90°/--

BORE No: CRR101 PROJECT No: 74321.00 DATE: 13 April 2010 SHEET 5 OF 6

		Description	Degree of Weathering	, <u>j</u>	Rock Strength	<u>اير</u>	Fracture	Discontinuities				n Situ Testing
교	Depth (m)	of	Degree of Weathering	Sraph	Ex Low Vory Low Low Medium High Vory High Ex High	Water	Spacing (m)	B - Bedding J - Joint	Type	ore %	RQD %	Test Results &
٩	20.0	Strata weathered, slightly fractured to	WW HWW SR		Ex Low Very Lo Low Medium High Vory High Ex High	- 6	0.10 0.50 1.00	S - Shear D - Drill Break	+	0 %	œ	Comments PL(D) = 0.4MPa
6	-21	unbroken becoming medium strength, fresh becoming medium to high strength TUFF - medium to high strength, fresh, fractured, grey tuff, slightly reworked sporadic pyrite mineralisation (infill and replacement)							C	100	97	PL(A) = 1.6MPa PL(D) = 0.6MPa
-8	-22		The control of the co	<pre>/> /> /> /</pre>							1	
2	- 23			> '> '> '> '		The state of the s			C	100	100	PL(A) = 1.3MPa PL(D) = 0.5MPa
9	-24	- sporadic extremely weathered pumice clasts		> `> `> `> `> `		, markanistanistanistanistanistanistanistanist		24.32m: J, 10°				PL(A) = 1.5MPa

LOGGED: MAH CASING: HW to 1.1m RIG: MD300 **DRILLER:** Taberner

TYPE OF BORING: Auger 0.00-1.18m, NMLC Core 1.18-30.00m WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND

Pocket penetrometer (kPa)
PiD Photo ionisation detector
S Standard penetration test
PL Point load strength (s/50) MPa
V Shear Vane (kPa)
Water seep
Water level Auger sample
Disturbed sample
Bulk sample
Tube sample (x mm dia.) Water sample Core drilling





CLIENT: AECOM Australia Ptv Ltd PROJECT: Cross River Rail - Phase 1 LOCATION: Cornwall Street, Fairfield

SURFACE LEVEL: 30 m AHD **EASTING:** 502687 NORTHING: 6958186 DIP/AZIMUTH: -90°/--

BORE No: CRR101 PROJECT No: 74321.00 **DATE:** 13 April 2010 SHEET 6 OF 6

	- dia	Description	Degree of Weathering	일 _	Rock Strength ់	Fracture Spacing	Discontinuities	Sa	mplir	ıg & l	n Situ Testing
	epth m)	of Strata	Degree of Weathering	Grap Log	Ex Low Very Low Very Low Madium Madium High High Ex High Water	(m)	8 - Bedding J - Joint S - Shear D - Drill Break	Туре	Core Rec. %	% CD %	Test Results & Comments
	25.0	- becoming high strength									PC(D) = 0.9MP
- 26		- becoming medium strength		` \			25.78m: J, 30°, pl, sm		The state of the s		
	***************************************			\ \ \ \ \ \			26.32m: J, 40°, pl	С	100	100	
27	,			> / > / >			27.11m: J, 45°, un, sm			The state of the s	PL(A) = 0.7MF PL(D) = 0.6MF
		becoming fractured becoming very low to low strength, slightly weathered		\			27.58m: J, 10°, pl, sm, cc 27.72m: J, 40°, pl, sm, cc		The state of the s		
- 28	3	- becoming slightly fractured	The same area area and a same area area area area area area area a	\ \ \ \ \ \ \			27.94m: J, 10°, pl, sm, cf 3mm 28.06m: J, 15°, un, sm, cf 4mm				PL(A) = 0.2MF PL(D) = 0.3M
-		- becoming very low strength		\ \ \ \			28.56m: J, 10°, pl, sm, cf 3mm				
- 29	9	- becoming extremely low strength, highly weathered, clay bands to 20mm at 20-50mm spacings to 29.48m becoming extremely weathered		> \ \ \ \ \ \				С	100	65	
	29.48	SANDSTONE - medium strength, fresh, slightly fractured, grey, fine to medium sandstone, bedding at 10-20°					29.46m: B, 10°, pl, sm, cc, sharp contact 29.56m: J, 70°, un, sm, cc			a verificação	
}	29 98										PL(A) = 0.8MI PL(D) = 0.2M

LOGGED: MAH DRILLER: Taberner CASING: HW to 1.1m **RIG: MD300**

TYPE OF BORING: Auger 0.00-1.18m, NMLC Core 1.18-30.00m WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: PVC standpipe installed

SAMPLING & IN SITU TESTING LEGEND

Pocket penetrometer (kPa)
PlD Photo ionisation detector
S Standard penetration test
PL Point load strength 1s/50) MPa
V Shear Vane (kPa)
D Water seep
Water level Auger sample
Disturbed sample
Bulk sample
Tube sample (x mm dia.)
Water sample
Core drilling













