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Ipswich Motorway Upgrade - Rocklea to Darra

PROJECT

## **ENGINEERING BOREHOLE LOG**

BOREHOLE No	<u>_BH115</u>
SHEET	<u>1</u> of <u>4</u>
REFERENCE No	<u>H10891_</u>

LOGGED BY

JA/SG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

LOCA	ATION	<u>Corn</u>	<u>ier Ipswi</u>	<u>ch R</u>	d and Oxley Rd near Oxley Hotel				CC	ORDINATES	<u>.9 N</u>
PRO	JECT No		<u>779</u>		SURFACE R.L. <u>14.05m</u> PLUNGE <u>-90 °</u>		DATES	STARTED	09/11	/10 GRID DATUM <u>GDA94</u>	
JOB	No	140/	<u>U16/902</u>	<u> </u>	HEIGHT DATUM <u>AHD</u> BEARING		DATE COM	MPLETED	<u>11/11</u>	/10 DRILLER <u>R&amp;D Drilling</u>	Pty Ltd
DEPTH (m)	R.L. (m) 14.05	ASING THER ASH BORING ORE DRILLING	RQD ()% CORE	SAMPLE	MATERIAL DESCRIPTION	SC EATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	<b>GRAPHIC LOG</b>	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	14.05		REC %	S/	Silty CLAY ( Engineered Fill) Brown, moist. Rock fill up to 300mm.				10	Non destructive drilling up to 1.5m — depth. (Based on Drillers Logs only)	10 V
2	11.05			A	SANDSTONE XW:Generally exhibits engineering properties of red brown, moist, very dense silty sand. Sand fraction medium to coarse grained.	xw				25,25,30/140mm N>50	SPT
gel CPT Tool gINt Add-In 14/02/201			(95)		CLAYSTONE FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY COMPOSED OF CLAY SIZED PARTICLES HW: Generally exhibits engineering properties of mottled red, massive and patchy iron staining, mainly extremely low to very low strength.					Is(50) = 0.04MPa Is(50) = 0.03MPa Is(50) = 0.11MPa Is(50) = 0.08MPa Is(50) = 0.08MPa Is(50) = 0.08MPa DD = 1.64t/m <sup>3</sup> ; WD = 2.02t/m <sup>3</sup> ;	x o x o x o
<pre><drawingfile>&gt; Datg - 1</drawingfile></pre>			100 (100) 100		Contains iron concretionary nodules; interbeds of siltstone in parts. Becoming yellow below 8.0m depth app. 150mm long.					MC = 23%; UCS=341KPa Is(50) = 0.10MPa Is(50) = 0.07MPa	x o
W_ROCKLEA TO DARRAGPJ <<			(90)		Generally defects are rare. - Drilling induced bedding / lamination partings @ 5-10° (2/m) Defects are mainly medium to wide spaced, closed & open with silty clay infill or iron stained.					Is(50) = 0.05MPa Is(50) = 0.03MPa Is(50) = 0.14MPa Is(50) = 0.10MPa Is(50) = 0.05MPa Is(50) = 0.08MPa	x o x
QLD_DMR_LIB_01.GLB_Log_A_ENGINEERING BOREHOLE LOG_FG5779 IPSWICH MWY_ROCKLEA TO DARRA.GFJ_<			(90)			HW				Is(50) = 0.04MPa Is(50) = 0.11MPa Is(50) = 0.03MPa — Siltstone interbeds	o x o
Log A_ENGINEERING BC			(100)							ls(50) = 0.13MPa ls(50) = 0.13MPa DD = 1.78t/m <sup>3</sup> ; WD = 2.10t/m <sup>3</sup> ; MC = 18%; UCS=1197KPa	x o
S_LIB_01.GLB			100							ls(50) = 0.05MPa ls(50) = 0.02MPa	x o
			(90)		(See over)					ls(50) = 0.02MPa	о

REMARKS Sandstone: Fine to coarse grained, massive, poorly cemented sedimentary rock mainly composed of sand sized particles.



# ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>_BH115</u>
SHEET	_2_ of _4_
REFERENCE No	<u>H10891</u>

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra									
LOCATION Corner Ipswich Rd and Oxley Rd near Oxley Hotel COORDINATES 497978.6 E; 6950861.9 N									
PROJECT No_FG5779	SURFACE R.L14.05mPLUNGE90	DATE STARTED _09/11/10	GRID DATUM <u>GDA94</u>						
JOB No <u>140/U16/902</u>	BEARINGBEARING	DATE COMPLETED <u>11/11/10</u>	DRILLER <u>R&amp;D Drilling Pty Ltd</u>						
R.L. RQD (m) SUNC ()% (m) SUNC ()% WINDER DARK WINDER CORE SUNC ()% WINDER CORE SUNC ()% ()% MINDER CORE ()% ()% ()% ()% ()% ()% ()% ()% ()% ()%	MATERIAL DESCRIPTION	INTACT DEFECT STRENGTH SPACING (mm) UNIC CO STRENGTH SPACING (mm) STRENGTH CO STRENGTH SPACING (mm) STRENGTH CO STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH STRENGTH SPACING (mm) STRENGTH SPACING (mm) S	ADDITIONAL DATA AND TEST RESULTS						
	CLAYSTONE HW: (Cont'd)	He	eavly iron						

_10	4.05		REC %	S		⊇≤	ļļ		!	1	111		U		∽ ⊦
					CLAYSTONE HW: (Cont'd)							· · ·		Heavly iron stained zone Is(50) = 0.05MPa	x
									-			· · ·		ls(50) = 0.05MPa	o x
11			100							Ŧ				ls(50) = 0.08MPa ls(50) = 0.08MPa	x o
			(100)											— Siltstone interbeds Is(50) = 0.13MPa Is(50) = 0.06MPa	x
• 12			100						· · · · · · · · · · · · · · · · · · ·			· · ·		DD = 1.82t/m <sup>3</sup> ; WD = 2.12t/m <sup>3</sup> ; MC = 16.6%; UCS=1082KPa	
- 13			(90)			нw						· · ·		ls(50) = 0.13MPa ls(50) = 0.11MPa	x o
			100							-	<u></u>			ls(50) = 0.06MPa ls(50) = 0.04MPa	x o
- 14 - -			100 (100)						· · · · · · · · · · · · · · · · · · ·	-		· · · · · · · · · · · · · · · · · · ·		ls(50) = 0.06MPa ls(50) = 0.03MPa	x o
- 13												· · · · · · · · · · · · · · · · · · ·		Is(50) = 0.11MPa Is(50) = 0.05MPa — Siltstone interbeds.	x o
-	-1.65		100									· · ·		ls(50) = 0.06MPa	x
- 16	1.00		100		MUDSTONE HW: Mottled red to black massive, fissle structure visible throughout, mainly extremely low to very strength.			· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·		ls(50) = 0.07MPa	0
-			(80)		Contains interbeds of claystone app. 500mm thick.	нw									
- 17 - 17	-3.35				Generally defects are rare. - Irregular Joints @ 45° (1/m)		* * * * * *							Is(50) = 0.05MPa Is(50) = 0.06MPa	x o
			100		<b>CLAYSTONE</b> <b>MW:</b> Pale grey, massive, fine grained, mainly very low strength.			· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·		DD = 1.84t/m <sup>3</sup> ; WD = 2.14t/m <sup>3</sup> ; MC = 16.8%; UCS=988KPa Is(50) = 0.05MPa Is(50) = 0.06MPa	x
- 18 -			(90)		Generally defects are rare. - Drilling induced lamination partings @ 5° (<1/m)	MW				· • •		· · ·		Loose sand (XW)	
- 19					Defects are mainly wide spaced, planar, smooth, tight, closed and clean or iron stained / or carbonaceous.			[	•					ls(50) = 0.08MPa ls(50) = 0.13MPa	x o
	-5.55		100					· · ·				· ·		ls(50) = 0.07MPa ls(50) = 0.07MPa	x o
- - - 20					MUDSTONE ( See over)	мw						· ·			
	MARKS	<u>San</u> parti		<u>ne to</u>	coarse grained, massive, poorly cemented sedimenta	r <u>y roc</u>	<u>k n</u>	n <u>ain</u>	<u>y c</u>	om	posed	l <u>of</u> <u>s</u>	and s	LOGGED BY JA/SG	·



## ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>_BH115</u>
SHEET	<u>3</u> of <u>4</u>
REFERENCE No	<u>H10891</u>

Is(50) = 0.13MPa

ls(50) = 0.06MPa

ls(50) = 0.16MPa ls(50) = 0.16MPa

Is(50) = 0.09MPa

Is(50) = 0.18MPa

<del>ls(50) = 0.22MPa</del>

Is(50) = 0.03MPa

Is(50) = 0.03MPa Is(50) = 0.05MPa

ls(50) = 0.04MPa ls(50) = 0.03MPa

Is(50) = 0.03MPa

LOGGED BY JA/SG

DD = 1.62t/m<sup>3</sup>; WD = 1.98t/m<sup>3</sup>;

MC = 23%; UCS=195KPa

х

0

x o

х

x o

0

х 0

x o

х

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

PRO	JECT	_lpsw	ich Moto	or <u>wa</u>	y Upgrade - Rocklea to Darra							
LOC	ATION	<u>Corr</u>	<u>er Ipswi</u>	<u>ch F</u>	td and Oxley Rd near Oxley Hotel					CC	ORDINATES <u>497978.6 E; 6950861</u>	.9 <u>N</u>
PRO	JECT No		<u>779</u>		SURFACE R.L. <u>14.05m</u> PLUNGE <u>-90 °</u>	·	DAT	TE ST	ARTED	<u>09/11</u>	/10GRID DATUM	
JOB	No	<u> 140/</u>	<u>U16/902</u>	<u> </u>	HEIGHT DATUM <u>AHD</u> BEARING	·	DATE C	COM	PLETED _	<u>11/11</u>	/10 DRILLER <u>R&amp;D Drilling</u>	Pty Ltd
Ê	R.L. (m)	RING	RQD ()%		MATERIAL	D D	INTAC STRENG		DEFECT SPACING	g	ADDITIONAL DATA	
DEPTH (m)		SING HER VSH BOR	CORE	SAMPLE	DESCRIPTION	C EATHERING	II		(mm) 5000 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRAPHIC LOG	AND TEST RESULTS	SAMPLES TESTS
20	-5.95	8₽\$0	REC %	SA		USC	_∠⊥∠∟		00000	GF GF		SA TE
					MUDSTONE ( Cont'd) MW: Dark black, massive with minor laminations, fissile in parts, mainly low strength.				· · · · · · · · · · · · · · · · · · ·		ls(50) = 0.12MPa ls(50) = 0.04MPa	x _ 0 -
			100		Generally defects are rare. - Drilling induced lamination partings @ 5° (2/m)						ls(50) = 0.11MPa ls(50) = 0.11MPa	x - 0
-21			(100)		- Irregular fractured joint @ 25° (2/m)		· · · · ·	F			Displays cracking along lamination partings	
					Defects are medium to wide spaced, planar, smooth, open and closed.				· · · · · · · · · · · · · · · · · · ·		ls(50) = 0.11MPa ls(50) = 0.08MPa	X -
FI			100			MW	· · · · ·				Is(50) = 0.12MPa Is(50) = 0.12MPa	x
- 22			(90)					-			IS(50) = 0.121viPa	
								-	<b></b>		Is(50) = 0.05MPa Is(50) = 0.10MPa	x - 0 -
F								11				
-23			63	X							DD = 1.78t/m <sup>3</sup> ; WD = 2.10t/m <sup>3</sup> ; MC = 17.8%; UCS=2091KPa	-
Eŀ	-9.45				SILTSTONE						DD = 1.90t/m <sup>3</sup> ; WD = 2.18t/m <sup>3</sup> ; MC = 14.6%; UCS=2585KPa	
-24					FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF SILT SIZED PARTICLES				<ul> <li></li></ul>		- Sandstone interbeds	
			100		<b>MW:</b> Grey to dark grey, massive, fine grained, mainly very low to low strength.						ls(50) = 0.05MPa ls(50) = 0.06MPa	x -

MW

нw

-12.55 orp 30

100

(100)

100 (95)

100

(90)

81

(85)

96

(87)

thick.

Defects as above.

SANDSTONE

dense silty sand.

Generally defects are rare:

strength.

(1-2/m)

(See over)

mainly very low to low strength.

Contains interbeds of sandstone app. 600mm

FINE TO MEDIUM GRAINED, MASSIVE, POORLY INDURATED SEDIMENTARY ROCK HW: Grey, bedded, fine grained, very low

Generally exhibits properties of dense to very

Defects are wide to very wide spaced, irregular,

- Drilling induced bedding partings @ 10°

slightly rough, open or tight, clean.

REMARKS Sandstone: Fine to coarse grained, massive, poorly cemented sedimentary rock mainly composed of sand sized particles



# ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>_BH115</u>
SHEET	4 of4
REFERENCE No	<u>H10891_</u>

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/6-2010

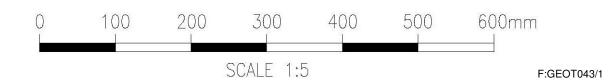
Ρ	ROJ	ECT	Ipswich Motorway Upgrade - Rocklea to Darra										
L	LOCATION Corner Ipswich Rd and Oxley Rd near Oxley Hotel										СС	ORDINATES	<u>.9 N</u>
PROJECT No_FG5779 SURFACE R.L14.05m PLUNGE90 °							DATE STARTED <u>09/11/10</u> GRID DATUM <u>GDA94</u>						
JOB No <u>140/U16/902</u> HEIGHT DATUM <u>AHD</u> BEARING								DATE COM	IPLETED	<u>11/11</u>	/10 DRILLER <u>R&amp;D Drilling</u>	Pty Ltd	
Г	-	PI		RQD					INTACT	DEFECT			
	_	(m) (19) (19)						с	STRENGTH	SPACING	ŋ	ADDITIONAL DATA	
			운희			MATERIAL				(mm)	CLO	AND	ŝ
		UNITER CORE		포ฏ   ᅱ		DESCRIPTION			· ·	2000 2000 2000	PHIO		
-	30			REC %	SAN		USC	VE/	₩¥±≈_>₩	50000	GR/	TEST RESULTS	SAMF TEST
E						SANDSTONE HW: (Cont'd)						Highly erodable gravelly sand layers app. 1.5m thick.	-

F					Highly erodable gravelly sand layers below 30m		1			1		арр. г.этт илск.		-
F					depth.		1			1				_
									-				ls(50) = 0.06MPa ls(50) = 0.05MPa	X -
-						HW							IS(50) = 0.05MPa	0
-31										1			ls(50) = 0.03MPa	x
t I							1			1			13(30) = 0.03141 a	^ 1
Εl			100											_
	-17.49		(73)					· · · · · ·	TE					-
F					MUDSTONE								ls(50) = 0.06MPa	x -
F I					<b>MW:</b> Dark grey, bedded, fine grained, low strength.								ls(50) = 0.05MPa	0
- 32					Strength.					<u> </u>				-
Εl					Defects:									_
-					- Drilling induced lamination/ bedding partings		1						ls(50) = 0.10MPa	x
"F I					@ 5-10° (1/m) - Joint @ 30° (>1/m)		1						ls(50) = 0.10MPa ls(50) = 0.19MPa	0 <del>-</del>
1136			100		- Joint @ 30° (>1/m)									1
5-33			(100)		Defects are close to wide spaced, planar,		1							_
02/20			(100)		smooth, tight or closed with clay infilled.		1						ls(50) = 0.14MPa	x
14/													ls(50) = 0.18MPa	0 ]
						MW	1							-
- <u>I</u> I							1						ls(50) = 0.08MPa ls(50) = 0.15MPa	x
			100										ls(50) = 0.15MPa	0
Ĕ − 34			(72)						_	<b>-</b>				-
			(/				1						ls(50) = 0.22MPa	x
Datg								_					ls(50) = 0.22MPa ls(50) = 0.24MPa	0 -
âF							1	: : :	_	1.1				-
BFile													ls(50) = 0.16MPa	x
awin-													ls(50) = 0.31MPa	0 -
< < < < <cbr></cbr> < < <p>&lt;<p>&lt;<p>&lt;<p>&lt;<p>&lt;<p>&lt;<p>&lt;<p>&lt;&lt;</p></p></p></p></p></p></p></p>	04.04		100				1			i .				-
ag E	-21.21				Borehole terminated at 35.26m				: + :					
RA.(							1		1					-
DAF									=					1
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2226														-
<u>е</u>									: + :					-
š⊢									+					-1
BOREHOLE LOG FG5779 IPSWICH MWY_ROCKLEA TO DARRA.GPJ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									: ‡ :					1
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MAL							11		: ‡ :					1
QLD_DMR_LIB_01.GLB_L09_A_ENGINEERING									: ‡ :					1
		- Com I	atona: E'					ointee						
RI	EMARK	s <u>Sand</u>	stone: Fi	ne to	coarse grained, massive, poorly cemented sedimenta	ry roc	ск т	ainly c	omp	used o	sand	sizea	LOGGED BY	
		partic	les.									_	JA/SG	

Ipswich Motorway Upgrade - Rocklea to Darra	Page 1 of 4
BH 115	_
3.00m	
35.00m	
FG5779	

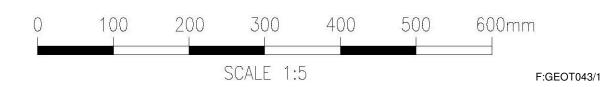
Project: Borehole No: Start Depth: Finish Depth: Project No:





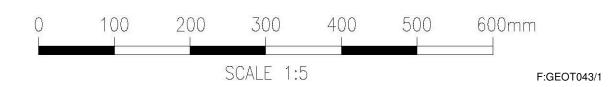
Project:	<u> Ipswich Motorway Upgrade - Rocklea to Darra</u>	
Borehole No:	BH 115	
Start Depth:	3.00m	
Finish Depth:	35.00m	
Project No:	FG5779	
H No:	H10891	





Project:	Ipswich Motorway Upgrade - Rocklea to Darra
Borehole No:	BH 115
Start Depth:	3.00m
Finish Depth:	35.00m
Project No:	FG5779
H No:	H10891





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Project:	Ipswich Motorway Upgrade - Rocklea to Darra
Borehole No:	BH 115
Start Depth:	3.00m
Finish Depth:	35.00m
Project No:	FG5779
H No:	H10891



