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**ENGINEERING BOREHOLE LOG**

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

BOREHOLE No   BH178    
 SHEET   1   of   3    
 REFERENCE No   12119  

PROJECT   Mackay Ring Road Geotechnical Investigation - Stage 1    
 LOCATION   Fursden Creek Overflow Bridge Pier 4; CH: 8770m;   COORDINATES   721427.5 E; 7661091.2 N    
 PROJECT No   FG6184   SURFACE R.L.   7.39m   PLUNGE        DATE STARTED   16/10/14   GRID DATUM   GDA 94 /MGA Zone 56    
 JOB No        HEIGHT DATUM   AHD   BEARING        DATE COMPLETED   17/10/14   DRILLER   Saxon Drilling  

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH						DEFECT SPACING (mm)				GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
								EH	VH	H	M	L	VL	EL	EC	VC	W			
0	7.39				<b>Clayey SILT (TOPSOIL)</b> Dark brown, dry to moist, firm. Low plasticity.	(ML)														
0.70	6.69			A	<b>SAND (ALLUVIUM)</b> Pale brown, moist, loose. Fine grained.	(ML)												2,3,4 N=7	SPT	
1				B		(ML)												2,3,3 N=6	SPT	
2				C		(SP)												3,3,3 N=6	SPT	
3				D		(SP)												3,2,3 N=5	SPT	
4				E	5.00m: Increasing in clay content. Becoming medium dense.	(SP)												6,6,7 N=13	SPT	
5				F	<b>Sandy GRAVEL (ALLUVIUM)</b> Pale grey, moist to wet, medium dense to very dense. Fine to medium gravel. Fine to coarse grained sand. Trace clay.	(GW)												30/150	SPT	
5.90	1.49			G		(GW)												13,22,18 N=40	SPT	
6				H		(GW)												8,8,10 N=18	SPT	
7				I		(GW)												6,6,6 N=12	SPT	
8				J	<b>SAND (ALLUVIUM)</b> Pale brown, moist to wet, medium dense. Trace fine gravel.	(SP)												6,6,6 N=12	SPT	
8.80	-1.41					(SP)														
10.10	-2.61					(SP)														

TMR JAN 15.GLB Log\_A\_ENGINEERING BOREHOLE LOG W LITHOLOGY FG6184 - BOREHOLES.GPJ <<DrawingFile>> Datget CPT Tool gInt.Add-In 04/03/2015 10:52

REMARKS   kgwu - Wundaru Granodiorite;    
  # Sample failed along existing defect surface.  

LOGGED BY  
**ME**

# ENGINEERING BOREHOLE LOG

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

BOREHOLE No   BH178    
SHEET   2   of   3    
REFERENCE No   12119  

PROJECT   Mackay Ring Road Geotechnical Investigation - Stage 1    
LOCATION   Fursden Creek Overflow Bridge Pier 4; CH: 8770m;   COORDINATES   721427.5 E; 7661091.2 N    
PROJECT No   FG6184   SURFACE R.L.   7.39m   PLUNGE            DATE STARTED   16/10/14   GRID DATUM   GDA 94 /MGA Zone 55    
JOB No            HEIGHT DATUM   AHD   BEARING            DATE COMPLETED   17/10/14   DRILLER   Saxon Drilling  

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	INTACT STRENGTH											DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS				
								USC	WEATHERING	EH	VH	H	M	J	VL	EL	EC	VC					W	WW	VW	EW
10	-2.61				K	<b>Silty CLAY (RESIDUAL)</b> Pale brown and grey, moist, very stiff. High plasticity. Trace fine grained sand. Trace fine gravel.	(CH)																		5,7,13 N=20	SPT
11					L																				5,8,12 N=20	SPT
12					M																				5,8,11 N=19	SPT
13					N																				10,12,17 N=29	SPT
14	-6.71				P	<b>GRANODIORITE (Kgwu)</b> XW: Recovered as grey and brown, moist, hard Silty CLAY.	XW																		13,24,27 N=51	SPT
15					Q																				30/140	SPT
16					R																				28,30/45	SPT
17					S																				16,30/80	SPT
18	-10.01				T	<b>GRANODIORITE (Kgwu)</b> HW: Grey and brown, fine to medium grained, very low strength.	HW																		30/80	SPT
19					U																				30/140	SPT
20																									15/5	

REMARKS   kgwu - Wundaru Granodiorite;    
  # Sample failed along existing defect surface.  

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**ENGINEERING  
BOREHOLE LOG**

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

BOREHOLE No **BH178**  
SHEET **3** of **3**  
REFERENCE No **12119**

PROJECT Mackay Ring Road Geotechnical Investigation - Stage 1  
LOCATION Fursden Creek Overflow Bridge Pier 4; CH: 8770m; COORDINATES 721427.5 E; 7661091.2 N  
PROJECT No FG6184 SURFACE R.L. 7.39m PLUNGE \_\_\_\_\_ DATE STARTED 16/10/14 GRID DATUM GDA 94 /MGA Zone 55  
JOB No \_\_\_\_\_ HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 17/10/14 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
														EH
20	-12.61					<b>GRANODIORITE (Kgwu) HW: (Cont'd)</b>							hb	SPT
21.28	-13.64		(32)			<b>GRANODIORITE (Kgwu) MW: Grey and pink, fine to medium grained, massive, low to high strength.</b>						30/30 hb D (21.10m) A (21.13m)	SPT	
22			72									21.65m-21.90m: Core Loss		
22.70	-15.31		100			<b>GRANODIORITE (Kgwu) SW: Grey and pink, fine to medium grained, massive, high to mainly very high strength. Defects: - Js; 0°-30° (1/m); Pl/Sm-Ro, OP, some CA; - Js; 30°-60° (4/m); Pl/Sm-Ro, OP, some CA;</b>						21.60m-23.60m: HFZ; SZ?		
23			62									23.26m-23.61m: Core Loss		
24			(53)									24.31m-24.34m: Clay seam, 30°.		
25			100									Is(50) = 2.97MPa; #	D (24.02m)	
26			(97)									UCS=29.1MPa Is(50) = 6.60MPa; # Is(50) = 4.03MPa	A (25.15m) D (25.22m)	
27			100									Is(50) = 4.77MPa; # Is(50) = 6.38MPa	D (26.55m) A (26.59m)	
28	-20.61		100									Is(50) = 6.24MPa	A (27.82m)	
28.00						Borehole terminated at 28m .								

REMARKS kgwu - Wundaru Granodiorite;  
# Sample failed along existing defect surface.

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**ME**

**CORE PHOTO LOG**

DEPARTMENT OF TRANSPORT & MAIN ROADS  
 Geotechnical Branch  
 35 Butterfield Street, HERSTON Qld 4006  
 Phone 07 3066 3336



Department of  
 Transport and Main Roads

Project Name	<b>Mackay – Ring Road</b>		
Project No	FG6184	Date	17/10/14
Borehole No	BH178	TMR H No	12119
Location	Fursden Creek Overflow Bridge	Start Depth (m)	21.0
Detail	Pier 4	Finish Depth (m)	28.0
Chainage	<b>8770m</b>	Submitted By	M.Ensor
Remarks			

