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**Queensland
Government**

**GEOTECHNICAL
BOREHOLE LOG**

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

BOREHOLE No **BH227**

Sheet 1 of 4

REFERENCE No **H12236**

PROJECT	Mackay Ring Road		
LOCATION	Pioneer River Bridge, Pier 8 (RHS)	COORDINATES 721327.6 E; 7660279.8 N	
PROJECT No	FG6184	SURFACE RL 6.96m	PLUNGE 90°
			DATE STARTED 28/09/2015
			GRID DATUM GDA 94 / MGA 255
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 06/10/2015
			DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	AUGER CASING WASHBORING CORE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS		
												EH	VH
1				A	Silty SAND (Alluvium?) Dark brown, moist, very loose to loose. Fine to medium grained sand. 1.00m: very loose	(SM)					2, 1, 2 N=3	SPT	
2	4.96			B	1.90m: Microdolerite boulders encountered (possible fill?) Clayey SAND (Alluvium) Dark brown, moist, very loose to loose. Fine to medium grained sand.	(SC)					2, 2, 2 N=4	SPT	
3	3.96			C	Gravelly SAND (Alluvium) Brown, wet, loose. Fine to coarse grained sand, fine to medium grained gravel, rounded grains.						4, 3, 5 N=8	SPT	
4				D	Gravel lenses throughout. 4.00m: becoming medium dense.						13, 10, 10 N=20	SPT	
5				E						5.00m-5.45m: No sample recovered	8, 7, 9 N=16	SPT	
6				F	6.00m: becoming dense.	(SP)					8, 18, 13 N=31	SPT	
7				G	7.00m: becomes medium dense.						6, 5, 8 N=13	SPT	
8				H	8.00m: becomes loose.						6, 3, 5 N=8	SPT	
9				I							5, 4, 5 N=9	SPT	
	-2.84 -3.04				Clayey SAND trace gravel (Alluvium)	(SC)							

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REMARKS: Kgwu = Wundaru Granodiorite

LOGGED BY	REVIEWED BY
T.Goosey	S.Foley



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BOREHOLE No **BH227**

Sheet 2 of 4

REFERENCE No **H12236**

PROJECT	Mackay Ring Road		
LOCATION	Pioneer River Bridge, Pier 8 (RHS)	COORDINATES 721327.6 E; 7660279.8 N	
PROJECT No	FG6184	SURFACE RL 6.96m	PLUNGE 90°
			DATE STARTED 28/09/2015
			GRID DATUM GDA 94 / MGA 255
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING °
			DATE COMPLETED 06/10/2015
			DRILLER Cairns Drilling

DEPTH (m)	R.L. (m)	FAUGER CASING WASHBORING CONE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
													EH
11					J	Clayey SAND trace gravel (Alluvium) Pale grey and brown, moist, medium dense. Fine to medium grained sand.						5, 8, 15 N=23	SPT
					K						11.00m-11.45m: No sample recovered	8, 9, 14 N=23	SPT
12					L		(SC)					10, 13, 14 N=27	SPT
13					M						13.00m-13.45m: No sample recovered	9, 11, 14 N=25	SPT
14	-7.04				N	Clayey SAND (Alluvium) Grey brown, moist, medium dense. Fine to coarse grained sand, low to medium plasticity.						8, 12, 16 N=28	SPT
15	-8.04				O	CLAY (Alluvium) Brown grey, moist, very stiff. Medium to high plasticity. 15.40 to 15.45m: Clayey SAND lens.						6, 8, 13 N=21	SPT
16	-9.14				P	16.00m: becoming hard MICRODIORITE (Kgwu) XW: Recovered as brown, dry to moist, hard, silty clay trace sand. Fine grained sand.						21, 30/100 hb	SPT
17					Q	17.00m: increasing gravel content		XW				30/130 hb	SPT
18	-11.04				R	MICRODIORITE (Kgwu) HW: Dark grey, fine grained, massive, low to medium strength.		HW				30/100 hb	SPT
19	-12.04				S	MICRODIORITE (Kgwu) XW: Recovered as brown, moist, very dense, clayey sand. Fine grained sand.		XW				26, 30/130 hb	SPT
	-12.90				(78)		SW						

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BOREHOLE No **BH227**

Sheet 3 of 4

REFERENCE No **H12236**

PROJECT	Mackay Ring Road								
LOCATION	Pioneer River Bridge, Pier 8 (RHS)			COORDINATES 721327.6 E; 7660279.8 N					
PROJECT No	FG6184	SURFACE RL	6.96m	PLUNGE	90°	DATE STARTED	28/09/2015	GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°	DATE COMPLETED	06/10/2015	DRILLER	Cairns Drilling

DEPTH (m)	R.L. (m)	FAUGER CASING WASHBORING CORE DRILLING	RQD (%) CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH		DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS										
								EH	VH	H	M			J	V	U	EC	VC	C	M	W	VW	EW
21					MICRODIORITE (Kgwu) SW: Blue grey, fine grained, massive, high to very high strength. Js: 5° to 20°(3-4/m); Pl/Ro; TI; Fe St; Js: 60° to 70°; (<1/m); St/Ro; TI; Fe St;	SW	VH					UCS=44.00 MPa E=53.6 GPa	(20.40m)										
					20.60m-20.65m: Clay and sand							Is(50)=4.60 MPa	A (20.85m)										
					21.00m: Contact; 75°, Pl/Sm, TI, Fe St;							Is(50)=8.20 MPa	D (21.20m)										
					21.95m: Contact; 5°, Pl/Ro, TI, Fe St and Cly Vr;							Is(50)=3.10 MPa	D (21.80m)										
			100 (76)		21.95 to 23.05m: Undulose boundary, microdiorite @90°.							Is(50)=2.50 MPa Is(50)=0.72 MPa	D (22.55m) A (22.56m)										
					Granodiorite (HW)																		
			100 (50)			MW HW MW																	
					23.05m-23.20m: SW zone, high to very high strength. 23.20m-23.77m: BZ; Cly and Sinf, Fe St and CA;							Is(50)=1.70 MPa	D (23.80m)										
												Is(50)=4.40 MPa	A (24.14m)										
	-17.42				GRANODIORITE (Kgwu) SW: Pale red grey, coarse grained, porphyritic, high to very high strength. Js: 5° to 15°; (3/m); Pl/Ro; TI; Fe St; Js: 65° to 75°; (1/m); Pl-St/Ro; TI; Fe St;	SW	VH					UCS=37.70 MPa	(24.80m)										
			100 (72)									Is(50)=12.00 MPa	D (25.20m)										
	-18.58				MICRODIORITE (Kgwu) MW: Brown grey, fine to medium grained, massive, generally high strength. Calcite veining throughout. Js: 5° to 15° (5/m); Pl/Ro; TI-OP; Fe St and some Cly Vr; Js: 30° to 50°; (2/m); Pl/Ro; OP; CA; Js: 60° to 75°; (1/m); Pl/Sm; TI; CA Vr;	MW						Is(50)=8.10 MPa	A (25.65m)										
			100 (77)									Is(50)=0.37 MPa Is(50)=1.50 MPa	A (26.50m) D (26.75m)										
					26.35m-26.40m: Granite clast																		
					27.47m-27.51m: BZ; very low to low strength							Is(50)=3.50 MPa Is(50)=0.90 MPa	A (27.30m) D (27.40m)										
	-20.64				MICRODIORITE (Kgwu) SW: Brown grey, fine to medium grained, massive, high to very high strength. Calcite veining and iron staining throughout. Js: 5°-15°(2-4/m) Pl/Ro, TI-OP, Fe St Js: 60°-75° (1/m), Pl/Sm, TI, CA Vr. Granodiorite (SW)	SW	VH					Is(50)=7.10 MPa Is(50)=5.10 MPa	D (28.55m) A (28.70m)										
			100 (84)									UCS=21.80 MPa	(29.35m)										
												Is(50)=4.60 MPa	A (29.90m)										
	-23.04																						

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REMARKS: Kgwu = Wundaru Granodiorite

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T.Goosey	S.Foley



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GEOTECHNICAL BOREHOLE LOG

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BOREHOLE No BH227

Sheet 4 of 4

REFERENCE No H12236

PROJECT	Mackay Ring Road								
LOCATION	Pioneer River Bridge, Pier 8 (RHS)			COORDINATES 721327.6 E; 7660279.8 N					
PROJECT No	FG6184	SURFACE RL	6.96m	PLUNGE	90°	DATE STARTED	28/09/2015	GRID DATUM	GDA 94 / MGA Z55
JOB No	242/10G/906	HEIGHT DATUM	A.H.D.	BEARING	°	DATE COMPLETED	06/10/2015	DRILLER	Cairns Drilling

DEPTH (m)	R.L. (m)	FAUGER CASING WASHBORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH							DEFECT SPACING							ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS				
									EH	VH	H	M	J	VI	EL	EC	VC	C	M	W	VW	EW						
-23.54			100			MICRODIORITE (Kgwu) \$W: (Cont'd) GRANODIORITE Borehole completed at 30.50m	X	SW																			30.30m: Contact; 70°, Un/Ro, TI-FL, Cly Vr and Fe St;	
31																												
32																												
33																												
34																												
35																												
36																												
37																												
38																												
39																												

REMARKS: Kgwu = Wundaru Granodiorite	LOGGED BY	REVIEWED BY
	T.Goosey	S.Foley

TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

CORE PHOTO LOG

DEPARTMENT OF TRANSPORT AND MAIN ROADS
 Geotechnical Section
 35 Butterfield Street, Herston Qld 4006
 Phone 07 3066 3336



Project Name	Mackay – Ring Road (Stage 2)		
Project No.	FG6184	Date	17/08/15
Borehole No.	BH 227	TMR H No.	H12236
Location	Pioneer River Bridge	Start Depth (m)	19.85
Detail	Pier 8 (RHS)	Finish Depth (m)	30.50
Chainage		Submitted By	M.Ensor
Remarks			

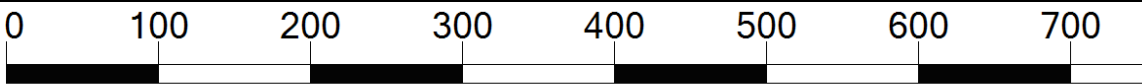
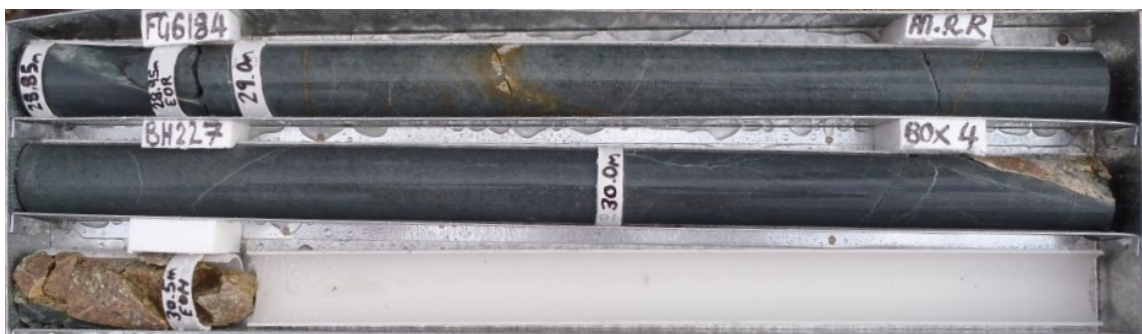


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Project Name	Mackay – Ring Road (Stage 2)		
Project No.	FG6184	Date	17/08/15
Borehole No.	BH 227	TMR H No.	H12236
Location	Pioneer River Bridge	Start Depth (m)	19.85
Detail	Pier 8 (RHS)	Finish Depth (m)	30.50
Chainage		Submitted By	M.Ensor
Remarks			



SCALE 1:5