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# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 17/03/2016

BH202

Sheet 1 of 3

BOREHOLE No

REFERENCE No

H12211

PROJE	СТ	[	Ma	icka	ay Rin	g Ro	ad								
LOCAT	ION		Pio	nee	er Riv	er B	ridge, Abutment A (CL)					CO	ORDINATES 721279.1	E; 766001	9.8 N
PROJE	CT No	-	FG6184         SURFACE RL 7.28m         PLUNGE 90°         DATE STARTED 24/09/20		RTED 24/09/2015	GRID DATUM GDA 94 / MGA Z		1GA Z55							
JOB N	D	_	242	2/1	0G/90	06	HEIGHT DATUM A.H.D.	BEA	RING	•	DATE COMPLE	ETED 25/09/2015	DRILLER S	axon Drilli	ng
DEPTH (m)	R.L. (m)	AUGER CASING	WASH BORING		RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	ГІТНОГОGY	USCS WEATHERING	INTACT STRENGTH 픽곳고,고,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	DEFECT SPACING		DDITIONAL DATA AND EST RESULTS		SAMPLES TESTS
-		A C				z	Silty CLAY trace sand (Topsoil) Brown, dry, soft to firm. Medium grained sand, medium	X			<u>-                </u> - - - -			1, 2, 1 N=3	SPT
- - - - - - - - - - - - - - - - - - -	6.28					zx	plasticity, trace rootlets. 0.20m: becomes moist							1, 2, 3 N=5	SPT
1	0.20					A,C 1	Sandy CLAY (Alluvium) Brown mottled orange brown, moist, stiff.							3, 5, 6 N=11	SPT
	5.28					AX	Medium to coarse grained sand, medium plasticity. 1.70m: becom fine grained sand.		(CI)					4, 5, 5 N=10	SPT
2 						в	CLAY trace sand (Alluvium) Brown mottled orange brown,		-					3, 3, 6 N=9	SPT
- - - - - -						вх	moist, stiff. Fine grained sand, low plasticity. Becoming very stiff.		(CL)					4, 6, 10 N=16	SPT
- - -	3.78					с	Becoming stiff.		-		-			3, 4, 6 N=10	SPT
3  4 4 4 4 4 4						сх	Sandy CLAY (Alluvium) Grey brown mottled orange brown, moist, stiff.		(CL)		-			5, 7, 8 N=15	SPT
- · - -	2.98					D	tine grained sand, low plasticity. 4.00m: sand content increasing. Clayey SAND (Alluvium)				- - - -			4, 4, 6 N=10	SPT
- - - - 5	2.28					DX	Pale grey, moist, medium dense. Fine grained sand, low plasticity.		(SC)		- - - -			4, 6, 9 N=15	SPT
  							Silty SAND trace clay (Alluvium) Pale grey, moist, medium dense. Fine grained sand.	× × × ×			-			4, 8, 12 N=20	SPT
- - - - - - - - - - - - - - - - - - -						EX		X X X			-			7, 10, 14 N=24	SPT
						F		XXXX	(SM)	)	-			8, 11, 12 N=23	SPT
- - - - - - 7						FX	7.00m: becomes pale grey mottled	××××			-			9, 11, 18 N=29	SPT
	-0.32					G	orange, dense.	×××			- - - -			15, 17, 18 N=35	SPT
- - - - - - - - 8						GX	Sandy CLAY (Alluvium) Grey mottled orange brown, moist, very stiff.				- - - -			5, 9, 12 N=21	SPT
						-	Low plasticity.           8.50m: becomes		(CL)		- - - 			5, 8, 9 N=17	SPT
- - 9	-1.92					нх					- - - -			7, 6, 9 N=15	SPT
9   							Clayey SAND (Alluvium) Pale grey brown, moist, medium dense.		(SC)		- - - -			10, 11, 11 N=22	SPT
-	-2.52					IX	Medium to coarse grained sand, low			-	-			10, 8, 8 N=16	SPT
		1/10		12			Continued on next sheet								
RI	-MAR	KS	:	Kg	gwu∍	= W	'undaru Granodiorite						LOGGED BY		WED BY
							TMR G	OTECI	HNICAL E	BOREHOLE LOG - CREATED V	ITH HOLEBASE SI		C.Boyes	S.F	oley

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# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 17/03/2016

BH202

Sheet 2 of 3

BOREHOLE No

REFERENCE No

H12211

PROJE	CT	1	Mac	kay Rin	g Ro	bad								
LOCAT	ION	F	Pion	eer Riv	er B	ridge, Abutment A (CL)						COORDINATES 721279.	1 E; 76600	19.8 N
PROJE	CT No	F	G6	184		SURFACE RL 7.28m	PLU	INGE S	0°	DATE STAF	RTED 24/09/2015	GRID DATUM	GDA 94 / 1	MGA Z55
JOB No	)	2	242/	/10G/90	06	HEIGHT DATUM A.H.D.	BEA	RING_		DATE COMPL	ETED 25/09/2015	DRILLER	Saxon Drill	ing
DEPTH (m)	R.L. (m)	AUGER CASING	WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH 표준고주니			ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
- - - -					J,C 3	plasticity. CLAY trace sand (Alluvium) Grey mottled brown, moist, stiff to		-					6, 8, 11 N=19	SPT
- - - - 11					JX	very stiff. Fine grained sand, low plasticity. 10.50m: becomes low to medium		-		- - - -			5, 7, 8 N=15	SPT
-					к	plasticity.		(CL)		- - - -			4, 7, 9 N=16	SPT
- - - - 12					кх	11.50m: becomes very stiff. Trace carbonaceous material. 12.00m: sand content increasing.			-	- - - -			7, 10, 12 N=22	SPT
- - -	-5.22				L			-		-			7, 10, 12 N=22	SPT
- - - 13					LX	Silty SAND trace clay (Alluvium) Pale grey, moist, medium dense. Fine grained sand. 13.00m: silt content decreasing.		2		-			7, 8, 17 N=25	SPT
- - -					M	13.50m: becomes fine to coarse	× × × ×	(SM)		-			5, 4, 12 N=16	SPT
- - - - 14					мх	grained sand.	× × × ×	2		- - - -			8, 10, 11 N=21	SPT
- - -	-7.02				N	Clayey SAND (Alluvium) Pale grey, moist, medium dense.		2		- - -			7, 8, 8 N=16	SPT
- - - 15						Medium to coarse grained sand, medium plasticity. 15.00m: clay content increasing.		(SC)		- - - -			7, 5, 7 N=12	SPT
- - -	-8.02				0	Clayey SAND (Residual) Orange brown and grey, dry,		(SC)		- - - -			8, 12, 19 N=31	SPT
- - - 16	-8.72				Ρ	medium dense to dense. Fine to medium grained, low plasticity.	+						20/445	SPT
- - - -						GRANODIORITE (Kgwu) XW: Recovered as brown-grey, dry, very dense, silty sand. Medium	++	xw		- - - -			30/115	-
- - 17 -	-9.92			(51)	Q	grained sand. GRANODIORITE (Kgwu)	++		-	-			hb	SPT
- - - - - - - - -						SW: Grey, dark grey and pink, medium to coarse grained, porphyritic, high to very high strength. Locally fractured and	+ + + + + + + +	нw	VH	M c	<ul> <li>17.32m-17.34m: XW</li> <li>17.75m-17.82m: XW</li> <li>brecciated</li> <li>17.88m-17.92m: XW</li> </ul>	' Cly zone, ls ' Cly zone	s(50)=7.00 MPa s(50)=0.54 MPa	D (17.50m) A (17.58m) - - - -
- - - -				100		brecciated. Js: 5°-15°(<4/m); Pl/Ro; OP; Fe St or Cly Vr Js: 30°-50°(<5/m); Pl-Un/Ro; Sinf	+ + + + + +	HW SW HW	VH	M E C	18.08m-18.17m: HW			
- - - - - -				(0) 100 (30)		Js: 50° -75°(<2/m); Pl/Ro; OP; Sinf and Cly Js: 80°-90°(<1/m); Un-St/Sm; CD; Fe	+ + + + + + + +	MW XW	H-VH	vc vc c	19.00m-19.10m: XW brecciated	' Cly zone,		
	-12.72					St 19.86 to 20.19m: MICRODIORITE (XW)	• ++ • ++	SW XW		M	= 19.76m-19.78m: CA 40mm 19.86m-20.19m: S2;	VN; 5°, Pl/Sm,	s(50)=0.98 MPa	D (19.65m) 
						Continued on next sheet					Cly, brecciated			
RE	EMAR	KS	:	Kgwu	= W	/undaru Granodiorite						LOGGED BY	_	WED BY
						TMR G	EOTECH	HNICAL B	DREHOLE LOG - CREATED V	VITH HOLEBASE SI		C.Boyes	<u> </u>	Foley

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						-		FINAL 1	7/03/2016
**31ª	NG m		GE	OTECHN	ICAL		BOREHOLE No	В	H202
	Que Que	ensland	BO	REHOLE	LOG	_	Shee	t 3 of 3	
	GOV GOV	ernment		GEOTECHNICAL TE REFER FORM F:GE			REFERENCE No	H:	12211
PROJECT	Mackay Ring R	oad							
LOCATION	Pioneer River I	Bridge, Abutment A (CL)					COORDINATES 721279.1	L E; 76600	19.8 N
PROJECT No	FG6184	SURFACE RL 7.28m	PLUNGE 9	90°	DATE STAF	RTED 24/09/2015	GRID DATUM	GDA 94 / 1	MGA Z55
JOB No	242/10G/906	HEIGHT DATUM A.H.D.	BEARING		DATE COMPLE	TED 25/09/2015	DRILLER	Saxon Drill	ing
DEPTH (m) (m) (m)		MATERIAL DESCRIPTION	LITHOLOGY USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
				ĔĘĊŗਫ਼ŗŦĞĦ					SAM
12.89	100	GRANODIORITE (Kgwu) \$W: (Cont'd)	+ xw + mw	н	E	20.19m-20.55m: HI	-Z;		-
	(27)	GRANODIORITE (Kgwu) MW: Grey, dark grey and pir medium to coarse grained,	• •		c		Is	(50)=0.41 MPa	 A (20.61m) 
21	100	porphyritic, high strength. Fi throughout. –Js: 5° to 15°; (<9/m); Pl-Un/S	+ · SVV		VC	21.01m-21.97m: HI throughout		(50)=1.80 MPa	(21.13m)  -  -  -
  22		Fe St or Sinf; Js: 30° to 50°; (<3/m); PI/Sm Sinf or Fe St; Js: 75° to 90°; (<3/m); Un/Sr	+		c				
		Sinf or Fe St;	n-Ro; II; + sw + MW	-	vc	22.17m-22.94m: HI and broken	EZ; core jointed Is	(50)=3.80 MPa	D (22.12m) - - - - -
-15.63 23	<u>100</u> (63)	GRANODIORITE (Kgwu) SW: Grey dark grey and pink	, <b>+</b> SW		c	22.97m-23.27m: HI	Is	(50)=0.52 MPa	A (23.05m)_
		medium to coarse grained, porphyritic, very high streng Js: 5° to 15° ;(<5/m); PI-Un/S Fe St or Cn;	th.		м	⊟ 23.27m-23.32m: HI		CS=80.80 MPa	 (23.45m)  
24 	100 (57)	Js: 30° to 60°; (<3/m); PI/Sm Fe St or CA VN <2mm; Hs: 70° to 90°; (<1/m); Un/Sr Cn or Fe St;	•_+	н-үн	c			(50)=1.30 MPa (50)=7.70 MPa	 A (24.29m) D (24.40m)
25 		24.45m: becoming dominant pink.	ly		c	⇒ 25.07m-25.10m: HI	-Z Is	(50)=2.10 MPa	 A (25.10m)
	100		*+ *+ **		c c	25.62m-25.70m: HI	Is	(50)=0.43 MPa	– – – – A (25.95m)
	(45)		+ + + + +		vc c	26.20m-26.55m: HI		(50)=0.50 MPa	D (26.05m) - - - - - -
- 27 - 27 			+ - + + + - + + + -		c	⇒ 27.22m-27.24m: HI	FZ IS	(50)=1.70 MPa (50)=9.10 MPa S=100.00 MPa	A (27.07m)- D (27.15m) (27.45m)
- - - - 28 -					C VC				
-21.22	100	Borehole completed at 28.5	0m		c			(50)=5.70 MPa (50)=1.20 MPa	A (28.20m) D (28.30m) 
- - 29 -					- - 				-
					-				-
-					_ _ _ _				
REMARK	KS: Kgwu = V	Vundaru Granodiorite					LOGGED BY		WED BY
			TMR GEOTECHNICAL BO	DREHOLE LOG - CREATED V	VITH HOLEBASE SI		C.Boyes	S.	Foley

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#### 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	25/09/15
Borehole No.	BH 202	TMR H No.	H12211
Location	Pioneer River Bridge	Start Depth (m)	17.20
Detail	Abutment A, centreline	Finish Depth (m)	28.50
Chainage		Submitted By	M.Ensor
Remarks			



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#### CORE PHOTO LOG

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



Drojoct Nome	Mackay Ding	Road (Stage 2)		
Project Name Project No.	FG6184	Nuau (Staye 2)	Date	25/09/15
Borehole No.	BH 202		TMR H No.	H12211
Location		ridao		17.20
	Pioneer River B		Start Depth (m)	
Detail	Abutment A, cer	htreline	Finish Depth (m	
Chainage Remarks			Submitted By	M.Ensor
FG6184				
	I.	B	SH202	BOX4
200 J	8	11	A.A	1 1
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