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ENGINEERINGBOREHOLE LOG

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

PROJE(Geotechnical Investigation - Stage 1		
	CT No	_F <u>G</u> 61	184		SURFACE R.L. <u>12.86m</u> PLUNGE HEIGHT DATUM <u>AHD</u> BEARING	DATE STARTED <u>24/9/14</u>	GRID DATUM GDA 94 /MGA Zone 55
TH (m)	R.L. (m)	GEK SH BORING RE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	INTACT DEFECT STRENGTH SPACING (mm) NOSC (mm) SEA PHIC CO	ADDITIONAL DATA AND TEST RESULTS Results
0 '	12.86	§§ <u>0</u>	REC %	SAI			SAL
- - -	12.16	l''			Silty CLAY (TOPSOIL) Dark brown, dry to moist, stiff. High plasticity. Silty CLAY (ALLUVIUM)	<u>'</u> ' ≟ (CH)	
- - 1 - - - - - - - - -	11.16			А	Pale orange-brown, moist, stiff. High plasticity.	(CH)	6,7,7 N=14
	11.10	Ļ		В	Sandy Clayey SILT (ALLUVIUM) Pale orange-brown, moist, stiff. High plasticity.	(MH)	4,4,8 N=12
	10.06			С	Silty CLAY (ALLUVIUM) Pale grey-brown, moist, stiff to very stiff. High plasticity.		5,5,8 N=13
- - - - - - - - - - -				D		(CH)	4,7,9 N=16
- 4.70 5 	8.16			E	Sandy Silty CLAY (ALLUVIUM) Pale grey-brown, moist, stiff to very stiff. High plasticity.	(CH)	5,7,8 N=15
- - - - - 6 - 6.20	6.66			F	Silty CLAY (ALLUVIUM) Pale grey, moist, stiff to very stiff.		
- - - - - - - - - -				G	Trave fine gravel. Trace fine grained sand.		5,7,9 N=16
				Н		(CH)	5,6,8 N=14
- - - - - - 9 - - -				J			4,7,8 N=15
:							
-10100 REM	2.86 //ARK				Granodiorite;		LOGGED BY ME
		<u> Jul</u>					



ENGINEERINGBOREHOLE LOG

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

BOREHOLE No __BH118__

SHEET __2_ of __4__

REFERENCE No __12064___

PROJECT					Geotechnical Investigation - Stage 1					
					SURFACE R.L. <u>12.86m</u> PLUNGE					
JOB No					HEIGHT DATUM AHD BEARING					
(m) R.L. (m)		RO CO REC	%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	WEATHERING	INTACT DEFECT SPACING (mm)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES
- - -					Silty CLAY (ALLUVIUM) (Cont'd)				4,6,8 N=14	SPT]
	96			L			CH)		5,6,8 N=14	SPT :
12 					Sandy Silty CLAY (ALLUVIUM) Pale grey and brown, moist, stiff to very stiff. High plasticity.				5,6,8 N=14	SPT =
- 				N	12.80-13.70m: Reduction in sand content.		CH)	± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ±	7,8,10 N=18	SPT -
- - - - 14 - - - - -				Р				+ + + + + + + + + + + + + + + + + + +	5,6,7 N=13	SPT -
-1.4.80 -1. -15 - 				Q	Silty SAND (ALLUVIUM) Pale grey and brown, moist, medium dense.		SM)		10,11,15 N=26	SPT -
-15.70 -2. 16 16 				R	Silty Sandy CLAY (ALLUVIUM) Pale grey and brown, moist, very stiff. High plasticity.		CH)		8,10,13 N=23	SPT =
17 17 				S	Silty SAND (ALLUVIUM) Brown and pale grey, moist, dense. Medium to coarse grained sand. Trace fine to medium gravel.	(SM)		16,18,25 N=43	SPT :
	24			Т	Silty CLAY (ALLUVIUM) Pale brown and grey, moist, very stiff. High plasticity.				——————————————————————————————————————	SPT =
- - - - - - - - - - -				U			CH)		6,7,11 N=18	SPT :
-7. REMAI		<u>wu - W</u>	undar	 u_G	ranodiorite;				LOGGED BY	
					ng existing defect surface.				ME	



ENGINEERINGBOREHOLE LOG

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

BOREHOLE No ___BH118 ___

SHEET __3__ of __4__

REFERENCE No ___12064 ___

COCATION PREADOME Now Design Flat 2 CH-52/200. PROJECT PROJECT NO FIGURE PRO		JECT				Geotechnical Investigation - Stage 1			70077 0 5 707700	
MATERIAL DESCRIPTION NATE DEFINITION DEFINITION DESCRIPTION DESCRIPTION										
RIL										
## AND RESIDUAL) Pale gray. With reduin dense. 20									JANEEL COMMINS	
10	2		S N S	RQD				OTDENIOTH ODAOINO	g ADDITIONAL DATA	
10	TH.		SORIN				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(mm)	O O O O O O O O O O O O O O O O O O O	S
Sity CLAY (ALLUVIUM) 0.7.8 SPT	DEP.		SHE D	CORE	MPLE	DESCRIPTION	19 HOL	SII_	TEST RESULTS	STS
SAND (RESIDUAL) Pale grey, wet, medium dense. SPT SAND (RESIDUAL) Pale grey, wet, medium dense. SAND (RESIDUAL) Pale grey, wet, medium dense. SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. High paletity. First be coarse grained sand. SPT SAND (RESIDUAL) Provent, moist, hard. SPT SAND (RESIDUAL) Provent, moist, hard. SPT SAND (RESIDUAL) SPT SAND (RESIDUAL) SPT SAND (RESIDUAL) Provent, moist, hard. SPT SAND (RESIDUAL) SAND (20	-7.14	₹§8	REC 9	δ δ	City OLAY (ALLED /ILIA)	5 8		8	SA
SAND (RESIDUAL) Pale grey, wet, medium dense. (SP) SAND (RESIDUAL) Pale grey, wet, medium dense. (SP) Sand (RESIDUAL) Pale grey, wet, medium dense. (SP) Sand (RESIDUAL) S					V	(Cont'd)				SPT]
SAND (RESIDUAL) Pale grey, wet, medium dense. (SP) SAND (RESIDUAL) Pale grey, wet, medium dense. (SP) Sand (RESIDUAL) Pale grey, wet, medium dense. (SP) Sand (RESIDUAL) S	-							: : : : : : : : : :		-
SAND (RESIDUAL) Pale grey, wet, medium dense. (SP) SAND (RESIDUAL) Pale grey, wet, medium dense. (SP) SAND (RESIDUAL) Brown, moist, hard. Hing haskicity, Pine to coarse grained sand R.12.30 SPT R.10.74 R.10.74	-						(CH	1)		-
SAND (RESIDUAL) Pale grey, well, medium to coarse grained. SAND (RESIDUAL) Pale grey, well, medium to coarse grained. SAND (RESIDUAL) Sandy Gravelly CLAY (RESIDUAL) Fine to coarse grained sand Size of the same strength Sandy Gravelly CLAY (RESIDUAL) Sandy Gravelly CLAY (RESIDU	- 21									-
Pale grey, wet, medium dense. Santy Gravelly CLAY (RESIDUAL) Fine to coarse grained sand Fine to medium gravel. Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand Fine to medium gravel. Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand (CH) Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand (CH) Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticity. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) Santy Gravelly CLAY (RESIDUAL) High plasticy. Fine to coarse grained sand (SP) 10,13,13 SPT 11,13,16 SPT	21.30	-8.44			W	CAND (DECIDIAL)		· · · · · · ·	5,11,13 N=24	SPT]
Sandy Gravelly CLAY (RESIDUAL) Brown, moist, hard High plasticty, Fine to coarse grained sand N=42 SPT	-						(SP) : : : : : : : : : : :		=
Brown, most, hard. Spt.	21.90	-9.04				L		<u> </u>		=
High plasticity. Fine to coarse grained sand. Fine to medium gravel. C(H)	- 22					Sandy Gravelly CLAY (RESIDUAL)			8 12 30	-
23	-				X	High plasticity. Fine to coarse grained sand	. //	: : : : : : : : : :	N=42	SPT =
23 13,24,30 SPT 13,24,30 SPT 13,24,30 SPT 13,24,30 SPT 13,24,30 SPT SAND (RESIDUAL) Brown, wet, medium dense. Trace fine gravel. Trace fines:	-					Fine to medium graver.		: : : : : : : : : :		-
SAND (RESIDUAL) Brown, wet, medium dense. Trace fine gravel. Trace fines. SAND (RESIDUAL) Brown, wet, medium dense. Trace fine gravel. Trace fines. SPT SAND (RESIDUAL) Brown, wet, medium dense. Trace fine gravel. Trace fines. SPT SPT	-						(CH	¹⁾ : : : : : : : : : : :		=
SAND (RESIDUAL) Brown, wet, medium dense. Trace fine gravel. Trace fines. 10,13,13 SPT N=26 SPT SP	-23 -				V				13,24,30	CDT -
SAND (RESIDUAL) Brown, wet, medium dense. Trace fine gravel. Trace fines. 10.13.13 N=26 SPT -25	-				Ť					571 _
Brown, wet, medium dense, Trace fine gravel. Trace fines.	23.60	-10.74				SAND (RESIDUAL)		 		-
2	-					Brown, wet, medium dense.		1::::::::::::::::::::::::::::::::::::::		-
CRANODIORITE (Kgwu)	- 24				Z	Trace line graver. Trace lines.				SPT -
11,13,16 N=29 SPT GRANODIORITE (Kgwu)	-								N=26	
AA	-						(SP) : : : : : : : : : : : : : : : : : : :		-
AA	- - -25									-
GRANODIORITE (Kgwu)					AA					SPT]
CRANODIORITE (Kgwu)	-							<u> </u>	14-23	-
###: Brown and grey, medium to coarse grained, extremely low to very low strength. ###################################	-25.75	-12.89				CDANODIODITE (Kanana)		<u> </u>		
grained, extremely low to very low strength. + + + + + + + + + + + + + + + + + + +	- 26				AB	HW: Brown and grey, medium to coarse		: : : : : : : : : :	30/90	SPT
30/70 SPT	-					grained, extremely low to very low strength.	+]
30/70 SPT	-						[+]	1:::::::		-
30/70 SPT	-						+ , + ,	.		-
28.00m: Becoming low to medium strength.	- -27				AC		T HW	' :::::: ::::::	30/70	SPT
28.00m: Becoming low to medium strength.	-						+	: : : : : :		-
28.00m: Becoming low to medium strength.	-						[+]			-
28.00m: Becoming low to medium strength.	-						+ , +]
28.30m-28.50m: Microdiorite contact at 50°. 28.30m-28.50m: HFZ; Cly; 28.50m-28.70m: HFZ; Cly; 28.50m-28.70m: HFZ; Cly; 33	28 				AD	28.00m: Becoming low to medium strength.	. ├ [┷]		30/55	SPT
29.00 -16.14	-				-1		+			
(33) GRANODIORITE (Kgwu) MW: Brown and grey, medium to coarse grained, medium strength. Defects: Js; 0°-30° (10/m); Pl/Sm, OP, Cly Vr; Js; 60°-70° (1/m); Pl/Sm, OP, Cly Vr; REMARKS Kgwu - Wundaru Granodiorite; (33) GRANODIORITE (Kgwu) H MW Srown and grey, medium to coarse grained, medium strength. H MW 29.86m: Dolerite contact at 60°; Pl. LOGGED BY	-						$\begin{bmatrix} + \end{bmatrix}$ HW	/ : : : : <u>: : : : : : : : : : : : : : :</u>		
Canal Cana	29-00	-16.14		100			- - - - - - - - - - - - -			
MW: Brown and grey, friedulin to coarse grained, medium strength. Signature of the coarse grained, medium strength. Defects: Is(50) = 0.77MPa A (29.63m) A (29.63m	- 29 -			(33)		GRANODIORITE (Kgwu)	+		Is(50) = 0.43MPa	D (29.15m)-
-17.00	-					grained, medium strength.	$\begin{bmatrix} + \end{bmatrix}$ MV	v : : : :		[4
29.86 -17.00 100 -15; 60°-70° (1/m); PI/Sm, OP, Cly Vr; + SW 29.86m: Dolerite contact at 60°; PI. 100 29.86m: Dolerite contact at 60°; PI. 100	-	47.00		100		- Js; 0°-30° (10/m); Pl/Sm, OP, Cly Vr;	 		Is(50) = 0.77MPa	A (29.63m)
ME		-17.00				- Js; 60°-70° (1/m); Pl/Sm, OP, Clý Vr;	_ + sw	/	29.86m: Dolerite contact at 60°; Pl.	_
# Sample failed along existing defect surface. ME	R	EMARK	S <u>Kgw</u>	<u>u - Wun</u>	daru (Granodiorite;				
			<u># Sa</u>	ample fa	iled al	ong existing defect surface.			ME	



ENGINEERING BOREHOLE LOG

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

BOREHOLE No __BH118 __

SHEET __4 __ of __4 __

REFERENCE No __12064 ___

PRO	JECT					Geotechnical Investigation - Stage 1								
						verpass Pier 2; CH: 5612m;							OORDINATES 720972.9 E; 7657966.6	
		<u>FG</u>	618	<u> 34 </u>		SURFACE R.L. <u>12.86m</u> PLUNGE								
JOB	No					HEIGHT DATUM _AHD BEARING			ı	DATE COM	IPLETED <u>1</u>	/ <u>10/</u>	14 DRILLER Saxon Drilling	
S DEPTH (m)	R.L. (m)	AÚGER WASH BORING CORF DRILLING	CONE DNIEEING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
- 50	17.17		П		$\overline{}$	< <listbuildseptrim(< td=""><td>+-</td><td></td><td>T</td><td></td><td></td><td></td><td>Is(50) = 3.08MPa; #</td><td>D (30.00m)-</td></listbuildseptrim(<>	+-		T				Is(50) = 3.08MPa; #	D (30.00m)-
-31 32 33				100 (77)			+	SW					UCS=80.3MPa Is(50) = 7.23MPa Is(50) = 3.55MPa	A _(31.78m) -
	0.4.4.4			100			-	-					IS(50) = 8.10MPa	D _(33.24m)
34-00	-21.14		+	100		Borehole terminated at 34m			$^{+}$		- : : : : : :			
-35 -35 -36 -37 -37 -38 -38 -39 -39 -40				Winds									LOCOED BY	
R	EMARK					ranodiorite;							LOGGED BY	
		<u>#</u> S	<u>Sam</u>	ple faile	d alo	ng existing defect surface.							. ME	

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



Project Name	Mackay – Ring Road		
Project No	FG6184	Date	01/10/14
Borehole No	BH 118	TMR H No	12064
ocation	Peak Downs Highway Overpass	Start Depth (m)	28.05
Detail	Pier 2	Finish Depth (m)	34.0
Chainage	5612	Submitted By	M.Ensor
Remarks			
28.75		(1-400 P	
	e e e		
	24-86		1
		The same of the same	The same
	- A		
	Mary Mary Mary Mary Mary Mary Mary Mary		
W.		1 17 3	
	32.81		Ż
			33:90

SCALE 1:5