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

 BOREHOLE No
 BH117

 SHEET
 1 of 4

 REFERENCE No
 H11197

PROJ					BYPASS PROJECT GEOTECHNICAL INVES				15 RUA		OORDINATES 721481.7 E; 7654834.4	
	ATION				Ch. 84486.6 10.m LHS)			DATE ST	ARTED			
JOB N					HEIGHT DATUM AHD BEARING			DATE COM				Pty Ltd
O DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT STRENGTH	DEFECT SPACING (mm) 0000 0000 0000 11111	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
- 1	7.52				Silty CLAY (ALLUVIAL) Brown, moist, soft. High plasticity; minor plant roots.		(CH)	1			— Based on Driller's logs only	-
-2	6.82			Α	Silty Sandy CLAY (ALLUVIAL) Brown, moist, stiff. High plasticity; fine grained sand fraction.		(CH)				3,5,6 N=11	SPT
3					Silty Sandy CLAY (ALLUVIAL) Pale brown, moist, stiff. High plasticity; minor coarse grained sand fraction.		(CH)					
	5.02			В							2,5,8 N=13	SPT
5				С	Sandy SILT (ALLUVIAL) Pale brown, moist, very stiff. High plasticity; fine grained sand fraction.		(МН				7,10,14 N=24	SPT
-6 -	2.82			D	SAND (ALLUVIAL) Pale brown, wet, medium dense. Fine to coarse grained; minor silt.						8,9,7 N=16	SPT
-7 -7 -8 9				Е			(SP)				7,9,9 N=18	SPT
9	4.40			F				-			6,7,9 N=16	SPT
	-1.18 REMARK		:_*Failure	app	ears to have occured along a pre-existing defect pla	ine.				·	LOGGED BY JLo/ME	



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

PROJECT											
LOCATION			MENT		RDINATES 721481.7 E; 7654834.4 N						
PROJECT No					SURFACE R.L. <u>8.82m</u> PLUNGE						
JOB No	242	2/3	3 <u>B</u> / <u>6</u>		HEIGHT DATUM _AHD BEARING			DATE COMPLETED	16/9/1	1 DRILLER <u>Caims Drilling Pty Ltd</u>	
R.L. (m)	AUGER CASING WASH BORING	CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS ADAM TEST RESULTS	
					SAND (ALLUVIAL) (Cont'd) Pale brown, wet, medium dense. Fine to coarse grained; minor silt.		(SP)			9,12,15 N=27 SPT = 12,17,20 N=37 SPT = 11,11,14 N=25 SPT = 12,17,20	
-14 -5.68				к	Clayey SAND (ALLUVIAL) Pale brown, moist, dense.		(SC			9,14,19 N=33 SPT	
- 15 16 16	-			L	Medium to fine grained. Silty CLAY (RESIDUAL) Mottled orange and grey, moist, hard. Medium plasticity; minor fine grained sand.					10,17,21 N=38 SPT	
_ 17				М			(CH			9,16,18 N=34 SPT	
	3			N						10,15,25 N=40 SPT	
				0	Silty CLAY (RESIDUAL) Grey and orange speckled white, wet, hard. High plasticity; minor fine to medium grained sand.		(СН			14,27,30/110mm N>50 SPT	
44.40				Р				Ī		13,21,30 N>50 SPT	
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane.										LOGGED BY JLo/ME	



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

PROJECT No. PG6835 SURFACE R.L. 8.82m PLINGE DATE STARTED 139011 ORNID DATUM MG6.94	PROJECT	WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE											
DRILER Calmy Define Pty Let	LOCATION												
RIL	PROJECT N	10 <u>FG</u>	5 <u>635</u>			SURFACE R.L8.82m PLUNGE	_		DATE S	TARTED _	13/9/	11 GRID DATUM <u>MGA 94</u>	
MATERIAL	JOB No	242	/ <u>3</u> 3E	<u>8/6</u> _		HEIGHT DATUM AHD BEARING	_		DATE COM	PLETED _	16/9/	DRILLER Cairns Drilling Pty L	<u>Ltd</u>
Silty CLAY (RESIDUAL) Cord	(m) (m)	SH B	SE DRILLING) %	MPLE		THOLOGY	SC EATHERING			RAPHIC LOG		ESTS
11.58 Gontal Go	20 -11.1	8 ₹23	Ö RE	EC %	S	Silty CLAY (RESIDUAL)				-	Ō	, v	F
10.20.24 SFT 11.20130mm SFT	-11.5	58				(Cont'd)		(CH)					-
14,30/130mm SPT	-21				Q	Intrusive, medium to coarse grained, massive, crystalline, acidic, igneous rock. HW: Speckled pale grey, brown and orange, medium to coarse grained,							>T :
15.53 100					-	Thursday, very energene							DT T
S S S S S S S S S S					R							N>50	
13,30/120mm SPT	- 22							HW				23 30/130mm	
13,30/120mm N>50 NW. Generally exhibits engineering properties of brown and grey molst, hard sandy clay. 16,50 = 0.05MPa.* 1,500 = 0.05MPa.*					S								PT :
N>50 SP 100 N>50 S	-23												
10.0 (0) 15.53 (0) 100 XW: Generally exhibits engineering properties of brown and grey, moist, hard sandy clay. XW: Generally exhibits engineering properties of brown and grey, moist, hard sandy clay. XW XW XW XW XW XW XW XW XW X					Т								PT :
10. XW: Generally exhibits engineering properties of brown and grey, moist, hard sandy clay. XW: Generally exhibits engineering properties of brown and grey, moist, hard sandy clay. XW XW XW XW XW XW XW XW XW X	24			(0) 100									-
100	-15.	53		(0)						<u> </u>	ļ	Is(50) = 0.08MPa; * c	
## Appears to have occurred along a pre-existing defect plane. ## Appears to have occurred along a pre-existing defect plane. ## Appears to have occurred along a pre-existing defect plane. ## Appears to have occurred along a pre-existing defect plane. ## Appears to have occurred along a pre-existing defect plane. ### Appears to have occurred along a pre-existing defect plane. ### Appears to have occurred along a pre-existing defect plane. ### Appears to have occurred along a pre-existing defect plane. ### Appears to have occurred along a pre-existing defect plane. ### Appears to have occurred along a pre-existing defect plane. #### Appears to have occurred along a pre-existing defect plane. ###################################	25		_			properties of brown and grey, moist, hard		xw				IS(50) = 0.01WPa, x	×
Defects: - Joints @ 5-10° (3/m) - Joints @ 40-50° (2/m) Defects are generally planar, rough and open. MICRODIORITE Intrusive, fine grained, massive, crystalline, prophyritic, acidic igneous rock. MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Defects: - Joints @ 10-45° (15/m) Defects: - Joints @ 10-45° (15/m) Defects are generally wavy, smooth and tight. GRANODIORITE MW: Speckled grey and dark grey, medium to coarse grained, generally REMARKS Note: "Failure appears to have occured along a pre-existing defect plane. Defects: - Joints @ 10-40MPa. x Is(50) = 0.40MPa. x Is(50) = 0.09MPa. x	-16.5	56		400						L	ļ		L
Defects: - Joints @ 5-10° (3/m) - Joints @ 40-50° (2/m) Defects are generally planar, rough and open. MICRODIORITE Intrusive, fine grained, massive, crystalline, prophyritic, acidic igneous rock. MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Defects: - Joints @ 10-45° (15/m) Defects: - Joints @ 10-45° (15/m) Defects are generally wavy, smooth and tight. GRANODIORITE MW: Speckled grey and dark grey, medium to coarse grained, generally REMARKS Note: "Failure appears to have occured along a pre-existing defect plane. Defects: - Joints @ 10-40MPa. x Is(50) = 0.40MPa. x Is(50) = 0.09MPa. x						grey, medium grained, massive, generally							x
- Joints @ 5-10° (3/m) - Joints @ 40-50° (2/m) Defects are generally planar, rough and open. MICRODIORITE Intrusive, fine grained, massive, crystalline, porphyritic, acidic igneous rock. MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Defects: - Joints @ 10-45° (15/m) Defects are generally wavy, smooth and tight. GRANODIORITE MW: Speckled grey and dark grey, medium to coarse grained, generally MV	5-											Is(50) = 0.30MPa; *	0
open. Is(50) = 0.13MPa; * L				100		- Joints @ 5-10° (3/m)							
MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Some alteration Is(50) = 0.40MPa x -29			_					MW					-
MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Some alteration Is(50) = 0.40MPa x -29	2 - 27					open.						Is(50) = 0.13MPa; * L	L -
MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Some alteration Is(50) = 0.40MPa x -29												Is(50) = 0.04MPa; * L	L
MW: Greenish grey, minor pink, fine grained, low to medium strength. Slightly altered; numerous defects. Some alteration Is(50) = 0.40MPa x -29	-18.	76				MICRODIORITE		\vdash			-		-
Defects are generally wavy, smooth and light. GRANODIORITE MW: Speckled grey and dark grey, medium to coarse grained, generally REMARKS Note: *Failure appears to have occurred along a pre-existing defect plane. LOGGED BY	28					Intrusive, fine grained, massive, crystalline, porphyritic, acidic igneous rock. MW: Greenish grey, minor pink, fine grained, low to medium strength.		MVV				Is(50) = 0.09MPa; *	L
Defects are generally wavy, smooth and light. GRANODIORITE MW: Speckled grey and dark grey, medium to coarse grained, generally REMARKS Note: *Failure appears to have occurred along a pre-existing defect plane. LOGGED BY	-19	88											x -
Defects are generally wavy, smooth and light. GRANODIORITE MW: Speckled grey and dark grey, medium to coarse grained, generally REMARKS Note: *Failure appears to have occurred along a pre-existing defect plane. LOGGED BY	-13.					Defects: - Joints @ 10-45° (15/m)							
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	29		NAME OF THE PARTY	(12)				MW				Is(50) = 0.05MPa; *	x
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	30 -21.	18	A PROPERTY OF THE PARTY OF THE			MW: Speckled grey and dark grey,						Is(50) = 0.09MPa; *	×
	REMAR	RKS No	<u>te:_*</u> F	ailure	арр	ears to have occured along a pre-existing defect plan	ne					LOGGED BY JLo/ME	



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

PROJECT WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE													
	ABUTMENT A - (Ch. 84486.6 10.m LHS) COORDINATES 10 FG5635 SURFACE R.L. 8.82m PLUNGE DATE STARTED 13/9/11 GRID											ORDINATES 721481.7 E; 7654834.4	
JOB No	_24	2/3	3 <u>B/6</u>		HEIGHT DATUM _AHD BEARING _				DATE COMPL	ETED _	16/9/	11 DRILLER <u>Cairns Drilling</u>	Pty Ltd
R.L. (m)	AUGER CASING	CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	usc	WEATHERING	INTACT D STRENGTH SI	PACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES
30 -21.	11	T	IXEO 70		medium strength.	T		+				Is(50) = 0.04MPa; *	0
			100 (22)		GRANODIORITE MW: (Cont'd) Defects: - Joints @ 10-50° (5/m)		M	w				Is(50) = 0.62MPa	×
-31 22.5	55		100		Defects are generally planar, rough and tight to open. Borehole terminated at 31.37m							Is(50) = 0.23MPa; *	0
-32 -33 -34 -35 -36 -37 -38 -39 -39									+++++++++++++++++++++++++++++++++++++++				
	KS N	o <u>te</u> :_	*Failure	арр	ears to have occured along a pre-existing defect p	lane.			<u> </u>			LOGGED BY JLo/ME	

Project: Walkerston Bypass Geotechnical Investigation
Borehole No: BH117 (Cowleys Road Bridge Ch. 84486.6 10.0m left)

Start Depth: 23.80 m Finish Depth: 31.37 m Project No: FG5635 H No: 11197



