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QLD\_DMR\_LIB\_01A GLB Log A\_ENGINEERING BOREHOLE LOG WLITHOLOGY TOWNSVILLE RING ROAD 4 GEANEY LANE.GPJ <<DrawngFile>> Datgel CPT Tool gilnt Add-In 17/10/2013 11:47

# **ENGINEERING**BOREHOLE LOG

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

BOREHOLE No	BH405
SHEET	_1_ of _4_
REFERENCE No	H11493

PROJECT				Road Section 4									
				er <u>pass</u>							OORDINATES 464718		
JOB No				HEIGHT DATUM <u>AHD</u> BEARING								Cairns Drilling	
JOB NO		10101/3		TILIGITI DATONI <u>ALID</u> BLAKING					- ULD	<u> </u>	13 DIVILLER	Call is Dilling	
R.L. (m)	CASING OTHER OTHER CORF DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	SCEATHERING	INTACT STRENG	TH SPA (n	FECT ACING nm)	GRAPHIC LOG	ADDITIONAL AND TEST RESU		SAMPLES TESTS
0 13.0	805≷5	REC %	δ	Engineered Bood Book and Fill	5 xxx	5			111	GF			S ⊒
- - - - - - - - - 1 - - - - 1	8			Engineered Road Base and Fill							_ Non Destructive Digging Used.	Techniques	
			С	Clayey SAND Brown, moist, dense to very dense. Medium to coarse grained sand. Trace fine gravel.		(SC	))					14,20,20 N=40	SPT
9.0	8		D	Becoming very dense.  Silty SAND								25,30/110 N>50	SPT -
- - - - - - - - - - - -			E	Brown, moist, dense to mainly very dense. Fine to medium grained. Trace fine gravel.								30/120 N>50	SPT _ - - - - - - -
			F			(SM						30/125 N>50 -	SPT
			G									16,23,27 N=50	SPT :
	8		Н	Becoming dense.								14,19,21 N=40	SPT -
REMAR												LOGGED BY VP	



QLD\_DMR\_LIB\_01A.GLB Log A\_ENGINEERING BOREHOLE LOG WLITHOLOGY TOWNSVILLE RING ROAD 4 GEANEY LANE.GFJ <<DrawingFile>> Datgel CPT Tool gibt Add-in 17/10/2013 11:47

# **ENGINEERING**BOREHOLE LOG

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

BOREHOLE No	BH405
SHEET	_2_ of _4_
REFERENCE No	H11493

PROJECT	_Towns	<u>ville Ri</u>	ng F	Road Section 4				. <b></b>		
LOCATION	<u>Geane</u>	<u>y Lane</u>	<u>Ov</u>	erpass				CO	ORDINATES <u>464718.5 E; 7871690.1</u>	<u>N</u>
PROJECT I	No <u>FG60</u> 2	<u>20</u>		SURFACE R.L. <u>13.08m</u> PLUNGE			DATE STARTED	22/4/1	3 GRID DATUM <u>GDA 94</u>	
JOB No	<u>268/1</u> 0	<u>0M/5</u> _		HEIGHT DATUM <u>AHD</u> BEARING			DATE COMPLETED _	23/4/1	3 DRILLER <u>Cairns Drilling</u>	
(m) R.L. (m) 10 3.0	SING HER ASH BORIN RE DRILLI	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA  AND  TEST RESULTS	SAMPLES TESTS
- - - - - - - - - - - - - - - - - - -				Clayey SAND Pale brown, moist, dense to mainly very dense. Fine to medium grained.					10,18,27 N=45	SPT -
-12 -12 12 			К	Becoming very dense and iron stained.					13,21,30/130 N>50	SPT -
- 14 			L	Becoming dense.					11,16,22 N=38	SPT -
- 15 15 			М	Becoming pale brown and medium dense.		(SC)			8,11,14 N=25	SPT
- - - - - - - - - - - - - - - - - - -			N	Becoming very dense. Clay bands sizing up to 200mm throughout.			+ + + + + + + + + + + + + + + + + + +		12,22,30/105 N>50	SPT -
- - 18 - - - - - - - - - - - - - -			Q	Colour changed to brown, red-brown.			‡ + + + + + + + + + + + + + + + + + + +		20,30/110 N>50	SPT
- 10 	02		R	Becoming dark brown.					30/100 N>50	SPT
REMAR	KS		- — ·		·	 			LOGGED BY VP	



QLD\_DMR\_LIB\_01A GLB Log A\_ENGINEERING BOREHOLE LOG WLITHOLOGY TOWNSVILLE RING ROAD 4 GEANEY LANE.GFJ <<DrawingFile>> Datgel CPT Tool gibt Add-in 17/10/2013 11:47

## ENGINEERING BOREHOLE LOG

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

PRO.	JECT	<u>_To</u>	w <u>n</u>	s <u>ville</u> R	ing F	Road Section 4						
LOC	ATION	<u>Ge</u>	<u>an</u>	e <u>y Lane</u>	<u>Ov</u>	erpass					C	COORDINATES 464718.5 E; 7871690.1 N
PRO.	JECT No	_F@	<u>60</u>	20		SURFACE R.L. 13.08m PLUNGE				DATE STARTED	22/4	/4/13 GRID DATUM <u>GDA 94</u>
JOB	No	_26	<u>8/1</u>	<u>0M/5</u>		HEIGHT DATUM <u>AHD</u> BEARING				DATE COMPLETED	23/4	/4/13 DRILLER Cairns Drilling
DEPTH (m)	R.L. (m)	CASING DTHER WASH BODING	SORE DRILLING	RQD ( )%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT DEFECT STRENGTH SPACING (mm)  STRENGTH SPACING (mm)  STRENGTH SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA  AND SAWPLES TEST RESULTS
	-6.92 -7.92			REC 70	0)	Clayey SAND (Cont'd)		(S(				
-21 -	-1.92					VOLCANIC BRECCIA Pyroclastic rock consisting of angular fragments embedded in a finer grained matrix. XW: Exhibits engineering properties of a dark brown to red brown/grey, slightly moist, very dense, Clayey Sand with some trace fine to medium sized, angular gravel.						30/70 N>50
-24	-13.92				₩			XV	~			30/50 N>50 SPT 30/40 N>50
-27 -				(93)		MW: Dark brown/red to dark grey, medium to coarse grained, massive, medium to mainly high strength. Defects: Defects: - Joints @ 30° (1/m) - Joints @ 60° (1/m) Defects are generally planar, rough & open. Defect spacing: Mainly medium to wide.		MV	w			UCS=8.31 MPa Is(50) = 0.85MPa
R	REMARKS	- ·						_ ·	— - — -			LOGGED BY



QLD\_DMR\_LIB\_01A GLB Log A\_ENGINEERING BOREHOLE LOG WLITHOLOGY TOWNSVILLE RING ROAD 4 GEANEY LANE.GFJ <<DrawingFile>> Datgel CPT Tool gibt Add-in 17/10/2013 11:47

## ENGINEERING BOREHOLE LOG

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

BOREHOLE No \_\_\_BH405\_\_\_

SHEET \_\_4\_\_ of \_\_4\_\_

REFERENCE No \_\_\_H11493\_\_\_

PRO	JECT	_Town	<u>nsville R</u>	ing F	Road Section 4										
LOC	ATION	<u>Gear</u>	ney Lane	<u> Ov</u>	rerpass						C	OORDINATI	ES <u>464718</u>	.5 E; 7871690.	<u> </u>
PRO	JECT No	_F <u>G</u> 6	020	- — -	SURFACE R.L. <u>13.08m</u> PLUNGE				DATE S	TARTED	22/4/	<u>13</u> GF	RID DATUM	GDA 94	
JOB	No	268/	<u>10M/5</u>		HEIGHT DATUM <u>AHD</u> BEARING			DA	TE COM	IPLETED .	23/4/	13	DRILLER	Cairns Drilling	
& DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	ГТНОГОСУ □	USC		NTACT RENGTH	DEFECT SPACING (mm)	GRAPHIC LOG		DDITIONAL I AND TEST RESUI		SAMPLES TESTS
- 31			(100)		VOLCANIC BRECCIA MW:(Cont'd)		MW						ls(£	50) = 2.04MPa 50) = 0.87MPa 50) = 2.13MPa	0 -
- -32 - - - - -														50) = 2.14MPa	0 -
33	-19.92		100			Δ							ls(5	50) = 2.83MPa	0 -
-34 -35 -35 -36 -37 -37 -37 -38 -39 -39	REMARKS	S			Borehole terminated at 33m								L	OGGED BY	
F	EMARK	S										-	'	OGGED BY.	
												-			

### **CORE PHOTO LOG**

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



Project Name	Townsville Ring Road Section 4		
Project No	FG 6020	Date	23/04/13
Borehole No	BH 405	TMR H No	11493
Location	Geaney Lane Overpass	Start Depth (m)	27.00
Detail	Pier 2 (Right)	Finish Depth (m)	33.00
Chainage		Submitted By	MS
Remarks			
7 300			
EC.			ALC: NO.
(ba)	1		
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