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PROJECT

BRARY

ENGINEERING **BOREHOLE LOG**

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

Mt Whitestone: Slope Instability Investigation - Preliminary Inclinometer Boreholes

BOREHOLE No	<u>BH3B</u>
SHEET	<u>1</u> of <u>5_</u> _
REFERENCE No	<u>11600</u>

Gatton-Clifton Rd, LHS table drain (Southern) Ch 15.308km LOCATION COORDINATES 416148.5 E; 6937749.4 N DATE STARTED 10/6/14 PROJECT No FG6128 SURFACE R.L. ______ PLUNGE _____ GRID DATUM MGA94 ____ DATE COMPLETED 12/6/14 JOB No HEIGHT DATUM _AHD ___ BEARING DRILLER <u>Hinterland Drilling</u> R.L RQD INTACT DEFECT ING H BORING E DRILLING ADDITIONAL DATA ()% STRENGTH (m) SPACING LOG **IERING** Ē MATERIAL (AS1726) (AS1726) -ITHOLOGY DEPTH AND ≌ SAMPLES DARE DA SANSA CORE DA SANSA DESCRIPTION TESTS GRAPH SAMPL CORE TEST RESULTS REC % 0 Gravelly SILT (COLLUVIUM) Orange brown, dry to moist, firm. Angular gravel fragments up to 30mm in size. A 1 (ML) Becoming stiff. + 6,17,28; LL = 25; PI = 11; LS = 7 SPT В 2 Datgel CPT Tool gINt Add-In 11/11/2015 15:25 211.43 .3 30/70mm SPT C Clayey SAND (XW Boulder?) Pale grey brown mottled orange. Very dense with high strength rock fragments. (SC)<<DrawingFile>> - 4 209.93 Silty CLAY (COLLUVIUM) 11,14,15; LL = 39; PI = 23; LS = 11.4; FG6128 MT WHITESTONE COMBINED.GPJ D SPT Grey brown mottled orange, moist, very stiff MC = 16.8% to hard. - 5 Intermediate plasticity. Minor rock fragments up to 35mm in size. Traces of sand throughout. 6 (CI) F SPT 10 13 13 A_ENGINEERING BOREHOLE LOG W LITHOLOGY Ŧ 206.93 30/50mm SPT Clayey SAND (XW Boulder?) Pale grey brown, moist, very dense. Contains medium strength sandstone - 8 fragments in parts. (SC) -Go 2014.GLB 205.43 . 9 Sandy CLAY (COLLUVIUM) 7,13,16; LL = 39; PI = 23; LS = 11.6; MC = 20.6% G SPT Ε Grey brown mottled orange, moist, very stiff to hard. (CI) Intermediate plasticity. Traces of rock fragments up to 35mm in size **TMR** and sand throughout. 10 REMARKS *Load cell used does not comply with the test method requirements. LOGGED BY TH/WW **Sample failed along existing defect surface.

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PROJECT

ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>BH3B</u>
SHEET	_2_ of _5_
REFERENCE No	<u>11600</u>

TH/WW

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

Mt Whitestone: Slope Instability Investigation - Preliminary Inclinometer Boreholes

NL CO AL DETECT ADDITIONAL DATA ADD 10 204.48 0 <t< th=""><th>LOCATION G</th><th>atton-Clifton Rd, L</th><th>LHS table drain (Southern) Ch 15.308km</th><th>COORDINATES <u>416148.5 E; 6937749</u></th><th>9.<u>4 N</u></th></t<>	LOCATION G	atton-Clifton Rd, L	LHS table drain (Southern) Ch 15.308km	COORDINATES <u>416148.5 E; 6937749</u>	9. <u>4 N</u>
Int. Int. <th< td=""><td>PROJECT No F</td><td><u>G6128 </u></td><td>SURFACE R.L214.43m PLUNGE</td><td> DATE STARTED _10/6/14 GRID DATUM _MGA94</td><td></td></th<>	PROJECT No F	<u>G6128 </u>	SURFACE R.L214.43m PLUNGE	DATE STARTED _10/6/14 GRID DATUM _MGA94	
Open Model Open Marcel MatterNal Open Marcel MatterNal Open Marcel MatterNal Open Marcel MatterNal AND AND <td>JOB No</td> <td></td> <td>HEIGHT DATUM _AHD BEARING</td> <td> DATE COMPLETED <u>12/6/14</u> DRILLER <u>Hinterland D</u></td> <td><u>Prilling</u></td>	JOB No		HEIGHT DATUM _AHD BEARING	DATE COMPLETED <u>12/6/14</u> DRILLER <u>Hinterland D</u>	<u>Prilling</u>
Image: Second CLAV (COLLUVIUM) (Cont'd) Sandy CLAV (COLLUVIUM) (Cont'd) Second Clave (Cont'd) Second	(m) (m) (m)	% () % ()		STRENGTH SPACING O ADDITIONAL DATA (AS1728) (AS1728) U ADDITIONAL DATA (AS1728) U ADDITIONAL DATA	SAMPLES TESTS
13 13 1 12,19,30 SPT 14 12,16,25; LL = 41; PI = 24; LS = 12.4; MC = 17.7% SPT 16 198.45 1 Clayey SAND (XW Boulder?) Orange brown, moist, dense. Contains high strength sandstone fragments in parts. 6C0 12,16,25; LL = 41; PI = 24; LS = 12.4; MC = 17.7% SPT 18 198.45 1 Clayey SAND (XW Boulder?) Orange brown, moist, dense. Contains high strength sandstone fragments in parts. 6C0 12,16,25; LL = 41; PI = 24; LS = 12.4; MC = 17.7% SPT 18 198.45 1 Clayey SAND (XW Boulder?) Orange brown, moist, dense. Contains high strength sandstone fragments in parts. 6C0 14,17,17 SPT 198.45 1 100 100 17,177 SPT 198.45 35 100 17,077 14,17,17 SPT 198.45 35 100 100 17,077 17,077 198.45 35 100 100 17,077 14,177 198.45 35 100 100 17,077 14,177 198.45 100 35 100 17,077 14,177 198.45 100 100 100		A	Sandy CLAY (COLLUVIUM) (Cont'd) As before.	13,30/130mn	n SPT
MC = 17.7% MC = 17.7\%		J			D SPT
13 L Clayey SAND (XW Boulder?) Orange brown, moist, dense. Contains high strength sandstone fragments in parts. (SC) 198.53 Sandy CLAY with Cobbles and Boulders (COLL/VIUM) Orange brown, moist. Generally comprises a hard Sandy Clay of intermediate plasticity which contains a mix of high strength cobbles and boulders up to 170mm size. MW Sandstone cobble 18 35 (CI) (CI) 18 35 (CI)		к		12,16,25; LL = 41; PI = 24; LS = 12.4 MC = 17.7%	SPT
(COLLUVIUM) Orange brown, moist. Generally comprises a hard Sandy Clay of intermediate plasticity which contains a mix of high strength cobbles and boulders up to 170mm size. MW Sandstone cobble MW Sandstone cobble %Pass 2.360mm = 88			Orange brown, moist, dense. Contains high strength sandstone fragments		7 SPT
-18 -18 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0		() C ir o	(COLLUVIUM) Orange brown, moist. Generally comprises a hard Sandy Clay of intermediate plasticity which contains a mix of high strength cobbles and boulders up to	• ↓ • ↓ • ↓ • ↓ • ↓ • ↓ • ↓ • ↓ • ↓ • ↓	
Pass 0.002mm = 30	2	90		%Pass 2.360mm = 86 %Pass 0.075mm = 7 %Pass 0.002mm = 30 %Pass 0.002mm = 30	1
20 0 </td <td></td> <td></td> <td></td> <td></td> <td></td>					

**Sample failed along existing defect surface.

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ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>BH3B</u>
SHEET	<u>3</u> of <u>5</u>
REFERENCE No	<u>11600</u>

TH/WW

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

<u>Gatto</u>	on-Clifto	<u>n Rd,</u>	LHS table drain (Southern)	<u>Ch 15.308km</u>					СС	ORDINATES 416148.5 E; 6937749.4	<u>1 N</u>
_ <u>FG6</u>	128		SURFACE R.L214.43	<u>n</u> PLUNGE			DATE S	TARTED <u>1</u>	0/6/	14 GRID DATUM _MGA94	
			HEIGHT DATUM <u>AHD</u>	BEARING			DATE COM	PLETED 1	2/6/	14 DRILLER <u>Hinterland Dri</u>	lling
AUGER CASING WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE			гітногову	USC WEATHERING			GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
	54 60 100 100		Sandy CLAY with Cobbles (COLLUVIUM) (Cont'd) As before.	and Boulders		(CI)				☐ MW Sandstone cobble — Commence NMLC coring UCS=242kPa ☐ Total circulation loss MW Sandstone cobble	
	100 50 100 100 44 100									- Soft clay seam - Total circulation loss Soft clay seam %Pass 2.360mm = 67 - with highly %Pass 0.075mm = 29 fract. basalt %Pass 0.002mm = 10 - Basalt fragments - HW Sandstone boulder - HW Sandstone boulder	
		FG6128	FG6128	D FG6128	PG0128	DEG6128 SURFACE R.L 214.43m PLUNGE	D_FG6128 SURFACE R.L 214.43m PLUNGE	D_EG6128	De <u>FG6128</u> SURFACE R.L. <u>214.49m</u> PLUNGE DATE STARTED	b F G6128 SURFACE R.L 214.49 PLUNGE DATE STARTED 109/	0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.1 UM Service E.L. 214.45m PUINCE DATE STARTED 109/14 GRD DATUM MOVAL

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**Sample failed along existing defect surface.

Et.			0116	90	nsland					RING E LOG				OLE No	BH3B	
4					rnment	Γ				TERMS AND			SHEET	ENCE No	4 ^{of} _ 11600	
F	AUTONA AT HIM		00.		innent		SYMBOLS REFE	R FO	RM F	GEOT 017/8-	-2014					<u></u>
	JECT				lope Instability Investig											
					<u>, LHS table drain (Sou</u> SURFACE R.L										8.5 E; 6937749.	<u>4 N</u>
JOB					HEIGHT DATUM										Hinterland Dri	— — — - Illina
	R.L.		DOD						—- — —	INTACT	DEFECT			BIULLEI		
Ê	(m)	R JG I BORING	()%		Ν	<i>I</i> ATERI	AI	<u>></u>	Ű			OG	A	DDITIONAL	DATA	
DEPTH (m)				ЪГЕ		SCRIPT		ГІТНОГОGY	THER	STRENGTH (AS1726)	(A31720)	EW GRAPHIC LOG		AND		SAMPLES TESTS
⊡ 30	184.43	AUG CASI WAS	CORE REC %	SAMPLE							ບບ ພ>ບ≥≥≶ີ	GRAI		TEST RESU	JLTS	SAMPLI
- - - - - -	184.28		82 (7)		Interbedded SILTS MW:Light grey to bla medium to low streng Thinly laminated at 0 Coaliferous seams a	ck, very gth. -5° in p	y fine grained, oarts.	E	(CI)				infill 1-2m	al fracture Plan maperture	-Stp, Ro, O, Fe argin.	
- 31 					throughout. Defects: Js: 30° (<1/m); PI/Sr Js: 50° (<1/m); PI/Sr Js: 70° (3/m); PI/Sm Js: 90° (<1/m); PI/Sr	n, OP-1 n, OP-1 , OP-TI	ΓΙ, Cn-FeStn. ΓΙ, Cn-FeStn. , Cn-FeStn.								0) = 0.14MPa; * 0) = 0.08MPa; *	x o -
			100													
			(6)										- Soft clay	seam		
									MW) = 0.08MPa; ** 0) = 0.31MPa; *	o X
													– Black mu – Broken zo	dstone, fractu one	red in parts.	
													Soft clay	Ìe	0) = 0.14MPa; * (50) = 0.67MPa	x o
														ed coal and b ictured in part	lack mudstone s.	
			100										- Soft clay	seam		
- - - - - - - - - - - - - - - - - - -			(82)										_− Broken zo =− Soft clay :			
	177.05												⇒– Broken zo	one		
	177.95				SW:Grey to light grey		fine grained,									
- 37					medium to high strer Finely laminated at 0											
					Defects: LP: 0-5° (1-2/m); Pl/	Sm, OF	P-TI.								0) = 0.54MPa; *	x
														IS	(50) = 0.68MPa	0
										· · ·						
2 – 38 -									sw							
			100 (100)							· · · · · · · · · · · · · · · · · · ·	· · ·		— Inclinome	ter installation	٦.	
39 																-
	FMARK	s *Load	l d cell use	d doe	es not comply with the te	est meth	nod requirements.								LOGGED BY	
7					ng existing defect surface										TH/WW	

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LOCATION <u>Gatton-Clifton Rd, LHS table drain (Southern) Ch 15.308km</u>

PROJECT

ENGINEERING BOREHOLE LOG

BOREHOLE No	<u>BH3B</u>
SHEET	<u>5</u> of <u>5</u>
REFERENCE No	<u>11600</u>

LOGGED BY TH/WW

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

<u>Mt Whitestone: Slope Instability Investigation - Preliminary Inclinometer Boreholes</u>

R.L. OP ROD () % MATERIAL DESCRIPTION NATERIAL DESCRIPTION NATERIAL DESCRIPTION NATERIAL DESCRIPTION OP NATERIAL (AST720) DEFECT SPACING (AST720) ADDITIONAL DATA AND 40 174.43 CORE (AST720) Interbedded SILTSTONE and SANDSTONE Interbedded at 40.3m Interbedded at 40.3m	PROJECT No <u>FG6128</u>	SURFACE R.L 214.43m PLUNGE	DATE STARTED _10/6/14	GRID DATUM <u>MGA94</u>
Image: Construction of the second	JOB No	HEIGHT DATUM <u>AHD</u> BEARING	DATE COMPLETED _12/6/14	DRILLER <u>Hinterland Drilling</u>
174.13 Interbedded SILTSTONE and SANDSTONE 174.13 SW: (Cont'd) Borehole terminated at 40.3m	R.L. (m) SURVEY (m) BULSEY SURVEY			AND Since a second seco
-41 -42				
		SW: (Cont'd)		

REMARKS *Load cell used does not comply with the test method requirements. **Sample failed along existing defect surface.

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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	Mt Whitestone: Slope Instabi	lity Investigation, Supp. Inclinor	1
Project No.	FG6128	Date	10/6/14
Borehole No.	BH3B	TMR H No.	H11600
ocation	Gatton-Clifton Rd	Start Depth (m)	15.70m
Detail	LHS table drain	Finish Depth (m)	40.12m
Chainage	Ch 15.308km	Prepared By	ТАН
Remarks			
	and the state of the state		10
Lot	BH3B	Bex 1	S. F. SF
32	the summer was a state of the s	CORE LOSS	₹.
	P A A	17.35-18.00	AUN NO
			CORE LOSS P.3
		De produce	18-90-19-00 ZS
1	N) CORE 1955		TORE LOSS N
	120 222 C		20:25 20 To 20:80 20
19 19	CORE LOSS 21.08-21.50 25	WASH	
10 hrs have a	21.08-21.50 28	21.80	-22.00 FROM 22.0
	8438	Box 3	- M
SP 8	A	A the state of the state	8.8
and the second		Fa612	8
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and the state	NO PROVIDE AND A STATE		ALL
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	4	the second se	
a second second		the second se	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
THE LOOK	CORE LOSS AND DRIVE CASING A	2	
and the second s	CORE LOSS 02 DRIVE CASING + 26-13-27-08 12 27-08 12 27-08	WASHBORE S	2
8-1	ST COSTAN	The second s	94 mar 86
Jan 201			288 A
(A)	CORE FELL OUT OF BARREL	No. 20 And	Contraction of the second
CORE LOSS			82
29-60-29-80			22
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		and any support of the second	
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0 0.1	0.2 0.3 0.4	0.5 0.6 0.7 0.8	<u>3 0.9 1.0 m</u>

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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	Mt Whitestone: Slope	e Instability In	vestigation. S	upp. Inclinon	neter Boreh	oles
Project No.	FG6128	,	Date		10/6/14	
Borehole No.	BH3B		TMR	H No.	H11600	
Location	Gatton-Clifton Rd			Depth (m)	15.70m	
Detail	LHS table drain			Depth (m)	40.12m	
Chainage	Ch 15.308km			ared By	TAH	
Remarks		0.12 0.75 0.42 0.42 0.42	SPACE	е Еон 4-0 Внзв		SP SP SP SP SP SP SP SP SP SP SP SP SP S

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