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### ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No	BHABA
SHEET	_1_ of _3_
REFERENCE No	H9905

LO.	PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT  LOCATION APPR 24m RIGHT,5M STH FROM EASTN PILE-STHN ABUTMT OF EXIST BRIDGE COORDINATES 38870.7 E; 51923.5 N  PROJECT No FG5423 SURFACE R.L. 1.59 PLUNGE DATE STARTED 22/05/06 GRID DATUM PROJECT DATUM										
JO	B No	<u> 165/</u>	122/35		HEIGHT DATUMAHD BEARING						
o DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES
MRD_UB_V12.GLB_25/10/06	0.99	AUGE WASH CORE		A B C C F	FILL - SAND (Driller's record only.) Grey.  FILL - CLAYEY SILTY SAND Red mottled brown to red, moist, soft to firm.  Fine grained sand.  ESTUARINE SAND / SILTY SAND Dark grey, wet, very loose to mainly loose.  Slightly organic and high content of shell fragments in the upper area; mainly fine to medium grained sand; minor fraction of silt.  RESIDUAL SANDY SILTY CLAY / SILTY CLAY Mottled red to white, mainly moist to dry, very stiff, becoming stiff with depth.  Frequent lateritic and slightly concreted zones; medium plastic kaolinitic clay; fine grained sand throughout; medium	отоны положения в	の (英の (英の (英の (英の (英の (英の (英の (英	<u></u>	GRAPHIC		SPT : U50 :
A ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE GPJ	o -8.41 REMARKS			- T	plasticity.		(CI)			4,7,9 N=16 5,6,6 N=12	SPT
	TENMANS	'								AS/ ADISS	



### ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No \_\_BHABA \_\_

SHEET \_\_2\_\_ of \_\_3\_\_

REFERENCE No \_\_H9905\_\_\_

PROJECT LOCATION			CHWAY BRIDGE DUPLICATION - HOUGHT T,5M STH FROM EASTN PILE-STHN ABUT					ECT
			SURFACE R.L. <u>1.59</u> PLUNGE					
JOB No	165/122/35		HEIGHT DATUM AHD BEARING			DATE COMPLETED _	22/05	05/06 DRILLER SCHNEIDER DRIL
R.L. (m) H1dd BQ 10 -8.41	AUGER WASH BORING CORE DRILLING AUC) & CORE AUC) & CORE MACONIC	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA  AND  TEST RESULTS
-11		K	RESIDUAL SANDY SILTY CLAY / SILTY CLAY (As above.)					2,3,5 N=8 SP
-12 -12 -13		М	-		(CI)	† † † † † † † † † † † † † † † † † † †		2,3,6 N=9
-12.41 -12.41 -13.61		N	SANDSTONE FINE TO MEDIUM GRAINED MASSIVE TO MAINLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK XW: Generally exhibits engineering properties of white to mottled orange brown, moist, mainly stiff sandy silty clay. Fine to medium grained sand; medium plasticity; gradually becoming hard with		xw			3,5,9 N=14
		P	HW: Grey white to pale orange brown, moist, dense to very dense silty sand gradually grading into very low to low strength rock.  Relic rock structures throughout.	j		+ + + + + + + + + + + + + + + + + + +		6,12,29 N=41
		Q			нw	+ + + + + + + + + + + + + + + + + + +		25,12/10,- N>50
- - - - - - - - - - - - - - - - - - -		R				† † † † † † † †		10,23,12/10 N>50
REMARKS	S							LOGGED BY AS/ ADISS



# **ENGINEERING**BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No	BHABA
SHEET	_3_ of _3_
REFERENCE No	<u>H9905</u>

PRO					SHWAY BRIDGE DUPLICATION - HOUGHTO							· <b>-</b>	
	ATION										E; 51923.5 N		
JOB I					SURFACE R.L. 1.59 PLUNGE HEIGHT DATUM AHD BEARING							PROJECT DA	
3061	INO	_100/	1 <u>22/33</u> _		HEIGHT DATOMAND BEARING		_	DATE COMPLETED :	22/03	5/U <u>6</u>	DRILLER	SCHNEIDER	DRIFFING
20 DEPTH (m)	-18.41	AUGER WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DESCRIPTION  HW(??): (As above.)	ADOTOHIL TIMHOLOGY	L USC WEATHERING	INTACT DEFECT SPACING (mm)	GRAPHIC LOG		DDITIONAL I	30/100 N>50	SAMPLES TESTS
25 24 25 25 26 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	<u>-21.66</u>		100 (100)		Pale orange grey to orange brown, fine to mainly medium grained, mainly massive to slightly laminated, low to medium strength with some very low strength areas.  Multi-directional (<35°) carbonaceous and low grade coal seams up to 20mm.  Defects: - Predominately drilling-induced lamination partings <10° (4/m) Occasional joints @ 40° (1/m).  Gradually grading into SW rock with depth. SW: Pale grey to white, fine to mainly medium grained, mainly massive to slightly laminated, medium to high strength.  Defects: Generally rare Occasional drilling-induced lamination partings <10° (1/2m).		sw				s(  s(  s(  s(  s(  s(  s(  s(  s(  s(	50)=0.16 MPa 50)=0.12 MPa 50)=0.11 MPa 50)=0.15 MPa 50)=0.34 MPa 50)=0.44 MPa 50)=0.58 MPa 50)=0.66 MPa 50)=0.66 MPa 50)=0.64 MPa 50)=0.68 MPa 50)=0.84 MPa 50)=0.84 MPa 50)=0.71 MPa 50)=0.99 MPa 50)=0.71 MPa 50)=0.52 MPa 50)=0.71 MPa	x
WAY.	-25.16		100			: : :						50)=0.50 MPa 50)=1.33 MPa	x -
A ENGINEERING BORRHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE GPJ C 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Borehole terminated at 26.75m								
	EMARKS		<u> </u>		I			<u> </u>	1			OGGED BY	<u> </u>
170				 					<del>-</del>	-		AS/ ADISS	

Project: Houghton Highway Bridge Duplication

Borehole No: BH ABA

Start Depth: 21.00m Finish Depth: 26.75m Project No: FG5423 H No: 9905





Road System & Engineering 35 Butterfield Street Herston Qld 4006

## Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation

Project No: FG5423

Date Sampled 22/05/06

Feature: N/A

Sample Type: NMLC Core

Report No. FG5423/GS06-481/AS4133.4.1

Date Tested 10/06/06

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	ls (MPa)	ls50 (MPa)	Strength Descriptor*	Lithology
GS06/481.A	BHP ABA	21.15	D	0.16	0.16	L	Sandstone
GS06/481.B	BHP ABA	21.18	Α	0.11	0.12	L.	Sandstone
GS06/481.C	BHP ABA	21.71	D	0.11	0.11	L	Sandstone
GS06/481.D	BHP ABA	21.74	Α	0.15	0.15	L	Sandstone
GS06/481.E	BHP ABA	22.81	D	0.34	0.34	M	Sandstone
GS06/481.F	BHP ABA	22.84	Α	0.45	0.44	M	Sandstone
GS06/481.G	BHP ABA	23.22	D	0.58	0.58	M	Sandstone
GS06/481.H	BHP ABA	23.24	Α	0.72	0.68	M	Sandstone
GS06/481.J	BHP ABA	23.56	D	0.64	0.64	M	Sandstone
GS06/481.K	BHP ABA	23.58	Α	0.73	0.71	M	Sandstone

Sample Remarks

\* D - Diametral; A - Axial; B - Block; I - Irregular;

\*\* EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High ( laken from AS1726 Table 8A )

Remarks / Variations to Test Procedures:

Test Method: AS4133.4.1 Software Version 2.03 April 2005

Client Name: Department of Main Roads

Client Address: PO Box 70, Spring Hill QLD 4004

( Peter W Reynolds )

Accreditation Number: 2302 Accredited for compliance with ISO/IEC 17025

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Road System & Engineering 35 Butterfield Street Herston Qld 4006

# Point Load Strength Index - Test Report

**Project: Houghton Highway Bridge Investigation** 

Project No: FG5423

Date Sampled 22/05/06

Feature: N/A

Sample Type: NMLC Core

Report No. FG5423/GS06-481/AS4133.4.1

Date Tested 10/06/06

			;				
Sample	Sample	Depth	Test Type	ls	ls50	Strength	Lithology
Number	Location	(m)	D,A,B,Í*	(MPa)	(MPa)	Descriptor	
		( )	- 1	(,	(		
GS06/481.L	BHP ABA	23.94	D	0.66	0.66	M	Sandstone
GS06/481.M	BHP ABA	23.96	Α	0.81	0.84	М	Sandstone
GS06/481.N	BHP ABA	24.69	D	0.58	0.58	М	Sandstone
GS06/481.P	BHP ABA	24.71	Α	1.03	0.99	M	Sandstone
GS06/481.Q	BHP ABA	25.56	A	0.52	0.52	M	Sandstone
GS06/481.R	BHP ABA	25.65	D	0.70	0.71	M	Sandstone
GS06/481.S	BHP ABA	26.19	D	1.26	1.28	Н	Sandstone
GS06/481.T	BHP ABA	26.21	Α	2.20	2.25	H	Sandstone
GS06/481.U	BHP ABA	26.72	D	0.50	0.50	M	Sandstone
GS06/481.V	BHP ABA	26.74	Α	1.36	1.33	H	Sandstone

Sample Remarks

\* D - Diametral; A - Axial; B - Block; I - Irregular;

\*\* EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High (taken from A\$1726 Table 8A)

Remarks / Variations to Test Procedures:

Test Method: AS4133.4.1 Software Version 2.03 April 2005

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Client Name: Department of Main Roads

Client Address: PO Box 70, Spring Hill QLD 4004

Signatory .

(Peter W Reynolds)

Accreditation Number: 230
Accredited for compliance
with ISO/IEC 17025

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