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**Queensland
Government**

Department of
Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BHP37**

SHEET 1 of 3

REFERENCE No **H9910**

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 23m RIGHT FROM EASTN PILE OF PIER 37 OF EXIST BRIDGE COORDINATES 39308.1 E; 52848.6 N

PROJECT No FG5423 SURFACE R.L. -3.88 PLUNGE _____ DATE STARTED 16/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 17/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RCD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	-3.88					ESTUARINE SILTY CLAY Dark grey, moist, soft, silty clay. (Driller's record only.)							Silt at the surface.	
1							(OH)							
2														
3	-6.38				A	ALLUVIAL SILTY CLAY Green grey to mottled orange brown, moist, very stiff on top, becoming stiff with depth. Mainly medium to high plasticity.							pH _f = 7.92 pH _{f,ox} = 7.96	7,12,16 N=28 ASS Sample stored at Herston Geotechnical Laboratory
4														
5														
6					B									
7														
8														
9					C									
10	-13.88													
														3,4,7 N=11 SPT
														4,6,8 N=14 SPT

A. ENGINEERING BOREHOLE LOG W/ LITHOLOGY - FG5423 HIGHWAY BRIDGE.GPJ - MRD_LIB_V1.2_GLB_25/10/06

REMARKS _____

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHP37

SHEET 2 of 3

REFERENCE No H9910

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 23m RIGHT FROM EASTN PILE OF PIER 37 OF EXIST BRIDGE COORDINATES 39308.1 E; 52848.6 N

PROJECT No FG5423 SURFACE R.L. -3.88 PLUNGE _____ DATE STARTED 16/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 17/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING						DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
									EH	VH	M	L	VL	EL				
10	-13.88					ALLUVIAL SILTY CLAY (As above.)												
11							(Cl-CH)											
12	-15.88				D	ALLUVIAL SILTY SAND / SAND Grey to mottled yellow brown, mainly wet, medium dense. Fine grained sand; minor clay fraction.										6,7,11 N=18	SPT	
13																		
14							(SP-SM)											
15					E											6,8,12 N=20	SPT	
16																		
17	-20.18					ALLUVIAL SANDY GRAVEL Grey white to pale grey, wet, dense. Coarse fraction - Subangular to subrounded quartzo particles sizing up to 35mm. Fine fraction - Angular to subangular medium to coarse grained quartzo sand with minor silt and clay fraction.												
18						(Coarse fraction > Fine fraction)												
19							(GP)											
20	-23.88																	

REMARKS _____

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BOREHOLE No BHP37

SHEET 3 of 3

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PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 23m RIGHT FROM EASTN PILE OF PIER 37 OF EXIST BRIDGE COORDINATES 39308.1 E; 52848.6 N

PROJECT No FG5423 SURFACE R.L. -3.88 PLUNGE _____ DATE STARTED 16/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 17/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH				DEFECT SPACING (mm)			GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
									U	T	M	U _{EL}	20	60	200			
20	-23.88					ALLUVIAL SANDY GRAVEL (As above.)		(GP)										
	-24.18					INTERBEDDED MUDSTONE AND SANDSTONE - FINE GRAINED INTERBEDDED / INTERLAMINATED POORLY CEMENTED SEDIMENTARY ROCK (Sandstone > Mudstone) HW?		HW							Is(50)=1.08 MPa Is(50)=0.53 MPa Is(50)=3.25 MPa Is(50)=2.99 MPa	x o o x		
	-24.63		(100)			SW: Pale grey to banded black, fine grained, interbedded / interlaminated, medium to mainly high strength with occasional very high strength bands.		SW							Is(50)=1.29 MPa Is(50)=3.62 MPa	x o		
	-26.68					Defects: Generally rare. - Occasional drilling-induced lamination / bedding partings <10 (1/m).									Is(50)=2.39 MPa Is(50)=1.76 MPa	o x		
	-27.63		100			SANDSTONE FINE GRAINED LAMINATED POORLY CEMENTED SEDIMENTARY ROCK SW: Pale grey to grey, fine grained, laminated, mainly medium to high strength. Defects: Nil.		SW							Is(50)=3.10 MPa Is(50)=1.54 MPa Is(50)=0.53 MPa Is(50)=1.54 MPa	o x x o		
						Defects: Nil.									Is(50)=0.69 MPa Is(50)=1.70 MPa	x o		
						Borehole terminated at 23.75m												
24																		
25																		
26																		
27																		
28																		
29																		
30																		

REMARKS _____

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Project: **Houghton Highway Bridge Duplication**

Borehole No: **BHP37**

Start Depth: 20.75m

Finish Depth: 23.75m

Project No: FG5423

H No: 9910



Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation

Project No: FG5423

Date Sampled 17/05/06

Feature: N/A

Sample Type: NMLC Core

Date Tested 06/06/06

Report No. FG5423/GS06-423/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/423.A	BHP 37	20.80	D	1.09	1.08	H	I/B Mudstone/Sandstone
GS06/423.B	BHP 37	20.84	A	0.54	0.53	M	I/B Mudstone/Sandstone
GS06/423.C	BHP 37	21.14	D	2.99	2.99	H	I/B Mudstone/Sandstone
GS06/423.D	BHP 37	21.10	A	3.25	3.25	VH	I/B Mudstone/Sandstone
GS06/423.E	BHP 37	21.46	D	1.30	1.29	H	I/B Mudstone/Sandstone
GS06/423.F	BHP 37	21.48	A	3.93	3.62	VH	I/B Mudstone/Sandstone
GS06/423.G	BHP 37	21.92	D	1.78	1.76	H	I/B Mudstone/Sandstone
GS06/423.H	BHP 37	21.90	A	2.51	2.39	H	I/B Mudstone/Sandstone
GS06/423.J	BHP 37	22.78	D	1.54	1.54	H	I/B Mudstone/Sandstone
GS06/423.K	BHP 37	22.75	A	3.09	3.10	VH	I/B Mudstone/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 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

Signatory

(P.REYNOLDS)



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Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation

Project No: FG5423

Date Sampled 17/05/06

Date Tested 06/06/06

Feature: N/A

Sample Type: NMLC Core

Report No. FG5423/GS06-423/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/423.L	BHP 37	23.07	D	0.53	0.53	M	Sandstone
GS06/423.M	BHP 37	23.12	A	1.69	1.54	H	Sandstone
GS06/423.N	BHP 37	23.74	D	0.69	0.69	M	Sandstone
GS06/423.P	BHP 37	23.75	A	1.85	1.70	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 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

Signatory *[Signature]* 16.06.06
(P.REYNOLDS)



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