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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 **BHP24**

SHEET **1** of **4**

REFERENCE No **H9906**

PROJECT **HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT**

LOCATION **23m RIGHT, 1.0m NTH FROM EASTN PILE OF PIER 24 OF EXIST BRIDGE** COORDINATES **39155.2 E; 52527.4 N**

PROJECT No **FG5423** SURFACE R.L. **-1.23** PLUNGE DATE STARTED **05/05/06** GRID DATUM **PROJECT DATUM**

JOB No **165/122/35** HEIGHT DATUM **AHD** BEARING DATE COMPLETED **05/05/06** 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
0	-1.23												
1					A	<b>ESTUARINE SAND &amp; SHELL</b> Dark grey to grey brown, moist to wet, very loose to loose.  Slightly organic; mainly very fine sand; partly decomposed shell fragments predominately towards bottom.  Becoming medium to coarse grained with depth.						pH <sub>F</sub> = 7.38 pH <sub>FOX</sub> = 5.76	HW N<1 SPT
2					B			(SP-SM)				pH <sub>F</sub> = 8.31 pH <sub>FOX</sub> = 7.27	U50
3					C							pH <sub>F</sub> = 8.06 pH <sub>FOX</sub> = 6.34	1,1,2 N=3 SPT
4					D							pH <sub>F</sub> = 7.94 pH <sub>FOX</sub> = 6.84	U50
4	-5.23				E	<b>ALLUVIAL SANDY SILTY CLAY</b> Green grey, moist, stiff to mainly stiff.  Medium to high plasticity.  Becoming clayey sand with depth.							1,4,7 N=11 SPT
5								(CI-CH)					
6					F								5,9,10 N=19 SPT
7													
7	-7.73				G	<b>ALLUVIAL SILTY CLAY</b> Pale grey to mottled orange brown, moist, stiff to very stiff.  Slightly lateritic and occasional concreted zones; mainly medium to high plasticity.							5,8,11 N=19 SPT
8								(CI-CH)					
9													
10	-11.23												

REMARKS

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## ENGINEERING BOREHOLE LOG

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BOREHOLE No BHP24

SHEET 2 of 4

REFERENCE No H9906

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 23m RIGHT, 1.0m NTH FROM EASTN PILE OF PIER 24 OF EXIST BRIDGE COORDINATES 39155.2 E; 52527.4 N

PROJECT No FG5423 SURFACE R.L. -1.23 PLUNGE        DATE STARTED 05/05/06 GRID DATUM PROJECT DATUM

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

DEPTH (m)	R.L. (m)	Casing Wash Boring Core Drilling	ROD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	-11.23			H	ALLUVIAL SILTY CLAY (As above.)						3,6,8 N=14	SPT
11												
12					Becoming brown, very stiff, high plastic, clayey silt.							
13				J							5,9,12 N=21	SPT
14						(Cl-CH)						
15												
16				K							2,4,6 N=10	SPT
17												
18	-19.23				ALLUVIAL SAND & GRAVEL (Driller's record only.)		(GP)					
19	-20.23			L	ALLUVIAL SILTY CLAY Brown, slightly moist to mainly dry, very stiff.		(Cl)				6,11,12 N=23	SPT
20	-21.23											

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BOREHOLE No BHP24

SHEET 3 of 4

REFERENCE No H9906

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 23m RIGHT, 1.0m NTH FROM EASTN PILE OF PIER 24 OF EXIST BRIDGE COORDINATES 39155.2 E; 52527.4 N

PROJECT No FG5423 SURFACE R.L. -1.23 PLUNGE DATE STARTED 05/05/06 GRID DATUM PROJECT DATUM

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

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD (%)	SAMPLE CORE REC %	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
20	-21.23				<b>ALLUVIAL SILTY CLAY</b> Dark grey brown, moist, soft to firm.  High plasticity; slightly organic throughout.							
21				M							RW, RW, 2 N=2	SPT
22						(OL)						
23												
24				N							RW, 1, 5 N=6	SPT
25	-25.43				<b>ALLUVIAL SANDY GRAVEL</b> Pale grey to white, wet, mainly medium dense to very dense.  (Coarse fraction > Fine fraction)							
26				P	Coarse fraction - Subangular to subrounded quartz and sandstone particles sizing up to 50mm, with occasional particles up to 100mm.						10, 5, 8 N=13	SPT
27				Q	Fine fraction - Subangular to subrounded quartzitic sand particles.	(GP- GM)					18, 30/110 N>50	SPT
28										Clay seam.		
29	-29.93			R							5, 12, 17 N=29	SPT
30	-30.83			S	<b>SANDSTONE</b> <b>FINE GRAINED LAMINATED POORLY CEMENTED SEDIMENTARY ROCK</b> HW: Pale grey to grey, mainly dry, very dense silty sand abruptly grading into very low to low strength rock. SW: (See next page.)	HW					30/60 N>50	SPT
31	-31.23					SW					Is(50)=0.13 MPa	x

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BOREHOLE No **BHP24**

SHEET **4** of **4**

REFERENCE No **H9906**

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 23m RIGHT, 1.0m NTH FROM EASTN PILE OF PIER 24 OF EXIST BRIDGE COORDINATES 39155.2 E; 52527.4 N

PROJECT No FG5423 SURFACE R.L. -1.23 PLUNGE DATE STARTED 05/05/06 GRID DATUM PROJECT DATUM

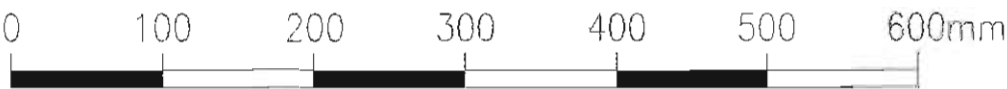
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 05/05/06 DRILLER CAIRNS DRILLING

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
30	-31.23					<b>SW:</b> Pale grey to grey, fine grained, laminated, low to medium strength.  Core appears to be erodable down to 30.7m; occasional mudstone interbeds up to 10mm.  Defects: Generally rare. - Occasional drilling-induced lamination partings <15° (1/2m).						Is(50)=0.23 MPa Is(50)=0.13 MPa Is(50)=0.19 MPa	x o
31												Is(50)=0.42 MPa Is(50)=0.59 MPa	x o
32												Is(50)=0.23 MPa Is(50)=0.23 MPa	x o
	-33.73		90									Is(50)=0.39 MPa Is(50)=0.17 MPa	x o
Borehole terminated at 32.5m													
33													
34													
35													
36													
37													
38													
39													
40													

REMARKS

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Project: **Houghton Highway Bridge Duplication**  
Borehole No: **BHP24**  
Start Depth: 29.60m  
Finish Depth: 32.50m  
Project No: FG5423  
H No: 9906





# Point Load Strength Index - Test Report

**Project: Houghton Highway Bridgesite Investigation**

**Project No: FG5423**

**Date Sampled 05/05/06**

**Feature: N/A**

**Sample Type: NMLC Core**

**Date Tested 31/05/06**

**Report No. FG5423/GS06-415/AS4133.4.1**

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/415.A	BHP 24	29.88	D	0.14	0.13	L	Sandstone
GS06/415.B	BHP 24	29.92	A	0.24	0.23	L	Sandstone
GS06/415.C	BHP 24	30.22	D	0.13	0.13	L	Sandstone
GS06/415.D	BHP 24	30.24	A	0.20	0.19	L	Sandstone
GS06/415.E	BHP 24	30.81	D	0.42	0.42	M	Sandstone
GS06/415.F	BHP 24	30.83	A	0.63	0.59	M	Sandstone
GS06/415.G	BHP 24	31.36	D	0.24	0.23	L	Sandstone
GS06/415.H	BHP 24	31.38	A	0.24	0.23	L	Sandstone
GS06/415.J	BHP 24	32.16	D	0.40	0.39	M	Sandstone
GS06/415.K	BHP 24	32.18	A	0.18	0.17	L	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 BA )

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 .....

( Mr Peter Simson )



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