Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHP90
SHEET 1 of 2
REFERENCE No H9917

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION 24m RIGHT,1.5m STH FROM EASTN PILE OF PIER 90 OF EXIST BRIDGE COORDINATES 39932.2 E; 54160.6 N
PROJECT No FG5423 SURFACE R.L. -1.01 PLUNGE DATE STARTED 07/06/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 07/06/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC / WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES / TESTS
0	-1.01											
				A	**ESTUARINE SAND** Dark grey, wet, very loose. Fine grained sand; minor organic content.		(SM)				pH_F = 7.42 pH_{FOX} = 5.95	HW,1 N=1 SPT
1	-2.31											
				B	**RESIDUAL SANDY CLAY** White, moist, soft to mainly firm. Medium plastic white kaolinitic clay; minor sand fraction; some relic rock structures.		(CI)				pH_F = 6.68 pH_{FOX} = 6.05	HW,2,4 N=6 SPT
2												
3				C							pH_F = 4.34 pH_{FOX} = 3.49	3,3,5 N=8 ASS Sample stored at Herston Geotechnical Laboratory SPT
4	-5.01											
				D	**SANDSTONE** **MEDIUM TO COARSE GRAINED** **MASSIVE TO SLIGHTLY LAMINATED** **POORLY CEMENTED SEDIMENTARY ROCK** **XW:** Generally exhibits engineering properties of white, moist, very stiff clayey silt. Relic rock structures throughout.		XW					4,8,10 N=18 SPT
5												
6	-7.01											
				E	**HW:** Orange brown to pale orange brown, moist, very stiff sandy clay gradually grading into very low to low strength rock with depth.		HW					6,14,17 N=31 SPT
7												
				F								23,30/110 N>50 SPT
8	-9.01		(98)		**HW**: Pale orange brown to pale brown, medium to coarse grained, massive to slightly laminated, very low to low strength. Occasional siltstone rip-up clasts sizing up to 30mm. Defects: Generally rare. - Subhorizontal lamination partings <10° (1/2m) - Joints @ 50° (1/2m) - Joints @ 80° (1/2m)		HW					Is(50)=0.05 MPa x Is(50)=0.04 MPa o
9												Is(50)=0.05 MPa o
10	-11.01											

REMARKS

LOGGED BY
BW / ADISS

A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE.GPJ MRD_LIB_V1.2.GLB 25/10/06

Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHP90
SHEET 2 of 2
REFERENCE No H9917

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION 24m RIGHT,1.5m STH FROM EASTN PILE OF PIER 90 OF EXIST BRIDGE COORDINATES 39932.2 E; 54160.6 N
PROJECT No FG5423 SURFACE R.L. -1.01 PLUNGE DATE STARTED 07/06/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 07/06/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING / WASH BORING / CORE DRILLING	RQD ( )% / CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
10	-11.01				**MW:** Pale orange brown to pale red brown, massive, low to medium strength rock.							Is(50)=0.12 MPa		x
			100									Is(50)=0.12 MPa		o
			(100)		Defects: Generally rare. - Occasional drilling induced lamination partings <10° (1/2m) (As above.)							Is(50)=0.22 MPa		x
11												Is(50)=0.24 MPa		o
												Is(50)=0.28 MPa		x
												Is(50)=0.24 MPa		o
12							MW					Is(50)=0.27 MPa		x
												Is(50)=0.31 MPa		o
												Is(50)=0.66 MPa		x
												Is(50)=0.68 MPa		o
13												Is(50)=0.37 MPa		x
												Is(50)=0.51 MPa		o
												Is(50)=0.07 MPa		x
												Is(50)=0.43 MPa		o
												Is(50)=0.19 MPa		x
	-14.61		100									Is(50)=0.25 MPa		o
					Borehole terminated at 13.6m									
14														
15														
16														
17														
18														
19														
20														

A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5423 HIGHWAY BRIDGE.GPJ MRD_LIB_V1.2.GLB 25/10/06

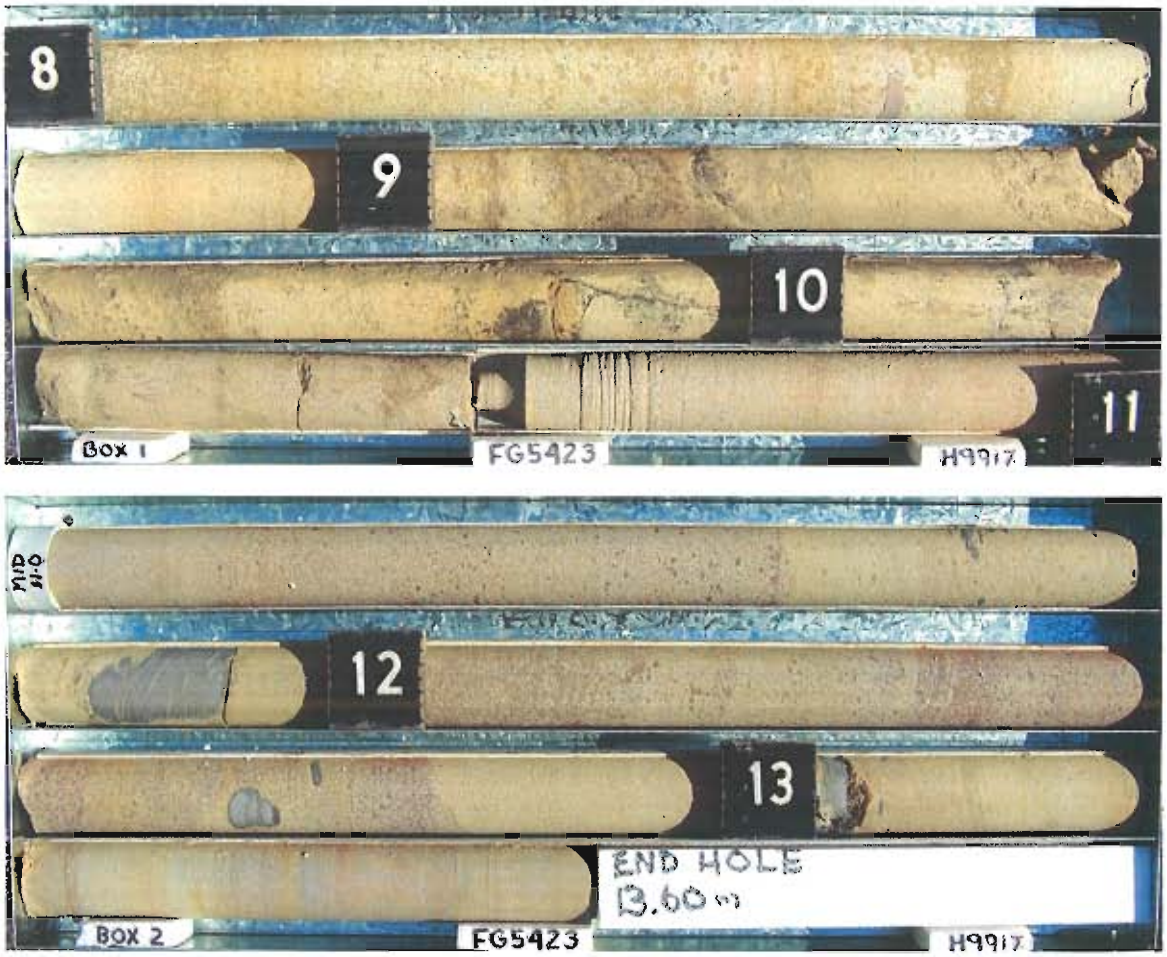
REMARKS

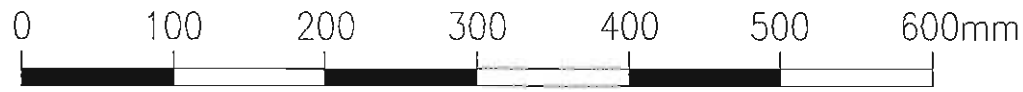
LOGGED BY
BW / ADISS

Project: **Houghton Highway Bridge Duplication**

Borehole No: **BHP90**

Start Depth: 8.00m
Finish Depth: 13.60m
Project No: FG5423
H No: 9917





SCALE 1:5

Queensland Government
Department of Main Roads

ROAD SYSTEM & ENGINEERING
GEOTECHNICAL BRANCH
35 Butterfield St
Herston Q 4006

Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation
Project No: FG5423

Date Sampled 07/06/06 **Date Tested 15/06/06**
Feature: N/A
Sample Type: NMLC Core

Report No. FG5423/GS06-490/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B;I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/490.A	BHP 90	8.05	D	0.05	0.05	VL	Sandstone
GS06/490.B	BHP 90	8.08	A	0.04	0.04	VL	Sandstone
GS06/490.F	BHP 90	8.87	A	0.05	0.05	VL	Sandstone
GS06/490.G	BHP 90	10.31	D	0.13	0.12	L	Sandstone
GS06/490.H	BHP 90	10.37	A	0.13	0.12	L	Sandstone
GS06/490.J	BHP 90	11.06	D	0.22	0.22	L	Sandstone
GS06/490.K	BHP 90	11.09	A	0.24	0.24	L	Sandstone
GS06/490.L	BHP 90	11.70	D	0.28	0.28	L	Sandstone
GS06/490.M	BHP 90	11.74	A	0.23	0.24	L	Sandstone
GS06/490.N	BHP 90	11.94	D	0.27	0.27	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 8A)

Remarks / Variations to Test Procedures:

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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 16/6/06
(MR P. REYNOLDS)

NATA
Accreditation Number: 2302
Accredited for compliance with ISO/IEC 17025
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Queensland Government
Department of Main Roads

ROAD SYSTEM & ENGINEERING
GEOTECHNICAL BRANCH
35 Butterfield St
Herston Q 4006

Point Load Strength Index - Test Report

Project: Houghton Highway Bridgesite Investigation
Project No: FG5423

Date Sampled 07/06/06
Feature: N/A
Sample Type: NMLC Core

Date Tested 15/06/06

Report No. FG5423/GS06-490/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B;I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/490.P	BHP 90	11.96	A	0.31	0.31	M	Sandstone
GS06/490.Q	BHP 90	12.55	D	0.67	0.66	M	Sandstone
GS06/490.R	BHP 90	12.58	A	0.70	0.68	M	Sandstone
GS06/490.S	BHP 90	12.96	D	0.38	0.37	M	Sandstone
GS06/490.T	BHP 90	12.98	A	0.56	0.51	M	Sandstone
GS06/490.U	BHP 90	13.23	D	0.08	0.07	VL	Sandstone
GS06/490.V	BHP 90	13.25	A	0.49	0.43	M	Sandstone
GS06/490.W	BHP 90	13.50	D	0.20	0.19	L	Sandstone
GS06/490..X	BHP 90	13.52	A	0.27	0.25	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 8A)

Remarks / Variations to Test Procedures:

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