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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 BHP67

SHEET 1 of 4

REFERENCE No H9921

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 0.8m NTH FROM EASTN PILE OF PIER 67 OF EXIST BRIDGE COORDINATES 39661.9 E; 53592.8 N

PROJECT No FG5423 SURFACE R.L. -1.34 PLUNGE DATE STARTED 21/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/05/06 DRILLER CAIRNS DRILLING

DEPTH (m)	R.L. (m)	CASING WASH BORING CORE DRILLING	RQD (%)	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	-1.34				ESTUARINE SILTY SAND Dark grey, wet, very loose to loose. Occasional partly decomposed shell fragments; mainly fine grained sand; slightly organic throughout.								
1				A		(SM)						pH _f = 8.19 pH _{FOX} = 7.34	1,3,2 N=5 SPT
2				B									
3	-4.34				ESTUARINE SILTY CLAY Dark grey, moist, very soft. High plasticity; high organic content; minor fraction of shell fragments.							pH _f = 8.47 pH _{FOX} = 6.29	RW,1,1 N=2 SPT
4				C		(OH)						pH _f = 8.61 pH _{FOX} = 7.57	RW N<1 SPT
5				D								pH _f = 8.77 pH _{FOX} = 6.56	RW N<1 SPT
6	-7.74				ESTUARINE SAND Dark grey, moist to wet, very loose to loose. High organic content; very fine to fine grained sand							pH _f = 8.22 pH _{FOX} = 6.48	RW N<1 SPT
7				E									
8				F		(SP- SM)						pH _f = 7.94 pH _{FOX} = 5.51	RW,RW,2 N<3 SPT
9													
10	-11.34												RW N<1

REMARKS

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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BHP67

SHEET 2 of 4

REFERENCE No H9921

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT 0.8m NTH FROM EASTN PILE OF PIER 67 OF EXIST BRIDGE COORDINATES 39661.9 E; 53592.8 N

PROJECT No FG5423 SURFACE R.L. -1.34 PLUNGE _____ DATE STARTED 21/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 21/05/06 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
10	-11.34				G	ESTUARINE SAND (As above.)		(SP-SM)				pH _F = 8.09 pH _{FOX} = 1.82 ASS Sample stored at Herston Geotechnical Laboratory	SPT
11	-12.34				H	ESTUARINE SILTY CLAY Dark grey, moist, very soft. High plasticity; high organic content; slightly sandy with depth.		(OH)				pH _F = 8.20 pH _{FOX} = 5.09 RW N<1	SPT
13	-14.34				J	ALLUVIAL (?) SILTY CLAY Green grey to grey, moist, very soft. Possible soften alluvial layer due to saturated upper estuarine layer.		(OH)				pH _F = 8.37 pH _{FOX} = 7.13 RW N<1	SPT
15	-15.84					ALLUVIAL SILTY CLAY Dark grey brown to dark brown, moist, mainly very stiff. High plasticity.							
16					K			(CH)				pH _F = 7.48 pH _{FOX} = 6.30 6, 10, 15 N=25	SPT
19	-19.54				L	ALLUVIAL SANDY GRAVEL Brown to white, wet, medium dense. (Coarse fraction < Fine fraction) Coarse fraction - Subangular to subrounded, quartz fragments sizing upto 30mm. Fine fraction - Angular to subangular medium to coarse sand with no clay fraction.		(GP)				6, 11, 10 N=21	SPT
20	-21.34												

REMARKS

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ENGINEERING BOREHOLE LOG

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SYMBOLS REFER FORM F:GEOT 017/3-2005

BOREHOLE No BHP67

SHEET 3 of 4

REFERENCE No H9921

PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT

LOCATION 24m RIGHT, 0.8m NTH FROM EASTN PILE OF PIER 67 OF EXIST BRIDGE COORDINATES 39661.9 E; 53592.8 N

PROJECT No FG5423 SURFACE R.L. -1.34 PLUNGE DATE STARTED 21/05/06 GRID DATUM PROJECT DATUM

JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/05/06 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
20	-21.34					ALLUVIAL SANDY GRAVEL Pale grey brown to pale brown, wet, dense becoming medium dense with depth. (Coarse fraction > Fine fraction) Coarse fraction - Subangular to subrounded medium to coarse gravel sizing up to 30mm. Fine fraction - Angular to subangular medium to coarse quartzo sand.							
21													
22					M							18,15,23 N=38	SPT
23													
24													
25					N							9,10,12 N=22	SPT
26													
27													
28													
29	-30.14					SANDSTONE FINE TO MEDIUM GRAINED MAINLY MASSIVE TO SLIGHTLY LAMINATED POORLY CEMENTED SEDIMENTARY ROCK HW: (Driller's record only.)		HW					
30	-31.34												

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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND
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BOREHOLE No BHP67
SHEET 4 of 4
REFERENCE No H9921

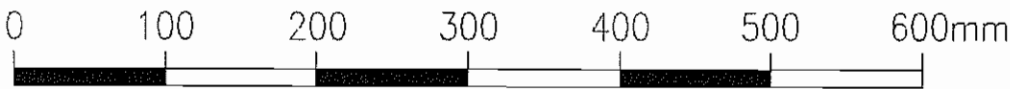
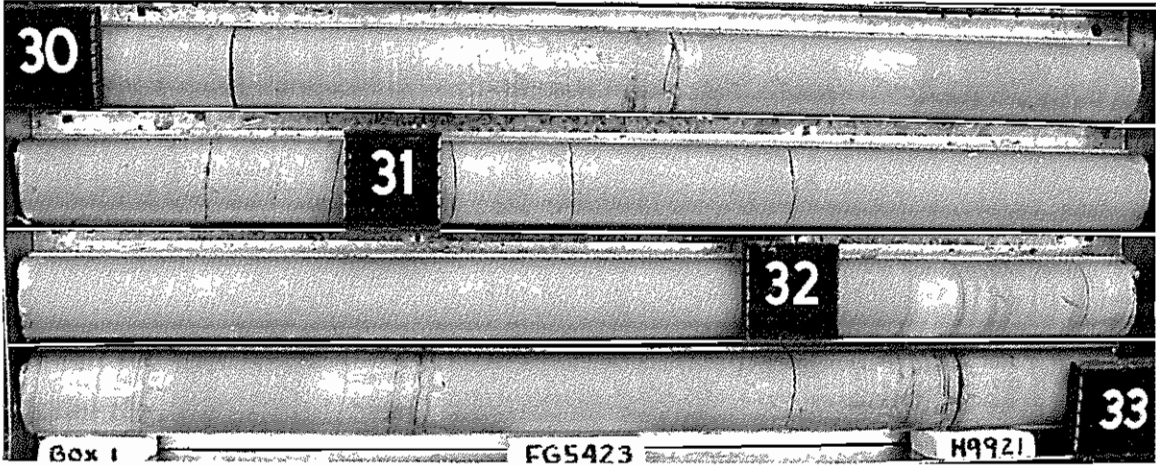
PROJECT HOUGHTON HIGHWAY BRIDGE DUPLICATION - HOUGHTON HIGHWAY UPGRADE PROJECT
LOCATION 24m RIGHT 0.8m NTH FROM EASTN PILE OF PIER 67 OF EXIST BRIDGE COORDINATES 39661.9 E; 53592.8 N
PROJECT No FG5423 SURFACE R.L. -1.34 PLUNGE DATE STARTED 21/05/06 GRID DATUM PROJECT DATUM
JOB No 165/122/35 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/05/06 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
30	-31.34		(100)		SW: Pale grey to white, massive to slightly laminated, mainly fine to medium grained, medium to high strength with occasional very low to low strength and high strength bands. Occasional carbonaceous laminations. Defects: Some drilling induced lamination partings <15° (3-5/m).	SW					Is(50)=0.50 MPa Is(50)=0.62 MPa	x o
31											Is(50)=0.59 MPa Is(50)=1.12 MPa	x o
32											Is(50)=1.94 MPa Is(50)=3.22 MPa	x o
33											Is(50)=0.70 MPa Is(50)=2.23 MPa	x o
33	-34.34		100								Is(50)=0.03 MPa Is(50)=1.21 MPa Is(50)=1.28 MPa	x x o
34					Borehole terminated at 33m							
35												
36												
37												
38												
39												
40												

REMARKS

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Project: **Houghton Highway Bridge Duplication**
Borehole No: **BHP67**
Start Depth: 30.00m
Finish Depth: 33.00m
Project No: FG5423
H No: 9921





Point Load Strength Index - Test Report

Project: Houghton Highway Bridge Investigation**Project No: FG5423****Date Sampled 19/06/06****Feature: N/A****Sample Type: NMLC Core****Date Tested 27/06/06****Report No. FG5423/GS06-561/AS4133.4.1**

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/561.A	BHP 67	30.08	D	0.50	0.50	M	Sandstone
GS06/561.B	BHP 67	30.13	A	0.63	0.62	M	Sandstone
GS06/561.E	BHP 67	30.81	D	0.59	0.59	M	Sandstone
GS06/561.F	BHP 67	30.83	A	1.20	1.12	H	Sandstone
GS06/561.G	BHP 67	31.58	D	1.94	1.94	H	Sandstone
GS06/561.H	BHP 67	31.60	A	3.34	3.22	VH	Sandstone
GS06/561.J	BHP 67	32.16	D	0.70	0.70	M	Sandstone
GS06/561.K	BHP 67	32.18	A	2.08	2.23	H	Sandstone
GS06/561.L	BHP 67	32.80	D	0.03	0.03	EL	Sandstone

Sample Remarks

GS06/561.L- See note 1

* 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**

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 19/06/06

Feature: N/A

Sample Type: NMLC Core

Date Tested 27/06/06

Report No. FG5423/GS06-561/AS4133.4.1

Sample Number	Sample Location	Depth (m)	Test Type D,A,B,I*	Is (MPa)	Is50 (MPa)	Strength Descriptor**	Lithology
GS06/561.M	BHP 67	32.94	D	1.21	1.21	H	Sandstone
GS06/561.N	BHP 67	32.96	A	1.37	1.28	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

Client Name: Department of Main Roads

Client Address: PO Box 70, Spring Hill QLD 4004

Signatory

(P.REYNOLDS)



3.17.06
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