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**Queensland  
Government**

Department of  
Main Roads

# ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 01772-2004

BOREHOLE No   BH103    
SHEET   1   of   3    
REFERENCE No   H9412  

PROJECT   GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION    
LOCATION   CONTROL LINE: MCAO - Ch. 18472.6 - OFFSET 23.0 L   COORDINATES   9579.0 E; 169069.2 N    
PROJECT No   FM2055   SURFACE R.L.   3.08   DATE STARTED   3/8/04   DATUM   SETP    
JOB No            DATUM   AHD   DATE COMPLETED   3/8/04   DRILLER   R & D Drilling Pty Ltd  

DEPTH (m)	R.L. (m)	AUGER 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	3.08					<b>SILTY CLAY - FILL</b> Dark grey, moist, soft to mainly firm.  Frequent dessication and cracks throughout; Medium plasticity.		OL					1,2,2 N=4  SPT
2	1.08					<b>ESTUARINE (??) SILTY CLAY</b> Dark grey, moist, soft to firm.  High plasticity and some organic content.		CH				MC=50.4%, WD=1.68t/m3, DD=1.12t/m3  U50	
5	-1.62					<b>ESTUARINE SILTY SAND</b> Dark grey to grey, wet, very loose.  Fine to medium grained sand.  (Probable basal layer of the younger/estuarine sediments).		SM				LL=67.2%, PI=35.8%, LS=18.4% APD=2.674t/m3 MC=70.2%, WD=1.60t/m3, DD=0.94t/m3  U50	
6												HW,-,1 N<1  SPT	
7	-3.52					<b>SILTY SAND - ALLUVIUM</b> Pale grey to orange brown, moist to slightly dry, medium dense.  Fine sand.		SM				6,9,13 N=22  SPT	
9	-5.12					<b>SILTY CLAY - ALLUVIUM</b> Grey brown to mottled orange, moist to dry, stiff.  Medium plasticity.		CI				5,8,9 N=17  SPT	
10	-6.92												

REMARKS   SPT N values in clayey sandy gravel can overestimate density due to influence of coarser gravel particles. Defect angles have been measured with respect to a horizontal plane.  

LOGGED BY  
**B. Woodgate & A. Dissanayake**



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# ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 017/2-2004

BOREHOLE No BH103

SHEET 2 of 3

REFERENCE No H9412

PROJECT GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION

LOCATION CONTROL LINE: MCAO - Ch. 18472.6 - OFFSET 23.0 L COORDINATES 9579.0 E; 169069.2 N

PROJECT No FM2055 SURFACE R.L. 3.08 DATE STARTED 3/8/04 DATUM SETP

JOB No \_\_\_\_\_ DATUM AHD DATE COMPLETED 3/8/04 DRILLER R & D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	AUGER 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	-6.92					SILTY CLAY - ALLUVIUM (As above)	CI					Slickensided joint	3,7,11 N=18	SPT
11	-7.92					SILTY SAND / SANDY SILT - ALLUVIUM Pale green to mottled orange.	SM						5,8,9 N=17	SPT
12														
13	-9.42					SAND - ALLUVIUM Pale brown to orange brown, wet, mainly medium dense to occasionally dense.  Fine sand.							6,8,9 N=17	SPT
14														
15													6,10,12 N=22	SPT
16						Minor silt fraction around 16m.	SP						7,12,21 N=33	SPT
17														
18													10,9,7 N=16	SPT
19														
20	-16.92												6,7,9 N=16	SPT

REMARKS SPT N values in clayey sandy gravel can overestimate density due to influence of coarser gravel particles. Defect angles have been measured with respect to a horizontal plane.

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# ENGINEERING BOREHOLE

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BOREHOLE No   BH103    
SHEET   3   of   3    
REFERENCE No   H9412  

PROJECT   GATEWAY UPGRADE PROJECT GEOTECHNICAL INVESTIGATION - NORTHERN SECTION    
LOCATION   CONTROL LINE: MCAO - Ch. 18472.6 - OFFSET 23.0 L   COORDINATES   9579.0 E; 169069.2 N    
PROJECT No   FM2055   SURFACE R.L.   3.08   DATE STARTED   3/8/04   DATUM   SETP    
JOB No            DATUM   AHD   DATE COMPLETED   3/8/04   DRILLER   R & D Drilling Pty Ltd  

DEPTH (m)	R.L. (m)	ROD ( ) %	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	WEATHERING							DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
							USC	WEATHERING	EH	VH	H	M	J					VL
20	-16.92				CLAYEY SANDY GRAVEL - ALLUVIUM Pale brown to orange brown, moist, very dense.	GC											22,30/115,- N>50	SPT
21	-17.92				SANDSTONE FINE TO MEDIUM GRAINED POORLY CEMENTED, THINLY LAMINATED SEDIMENTARY ROCK.  HW : Generally exhibits engineering properties of grey brown, moist, very dense, silty sand.  Fine to medium sand.	HW										30/55,- N>50	SPT	
23	-19.92		(100)		MW : Orange brown to grey brown, massive, medium, slightly. SW : Pale grey to grey, mainly thinly laminated to slightly massive, medium strength.  Defects - Generally rare. - Occasional drilling induced lamination partings <30deg (1/2m). - Joints @ 80deg (1/3m).  Some thin carbonaceous layers from 23.3m to 25.55m.	MW										Is(50)=0.20 MPa Is(50)=0.49 MPa Is(50)=0.34 MPa Is(50)=0.62 MPa	o x o x	
26	-20.22		100 (100)			SW										Is(50)=0.65 MPa Is(50)=0.33 MPa  Is(50)=0.74 MPa Is(50)=0.89 MPa  Is(50)=0.34 MPa Is(50)=0.25 MPa	o x  o x  o x	
28	-24.92		100		Borehole terminated at 28m											Is(50)=0.54 MPa Is(50)=0.64 MPa	o x	
29																		
30																		

REMARKS   SPT N values in clayey sandy gravel can overestimate density due to influence of coarser gravel particles. Defect angles have been measured with respect to a horizontal plane.  

LOGGED BY  
**B.Woodgate & A.Dissanayake**

Project: Gateway Upgrade Project Geotechnical Investigation

Borehole No: BH 103

Start Depth: 23.00m

Finish Depth: 28.00m

Project No: FM2055

H No: 9412

