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BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH45

SHEET 1 OF 6

Client:	QUEENSLAND MAIN ROADS	Date Commenced:	30/5/05
Project:	TUGUN BYPASS GEOTECHNICAL INVESTIGATION	Date Completed:	1/6/05
Borehole Location:	Airport Tunnel	Recorded By:	SAM
Project Number:	2134070C	Log Checked By:	PAW

Drill Model/Mounting: HYDRAPOWER SCOUT 250 Hole Angle: 90° Surface RL: 1.2 m AHD
Borehole Diameter: 100 mm Bearing: --- Co-ords: E 50811.4 N 86843.2 PMG

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13
METHOD	SUPPORT	WATER	RL(m) AHD	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
TC	C	100mm	1					SP	Gravelly SAND: fine to coarse grained, brown-yellow, fine to coarse gravel, sub-rounded with low plasticity fines.	D	VS	FILL
			0.80					CH	Silty Sandy CLAY: high plasticity, black, dark grey, with fine to coarse grained sand.		VL	ESTUARINE/ FLOODPLAIN/TIDAL DELTA DEPOSITS
			1								MD	
			1.30					SP	Silty SAND: fine to medium grained, grey, trace of low plasticity fines.	W	ST	
WB			2.00-2		SPT 2,2,2 N=4	SPT					VD	
			-1					SP	Cemented Silty SAND (Coffee Rock): fine to medium grained, dark brown.			
			3									
			-2									
			4									
			-3		SPT 1,2,5 N=7	SPT						
			5									
			-4									
			6									
			-5		SPT 8,13,16 N=29	SPT						
			7.00-7					SP	SAND: fine to medium grained, pale brown-yellow.			
			-6									
			8.00-8		SPT 6,8,11 N=19	SPT						
			-7					SM	Cemented Silty SAND (Coffee Rock): fine to medium grained, dark brown.			
			9									
			-8		SPT 6,8,11 N=19	SPT						

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH45

SHEET 4 OF 6

Client: QUEENSLAND MAIN ROADS

Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION

Borehole Location: Airport Tunnel

Project Number: 2134070C

Date Commenced: 30/5/05

Date Completed: 1/6/05

Recorded By: SAM

Log Checked By: JAW

Drill Model/Mounting: HYDRAPOWER SCOUT 250

Hole Angle: 90°

Surface RL: 1.2 m AHD

Borehole Diameter: 100 mm

Bearing: ---

Co-ords: E 50811.4 N 86843.2 PMG

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13
METHOD	SUPPORT	WATER	RL(m) AHD	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
WB												
			29					CH	Sandy CLAY: high plasticity, grey, fine to medium grained sand. (continued)	W		
			31									
			30									
			31.50		SPT 10, 12, 13 N=25			SM	Silty SAND: fine to coarse grained, grey, sub-rounded, with low plasticity fines and fine to coarse grained gravel.			
			32									
			31									
			33									
			32									
			34									
			33									
			34.50		SPT 4, 15, 19 N=34			CH	Silty CLAY: low plasticity, white, trace of fine sand.			RESIDUAL SOIL.
			35									
			34									
			36									
			35									
			37									
			36									
			37.50		SPT 6, 18, 28 N=46				... white with brown bands.			MC=27.7% LL=37% PI=10% LS=4.5%
			38									
			37									
			39									
			38									

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH45

SHEET 5 OF 6

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Airport Tunnel
Project Number: 2134070C

Date Commenced: 30/5/05
Date Completed: 1/6/05
Recorded By: SAM
Log Checked By: DAN

Drill Model/Mounting: HYDRAPOWER SCOUT 250 Hole Angle: 90° Surface RL: 1.2 m AHD
Borehole Diameter: 100 mm Bearing: --- Co-ords: E 50811.4 N 86843.2 PMG

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13
METHOD	SUPPORT	WATER	RL(m) AHD	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
VS	FB	VS	VL	ST	LD	VS	LD					
WB								... white with brown bands.(continued)	W			
			-39									
			10.50		SPT 26	SPT		ARGILLITE: fine grained, dark grey-brown-white, highly to moderately weathered, very low to low strength.				WEATHERED ROCK Hammer bouncing.
			41		(120mm)							
			40									
			42									
			41									
			43									
			42									Hammer bouncing.
			44		SPT 22	SPT						
			43		(110mm)							
			45									
			44									
			46									
			45									
			47		SPT 10	SPT						Hammer bouncing. No sample.
			46		(120mm)							
			48									
			47									
			49									
			48									
								REFER TO CORED BOREHOLE LOG				
This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.												



CORED BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH45

SHEET 6 OF 6

Client: QUEENSLAND MAIN ROADS

Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION

Borehole Location: Airport Tunnel

Project Number: 2134070C

Date Commenced: 30/5/05

Date Completed: 1/6/05

Recorded By: SAM

Log Checked By: *DAW*

Drill Model/Mounting: HYDRAPOWER SCOUT 250

Hole Angle: 90°

Surface RL: 1.2 m AHD

Borehole Diameter: 100 mm

Bearing: ---

Co-ords: E 50811.4 N 86843.2 PMG

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	
METHOD	SUPPORT	WATER	CORE RECOVERY	ROD	RL(m) AHD	DEPTH(m)	GRAPHIC LOG	SOIL/ROCK MATERIAL FIELD DESCRIPTION	WEATHERING	INFERRED STRENGTH f _d (50) MPa	AVERAGE DEFECT SPACING mm	STRUCTURE AND ADDITIONAL OBSERVATIONS
									0.03 0.1 0.3 1 3 10 EL VL JL H VH EH	10 30 100 300 1000 3000		
					39							
						41						
					40							
						42						
					41							
						43						
					42							
						44						
					43							
						45						
					44							
						46						
					45							
						47						
					46							
						48						
					47							
						49						
					48							
								COMMENCE CORING AT 49.5 m				
								ARGILLITE: fine grained, dark grey.	MW			49.5m: Fragmented seam 170mm. 49.67m: JT, S, PL, 30°. 49.75m: JT, S, PL, 30°, fragmented seam 250mm.
NMLC	CM		100	0								

END OF BOREHOLE AT 50.00 m

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

Project: Tugun Bypass Geotechnical Investigation
Borehole: BH45
Start Depth: 49.50m
Finish Depth: 50.00m

BH45 2134070A TUGUN 1/6/05
49 H9608