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BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH22

SHEET 1 OF 6

Client:	QUEENSLAND DEPARTMENT OF MAIN ROADS	Date Commenced:	9/5/03
Project:	TUGUN BYPASS GEOTECHNICAL INVESTIGATION	Date Completed:	17/5/03
Borehole Location:	TUGUN	Recorded By:	MCM
Project Number:	2134070A	Log Checked By:	DAW

Drill Model/Mounting:	JACRO 500	Hole Angle:	90°	Surface RL:	1.66 m AHD
Borehole Diameter:	100 mm	Bearing:	---	Co-ords:	E 50825 N 86819 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	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
TC	M												

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



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH22

SHEET 2 OF 6

Client: QUEENSLAND DEPARTMENT OF MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: TUGUN
Project Number: 2134070A

Date Commenced: 9/5/03
Date Completed: 17/5/03
Recorded By: MCM
Log Checked By: DAW

Drill Model/Mounting: JACRO 500
Borehole Diameter: 100 mm

Hole Angle: 90°
Bearing: ---
Surface RL: 1.66 m AHD
Co-ords: E 50825 N 86819 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	M		10.00					SM	Cemented Silty SAND (Coffee Rock): medium to coarse grained, interlaminated dark brown, brown and yellow-brown, quartzose. ... becoming interbedded brown and grey-brown.	M		
			-9		SPT 14, 11, 15 N=26	D						
			-11									interbedded coffee rock and silty sand
			-12		SPT R /80mm	D						coffee rock 30 blows/80mm.
			-13									
			-12		SPT 5, 7, 12 N=19	D		SP	SAND: medium grained, pale yellow-brown.			
			-14									
			-15		SPT 4, 5, 9 N=14	D		SP	SAND: medium grained, grey, with a trace of silt.			
			-16									
			-15		SPT 12, 18, 27 N=45	D						
			-17									
			-18		SPT 1, 2, 3 N=5	D		CH	CLAY: high plasticity, dark grey with a trace of fine grained quartzose sand with interbedded CLAYEY SAND: fine to medium grained, grey.			
			-19									
			-18		SPT 6, 10, 14 N=24	D		CH	CLAY: high plasticity, grey with a trace of brown mottling. ... with a trace of sandy clay lenses.			

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



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH22

SHEET 3 OF 6

Client: QUEENSLAND DEPARTMENT OF MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: TUGUN
Project Number: 2134070A

Date Commenced: 9/5/03
Date Completed: 17/5/03
Recorded By: MCM
Log Checked By: *DMW*

Drill Model/Mounting: JACRO 500
Borehole Diameter: 100 mm

Hole Angle: 90°
Bearing: ---

Surface RL: 1.66 m AHD
Co-ords: E 50825 N 86819 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	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
WB	M							CH	CLAY: high plasticity, grey with a trace of brown mottling. (continued)	M			
				-19									
				21		U50							
				-20								200-350	Recovery =420mm
				22									
				-21		U50							
				23								100-250	Recovery=500mm
				-22									
				24		U50							
				-24.40				SC	Clayey SAND: medium grained, grey, subrounded.				Recovery=500mm
				-23									
				25									
				-24	SPT 7,8,20 N=28	D			... grain size increase to medium to coarse grained.				
				26									
				-25									
				27	SPT 13,11,12 N=23	D			... with pale yellow mottling and a trace of medium grained gravel (quartz and sandstone).				
				-27.30				CH	CLAY: high plasticity, white with a trace of pale grey-brown and pale yellow laminations and mottling.				RESIDUAL SOIL
				-26									
				28									
				-27	SPT 7,14,18 N=32	D							
				29									
				-28									

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



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH22

SHEET 4 OF 6

Client: QUEENSLAND DEPARTMENT OF MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: TUGUN
Project Number: 2134070A

Date Commenced: 9/5/03
Date Completed: 17/5/03
Recorded By: MCM
Log Checked By: DPW

Drill Model/Mounting: JACRO 500
Borehole Diameter: 100 mm

Hole Angle: 90° Surface RL: 1.66 m AHD
Bearing: --- Co-ords: E 50825 N 86819 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	HAND PENETROMETER (NPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
WB	M					U50		CH	CLAY: high plasticity, white with a trace of pale grey-brown and pale yellow laminations and mottling. (continued) ... becoming pale yellow, pale brown and pale grey.	M			
			-29	30.70								>500	Recovery=390mm
				31					ARGILLITE: mottled pale yellow, pale brown and pale grey, extremely weathered, extremely low strength.				WEATHERED ROCK
			-30			U50							
				32								>450	Recovery=410mm
			-31										
				33		U50							Recovery=300mm
			-32										Standpipe Installation (25mm dia) Bentonite seal 33.5-34m Sand Filter 34-43m Tip at 43m
				34									
			-33		SPT 21,R /125mm	D			... strength increasing to very low strength.				21, 30 blows/125mm
				35									
			-34										
	C			36	SPT 25,R /70mm	D			... becoming mottled pale orange, dark brown and pale red.				25, 30 blows/70mm
			-35										
				37									
			-36		SPT 17,R /140mm	D							17, 30 blows/140mm
				38									
			-37										
				39	SPT R /110mm	D			... extremely to highly weathered, colour change to grey, dark brown and pale brown.				30 blows/110mm
			-38										

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

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BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH22

SHEET 5 OF 6

Client: QUEENSLAND DEPARTMENT OF MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: TUGUN
Project Number: 2134070A

Date Commenced: 9/5/03
Date Completed: 17/5/03
Recorded By: MCM
Log Checked By: *DMV*

Drill Model/Mounting: JACRO 500
Borehole Diameter: 100 mm

Hole Angle: 90°
Bearing: ---
Surface RL: 1.66 m AHD
Co-ords: E 50825 N 86819 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	HAND PENETROMETER (NPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
WB	C												
				40.30									
				39	SPT R				INTERBEDDED GREYWACKE: very fine to fine grained, pale grey with orange-brown mottling, extremely to highly weathered, very low strength and ARGILLITE: dark grey, extremely to highly weathered, very low strength. REFER TO CORED BOREHOLE LOG				30 blows/60mm
				41	/60mm								
				40									
				42									
				41									
				43									
				42									
				44									
				43									
				45									
				44									
				46									
				45									
				47									
				46									
				48									
				47									
				49									
				48									

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CORED BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH22

SHEET 6 OF 6

Client: QUEENSLAND DEPARTMENT OF MAIN ROADS

Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION

Borehole Location: TUGUN

Project Number: 2134070A

Date Commenced: 9/5/03

Date Completed: 17/5/03

Recorded By: MCM

Log Checked By: DAW

Drill Model/Mounting: JACRO 500

Hole Angle: 90°

Surface RL: 1.66 m AHD

Borehole Diameter: 100 mm

Bearing: ---

Co-ords: E 50825 N 86819 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 Is(50) MPa	AVERAGE DEFECT SPACING mm	STRUCTURE AND ADDITIONAL OBSERVATIONS
									EL 0.03 VL 0.1 L 0.3 M 1 MH 3 H 10 FH 30 TO 100 300 1000 3000			
NMLC	M		100	0	39			COMMENCE CORING AT 40.56 m				
					40.78		ARGILLITE: dark grey, mainly highly weathered, very low strength with	HW				very thinly bedded, steeply dipping (80-90°), highly fractured, very well developed bedding 40.79 - 41.42m: Interpreted as extremely weathered, extremely low strength interbedded argillite and greywacke.
					41.04		Interbedded GREYWACKE: very fine to fine grained, pale grey, highly weathered, very low strength.					
		72	11	41.42		WASHBORE						
				40		AS ABOVE: but extremely highly weathered, recovered as clayey silt.						
		41.70		CORE LOSS	HW							
			100	0	42			INTERBEDDED ARGILLITE: dark grey and GREYWACKE: pale grey.				
			100	0	41				XW			
					43			END OF BOREHOLE AT 43.00 m	HW			
					42							
					44							
					43							
					45							
					44							
					46							
					45							
					47							
					46							
					48							
					47							
					49							
					48							

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