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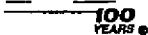
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BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH53

SHEET 1 OF 5

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Airport Tunnel - South end, Pony Club.
Project Number: 2134070C

Date Commenced: 1/8/05
Date Completed: 2/8/05
Recorded By: JM/AF
Log Checked By: *CAF*

Drill Model/Mounting:	HYDRAPOWER SCOUT 250	Hole Angle:	90°	Surface RL:	1.1 m AHD
Borehole Diameter:	100 mm	Bearing:	---	Co-ords:	E 51324.1 N 86553.4 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	
										VS FB VL SL ST MD VST VD H	HAND PENETROMETER (kPa)		
TC	NII		1	0.15				SP	Clayey SAND: dark grey, fine grained. SAND: fine grained, pale brown, quartzose, trace of silt.	M		TOPSOIL	
				1	SPT 3.3,2 N=5	SPT			... becoming grey.	W		ESTUARINE/ FLOODPLAIN/TIDAL DELTA DEPOSITS	
				2					... trace of shell fragments.				
WB	M			-1	SPT 5.4,4 N=8	SPT							
				-2									
				-3	SPT 1.3,3 N=6	SPT			... becoming brown.				
				-4									
				-5	SPT 2.5,7 N=12	SPT							
				-6									
				-6.60				SW	Cemented Silty SAND (Coffee Rock): fine grained, dark brown and brown layers, very weakly cemented.				
				-7	SPT 7.14, 17 N=31	SPT							
				-8									
				-9	SPT 6.9, 17 N=26	SPT							
				-10									
				-11	SPT								

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



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH53

SHEET 2 OF 5

Client:	QUEENSLAND MAIN ROADS	Date Commenced:	1/8/05
Project:	TUGUN BYPASS GEOTECHNICAL INVESTIGATION	Date Completed:	2/8/05
Borehole Location:	Airport Tunnel - South end, Pony Club.	Recorded By:	JM/AF
Project Number:	2134070C	Log Checked By:	DW

Drill Model/Mounting:	HYDRAPOWER SCOUT 250	Hole Angle:	90°	Surface RL:	1.1 m AHD
Borehole Diameter:	100 mm	Bearing:	---	Co-ords:	E 51324.1 N 86553.4 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			-9	10	SPT 13,14,14 N=28			SW	Silty SAND: fine grained, pale brown.	W			
			-10	11	SPT 6,11,14 N=25								
			-11	12									
			-12	13	SPT 1,7,8 N=15								
			-13	14									
			-14	15									
			-15	16	SPT 1,2,6 N=8				... interbedded brown and grey layers.				
			-16	17									
			-17	18									
			-18	19	SPT 5,7,8 N=15								

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BOREHOLE ENGINEERING LOG

BOREHOLE NO.
BH53
SHEET 3 OF 5

Client: QUEENSLAND MAIN ROADS

Date Commenced: 1/8/05

Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION

Date Completed: 2/8/05

Borehole Location: Airport Tunnel - South end, Pony Club.

Recorded By: JM/AF

Project Number: 2134070C

Log Checked By: *Daw*

Drill Model/Mounting: HYDRAPOWER SCOUT 250

Hole Angle: 90°

Surface RL: 1.1 m AHD

Borehole Diameter: 100 mm

Bearing: ---

Co-ords: E 51324.1 N 86553.4 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
										VS FB VL SL ST H	VS FB VL SL ST H	
WB			-19					SW	Silty SAND: fine grained, pale brown. (continued)	W		
			21									
			-20									
			21.30					SC/CH	Clayey SAND: fine grained, grey, high plasticity fines, interbedded withSandy CLAY: high plasticity. grey, fine grained sand. firm to stiff.			
			22		SPT 1.0,0 N=0	SPT						
			-21									
			23									
			-22									
			24									
			-23									
			25		SPT 0.3,6 N=9	SPT						
			-24									
			26									
			-25									
			27									
			-26									
			28		SPT 1.3,6 N=9	SPT						
			-27									
			29									
			-28					SW	Silty SAND: medium to coarse grained, grey, trace of fine to medium grained gravel.			
			29.30									

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



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH53

SHEET 4 OF 5

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Airport Tunnel - South end, Pony Club.
Project Number: 2134070C

Date Commenced: 1/8/05
Date Completed: 2/8/05
Recorded By: JM/AF
Log Checked By: JAW

Drill Model/Mounting: HYDRAPOWER SCOUT 250 Hole Angle: 90° Surface RL: 1.1 m AHD
Borehole Diameter: 100 mm Bearing: --- Co-ords: E 51324.1 N 86553.4 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					SW	Silty SAND: medium to coarse grained, grey, trace of fine to medium grained gravel.(continued)	W		
			-30	31	SPT 3,3,8 N=11	SPT						
			-31	32								
			-32	33								
			-33	34	SPT 9,10,13 N=23	SPT			... trace of high plasticity clay.			Water pressure drop.
			-34	35				CH	Silty CLAY: medium plasticity, light grey-white.			RESIDUAL SOIL
			-35	36								
			-36	37.007	SPT 12,2,19 /110mm	SPT		SC	Clayey SAND: fine grained, light grey-white, medium plasticity clay. ... becoming extremely weathered Argillite.			200 380 SPT bouncing.
			-37	38.008					ARGILLITE: pale grey, with brown staining, extremely weathered, extremely low strength.			WEATHERED ROCK
			-38	39								Some interbedded clay bands.
					SPT							

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



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH53

SHEET 5 OF 5

Client: QUEENSLAND MAIN ROADS

Date Commenced: 1/8/05

Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION

Date Completed: 2/8/05

Borehole Location: Airport Tunnel - South end, Pony Club.

Recorded By: JM/AF

Project Number: 2134070C

Log Checked By: *QAW*

Drill Model/Mounting: HYDRAPOWER SCOUT 250

Hole Angle: 90°

Surface RL: 1.1 m AHD

Borehole Diameter: 100 mm

Bearing: ---

Co-ords: E 51324.1 N 86553.4 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			39	8.18, 26	N=44	SPT			ARGILLITE: pale grey, with brown staining, extremely weathered, extremely low strength. (continued)	W		SPT bouncing.
			40	41								
			41.40					CH	Silty CLAY: medium to high plasticity, pale grey.			41.4-42.2m: Low drill resistance.
			42	41					ARGILLITE: fine grained, pale grey, extremely weathered, extremely low to very low strength.			High drill resistance.
			42.20									
			43	43	SPT 15.14 / 60mm	SPT						SPT bouncing.
			44	44					... becoming orange-brown to grey, highly to moderately weathered, very low to low strength.			
			45	45								
			46	46	SPT 25 / 60mm	SPT			END OF BOREHOLE AT 45.66 m			
			47	47								
			48	48								
			49	49								

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