

COPYRIGHT NOTICE

This geotechnical log and its associated data (the Document) is licensed by the Queensland Department of Transport and Main Roads under the [Creative Commons Attribution 4.0 Licence](#) (CC BY 4.0). When reusing the Document, in whole or in part, please attribute the Department and author as follows: "(c) *State of Queensland (Department of Transport and Main Roads) 2026, licensed under the CC BY 4.0 Licence, prepared by WSP*". This licence does not apply to logos or trademarks.

LIMITATION OF LIABILITY

The CC BY 4.0 Licence contains a comprehensive Disclaimer of Warranties and Limitation of Liability. In addition, please note that this Document was prepared for Departmental use only. Reuse of the Document by anyone for any other purpose could result in error and/or loss. You should obtain professional advice before making decisions based on the contents of the Document.

When reproducing any part of this Document, you must also reproduce this limitation of liability notice in addition to the italicised attribution statement above.

Retrieved from the Queensland Geotechnical Database <http://qgd.org.au/>

BH37

SHEET 1 OF 5

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Rail Tunnel Portal; Chainage 2560 (MC11); on centreline;
Project Number: 2134070C

Date Commenced: 23/5/05
Date Completed: 25/5/05
Recorded By: SAM
Log Checked By: *Sam*

Drill Model/Mounting: **LEWIS 350 TRACKED RIG**

Hole Angle: 90°

Surface RL: 3.9 m AHD

Borehole Diameter: 100 mm

Bearing: ---

Co-ords: E 48539.3 N 88895.7 PMG

[illegible]

Client:	QUEENSLAND MAIN ROADS
Project:	TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location:	Rail Tunnel Portal; Chainage 2560 (MC11); on centreline;
Project Number:	2134070C

Date Commenced: 23/5/05
Date Completed: 25/5/05
Recorded By: SAM
Log Checked By: *[Signature]*

Drill Model/Mounting: LEWIS 350 TRACKED RIG
Borehole Diameter: 100 mm

Hole Angle: 90°
Bearing: ---

Surface RL: 3.9 m AHD
Co-ords: E 48539.3 N 88895.7 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 L MD ST D H	HAND PENETROMETER (kPa)	
WB				-2				SM	Cemented Silty SAND (Coffee Rock): dark brown, fine grained, some low plasticity silt fines. <i>(continued)</i>	W		
				6								
				6.35	3, 1, 1 N=2	SPT						
				-3					Sandy CLAY: medium to high plasticity, grey, fine to medium grained sand.			
				7								
				-4								
				8								
				-5								
				9.00-9					Gravelly Sandy CLAY: medium to high plasticity, pale grey to white, fine to coarse grained sand, fine to medium grained gravel.			RESIDUAL SOIL
					6, 9, 13 N=22	SPT						
				-6								



BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH37

SHEET 3 OF 5

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Rail Tunnel Portal; Chainage 2560 (MC11); on centreline;
Project Number: 2134070C

Date Commenced: 23/5/05
Date Completed: 25/5/05
Recorded By: SAM
Log Checked By: DAV

Drill Model/Mounting: LEWIS 350 TRACKED RIG Hole Angle: 90° Surface RL: 3.9 m AHD
Borehole Diameter: 100 mm Bearing: --- Co-ords: E 48539.3 N 88895.7 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										FB VL L MD ST VST D H	HAND PENETROMETER (MPa)	
				10.80	17,21	SPT			Gravelly Sandy CLAY: medium to high plasticity, pale grey to white, fine to coarse grained sand, fine to medium grained gravel. (continued)	W		
				-7	11				Interbedded ARGILLITE and GREYWACKE: fine to medium grained, pale grey with red-orange mottling, highly weathered, very low strength..			SPT bouncing.
				-8	12	23,32	SPT					SPT bouncing.
				-9	13							
				-10	14	10,19,20	SPT					SPT bouncing.
				-11		N=39						

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

BH37

SHEET 5 OF 5

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Rail Tunnel Portal; Chainage 2560 (MC11); on centreline;
Project Number: 2134070C

Date Commenced: 23/5/05
Date Completed: 25/5/05
Recorded By: SAM
Log Checked By: *[Signature]*

Drill Model/Mounting: LEWIS 350 TRACKED RIG
Borehole Diameter: 100 mm

Hole Angle:	90°	Surface RL:	3.9 m AHD
Bearing:	---	Co-ords:	E 48539.3 N 88895.7 PMG

ons Brockhoff Australia Pty Ltd. Version 5.1 ENGINEERING CORED BOREHOLE LOG LOGS 250505.GPJ GEOTECH.GDT 15/8/05

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	
METHOD	SUPPORT	WATER	CORE RECOVERY	RQD	RL(m) AHD	DEPTH(m)	GRAPHIC LOG	SOIL/ROCK MATERIAL FIELD DESCRIPTION	WEATHERING	INFERRED STRENGTH k(50) MPa	AVERAGE DEFECT SPACING mm	STRUCTURE AND ADDITIONAL OBSERVATIONS
									EL L J M H VH EH	0.03 0.1 0.3 1 3 10	10 30 100 300 1000 3000	
					12	16						
					13	17						
NMLC	C		100	34	14	18		COMMENCE CORING AT 17.6 m Interbedded ARGILLITE and GREYWACKE: fine to medium grained, grey with orange/brown staining.	MW			17.65m: PT, R, PL, 0°. 17.69m: PT, R, IR, 0-5°. 17.72m: Pr, R, IR, 2-5°. 17.86m: PT, R, IR, 3°. 17.88m: JT, R, PL, 30°. 17.93m: JT, R, IR, 30°. 18.0m: JT, PL, S, 30°. 18.04m: JT, PL, S, 32°. 18.11m: JT, PL, S, 30°. 18.14m: JT, PL, S, 30°. 18.20m: JT, PL, S, 30°. 18.3m: Clay seam 10mm. 18.32m: JT, PL, S, 25°. 18.33m: Fragmented seams 40mm. 18.40m: JT, PL, S, 30°. 18.45m: JT, PL, R, 30°. 18.62m: JT, PL, S, 30°. 18.76m: PT, PL, R, 30°. 18.79m: PT, PL, R, 2°. 18.79m: Fragmented seams 70mm. 18.92m: PT, R, IR, 3° - 5°. 19.0m: PT, R, IR, 10°. 19.13m: JT, PL, RO, 75°.
			100	75	15	19						19.4m: PT, PL, RO, 30°. 19.4m: Fragmented seam 90mm. 19.49m: PT, R, PL, 5°. 19.62m: PT, R, PL, 2°. 19.74m: PT, R, PL, 5°. 19.77m: Clay seam 30mm. 19.89m: PT, PL, S, 5°. 19.93m: JT, PL, S, 45°.
			100	37	16							

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



CORED BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH37

SHEET 6 OF 5

Client: QUEENSLAND MAIN ROADS
Project: TUGUN BYPASS GEOTECHNICAL INVESTIGATION
Borehole Location: Rail Tunnel Portal; Chainage 2560 (MC11); on centreline;
Project Number: 2134070C
Date Commenced: 23/5/05
Date Completed: 25/5/05
Recorded By: SAM
Log Checked By: *DAW*

Drill Model/Mounting: LEWIS 350 TRACKED RIG
Borehole Diameter: 100 mm
Hole Angle: 90°
Bearing: —
Surface RL: 3.9 m AHD
Co-ords: E 48539.3 N 88895.7 PMG

Borehole Information						Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	
METHOD	SUPPORT	WATER	CORE RECOVERY	RQD	RL(m) AHD	DEPTH(m)	GRAPHIC LOG	SOIL/ROCK MATERIAL FIELD DESCRIPTION	WEATHERING	INFERRED STRENGTH I _p (50) MPa	AVERAGE DEFECT SPACING mm	STRUCTURE AND ADDITIONAL OBSERVATIONS
NMLC			100					Interbedded ARGILLITE and GREYWACKE: fine to medium grained, grey with orange/brown staining. (continued)	MW			20.02m: JT, PL, S, 30°. 20.06m: JT, PL, S, 30°. 20.10m: JT, PL, S, 30° 20.10m: Fragmented seam 10mm. 20.30m: JT,PL, R, 25°. 20.30m: Fragmented seam 50mm. 20.38m: PT, R, UN, 2°. 20.41m: JT, PL, S, 25°. 20.51m: JT, PL, S, 30°. 20.63m: JT, PL, S, 30°. 20.71m: JT, PL, S, 35°. 20.80m: Fragmented seam 40mm.
					-17	21		END OF BOREHOLE AT 20.84 m				
					-18	22						
					-19	23						
					-20	24						
					-21							

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

Project: Tugun Bypass Geotechnical Investigation
Borehole: BH37
Start Depth: 17.60m
Finish Depth: 20.84m



Project: Tugun Bypass Geotechnical Investigation
Borehole: BH38
Start Depth: 31.50m
Finish Depth: 32.39m

BH38 2134070A Tugun 19/5/05
31 Commence Coring 31.50m
32 END BH 32.39m H9601