FINAL 02/11/2017

Queensland Government

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 1 of 4

REFERENCE No **H12902**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (EC VC C M W VW EW)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0					Sandy SILT (Alluvium) Dark brown, moist, stiff. Low plasticity. Fine grained sand.						
1				A			(ML)			2, 6, 6 N=12	SPT
2				B						3, 5, 5 N=10	SPT
	122.86										
3				C	Silty SAND (Alluvium) Grey brown, moist, medium dense. Fine grained sand.					3, 7, 6 N=13	SPT
4				D	4.00-4.35m: Sandy SILT, fine grained sand.		(SM)			7, 7, 10 N=17	SPT
5	120.21			E						10, 11, 12 N=23	SPT
					Sandy CLAY (Alluvium) Brown to grey, moist, very stiff to hard. Low plasticity. Fine grained sand.		(CL)				
6	119.26			F						13, 19, 19 N=38	SPT
					SAND with Silt (Alluvium) Orange brown, moist, medium dense. Medium grained gravel.		(SP-SM)				
7				G						8, 12, 13 N=25	SPT
	117.86										
8				H	Gravelly SAND with Silt (Alluvium) Grey brown, moist, dense to very dense. Medium to coarse grained sand. Fine to medium grained gravel, sub rounded.		(SP-SM)			17, 26, 25 N=51	SPT
9	116.26			I						16, 15, 20 N=35	SPT
					Sandy CLAY (Alluvium) Grey brown, moist, very stiff to hard.		(CL)				
	115.56										

Continued on next sheet

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

Queensland Government

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 2 of 4

REFERENCE No **H12902**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (EC VC C M W VW EW)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
				J	Sandy CLAY (Alluvium) Cont'd. Low plasticity. Fine grained sand.		(CL)			7, 10, 18 N=28	SPT
	114.96				Gravelly SAND (Alluvium) Grey brown, moist, dense. Medium to coarse grained sand. Fine grained gravel, sub rounded to sub angular. Trace Silt.						
11				K			(SP)			12, 15, 18 N=33	SPT
										11.74m: Groundwater level 04/09/17 04/09/2017	
12				L						15, 11, 20 N=31	SPT
	113.26				Silty CLAY (Alluvium) Pale grey mottled brown, moist, hard. Medium plasticity. Trace Sand.						
13				M			(CI)			18, 25, 30/140mm	SPT
14				N						16, 30/140mm	SPT
15	110.56			O	Sandy CLAY (Alluvium) Grey brown, moist, hard. Medium to high plasticity. Fine grained sand.		(CI)			28, 30/110mm hb	SPT
16	109.56			P	Silty CLAY (Residual) Pale grey mottled orange brown, moist, hard. Medium to high plasticity. Trace fine grained sand. Trace fine grained gravel, sub rounded.					24, 30/140mm hb	SPT
17				Q						22, 30/90mm hb	SPT
18				R			(CI)			15, 30/150mm hb	SPT
19				S						15, 30/100mm hb	SPT
	105.56										

Continued on next sheet

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

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FINAL 02/11/2017

Queensland Government

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 3 of 4

REFERENCE No **H12902**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % / CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (EC VC C M W VW EW)	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
				T	Silty CLAY (Residual) Cont'd.		(CI)			24, 30/100mm hb	SPT
	105.16				SILTSTONE (Je1) XW: Recovered as Gravelly CLAY with Sand. Pale grey mottled brown, moist, hard. Medium plasticity. Angular gravel, very low strength.						
21				U						30/50mm hb	SPT
22				V						10, 18, 30/100mm hb	SPT
23				W	23.00m: Becoming medium plasticity.		XW			26, 30/70mm hb	SPT
24				X						30/120mm hb	SPT
25				Y						30/90mm hb	SPT
26	99.56			Z	SANDSTONE (Je1) XW: Recovered as Sandy CLAY. Pale grey mottled brown, moist, hard. Medium plasticity. Fine grained sand. Fine to medium grained gravel, very low strength.		XW			30/140mm hb	SPT
27	98.56		(50)		SANDSTONE (Je1) HW: Pale grey mottled brown, fine to medium grained, medium bedded, very low to low strength. - BP: 30° to 50° (<1/m); Pl/Sm; Tl-CD; Fe St; some Cly Vr		HW			30/0mm hb Is(50)=0.78 MPa Is(50)=0.26 MPa	D (27.10m) A (27.11m)
28			100 (78)		- Js: 10° to 30° (3-5/m); Pl/Sm; Tl-CD; Fe St - Js: 70° to 90° (<1/m); Un/Ro-Sm; Tl-CD; Fe St		XW HW			28.02m-28.05m: XW 28.10m-28.17m: XW, Recovered as Clayey SAND 28.28m-28.30m: BZ, DI 28.70m-28.75m: XW, Cly Is(50)=0.40 MPa Is(50)=0.26 MPa	D (28.20m) A (28.21m)
29										29.53m-29.55m: XW, Cly	
	95.56						MW HW			Is(50)=1.00 MPa Is(50)=0.61 MPa	D (29.70m) A (29.71m)

Continued on next sheet

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

FINAL 02/11/2017

Queensland Government

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 4 of 4

REFERENCE No **H12902**

PROJECT Boyne River Bridge Repalcement

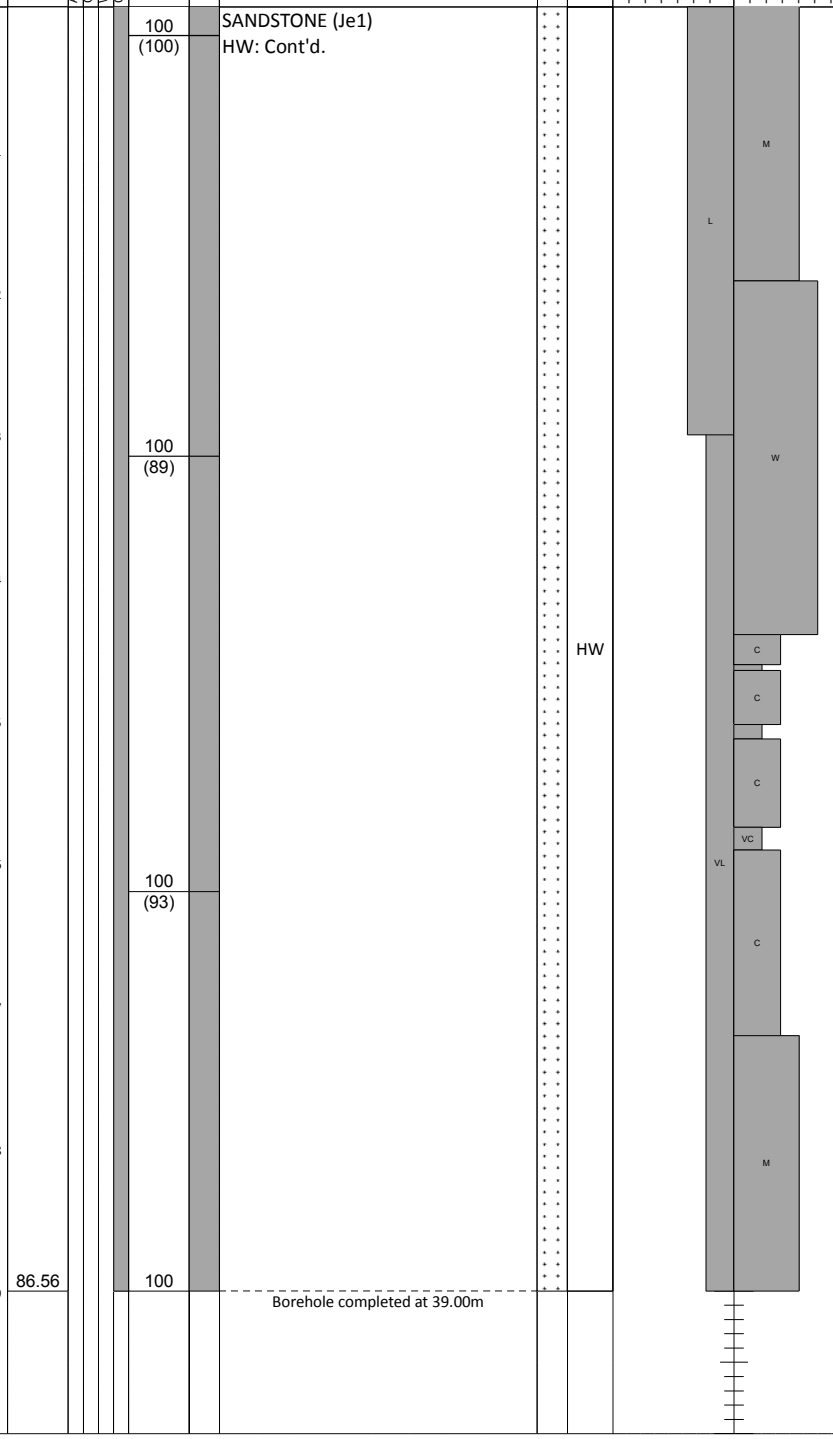
LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	RQD ( ) % / CORE REC %	MATERIAL DESCRIPTION	USCS WEATHERING	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
31		100 (100)	SANDSTONE (Je1) HW: Cont'd.		UCS=5.13 MPa 30.50m: Petrographic Report Is(50)=0.29 MPa Is(50)=0.05 MPa	(30.30m) D (30.50m) A (30.52m)
32					Is(50)=0.13 MPa Is(50)=0.09 MPa	D (31.85m) A (31.87m)
33		100 (89)			UCS=0.45 MPa Is(50)=0.05 MPa Is(50)=0.04 MPa	(33.25m) D (33.40m) A (33.42m)
34				HW		
35					Is(50)=0.04 MPa Is(50)=0.03 MPa	D (34.90m) A (34.92m)
36		100 (93)			Is(50)=0.07 MPa Is(50)=0.04 MPa Is(50)=0.06 MPa Is(50)=0.04 MPa	D (35.65m) A (35.67m) D (36.27m) A (36.29m)
37						
38					Is(50)=0.05 MPa Is(50)=0.05 MPa	D (37.90m) A (37.92m)
39	86.56	100	Borehole completed at 39.00m		UCS=0.95 MPa	(38.92m)



REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

FINAL 02/11/2017

Queensland Government

STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 1 of 4

PIEZOMETER No **BH01**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION
0			Sandy SILT (Alluvium) Dark brown, moist, stiff. Low plasticity. Fine grained sand.
2	122.86		Silty SAND (Alluvium) Grey brown, moist, medium dense. Fine grained sand.
4			4.00-4.35m: Sandy SILT, fine grained sand.
5	120.21		Sandy CLAY (Alluvium) Brown to grey, moist, very stiff to hard. Low plasticity. Fine grained sand.
6	119.26		SAND with Silt (Alluvium) Orange brown, moist, medium dense. Medium grained gravel.
8	117.86		Gravelly SAND with Silt (Alluvium) Grey brown, moist, dense to very dense. Medium to coarse grained sand. Fine to medium grained gravel, sub rounded.
9	116.26		Sandy CLAY (Alluvium) Grey brown, moist, very stiff to hard.
	115.56		

Standpipe Piezometer Construction Details

Depth (m) /RL (AHD)	Backfill Details
0.20m / 125.36 AHD	Rapid-set concrete
	Grout
3.00m / 122.56 AHD	
	Bentonite Seal
5.00m / 120.56 AHD	

Continued on next sheet

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

FINAL 02/11/2017

Queensland Government

STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 2 of 4

PIEZOMETER No **BH01**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Piezometer Construction Details: Depth (m) /RL (AHD)	Backfill Details
			Sandy CLAY (Alluvium) Cont'd. Low plasticity. Fine grained sand.		
	114.96		Gravelly SAND (Alluvium) Grey brown, moist, dense. Medium to coarse grained sand. Fine grained gravel, sub rounded to sub angular. Trace Silt.	04/09/2017	
11					
12	113.26		Silty CLAY (Alluvium) Pale grey mottled brown, moist, hard. Medium plasticity. Trace Sand.		
13					
14					
15	110.56		Sandy CLAY (Alluvium) Grey brown, moist, hard. Medium to high plasticity. Fine grained sand.		
16	109.56		Silty CLAY (Residual) Pale grey mottled orange brown, moist, hard. Medium to high plasticity. Trace fine grained sand. Trace fine grained gravel, sub rounded.		
17					
18					
19					
	105.56				

Continued on next sheet

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

Queensland Government

STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 3 of 4

PIEZOMETER No **BH01**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS — COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 — SURFACE RL 125.56m — PLUNGE 90° — DATE STARTED 10/07/2017 — GRID DATUM MGA Z56

JOB No 249/435/375550 — HEIGHT DATUM AHD — BEARING ° — DATE COMPLETED 12/07/2017 — DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Piezometer Construction Details: Depth (m) /RL (AHD)	Backfill Details
			Silty CLAY (Residual)		
	105.16		Cont'd.		
21			SILTSTONE (Je1) XW: Recovered as Gravelly CLAY with Sand. Pale grey mottled brown, moist, hard. Medium plasticity. Angular gravel, very low strength.	21.00m / 104.56 AHD	Top of slotted pipe
22					
23			23.00m: Becoming medium plasticity.		
24					
25					Graded Sand
26	99.56		SANDSTONE (Je1) XW: Recovered as Sandy CLAY. Pale grey mottled brown, moist, hard. Medium plasticity. Fine grained sand. Fine to medium grained gravel, very low strength.		
27	98.56		SANDSTONE (Je1) HW: Pale grey mottled brown, fine to medium grained, medium bedded, very low to low strength. - BP: 30° to 50° (<1/m); Pl/Sm; TI-CD; Fe St; some Cly Vr - Js: 10° to 30° (3-5/m); Pl/Sm; TI-CD; Fe St - Js: 70° to 90° (<1/m); Un/Ro-Sm; TI-CD; Fe St		
28					
29					
	95.56				

Continued on next sheet

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

FINAL 02/11/2017

Queensland Government

STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No **BH01**

Sheet 4 of 4

PIEZOMETER No **BH01**

PROJECT Boyne River Bridge Repalcement

LOCATION Abutment A, LHS

COORDINATES 323493.5 E; 7159937.9 N

PROJECT No FG6482 | SURFACE RL 125.56m | PLUNGE 90° | DATE STARTED 10/07/2017 | GRID DATUM MGA Z56

JOB No 249/435/375550 | HEIGHT DATUM AHD | BEARING ° | DATE COMPLETED 12/07/2017 | DRILLER NorthCoast Drilling

DEPTH (m)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Standpipe Piezometer Construction Details: Depth (m) /RL (AHD)	Backfill Details
31			SANDSTONE (Je1) HW: Cont'd.		
32					
33					
34					
35					
36					
37					
38					
39	86.56		Borehole completed at 39.00m	39.00m / 86.56 AHD	

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY	REVIEWED BY
J. Armstrong	S. Foley

TMR STANDPIPE PIEZOMETER INSTALLATION LOG - CREATED WITH HOLEBASE SI

CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

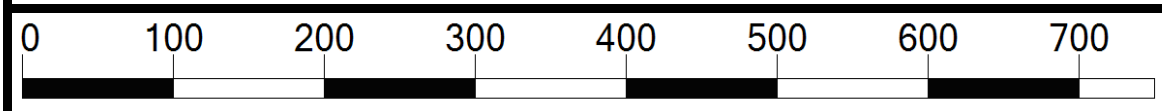
Queensland Government

Project Name	**Boyne River Bridge Replacement**		
Project No.	FG6482	Date	12/07/2017
Borehole No.	BH01	Reference No.	H12902
Location	Abutment A, LHS	Start Depth (m)	27.00
Submitted By	S. Louei	Finish Depth (m)	39.00
Remarks			

CORE PHOTO LOG
DEPARTMENT OF TRANSPORT AND MAIN ROADS
GEOTECHNICAL SECTION

Queensland Government

Project Name	**Boyne River Bridge Replacement**		
Project No.	FG6482	Date	12/07/2017
Borehole No.	BH01	Reference No.	H12902
Location	Abutment A, LHS	Start Depth (m)	27.00
Submitted By	S. Louei	Finish Depth (m)	39.00
Remarks			



SCALE (mm)