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# Queensland

#### **GEOTECHNICAL BOREHOLE LOG**

**FINAL** 02/11/2017

BOREHOLE No BH17

Sheet 1 of 3

AUDAS AT	R. UU	verimient				REFER FORM F:GEO			REFERENCE No	H1	12911
PROJECT	Boyne River	Bridge Repalcement									
LOCATION	Abutment B,	LHS							COORDINATES 323395.2	E; 715980	)8.3 N
PROJECT No	FG6482	SURFACE RL	126.95m	PLUNG	SE 90	o°	DATE START	TED 04/07/201	7 GRID DATUM	MGA Z56	
JOB No	249/435/375	5550 HEIGHT DATUM	AHD E	BEARIN	IG °		DATE COMPLET	TED 05/07/201	7 DRILLER	NorthCoas	t Drilling
DEPTH (m) (m) (m)	RQD () % () % () % () % () % () % () % ()	MATERIAL DESC	CRIPTION	LITHOLOGY	WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
— 1		Sandy SILT (Alluvium) Pale brown to brown, Fine grained sand.		× × × × × × × × × × × × × × × × × × ×	ML)					7, 7, 6 N=13	SPT
124.95 - 2 		Silty CLAY (Alluvium) Pale brown to brown, stiff. Low plasticity.	, moist, very	<u>×</u> _ ×_ ×_ ×_		-	- - - - - - - -			6, 8, 8 N=16	SPT
3		3.00m: Becoming da medium plasticity.	rk brown,	×	CL)		-			9, 11, 11 N=22	SPT
- 4 		D Silty SAND (Alluvium)		×_ ×_ ×_ ×_ ×_ ×_ ×_			-			11, 12, 11 N=23	SPT
		Pale brown to brown, medium dense. Fine grained sand.		× × × × ×	5M)					N=24	SPT
- - - - - - - - - - - - - - - - - - -		G Silty CLAY with Sand ( Pale brown to dark by very stiff. Low to medium plast grained sand.	rown, moist,	×		-	- - - - - - - - -			10, 12, 13 N=25	SPT
		8.00m: Becoming had Gravel.		×_ ((	CI)		- - - - - - - - - -			10, 15, 20 N=35	SPT
9		Silty CLAY trace Sand Pale brown mottle pa very stiff to hard. Low to medium plast Fine grained sand.	ile grey, moist,	× ((	CL)	-	-			11, 14, 15 N=29	SPT
RFMARK	(S: le1 - Fv	Continued on ne vergreen Formation.		zom	ete	er installed			LOGGED BY	DE//IE	WED BY
REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.								S. Louei		Foley	
			71.40.05	OTF0::		REHOLF LOG - CREATED W	T		J. LUUEI	٥.	. отсу

#### Queensland Government

## GEOTECHNICAL BOREHOLE LOG

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

FINAL 02/11/2017

BOREHOLE No BH17

Sheet 2 of 3

REFERENCE No H12911

PROJECT Boyne River Bridge Repalcement COORDINATES 323395.2 E; 7159808.3 N Abutment B, LHS LOCATION SURFACE RL 126.95m FG6482 PLUNGE 90° DATE STARTED 04/07/2017 GRID DATUM MGA Z56 PROJECT No DRILLER NorthCoast Drilling 249/435/375550 DATE COMPLETED 05/07/2017 JOB No HEIGHT DATUM AHD BEARING ' USCS WEATHERING RQD ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê ()% LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMP MATERIAL DESCRIPTION CORE REC % ᇳᆃᆂᄝᅿᆿᇜᇬᇬᄝᇂᇂᇕ Silty CLAY trace Sand (Alluvium) SPT Cont'd. Becoming hard, (CL) 15, 20, 30/130mm SPT 114.95 15, 15, 24 Silty SAND (Alluvium) N=39 SPT Pale brown mottled pale grey, moist, dense. (SM) Fine grained sand. 113.95 17, 28, 30/90mm Silty CLAY trace Sand (Alluvium) SPT Pale brown mottled pink and pale grey, moist, hard. Medium plasticity. 13.65m: Groundwater level. 04/09/2017 Fine grained sand. (CI) 13, 8, 17 14.00m: Becoming pale grey pale N=2 brown, stiff. SPT 111.95 30/145mm O Sandy SILT (Residual) Red mottled pale brown, moist, hard. (MH) Medium to high plasticity. Fine grained sand. 110.95 30/100mn Silty CLAY with Sand (Residual) Pale grey mottled pale brown, (CL) moist, hard. Low plasticity, fine 110.35 grained sand. (56)SANDSTONE (Je1) MW D (16.80m)-Is(50)=0.26 MPa Is(50)=0.15 MPa A (16.81m) MW: Pale grey mottled orange HW □ 17.08m-17.13m: HW, Sand brown, fine grained, very thinly to thinly bedded, low to medium Is(50)=0.22 MPa D (17.42m) strength. Is(50)=0.48 MPa A (17.44m)-BP: 20° to 30° (4-6/m); PI/Ro; TI; Fe St; some Cly Vr - Js: 45° to 60° (<1/m); Pl/Ro; TI; Fe MW 100 ⊐ 18.17m-18.21m: BZ, DI St: Clv Vr (15)☐ 18.31m-18.36m: BZ, HW Js: 80° to 90° (<1/m); Un/Ro; TI-□ 18 42m-18 48m· B7 HW D (18.52m) Is(50)=0.14 MPa CD; Fe St; Cly Vr Is(50)=0.21 MPa A (18.54m)-100 (41) 100 19 XW (28) MW Is(50)=0.66 MPa D (19.52m) Is(50)=0.46 MPa UCS=6.23 MPa A (19.54m) (19.71m) Continued on next sheet REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** S. Louei S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

#### Queensland Government

## GEOTECHNICAL BOREHOLE LOG

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

**FINAL** 02/11/2017

BOREHOLE No BH17

Sheet 3 of 3

REFERENCE No H12911

PROJECT Boyne River Bridge Repalcement COORDINATES 323395.2 E; 7159808.3 N Abutment B, LHS LOCATION SURFACE RL 126.95m grid datum MGA Z56 FG6482 PLUNGE 90° DATE STARTED 04/07/2017 PROJECT No DRILLER NorthCoast Drilling 249/435/375550 DATE COMPLETED 05/07/2017 JOB No HEIGHT DATUM AHD BEARING USCS WEATHERING RQD ADDITIONAL DATA INTACT STRENGTH DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS ()% RΙ DEPTH SAMP MATERIAL DESCRIPTION CORE REC % ᇳᆃᆂᄝᅿᆿᇜᇬᇬᄝᇂᇂᇕ SANDSTONE (Je1) MW: Cont'd. LM Is(50)=0.31 MPa Is(50)=0.24 MPa D (20.35m) ¬ 20.44m-20.49m; BZ, HW A (20.36m) LM ⊐ 20.68m-20.72m: BZ, HW MW 100 (8) Is(50)=0.19 MPa D (21.22m) Is(50)=0.11 MPa A (21.25m)-LM LM XW D (22.10m) Is(50)=0.21 MPa A (22.11m)-MW 104.13 SANDSTONE (Je1) ₩ 23 HW: Pale grey mottled orange XW brown, fine grained, very thinly bedded, mainly very low to low 23.54m-23.75m; HFZ, BZ HW strength. 23.75m-23.90m; HW. BZ - BP: 15° to 25° (9-12/m); PI/Sm-Ro; (17) TI; some Fe St; Cly Vr Is(50)=0.02 MPa D (24.05m)\_ - Js: 50° to 70° (3-4/m); PI-Un/Sm-Is(50)=0.03 MPa A (24.06m) Ro; TI; some Fe St; Cly Vr MW Is(50)=0.13 MPa D (24.45m) Is(50)=0.10 MPa A (24.46m) 101.95 25 25.03m-25.11m: HW, BZ 100 SANDSTONE (Je1) HW UCS=6.16 MPa (25.22m) <sup>-</sup> MW: Pale grey mottled pale brown, fine grained, very thinly to thinly bedded, low to medium strength. 25.70m-25.97m: J:90°: Un/Sm,Tl, LP/BP: 10° to 20° (3-6/m); PI/Ro-MW Sm; TI; some Fe St; Cly Vr 26 Is(50)=0.11 MPa D (26.05m)\_ - Js: 40° to 60° (1-2/m); PI/Ro-Sm; Is(50)=0.04 MPa A (26.06m) TI; some Fe St; some Cly Vr - Js: 80° to 90° (<1/m); Un/Sm; TI; ☐ 26.60m-26.70m: BZ, DI 100 Cly Vr Is(50)=0.08 MPa D (26.85m) HW 27 A (26.87m)\_ D (27.20m) MW Is(50)=0.09 MPa A (27.22m) 27.49m-27.62m: HW, BZ HW MW \_\_\_ 27.85m-27.94m: BZ HW 28 98.85 100 MW Borehole completed at 28.10m REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** S. Louei S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI



## STANDPIPE PIEZOMETER INSTALLATION LOG

BOREHOLE No BH17

Sheet 1 of 3

FOR GEOTECHNICAL TERMS AND **BH17** PIEZOMETER No SYMBOLS REFER FORM F:GEOT 017/8-2014 Boyne River Bridge Repalcement PROJECT COORDINATES 323395.2 E; 7159808.3 N Abutment B, LHS LOCATION grid datum MGA Z56 FG6482 SURFACE RL 126.95m PLUNGE 90° DATE STARTED 04/07/2017 PROJECT No DATE COMPLETED 05/07/2017 249/435/375550 DRILLER NorthCoast Drilling HEIGHT DATUM AHD BEARING ° JOB No **Standpipe Piezometer Construction Details** Ξ LITHOLOGY 50mm PVC Class No. 18 R.L. DEPTH ( MATERIAL DESCRIPTION Depth (m) /RL Stick Up = 0.50m (m) **Backfill Details** (AHD) **Encased in Steel** Monument Sandy SILT (Alluvium) Rapid-set concrete 0.20m / 126.75 AHD Pale brown to brown, moist, stiff. Fine grained sand. 124.95 Silty CLAY (Alluvium) Pale brown to brown, moist, very stiff. Low plasticity. 3.00m: Becoming dark brown, medium plasticity. 121.95 Silty SAND (Alluvium) Grout Pale brown to brown, moist, medium dense. Fine grained sand. 119.95 Silty CLAY with Sand (Alluvium) Pale brown to dark brown, moist, very stiff. Low to medium plasticity. Fine grained sand. 8.00m: Becoming hard, trace Gravel. 117.95 Silty CLAY trace Sand (Alluvium) Pale brown mottle pale grey, moist, very stiff to Low to medium plasticity. Fine grained sand. Continued on next sheet REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** 

TMR STANDPIPE PIEZOMETER INSTALLATION LOG - CREATED WITH HOLEBASE SI

S. Louei

S. Foley

## STANDPIPE PIEZOMETER INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 BOREHOLE No BH17

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FINAL 02/11/2017

Sheet 2 of 3

PIEZOMETER No BH17

Boyne River Bridge Repalcement PROJECT Abutment B, LHS COORDINATES 323395.2 E; 7159808.3 N LOCATION DATE STARTED 04/07/2017 grid datum MGA Z56 FG6482 SURFACE RL 126.95m PLUNGE 90° PROJECT No 249/435/375550 DRILLER NorthCoast Drilling HEIGHT DATUM AHD BEARING ° DATE COMPLETED 05/07/2017 JOB No **Standpipe Piezometer Construction Details** Ξ LITHOLOGY 50mm PVC Class No. 18 R.L. DEPTH MATERIAL DESCRIPTION Depth (m) /RL Stick Up = 0.50m (m) **Backfill Details** (AHD) **Encased in Steel** Monument Silty CLAY trace Sand (Alluvium) Cont'd. Becoming hard, 114.95 Silty SAND (Alluvium) Pale brown mottled pale grey, moist, dense. Fine grained sand. 113.95 Silty CLAY trace Sand (Alluvium) Pale brown mottled pink and pale grey, moist, hard. Medium plasticity. Fine grained sand. 04/09/2017 14.10m / 112.85 AHD 14.00m: Becoming pale grey pale brown, stiff. 111.95 15 Sandy SILT (Residual) Bentonite Red mottled pale brown, moist, hard. Medium to high plasticity. Fine grained sand. 110.95 16 16.10m / 110.85 AHD Top of slotted pipe Silty CLAY with Sand (Residual) Pale grey mottled pale brown, moist, hard. Low plasticity, fine grained sand. 110.35 SANDSTONE (Je1) MW: Pale grey mottled orange brown, fine grained, very thinly to thinly bedded, low to medium strength. - BP: 20° to 30° (4-6/m); PI/Ro; TI; Fe St; some Cly Vr - Js: 45° to 60° (<1/m); PI/Ro; TI; Fe St; Cly Vr - Js: 80° to 90° (<1/m); Un/Ro; TI-CD; Fe St; Cly Vr 18 19 Continued on next sheet REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** S. Foley S. Louei TMR STANDPIPE PIEZOMETER INSTALLATION LOG - CREATED WITH HOLEBASE SI



## STANDPIPE PIEZOMETER INSTALLATION LOG

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

BOREHOLE No BH17

Sheet 3 of 3

PIEZOMETER No BH17

Boyne River Bridge Repalcement PROJECT Abutment B, LHS COORDINATES 323395.2 E; 7159808.3 N LOCATION plunge 90° grid datum MGA Z56 FG6482 SURFACE RL 126.95m DATE STARTED 04/07/2017 PROJECT No 249/435/375550  $_{\rm BEARING}~^{\circ}$ DATE COMPLETED 05/07/2017 DRILLER NorthCoast Drilling HEIGHT DATUM AHD JOB No

=		<u>≻</u>		Standpipe Piezometer Construction Details					
DEF 111 (111)	R.L. (m)	LITHOLOGY	MATERIAL DESCRIPTION	Depth (m) /RL (AHD)	50mm PVC Class No. 18 Stick Up = 0.50m Encased in Steel Monument	Backfill Details			
222 222 223 223 225	104.13		SANDSTONE (Je1) MW: Cont'd.  SANDSTONE (Je1) HW: Pale grey mottled orange brown, fine grained, very thinly bedded, mainly very low to low strength BP: 15° to 25° (9-12/m); Pl/Sm-Ro; Tl; some Fe St; Cly Vr - Js: 50° to 70° (3-4/m); Pl-Un/Sm-Ro; Tl; some Fe St; Cly Vr  SANDSTONE (Je1) MW: Pale grey mottled pale brown, fine grained, very thinly to thinly bedded, low to medium strength LP/BP: 10° to 20° (3-6/m); Pl/Ro-Sm; Tl; some Fe St; Cly Vr - Js: 40° to 60° (1-2/m); Pl/Ro-Sm; Tl; some Fe St; some Cly Vr - Js: 80° to 90° (<1/m); Un/Sm; Tl; Cly Vr			Graded Sand			
29	98.85		Borehole completed at 28.10m	28.10m / 98.85 AHD					

REMARKS: Je1 - Evergreen Formation. Standpipe piezometer installed.

LOGGED BY
S. Louei
S. Foley

# **CORE PHOTO LOG**DEPARTMENT OF TRANSPORT AND MAIN ROADS GEOTECHNICAL SECTION



Project Name	Boyne River Bridge Replacement		
Project No.	FG6482	Date	05/07/2017
Borehole No.	BH17	Reference No.	H12911
Location	Abutment B, LHS	Start Depth (m)	16.60
Submitted By	S. Louei	Finish Depth (m)	28.10
Remarks	C. Eddel	Timori Dopur (III)	20.10
0 100	200 300 400	500 600	19.6 Min 19.
0 100	200 300 400 SCALE (mm)	500 600	700

Page 1 of 2

## **CORE PHOTO LOG**DEPARTMENT OF TRANSPORT AND MAIN ROADS GEOTECHNICAL SECTION



Project Name Project No. Borehole No. Location Submitted By Remarks	Boyne River Bit FG6482 BH17 Abutment B, LH S. Louei		, ement	Date Reference N Start Depth Finish Depth	(m)	05/07/2017 H12911 16.60 28.10
Borehole No. Location Submitted By	BH17 Abutment B, LH	S		Reference N Start Depth	(m)	H12911 16.60
Location Submitted By	Abutment B, LH	S		Start Depth	(m)	16.60
Submitted By		S	20 01			
	S. Louel		dir 70	Finish Deptr	i (m)	28.10
Remarks	J. J	W. Allen	30 01		District Control	
25.6		" 1	3 70			The same of the sa
	27 (		1000			
		26 10			10 kg 27 cm	
	200	Y	1368		S. C.	
	280	EOH (	28.10m	BH17		
0 100	200	300 SCA	400 ALE (mm)	500	600	700