Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

BOREHOLE No BH042
SHEET 1 of 2
REFERENCE No H10587

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 14 COORDINATES 484413.5 E; 7081296.2 N
PROJECT No FG5825 SURFACE R.L. 147.20m PLUNGE DATE STARTED 29/7/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING DATE COMPLETED 29/7/09 DRILLER R & D Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
0	147.20				**Clayey SILT** Brown, slightly gravelly.		(ML)							
	146.40			A								5,7,9 N=16		SPT
1					**PHYLLITE (XW):** Generally exhibits the engineering properties of brown to slightly grey, moist, very stiff to hard, clayey Silt.									
				B								12,17,26 N=43		SPT
2												Soil descriptions based on driller's log only (missing SPT samples)		
				C			XW					7,10,12 N=22		SPT
3														
				D								8,17,22 N=39		SPT
4														
	142.70			E	**PHYLLITE (HW):** Red to brown, fine grained, foliated.							15,22,30/125 N>50		SPT
5			(59)		Clayey zones throughout.		HW							
	141.20				**PHYLLITE (MW):** Brown to grey, fine grained, foliated.									
6			100 (74)		Foliations are indistinct and vary in dip between 50 and 80°.							Is(50) = 0.99MPa		x
7					Defects are generally close to medium spaced.									
					Defect sets at 30° and subvertical.							Is(50) = 0.57MPa		x
8			100 (88)		Defect surfaces are typically thinly clay infilled.		MW					Clay seam (70°)		
9					**Detailed defect descriptions are shown on Form GEOT533/8 attached.**							Is(50) = 0.24MPa		x
			100 (49)											
10														

REMARKS **Detailed defect descriptions are shown on Form GEOT533/8 attached.**

LOGGED BY AN

QLD_DMR_LIB_01.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5825 BRUCE HWY COOROY-CURRA SECTION A BHS.GPJ DWG95012.GDW Datgel CPT Tool gINt Add-In 12/05/2010 10:31

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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

BOREHOLE No BH042
SHEET 2 of 2
REFERENCE No H10587

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 14 COORDINATES 484413.5 E; 7081296.2 N
PROJECT No FG5825 SURFACE R.L. 147.20m PLUNGE ____ DATE STARTED 29/7/09 GRID DATUM MGA94
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DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
10	137.20				**PHYLLITE (MW)** (Cont'd)							30% water return from 10.6m to E.O.H.		
					10.70 - 10.85m: Clayey weathered band.									
11			100 (55)									Is(50) = 0.57MPa		x
												Clay seam (65°)		
12			100 (73)		**Detailed defect descriptions are shown on Form GEOT533/8 attached.**							Clayey broken zone		
13												Is(50) = 0.19MPa Is(50) = 0.20MPa		o x
			100 (62)											
14								MW						
					14.25 - 14.70m: Crushed zone with clayey altered bands and quartz veins throughout.							Clayey broken zone		
			100 (46)											
15												Is(50) = 0.38MPa		x
16			100 (45)											
					16.3 - 16.84m: Clayey weathered zone with crushed quartz veins.									
17			100 (70)									Highly disturbed brecciated & sheared zone		
	129.35													
18					**ANDESITE (MW):** Orange-brown, medium grained, massive, heavily altered.	+ + + +		MW				Is(50) = 0.82MPa Is(50) = 1.55MPa		o x
	128.55		100									Is(50) = 0.08MPa		x
19					Borehole terminated at 18.65m									
20														

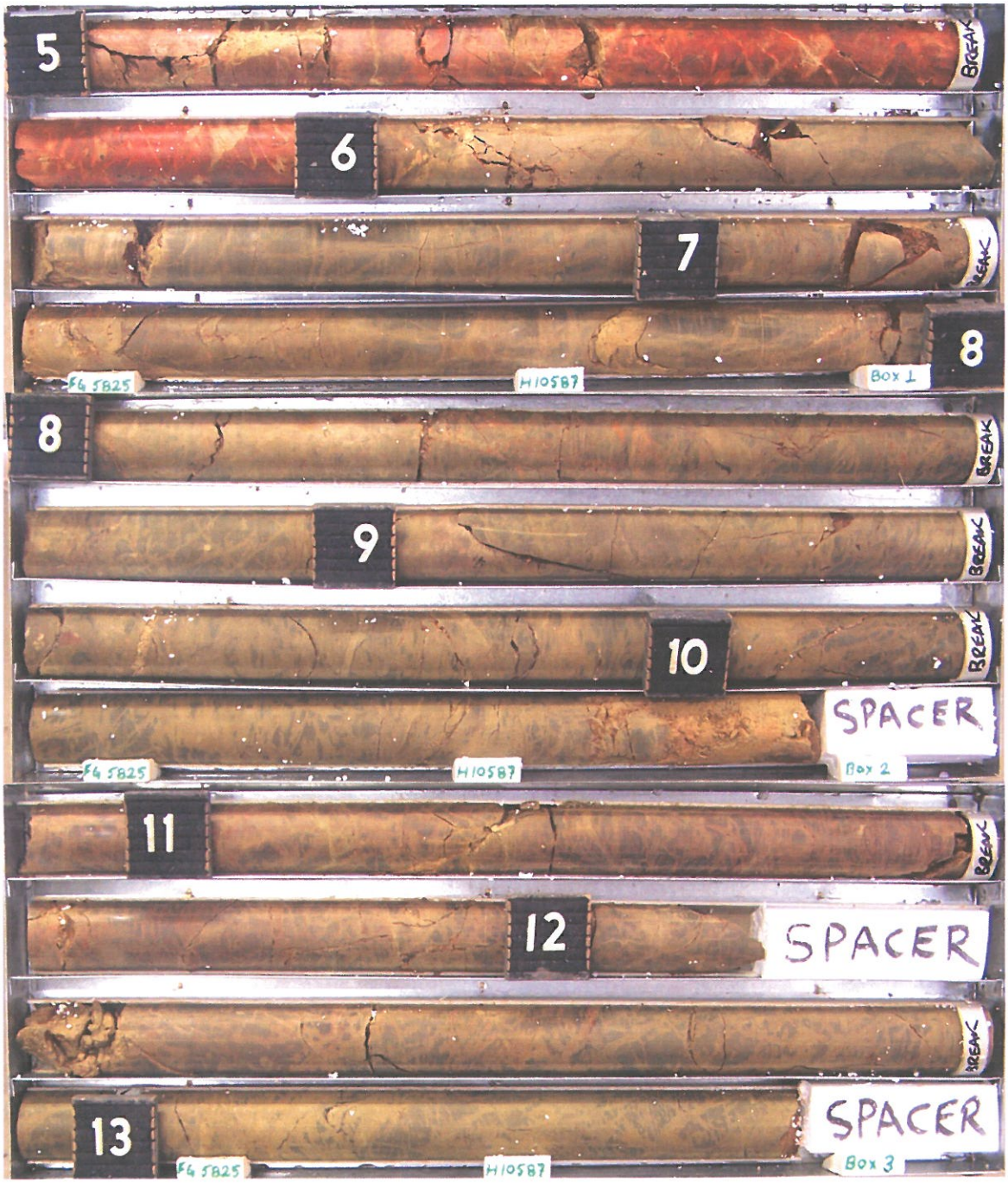
REMARKS **Detailed defect descriptions are shown on Form GEOT533/8 attached.**

LOGGED BY AN

Project: **Bruce Highway Upgrade (Cooroy – Curra) Section A**

Borehole No: **BH42 Cut 14**

Start Depth: 5.00m
Finish Depth: 18.65m
Project No: FG5825
H No: 10587



0 100 200 300 400 500 600mm

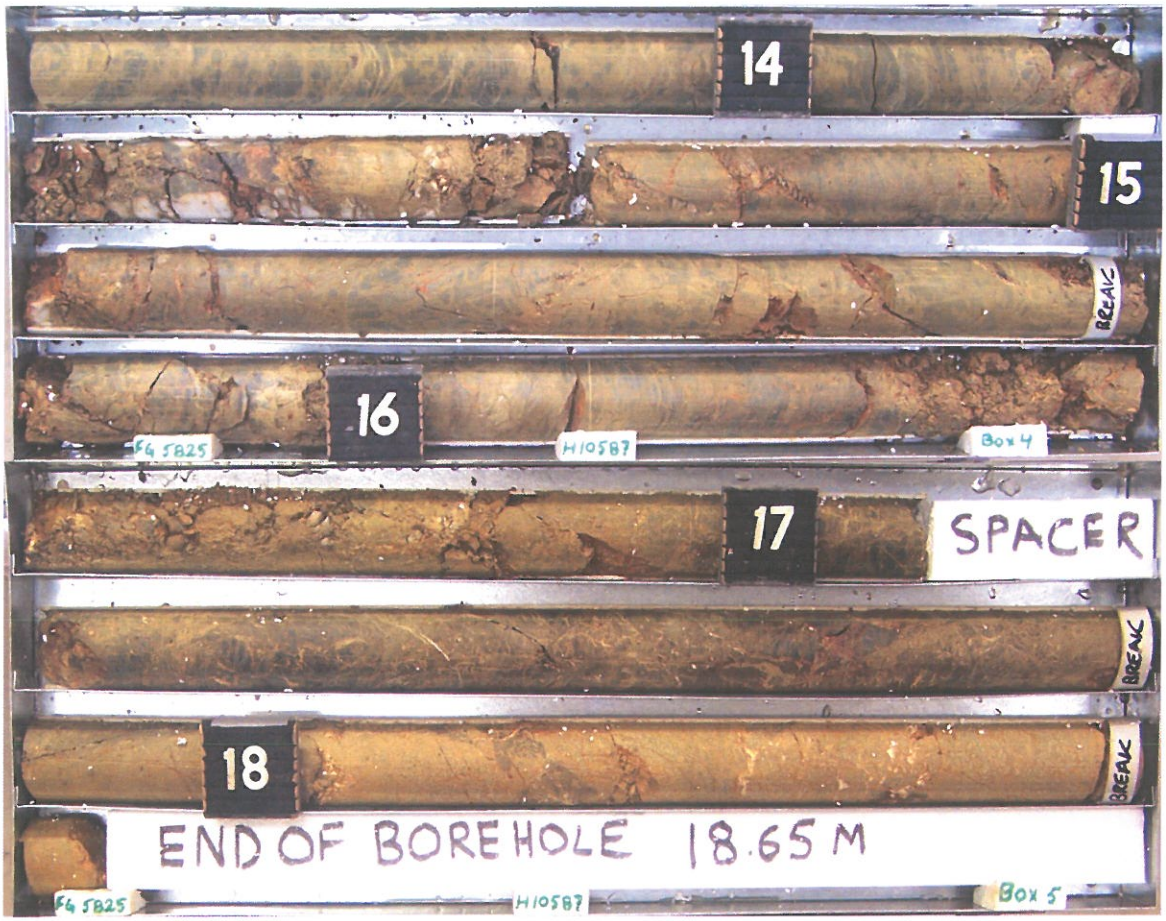
SCALE 1:5

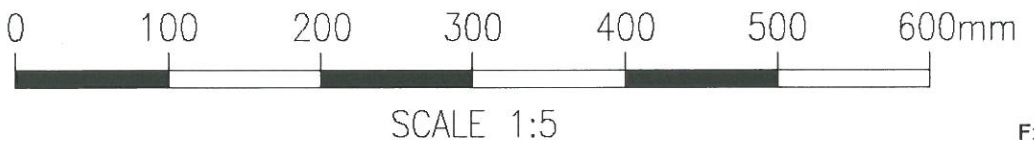
F:GEOT043/1

Project: **Bruce Highway Upgrade (Cooroy – Curra) Section A**

Borehole No: **BH42 Cut 14**

Start Depth: 5.00m
Finish Depth: 18.65m
Project No: FG5825
H No: 10587





SCALE 1:5

F:GEOT043/1

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Queensland Government
Department of Main Roads

DEFECT DESCRIPTIONS OF ENGINEERING BORELOGS

[CHARACTERISATION OF DEFECTS ARE IN ACCORDANCE WITH ISRM SUGGESTED METHODS (1981)]

BOREHOLE NO.:	BH42
SHEET:	1 of 2
REFERENCE NO.:	H10586

PROJECT: Bruce Highway (Cooroy – Curra) Section A Geotechnical Investigation

LOCATION: Cut 14

PROJECT NO.:	FG5825	**SURFACE R.L.:**	147.2	**DRILLER:**	R & D Drilling
JOB NO.:	128/10A/901	**DATUM:**	MGA94	**DATE DRILLED:**	29/7/09

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
5.00	J	Random			C		Rehealed
5.10	J	70°			C		Cl
5.42	J	20°	Cu	SR	O		SM, Cl
6.07	FZ	80°	Ir	R	C	FeSt	Trace of Cl
6.26	J / FZ	90 – 45°	Ir	SR	O	FeSt	Cl
7.14	J	65°	Pl	SR	O	FeSt	Cl
7.30	J	60°	Pl		C		SM
7.68	Clay Seam	70°	Pl	SR	C		Cl, Breccia Infill
7.95	J	0°	Ir	R	O	FeSt	Mn
8.13	J	30°	Ir	R	O	FeSt	
8.32	FP	0°	Pl	SR	O	FeSt	Trace of Cl
8.43	FP	5°	Pl / St	SR	C		
8.83	J	90°	Pl	SR	O		SM, Mn
8.78	J / SZ	5°	Pl	R	O		Brecciated
9.10	J	80°	Cu / Pl	SR	O		Cl, Breccia Infill
9.30	FP	10°	Pl		C		
9.32	FP?	35°	Cu		C		
9.45	J	40°	Pl	SR	O	FeSt	Mn

Abbreviations (as per F: GEOT 017/5 – 2009)

ROUGHNESS		WALL ALTERATIONS		TYPE		OTHER	
R	Rough	FeSt	Iron Stained	J, Js	Joint, Joints	Cl	Clay Infill
Sr	Slightly Rough	W	Weathered	B	Bedding	CLy	Clayey
S	Smooth	Smn	Secondary Mineralisation	BP	Bedding Parting	Co	Coal Seam
SL	Slickensided	Cn	Clean	FP	Foliation Parting	Carb	Carbonaceous
PO	Polished	MnSt	Manganese Stained	LP	Lamination Parting	Sl	Sand Infill
PLANARITY		**APERTURE**		CLV	Cleavage	QZ	Quartz
Pl	Planar	C	Closed	Fr	Fracture	CA	Calcite
St	Stepped	O	Open	SZ	Sheared Zone	Chl	Chlorite
Un	Undulating	F	Filled	CZ	Crushed Zone	In	Incipient
Cu	Curved	T	Tight	BZ	Broken Zone	Int	Intersecting
Ir	Irregular			HFZ	Highly Fractured Zone	Lam (s)	Lamination (s)
				WS	Weathered Seam	Di	Drilling Induced
				Vn	Vein	H	Horizontal
						V	Vertical

NOTE: This sheet should be read in conjunction with appropriate Engineering Borelog. Defect angles were measured with respect to horizontal plane.

BOREHOLE NO.:	BH42
SHEET:	2 of 2
REFERENCE NO.:	H10586

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
9.59	J	10°	Pl	SR	O	FeSt	Cl
9.70	Fr	30°	Ir		C		
10.08	J	70°	Pl / St	SR	C		Cl
10.50	FZ						
10.56	J	40°	Pl		C		Cl
11.18	Clay Seam	70°	Ir				Cl, Breccia Infill
11.73	J	45°	Pl		C	FeSt	Trace of Cl
11.80	J	90°	Pl / St		C		Cl
11.96	J	60°	Pl		O	FeSt	
12.17	FZ					FeSt	
12.25	J	50°	Pl	SR	C	FeSt	
12.38	J	40 – 90°	St	R	O	FeSt	Trace of Cl
12.44	J	5°	St	R	O	FeSt	Trace of Cl
12.68	J	50°	Pl		C		SM
13.44	J	50°	Pl				Rehealed
15.40	J	70°	Pl	SR		FeSt	Trace of Cl
15.55	J	70°	Pl	SR		FeSt	Trace of Cl
16.30	FZ						
16.82	J	80°	Pl	SR	O	FeSt	SM, Mn
17.37	J	60°	Pl	SR	O	FeSt	SM, Mn, Some polished surfaces
17.55	J	80 – 90°	Ir		C	FeSt	Rehealed
17.85	SZ						
17.99	Fr	0°	Ir	SR	O		Mn
18.00	J	60°	Pl	SR	O		Cl
18.10	Multiple Fr	10 – 50°	Pl			FeSt	