Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH025
SHEET 1 of 2
REFERENCE No H10600

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 11 COORDINATES 485950.1 E; 7080824.8 N
PROJECT No FG5825 SURFACE R.L. 166.23m PLUNGE ____ DATE STARTED 12/8/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING ____ DATE COMPLETED 13/8/09 DRILLER R & D Drilling

DEPTH (m)	R.L. (m)	AUGER / 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	166.23				**Silty CLAY (TOPSOIL)** Dark brown, moist.		(CL-ML)							
	165.73			A	**Clayey SILT** Dark brown, moist, stiff.							3,4,4 N=8		SPT
1					Low plasticity, traces of organics, occasional coarse sands.		(Cl-ML)							
	164.73			B	**Silty CLAY** Pale grey with mottled red iron staining, moist, stiff.							2,2,9 N=11		SPT
2					Occasional iron cemented kernels. Low to intermediate plasticity.		(CL-ML)							
	163.73			C	**Interbedded Clayey SAND and Silty CLAY** Pale grey, moist, medium dense to very stiff.							5,8,10 N=18		SPT
3					Occasional iron cemented kernels.		(SC)							
	162.73			D	**SILTSTONE (XW):** Generally exhibits the engineering properties of pale grey with mottled red iron staining, moist, very stiff to hard, silty clay.							8,11,16 N=27		SPT
4					Low to intermediate plasticity.		XW							
				E	Occasional iron cemented kernels up to 10mm.							14,14,19 N=33		SPT
5	161.23		(0)		**SILTSTONE (HW):** Pale grey with red mottling, fine grained, clayey, occasional iron cemented kernels.							Is(50) = 0.03MPa		x
			100 (0)		Defect planes indistinct.									
6							HW							
			74											
	159.63		(110)		**SILTSTONE (MW):**							Is(50) = 0.08MPa		x
			100 (480)		Pale grey to mottled red and orange, fine grained, thinly bedded, low strength.									
7					Bedding planes indistinct and flat lying.							Is(50) = 0.04MPa Is(50) = 0.21MPa		x o
			100 (0)		Prominent defect sets dip along bedding.									
8					Defect surfaces are generally iron stained.		MW					Is(50) = 0.04MPa Is(50) = 0.16MPa		x o
			100 (860)											
9					**Detailed defect descriptions are shown on Form GEOT533/8 attached.**							Is(50) = 0.13MPa Is(50) = 0.13MPa		x o
			100											
10					(See over)							Is(50) = 0.10MPa		x

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

LOGGED BY JA

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 10:30

Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH025
SHEET 2 of 2
REFERENCE No H10600

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 11 COORDINATES 485950.1 E; 7080824.8 N
PROJECT No FG5825 SURFACE R.L. 166.23m PLUNGE ____ DATE STARTED 12/8/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING ____ DATE COMPLETED 13/8/09 DRILLER R & D Drilling

DEPTH (m)	R.L. (m)	AUGER / 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	156.23		(360)		**SILTSTONE (MW):** (Cont'd)			MW				Is(50) = 0.07MPa		o
	155.90				**CONGLOMERATE (HW):** Light brown to mottled red, medium to coarse gravels in a weak silty matrix.							13/8/09 Is(50) = 0.19MPa		x
			50									Is(50) = 2.35MPa		o
11			(0)		Strongly cemented in parts.									
			0		10.35 - 11.90m: Large zone of core loss. Possible conglomerate.			HW				Water loss		
			(0)											
			0											
12			(0)											
			85											
			(0)											
	153.73		100											
			(290)		**SILTSTONE (MW):** Pale grey to mottled red and orange, fine grained, thinly bedded, low strength.			MW				Is(50) = 0.06MPa		x
			100									Is(50) = 0.16MPa		o
13			(210)									Is(50) = 0.20MPa		x
	152.98				Bedding planes indistinct and flat lying.							Is(50) = 0.19MPa		o
					Prominent defect sets dip along bedding.							Is(50) = 0.26MPa		x
					Defect surfaces are generally iron stained.							Is(50) = 0.32MPa		x
								MW				Is(50) = 0.01MPa		x
14					**PHYLLITE (MW):** Pale grey, fine grained, foliated.							Is(50) = 0.36MPa		x
	151.83		100											
			(140)		Weakly foliated, typically dipping at 45°.									
					Prominent defect set parallel to foliation.			MW-SW						
15					Defect surfaces are typically planar, smooth and iron stained or thinly clay coated.							Is(50) = 1.40MPa		x
	151.03		100		**PHYLLITE (MW - SW):** As above.							Is(50) = 0.65MPa		x
					Borehole terminated at 15.2m									
16														
17														
18														
19														
20														

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

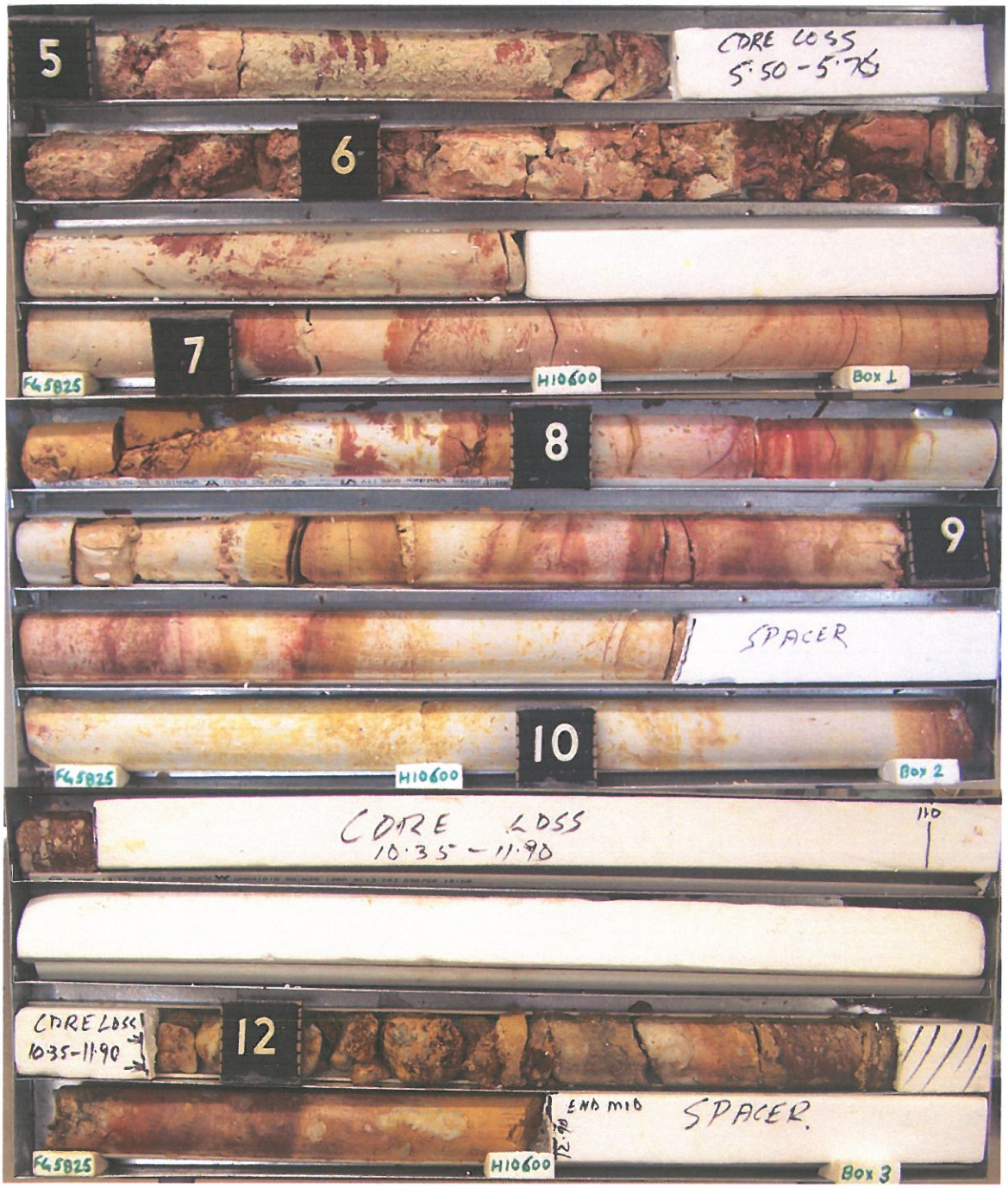
LOGGED BY JA

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 10:30

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

Borehole No: **BH25**

Start Depth: 5.00m
Finish Depth: 15.20m
Project No: FG5825
H No: 10600



0 100 200 300 400 500 600mm

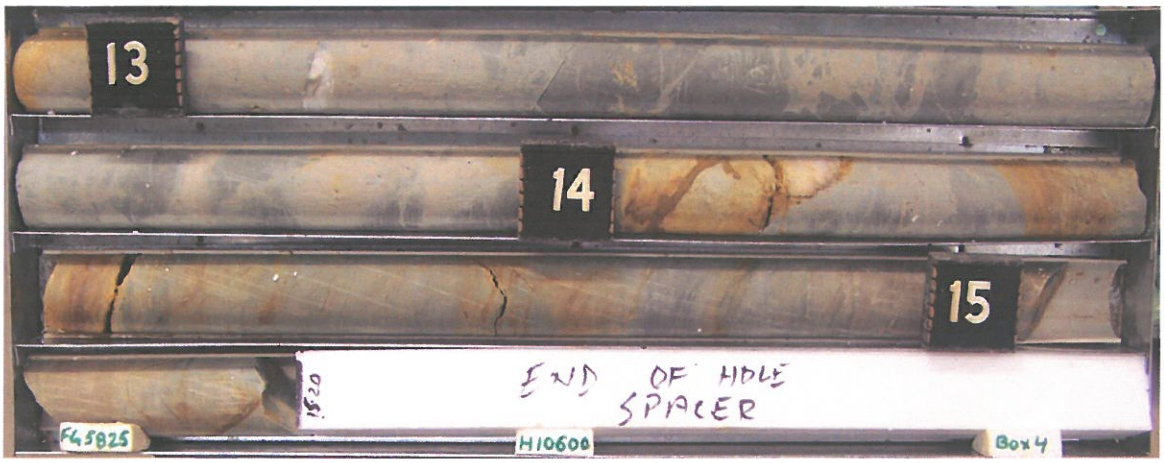
SCALE 1:5

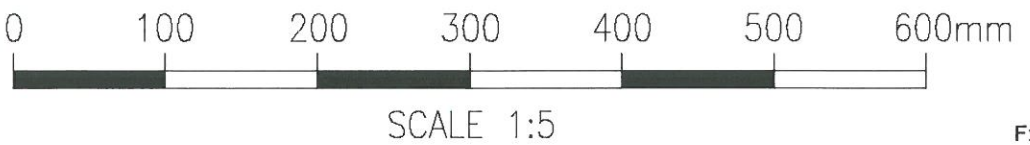
F:GEOT043/1

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

Borehole No: **BH25**

Start Depth: 5.00m
Finish Depth: 15.20m
Project No: FG5825
H No: 10600





F:GEOT043/1

GEOTECHNICAL BRANCH LABORATORY
Materials Services - Brisbane
35 Butterfield Street, HERSTON Q 4006
Phone: (07) 3115 3035 Fax: (07) 3115 3011

Queensland Government
Department of Main Roads

DEFECT DESCRIPTIONS OF ENGINEERING BORELOGS

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

BOREHOLE NO.:	BH25
SHEET:	1 of 2
REFERENCE NO.:	H10600

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

LOCATION: Cut 11

PROJECT NO.:	FG5825	**SURFACE R.L.:**	166.22	**DRILLER:**	R & D Drilling
JOB NO.:	128/10A/901	**DATUM:**	MGA94	**DATE DRILLED:**	12/08/09

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
5.1	J	40°	UN	R	O	Cn	
5.24	J	20°	PL	SR	O	Cn	
5.87	J	40°	PL	SR	O	Cn	
6.97	J	10°	PL	S	O	Cn	
7.08	J	10°	PL	S	O	FeSt	
7.25	J	15°	PL	S	O	FeSt	
7.49	J	10°	PL	S	O	FeSt	
7.55	J	20°	PL	S	O	FeSt	
7.59	J	10°	PL	S	O	FeSt	
7.67	J	10°	PL	S	O	FeSt	
7.67	J	60°	PL	S	O	FeSt	
7.94	J	10°	PL	S	O	FeSt	
8.15	J	10°	PL	S	O	FeSt	
8.21	J	30°	PL	S	O	FeSt	
8.24	J	10°	PL	R	O	FeSt	
8.29	J	10°	PL	SR	O	FeSt	
8.39	J	10°	PL	S	O	FeSt	
8.57	J	10°	PL	S	O	FeSt	

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

ROUGHNESS		WALL ALTERATIONS		TYPE		OTHER	
R	Rough	FeSt	Iron Stained	J, Js	Joint, Joints	Cln	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	SI	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.:	BH25
SHEET:	2 of 2
REFERENCE NO.:	H10600

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
8.39	J	10°	PL	S	O	FeSt	
8.57	J	10°	PL	S	O	FeSt	
8.64	J	10°	PL	SR	O	FeSt	
8.85	J	10°	PL	S	O	FeSt	
8.87	J	20°	PL	S	O	FeSt	
9.04	J	20°	PL	S	O	FeSt	
9.06	J	10°	PL	S	O	FeSt	
9.37	J	20°	PL	S	O	FeSt	
9.60	J	20°	PL	S	O	FeSt	
10.26	J	10°	PL	SR	O	FeSt	
11.9-12.2	BZ						
12.25	J	10°	IR	SR	O	Cn	
12.28-12.32	Qz	20°					
12.28	J	20°	PL	SR	O	Cn	
12.37	J	20°	IR	R	O	Cn	
12.52	J	40°	PL	R	O	FeSt	
12.7	J	10°	CU	R	O	FeSt	
13.24	J	30°	PL	SR	O	Cn	
13.52	J	20°	PL	S	O	Cn	
13.77	J	20°	PL	S	O	Cn	
14.14	J	20°	IR	R	O	FeSt	
14.45	J	20°	PL	S	O	FeSt	
14.50	J	40°	PL	S	O	FeSt	
14.7	J	40°	PL	S	O	MnSt	
15.08	J	30°	PL	S	O	FeSt	
15.17	J	45°	PL		C	FeSt	