Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH057
SHEET 1 of 2
REFERENCE No H10616

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 21 COORDINATES 482227.9 E; 7080665.1 N
PROJECT No FG5825 SURFACE R.L. 112.38m PLUNGE ____ DATE STARTED 20/8/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING ____ DATE COMPLETED 20/8/09 DRILLER Geo Drill

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	112.38				**Clayey SILT (Colluvium)** Pale brown, moist, stiff. Intermediate to high plasticity, occasional HW rock fragments.		(CI-ML)					3,4,6 N=10		SPT
1				A										
	110.88			B	**PHYLLITE (XW)** Generally exhibits the engineering properties of light brown to grey, moist, very stiff to hard, gravelly silt. Rock fabric visible in parts; occasional crushed quartz seams and clay seams.		XW					8,13,11 N=24		SPT
2														
				C								15,18,15 N=33		SPT
3	109.38													
	109.13				**PHYLLITE(XW/HW)** Exhibits engineering properties of brown, moist, hard, gravelly CLAY.		XW-HW					Is(50) = 0.87MPa		x
					PHYLLITE (MW/SW) Brown to grey, fine grained, foliated.									
4			100 (0)		Foliations typically dip at 20-30°. Defects generally medium spacing. Prominent defect sets dip along foliation and at 45°. Defect surfaces are typically iron or manganese stained.							Is(50) = 0.29MPa		x
			100 (40)				MW-SW							
5			100 (25)		**Detailed defect descriptions are shown on Form GEOT 335/8 attached.**							Is(50) = 0.55MPa		x
												MC = 2.8%; UCS=2.67MPa		UCS
6												Is(50) = 0.60MPa		x
	105.88				**PHYLLITE (MW)** Pale grey-brown, fine grained. Broken, clayey bands throughout.									
			100 (0)									Is(50) = 0.49MPa		x
7			100 (0)		Weakly foliated, typically dipping at 30°		MW				Broken Zone			
					Defects very close to closely spaced. Defects generally dipping parallel to foliation or at 40°. Defect surfaces usually clay infilled.									
			58 (0)								Broken Zone			
8	104.08										Gravelly clay seam Broken Zone			
			(0) 100		**PHYLLITE (MW/SW)** Pale grey-brown, fine grained. Broken, clayey bands and occasional quartz veins throughout.							Is(50) = 1.09MPa		x
			(61)									MC = 2%; UCS=6.97MPa		UCS
9					Weakly foliated, typically dipping at 30°		MW-SW					Is(50) = 1.06MPa		x
												Is(50) = 1.10MPa		x
					Defects very close to closely spaced. Prominent defect sets dip parallel to foliation or at 40°. Defect surfaces usually clay infilled.									
10			100											

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

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 10:31

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PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
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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	102.38		(46)		(See over) **PHYLLITE (MW/SW)** (Cont'd)							Is(50) = 1.13MPa		x
												MC = 2%; UCS=7.35MPa		UCS
11												Is(50) = 2.76MPa		x
			100 (36)		**Detailed defect descriptions are shown on Form GEOT 335/8 attached.**		MW-SW					Quartz seam		
12			100 (13)									Is(50) = 2.59MPa		x
												Is(50) = 0.57MPa		x
13	99.38		100		Borehole terminated at 13m									
14														
15														
16														
17														
18														
19														
20														

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

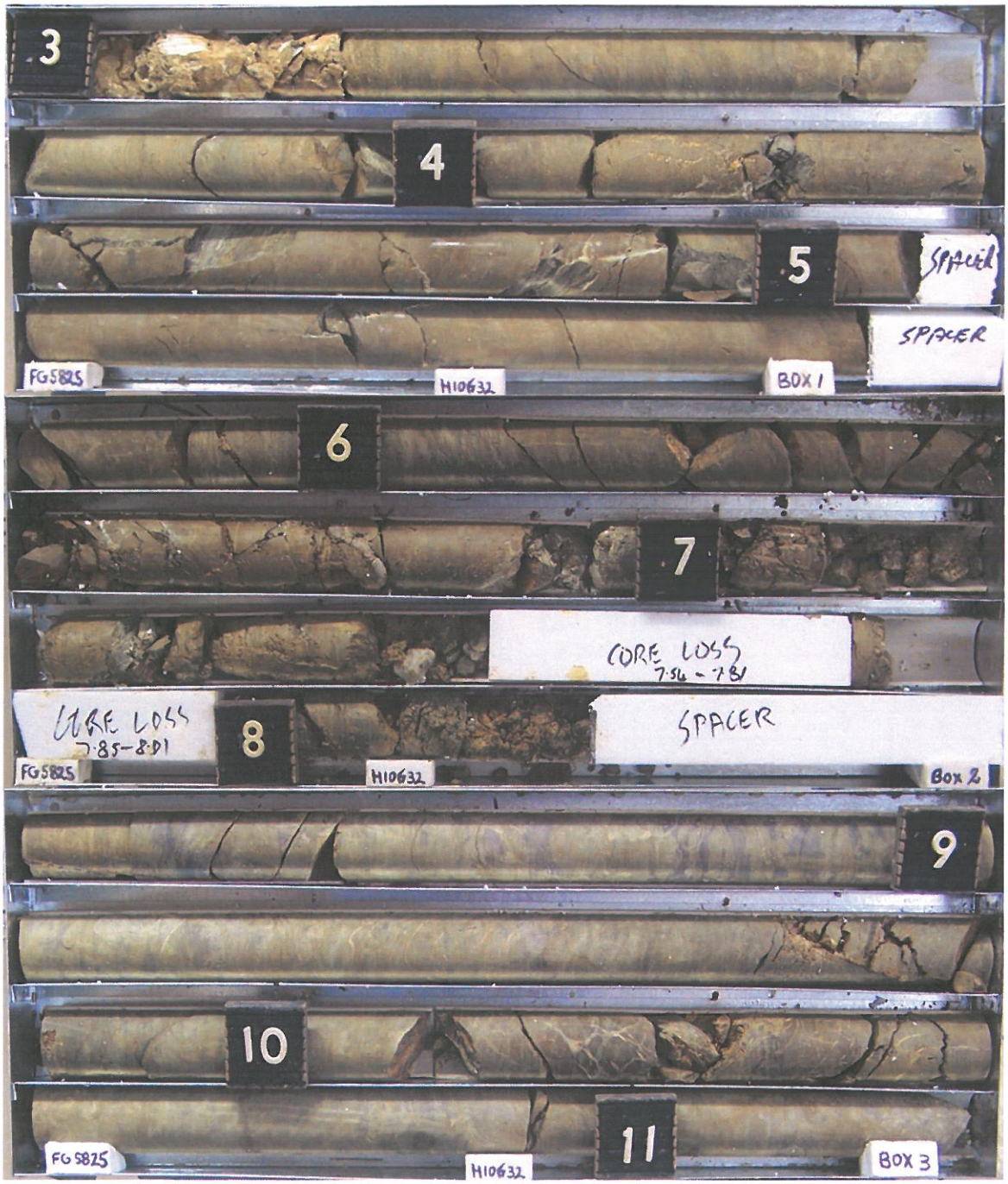
REMARKS **Detailed defect descriptions are shown on Form GEOT533/8 attached.** Piezometer installed.

LOGGED BY JA

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

Borehole No: **BH57**

Start Depth: 3.00m
Finish Depth: 13.00m
Project No: FG5825
H No: 10632



0 100 200 300 400 500 600mm

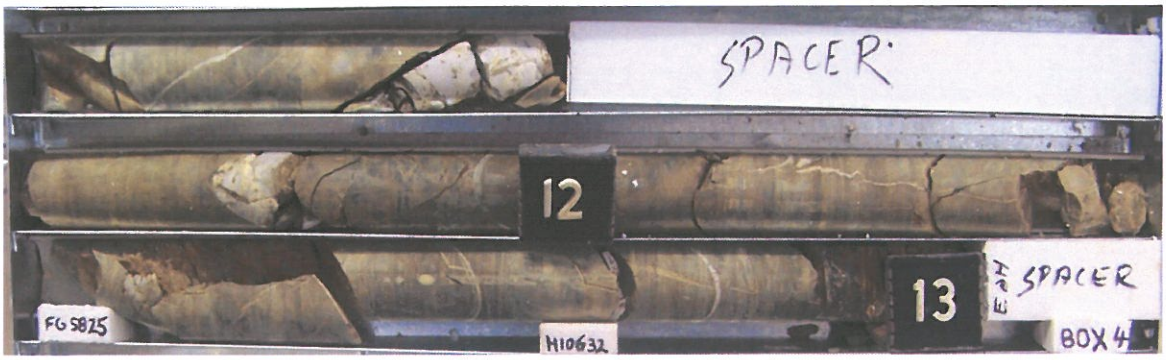
SCALE 1:5

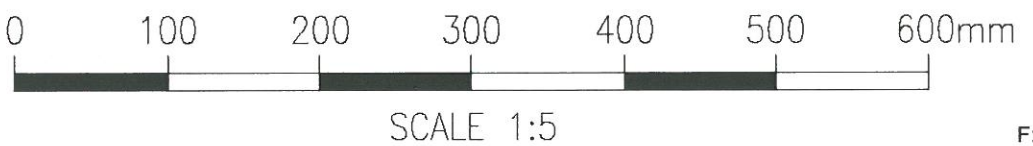
F:GEOT043/1

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

Borehole No: **BH57**

Start Depth: 3.00m
Finish Depth: 13.00m
Project No: FG5825
H No: 10632





SCALE 1:5

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
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DEFECT DESCRIPTIONS OF ENGINEERING BORELOGS

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

BOREHOLE NO.:	BH57
SHEET:	1 of 3
REFERENCE NO.:	H10616

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

LOCATION: Cut 21

PROJECT NO.:	FG5825	**SURFACE R.L.:**	112.4	**DRILLER:**	Geodrill
JOB NO.:	128/10A/901	**DATUM:**	AHD	**DATE DRILLED:**	20/08/09

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
3.0-3.25	WS						
3.36	J	50	Pl	S	O	FeSt	
3.42	J	50	Pl	S	O	FeSt	
3.64	J	10	Ir	R	O	Cn	
3.71	J	20	St	S	O	FeSt	
3.84	J	50	Pl	S	O	MnSt	
3.95	J	30	Pl	SR	O	FeSt	
4.01	J	20	Pl	SR	O	FeSt	
4.10	J	20	Pl	SR	O	FeSt	
4.15	J	20	Pl		C	FeSt	
4.15	J	60	Pl		C	Cl	
4.21-4.26	CZ						Gravel
4.32	J	10	Ir	R	C		
4.40	J	60	Pl	SR	O	Cn	
4.42	J	80	Pl	S	O	FeSt	200mm
4.42-4.55	BZ						
4.68	J	20	Pl	S	O	Cn	
4.71	J	30	Pl		C	Cl	

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.:	BH57
SHEET:	2 of 3
REFERENCE NO.:	H10616

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
4.8	J	60	Pl	S	O	Cn	
4.81	J	80	Cn		C	Cl	150mm Long
4.99	J	60	Pl		C		
5.01	J	60	Pl	S	O	FeSt	
5.08	J	30	Cn	SR	O	MnSt	
5.11	J	50	Pl		C		
5.35	J	20	St	S	O	Cn	
5.42	J	20	Pl	S	O	FeSt	
5.78	J	50	Pl	S	O	MnSt	
5.87	J	20	Pl	SR	O	MnSt	
5.92	J	30	Pl	S	O	FeSt	
6.14	J	40	Pl	S	O	FeSt	
6.18	J	30	Pl	S	O	FeSt	
6.26	J	60	Pl	SR	O	FeSt	
6.26	J	40	Pl	SR	O	FeSt	
6.34	J	20	Pl	R	O	FeSt	
6.38	J	40	Pl	R	O	MnSt	
6.45	J	40	Pl	R	O	FeSt	
6.46	J	40	Pl	S	O	FeSt	
6.48-8.15	BZ						HW
6.55	J	50	Pl	S	O	FeSt	
6.57	J	40	Pl		C	Cl	1mm
6.60	J	50	Pl		C		
6.66	J	20	Pl		C		
6.69	J	60	Pl		C	Cl	2mm
6.7-6.78	CZ						QZ Seam Within
6.83	J	10	Pl	S	O	FeSt	
6.87	J	20	Pl	SR	O	FeSt	
7.01	J	30	Pl	SR	O	MnSt	
8.09	J	30	Un	SR	O	FeSt	
8.15-8.30	WS						
8.3	J	80	Pl		C	MnSt	
8.42	J	30	Pl	S	O	MnSt	
8.47	J	30	Pl	S	O	MnSt	
8.52	J	30	Pl	S	O	MnSt	
8.56	J	30	Pl	S	O	MnSt	
8.63		30	Pl	S	O	MnSt	
8.68	J	30	Pl	S	O	MnSt	
8.95	J	10	Ir	R	O	Cn	
9.02	J	30	Pl	S	O	Cn	
9.63	J	20	Ir	R	O	FeSt	
9.66	J	80-90	Un	SR	O-C	MnSt	380mm Long
9.77	J	30	Pl	SR	O	FeSt	
9.89	J	60	Pl	S	O	MnSt	
9.95	J	50	Pl	SR	O	FeSt	
10.07	J	30	Pl	S	O	MnSt	
10.15	J	30	Pl	S	O	MnSt	
10.25-10.31	BZ						
10.42	J	40	Pl	SR	O	MnSt	
10.43	J	40	Pl	SR	O	MnSt	
10.47	J	40	Pl	SR	O	MnSt	
10.73	J	60	Pl	SR	O	MnSt	
10.92	J	30	Pl	S	O	MnSt	
11.25	J	30	Pl	SR	O	Cn	
11.26	J	60	Pl	S	O	MnSt	
11.47	J	50	St	S	O	MnSt	
11.50	J	60	Pl	S	O	MnSt	

BOREHOLE NO.:	BH57
SHEET:	2 of 3
REFERENCE NO.:	H10616

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
11.52-11.62	QZ						
11.62	J	80	PI	R	O	MnSt	300mm Long
11.87	J	40	PI	S	O	MnSt	
12.00	J	50	PI	S	O	MnSt	
12.08	J	20	PI	S	O	MnSt	
12.24	J	30	PI	S	O	MnSt	
12.24	J	80	PI	SR	O	MnSt	350mm Long
12.57	J	30	PI	S	O	MnSt	
12.74	J	30	PI	S	O	MnSt	
12.77	J	30	PI	S	O	MnSt	
12.89	J	30	PI	S	O	MnSt	
12.90	J	70	PI	R	O	MnSt	