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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH053
SHEET 1 of 1
REFERENCE No H10612

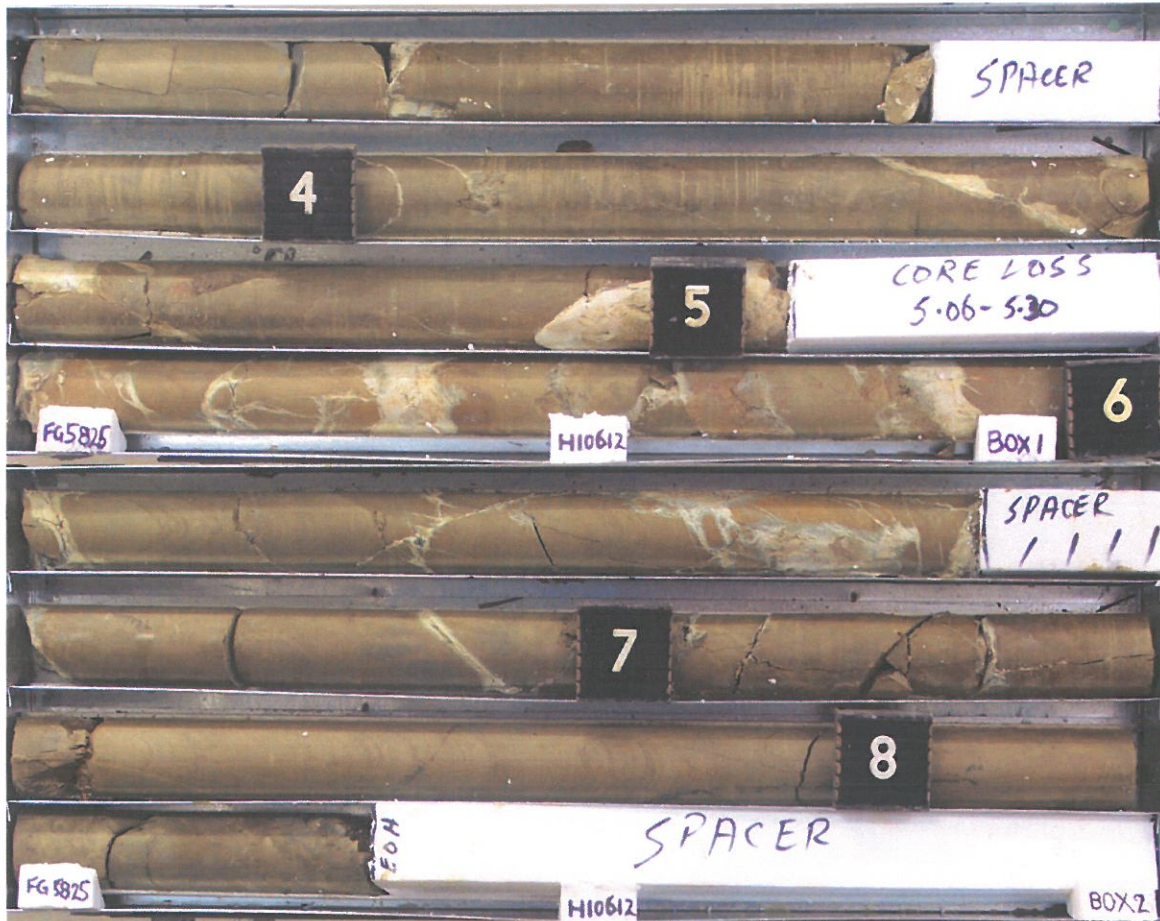
PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 19 COORDINATES 482905.7 E; 7080900.9 N
PROJECT No FG5825 SURFACE R.L. 112.20m PLUNGE DATE STARTED 19/8/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING DATE COMPLETED 19/8/09 DRILLER Geo Drill

DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT STRENGTH						DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
									EH	IH	M	J	V	U					
0	112.20					Clayey SILT (Colluvium) Pale brown with red mottling, moist, firm, intermediate plasticity.	(CI-ML)										2,3,3 N=6	SPT	
1					A														
110.70					B	Gravelly SILT (Colluvium) Pale brown to pale grey, moist, becoming dry, very stiff, intermediate plasticity. HW rock fragments throughout.	(MLG)											3,5,11 N=16	SPT
2																			
3					C													10,10,12 N=22	SPT
109.00					(0)	PHYLLITE (MW) Pale grey to brown-grey, fine grained. Weakly foliated, typically dipping at 50°.													
4					100 (0)	Defects closely spaced. Defects typically dipping at 10° - 30° and 70° - 90°. Defects often lined with white clayey silt and alteration halos or iron stained.												Is(50) = 0.14MPa Is(50) = 0.20MPa Is(50) = 0.44MPa Is(50) = 0.53MPa Is(50) = 0.85MPa	x x x x x
5					88 (17)													Is(50) = 0.12MPa Is(50) = 0.19MPa Is(50) = 0.16MPa	x o x
6							MW											FZ with pale grey clay infill (65mm wide) Jt, 70°, >20mm, white clay infill Is(50) = 0.34MPa	x
7					93 100 (0) (38)	Detailed defect descriptions are shown on Form GEOT 355/8 attached.												Is(50) = 0.07MPa Is(50) = 0.30MPa Is(50) = 0.73MPa	x x x
8																		Is(50) = 0.57MPa Is(50) = 1.31MPa Is(50) = 0.51MPa MC = 10.4%; UCS=2.47MPa Is(50) = 1.29MPa Is(50) = 0.57MPa	x x x U&S x
103.80					100	8.38m Cemented and brecciated.												Brecciated Is(50) = 0.57MPa	x
9						Borehole terminated at 8.4m													
10																			

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

LOGGED BY
JA

Project: **Bruce Highway Upgrade (Cooroy – Curra) Section A**
Borehole No: **BH53**
Start Depth: 3.20m
Finish Depth: 8.50m
Project No: FG5825
H No: 10612



SCALE 1:5

F:GEOT043/1

**DEFECT DESCRIPTIONS
OF ENGINEERING BORELOGS**
[CHARACTERISATION OF DEFECTS ARE IN ACCORDANCE WITH
ISRM SUGGESTED METHODS (1981)]

BOREHOLE NO.:	BH53
SHEET:	1 of 2
REFERENCE NO.:	H10612

PROJECT:	Bruce Highway (Cooroy – Curra) Section A Geotechnical Investigation		
LOCATION:	Cut 19		
PROJECT NO.:	FG5825	SURFACE R.L.:	112.20
DRILLER:	Geodrill		
JOB NO.:	128/10A/901	DATUM:	AHD
DATE DRILLED:	19/08/09		

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
3.2-3.45	J	90°	PL	S	O	Cn	
3.3	J	20°	IR	R	O	FeSt	
3.39	J	30°	PL	S	O	Cn	
3.45-4.15	J	90°	PL	S	O	FeSt	
3.9	J	50°	PL	S	O	FeSt	
4.0	J	20°	PL	S	O	FeSt	
4.13	J	60°	PL	S	O	FeSt	
4.3	J	60°	IR	SR	O	FeSt	
4.35	J	70°	PL	S	O	Cl	
4.44	J	70°	PL	S	O	FeSt	
4.49-4.57	WS	90°					Clay Seam
4.59	J	50°	PL	S	O	FeSt	
4.63	J	70°	PL	S	O	FeSt	
4.69	J	80°	PL	S	O	FeSt	200mm long
4.91	J	20°	PL	SR	O	FeSt	
4.91	J	80°	PL	S	O	Cl	
4.91-5.06	WS						Clay Seam
5.1-5.3	WS						Clay Seam

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.:	BH53
SHEET:	2 of 2
REFERENCE NO.:	H10612

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
5.31	J	90°	PL	S	O	FeSt	200mm long
5.37	J	20°	PL	S	O	FeSt	Clay seam throughout
5.43-5.59	WS						
5.45	J	45°	PL	-	O	Cl	
5.53	J	60°	PL	-	O	Cl	
5.66	J	20°	PL	-	C	Cl	
5.7	J	50°	PL	-	C	Cl	8mm thick
5.75	J	20°	PL	-	C	Cl	5mm thick
5.78-5.80	WS						Clay seam
5.80	J	30°	PL	-	C	Cl	
5.88-5.93	WS						Clay seam
6.0	J	30°	PL	S	O	FeSt, Cl	
6.05	J	70°	PL	S	O	FeSt	150 mm long
6.20	J	40°	PL	S	O	Cl	
6.21	J	60°	PL	S	O	FeSt	
6.28	J	70°	PL	S	O	Cl	1mm
6.39	J	20°	PL	S	O	FeSt	
6.39	J	70°	St	S	O	FeSt	Slight Cl
6.49	J	20°	PL	S	O	Cl	
6.49-6.61	WS						Clay seam
6.68	J	30°	PL	S	O	Cl	
6.71	J	75°	PL	SR	O	FeSt	
6.95	J	45°	PL	S	O	Cl	2mm
7.03	J	-	PL	S	O		Slight Cl
7.05	J	60°	PL	S	O	Cl	
7.11	J	10°	PL	-	C	Cl	
7.15	J	20°	PL	S	O	Cl	
7.15	J	90°	PL	S	O	Cl	350mm long
7.24	J	30°	PL	S	O		Slight Cl
7.3	J	10°	PL	S	O	Cl	
7.46	J	20°	PL	SR	O	FeSt	
7.7	J	30°	PL	S	O	MnSt	
7.86	J	60°	IR	R	O	MnSt	
7.94	J	30°	PL	S	O	MnSt	
8.25	J	65	IR	SR	O	MnSt	