Connell Wagner

Borehole: BH-02

Commenced: 21/07/08
Completed: 21/07/08

Client: Department of Main Roads (DMR)
Project: Bruce Highway Road Cutting - Slope Stability Investigation
Project Number: 36826-001-01
File Name: P:\WP\36826\Winlogs

Location:
Easting: 464878
Northing: 7104529
Elevation: 77m
Inclination: 90°

Sheet: 1 of 3

Drilling Information				Soil Description				Testing		Strata Information		
Groundwater	Drilling Method	Sample Type	Depth	USC	Material Type; Colour; Plasticity Or Particle Characteristics; Structure	Moisture Content	Consistency/ Relative Density (VS S F St VSt H / VL L MD D VD H)	Comments/ Test Results/ Origin	SPT Values Blows/150mm	Graphic Log	Elevation (m)	Depth (m)
	AV				**TARMAC**			Fill			77.0	0.0
					ROADBASE							
				CI	**Sandy CLAY** Yellow-grey, medium plasticity, stiff, slightly moist	M		Residual Soil				
				XW	**Meta-SILTSTONE** Grey-orange, extremely weathered, very low strength			Bedrock				
			1.0								76.0	1.0
		SPT							SPT @ 1.00m 24, 25, 5/50mm N* = 55			
			2.0								75.0	2.0
				XW	**Meta-SILTSTONE / Meta-SANDSTONE** Alternate layers of Meta-Siltstone and Meta-Sandstone, orange-grey, extremely weathered, very low strength							
	RC	SPT							SPT @ 2.50m 11, 12, 22 N = 34			
			3.0								74.0	3.0
		SPT							SPT @ 3.50m 12, 16, 21 N = 37			
			4.0		**Begin NMLC Rock Log @ -4.00m**						73.0	4.0
			5.0								72.0	5.0

Driller: Geodrill
Drill Type: Hydrapower Scout
Remarks:
Support: Hard Casing 2.50m
Logged By: RA
Checked By: MS
Logged Date: 21/07/08
Checked Date: 08/08/08

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Drilling Information				Rock Description			Intact Strength			Rock Mass Defects		Strata Information		
Groundwater	Drilling Method	Core Recovery	Depth	Weathering	Material Type; Colour; Plasticity Or Particle Characteristics; Structure	RQD (%)	Estimated Strength (VL L M H VH EL EH)	Is(50) A/D (MPa)	UCS (MPa)	Defect Spacing (m) (0.006 0.02 0.06 0.2 0.6)	Defect Description (depth, type, angle, roughness, infill, thickness)	Graphic Log	Elevation (m)	Depth (m)
			4.0		Begin NMLC Rock Log at -4.00m									
	NMLC	100		MW-HW	**Meta-SANDSTONE** Orange-grey, moderately to highly weathered, low to medium strength	0					Refer to attached defects sheet		-4.0	4.0
					- Mainly grey									
		100		SW	- Orange-grey, moderately to highly weathered, low to medium strength	0								
			5.0		**CLAY Seam (30mm)** Brown-orange, medium plasticity, moist, firm								-5.0	5.0
		82			**Meta-SANDSTONE** Orange-grey, slightly weathered, medium to high strength	0								
				XW	**Meta-SILTSTONE** Mainly grey, extremely weathered, very low strength									
				SW-MW	**CORE LOSS (0.20m)**									
					Meta-SANDSTONE									
			6.0		**Meta-SILTSTONE** Orange-grey, layered, extremely weathered, very low strength								-6.0	6.0
				SW	**Meta-SANDSTONE** Orange-grey, slightly to moderately weathered, medium strength, with grey bands of siltstone	0								
		57			**CLAY Seams (30-50mm)** Brown, medium plasticity, moist, firm									
			7.0		**LIMESTONE** Dark grey, with white calcite viens, slightly weathered, high to very high strength	0							-7.0	7.0
		100												
		40			**CORE LOSS (0.20m)**	0								
				XW	**LIMESTONE** Grey, extremely weathered, low to very low strength									
		100	8.0			0							-8.0	8.0

Driller: Geodrill
Drill Type: Hydrapower Scout
Remarks:
Support: Hard Casing 2.50m
Logged By: RA
Checked By: MS
Date Logged: 21/07/08
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Borehole: BH-02

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Drilling Information				Rock Description			Intact Strength			Rock Mass Defects		Strata Information		
Groundwater	Drilling Method	Core Recovery	Depth	Weathering	Material Type; Colour; Plasticity Or Particle Characteristics; Structure	RQD (%)	Estimated Strength (VL L M H VH EH)	Is(50) A/D (MPa)	UCS (MPa)	Defect Spacing (m) (0.006 0.02 0.06 0.2 0.6)	Defect Description (depth, type, angle, roughness, infill, thickness)	Graphic Log	Elevation (m)	Depth (m)
	N M L C	70		FR-SW	**LIMESTONE (continued)** Dark grey, fresh to slightly weathered, very high strength	50		4.09 (A) 4.88 (D)	121.74					
					CORE LOSS (0.30m)									
			9.0		**End of Borehole @ -9.00m**								-9.0	9.0
			10.0										-10.0	10.0
			11.0										-11.0	11.0
			12.0										-12.0	12.0
			13.0										-13.0	13.0

Driller: Geodrill
Drill Type: Hydrapower Scout
Remarks:
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Grey Scale

Colour Scale

Borehole Number			BH02
Page	1	of	1
Depth	4.00	to	9.00
Project	Bruce Highway		
Number	36826-001-01-7D-7G		
Client	Department of Main Roads		

Project: Bruce Highway Road Cutting - Slope Stability Investigation
BH ID: BH-02

Depth (m)	Type	Dip (Degrees)	Nature of Infilling	Infill Consistency	Roughness (Profile, JRC @ 100mm)	Defect Spacing	Defect Weathering
4.00	Joint		Clean		Smooth - Planar	Very Close	Moderately Weathered
4.17	Shear		Cohesive (clay/silts)	Soft / Loose	Smooth - Planar	Extremely Close	Highly Weathered
4.20	Joint	80°	Clean		Smooth - Planar	Close	Moderately Weathered
4.30	Joint	10°	Cohesive (clay/silts)	Soft / Loose	Smooth - Planar	Very Close	Moderately Weathered
4.40	Shear		Non Cohesive (sandy)	Soft / Loose	Rough - Planar	Extremely Close	Moderately Weathered
4.50	Bedding	5-10°	Clean		Rough - Planar	Very Close	Slightly Weathered
4.60	Joint	70°	Cohesive (clay/silts)	Soft / Loose		Very Close	Moderately Weathered
4.65	Shear		Cohesive (clay/silts)	Firm / Med. Dense		Extremely Close	Highly Weathered
4.70	Joint	5°	Clean		Rough - Planar	Very Close	Moderately Weathered
4.80	Joint	10°	Clean		Rough - Planar	Very Close	Slightly Weathered
4.90	Joint	80°	Clean		Smooth - Planar	Close	Slightly Weathered
5.00	Joint	10°	Clean		Smooth - Undulating	Close	Slightly Weathered
5.10	Joint	10°	Cohesive (clay/silts)	Soft / Loose	Smooth - Planar	Close	Slightly Weathered
5.40	Joint	70°	Clean		Smooth - Undulating	Close	Slightly Weathered
5.50	Bedding	10°	Non Cohesive (sandy)	Firm / Med. Dense	Smooth - Planar	Extremely Close	Highly Weathered
5.60	Joint	50-90°	Clean		Smooth - Undulating	Extremely Close	Slightly Weathered
5.70	Joint		Clean		Rough - Planar	Extremely Close	Slightly Weathered
5.80	Shear		Cohesive (clay/silts)	Soft / Loose	Smooth - Planar	Extremely Close	Highly Weathered
5.90	Joint	50-70°	Non Cohesive (sandy)	Soft / Loose	Smooth - Planar	Very Close	Slightly Weathered
6.00	Joint	80°	Clean		Smooth - Planar	Very Close	Slightly Weathered
6.10	Shear		Cohesive (clay/silts)	Soft / Loose		Extremely Close	Decomposed
6.20	Joint		Clean		Rough - Planar	Close	Slightly Weathered
6.30	Joint		Clean		Smooth - Planar	Very Close	Slightly Weathered
6.40	Joint		Clean		Smooth - Planar	Very Close	Slightly Weathered
6.50	Joint	5°	Clean		Smooth - Planar	Very Close	Slightly Weathered
6.60	Joint	60-70°	Clean		Rough - Planar	Medium	Slightly Weathered
7.00	Joint	5-10°	Clean		Smooth - Planar	Medium	Slightly Weathered
7.10	Joint	10°	Clean		Smooth - Planar	Medium	Slightly Weathered
7.20	Joint	70°	Clean		Smooth - Planar	Close	Slightly Weathered
7.30	Joint	60-80°	Clean		Smooth - Planar	Close	Slightly Weathered
7.60	Joint		Clean		Smooth - Planar	Extremely Close	Slightly Weathered
7.70	Shear			Soft / Loose		Extremely Close	Decomposed
7.80	Joint		Clean			Extremely Close	Moderately Weathered
7.90	Joint		Clean			Very Close	Slightly Weathered
8.00	Joint	10°	Clean		Rough - Undulating	Medium	Slightly Weathered
8.10	Joint	50°	Clean		Rough - Undulating	Medium	Slightly Weathered
8.50	Joint	10°	Clean		Rough - Undulating	Wide	Slightly Weathered
8.60	Shear		Non Cohesive (sandy)	Soft / Loose	Rough - Undulating	Extremely Close	Moderately Weathered