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REPORT OF BOREHOLE: BH430

SHEET: 1 OF 4

DRILL RIG: Fox B40

CONTRACTOR: Schneider Drilling Pty Ltd

LOGGED: BC DATE: 24/8/11

CHECKED: NK DATE: 27/9/11

CLIENT: McConnell Dowell Constructors (Aust) P/L COORDS: 85743.7 m E 59604.3 m N GCCC

PROJECT: Gold Coast Rapid Transit SURFACE RL: -1.76 m DATUM: AHD

LOCATION: Zone 4 INCLINATION: -90°

JOB NO: 117632047 HOLE DEPTH: 27.10 m

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
RT	M		0	-1.76					BOULDERS angular 200-400 mm river channel bed protection			
			1									
			2									
			2.70									
			-4.46									
	3			SPT 3.20-3.50 m 27, 30/149 mm HB N>30		SM	SAND fine to medium grained, angular, pale brown					
	4											
	5			SPT 4.70-5.00 m 25, 30/149 mm N>30							D - VD	
	6											
	6.60			SPT 6.50-6.95 m 12, 7, 5 N=12		SM	SAND fine to coarse grained, sub-angular to angular, dark grey, trace clay, with trace fine angular fine to gravel sized shell fragments					
-8.36												
7												
8		SPT 8.00-8.45 m 1, 1 N>1										
9												
9.00												
-10.76									fine to coarse, slight organic odour			
10		SPT 9.50-9.93 m 12, 25, 30/130 mm N>55										D - VD
10.00												

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GAP gINT FN. F01a
RL3



REPORT OF BOREHOLE: BH430

SHEET: 2 OF 4

DRILL RIG: Fox B40

CONTRACTOR: Schneider Drilling Pty Ltd

LOGGED: BC DATE: 24/8/11

CHECKED: NK DATE: 27/9/11

CLIENT: McConnell Dowell Constructors (Aust) P/L COORDS: 85743.7 m E 59604.3 m N GCCC

PROJECT: Gold Coast Rapid Transit SURFACE RL: -1.76 m DATUM: AHD

LOCATION: Zone 4 INCLINATION: -90°

JOB NO: 117632047 HOLE DEPTH: 27.10 m

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
RT	L		10	-11.76			SM	SAND fine to coarse grained, slight organic odour	W	D - VD		
			11									
			11.55	-13.31	SPT 12.35-12.46 m 30/110 mm HB		CI-CH	CLAY medium to high plasticity, pale grey	M	St - VSt		
			12	-13.76				with relict rock structure, stained orange brown in places and very stiff to hard in places				
			13					For Continuation Refer to Sheet 3				
			14									
			15									
			16									
			17									
			18									
			19									
			20									

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GAP gINT FN. F01a
RL3



REPORT OF BOREHOLE: BH430

SHEET: 3 OF 4

DRILL RIG: Fox B40

CONTRACTOR: Schneider Drilling Pty Ltd

LOGGED: BC DATE: 24/8/11

CHECKED: NK DATE: 27/9/11

CLIENT: McConnell Dowell Constructors (Aust) P/L COORDS: 85743.7 m E 59604.3 m N GCCC

PROJECT: Gold Coast Rapid Transit SURFACE RL: -1.76 m DATUM: AHD

LOCATION: Zone 4 INCLINATION: -90°

JOB NO: 117632047 HOLE DEPTH: 27.10 m

Drilling					Field Material Description					Defect Information				
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $I_{s(50)}$ MPa	DEFECT DESCRIPTION & Additional Observations			AVERAGE DEFECT SPACING (mm)	
				10										
				11										
				12										
				12.80			Continuation of Sheet 2							
				13	-14.56		ARGILLACEOUS MUDSTONE fine grained, pale grey to dark grey with orange staining, thinly to thickly laminated (<6 mm-<20 mm) sub-horizontal 10°	HW		12.85 m: J, 0°, Un-St, Sm, Sn 13.00 m: J, 80°, Un, Sm, Sn, incipient fracture 13.10 m: J, 10°, Pl, Sm, Sn 13.26 m: J, 10°, Pl, Sm, Sn 13.35 m: J, 10°, Pl, Sm, Sn 13.40 m: J, Un, Sm, Sn-Vr 13.50 m: J, 60°, Un, Ro, Sn 13.55 m: J, 40°, Un, Ro, Vr, clay 13.64 m: J, 10°, Pl, Sm, Sn 13.67 m: J, 10°, Un, Sm, Sn 13.75 m: J, 10°, Un, Ro, Vr 13.80 m: J, 10°, Pl, Vr, 3 mm, recovered soft clay 13.83 m: J, 10°, Pl, Sm, Sn 13.90 m: J, 10°, Pl, Sm, Sn 14.40 m: V, 10°, Pl, Sm, Sn, quartz 14.46 m: J, 40°, Un, Sm, Vr, clay 14.50 m: J, 10°, Pl, Sm, Sn 14.60 m: J, 10°, Pl, Sm, Sn 14.75 m: J, Un, Ro, Sn, 2 mm, quartz vein 14.80 m: J, 10°, Un, Ro, Sn 14.90 m: J, 10°, Pl, Sm, Vr, clay 15.15 m: J, 10°, Pl, Sm, Sn 15.25 m: CZ, 10°, Un, Sm, 40 mm, infilled with soft grey clay and angular gravel sized fragments of rock (source) 15.30-15.45 m: FZ, Sn, recovered non intact 15.45 m: CZ, 10°, Un, Ro, 50 mm, infilled with soft clay and gravel sized fragments of rock (source) 15.80 m: J, 40°, Un, Ro, Sn 15.96 m: J, Un, Ro, Sn 16.15 m: J, 10°, Un, Ro, Sn 16.20 m: CZ, 10°, 70 mm, recovered non intact gravel fragments in clay matrix 16.35 m: J, 80°, Un, Sm, Sn 16.40 m: J, 10°, Un, Sm, Sn 16.55 m: J, Pl, Sm, Vr, clay 16.70 m: J, 40°, Un, Sm, Sn 16.75-16.90 m: J, 80°, Un, Ro, Sn 16.90 m: J, 10°, Pl, Sm, Sn 17.05-17.10 m: FZ, 10°, Un, Ro, Sn 17.20-17.30 m: DB 17.35 m: J, 10°, Un, Sm, Vr, clay 17.40 m: J, 10°, Pl, Sm 17.58 m: J, 20°, Pl, Cn 17.65-17.70 m: J, Pl, Sm, Vr 17.75 m: J, 10°, Pl, Sm, Cn 17.80 m: J, 30°, Un, Sm, Cn 17.90-18.00 m: J, 80°, Un, Ro, Sn 18.00-18.20 m: CZ, 10°, Pl, Ro, Cn, low strength zone 18.35 m: J, 70°, Un, Ro, Cn 18.40-18.70 m: HB, disturbed during handling 18.70-18.90 m: DB, recovered non intact 18.90-19.25 m: FZ, subhorizontal and subvertical fractures stepped to undulating rough and clean 19.25-19.50 m: FZ, recovered non intact fine to medium gravel sized fragments with clay 19.70 m: J, 10°, Un, Sm, Cn 19.75 m: J, 60°, Un, Ro, Cn				
				14	-14.35		MUDSTONE fine grained, dark grey and pale grey with orange staining, thinly to thickly laminated (<6 mm-<20 mm) sub-horizontal	HW						
				15	-16.11		to 15.10 m recovered non intact							
				15	-16.66		to 15.70 m recovered low strength	MW						
				16	-17.41		ARGILLITE fine grained, dark grey, with quartz veining							
				16	-17.76		to 16.1 m recovered non intact							
				17										
				18										
				19										
				20										

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GAP gINT FN. F02a
RL3



REPORT OF BOREHOLE: BH430

SHEET: 4 OF 4

DRILL RIG: Fox B40

CONTRACTOR: Schneider Drilling Pty Ltd

LOGGED: BC DATE: 24/8/11

CHECKED: NK DATE: 27/9/11

CLIENT: McConnell Dowell Constructors (Aust) P/L COORDS: 85743.7 m E 59604.3 m N GCCC
PROJECT: Gold Coast Rapid Transit SURFACE RL: -1.76 m DATUM: AHD
LOCATION: Zone 4 INCLINATION: -90°
JOB NO: 117632047 HOLE DEPTH: 27.10 m

Drilling					Field Material Description					Defect Information				
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH $I_{s(50)}$ MPa	DEFECT DESCRIPTION & Additional Observations			AVERAGE DEFECT SPACING (mm)	
NMLC			100 0 (0)	20	20.20		ARGILLITE fine grained, dark grey, with quartz veining to 20.3 m pale grey coloured to 20.5 m recovered non intact	MW SW		19.80 m: V, 10°, Un, Ro, Cn, 5 mm 19.95 m: DB 20.00 m: J, 60°, Un, Ro, Cn 20.10 m: J, 60°, Un, Ro, Ct 20.10-20.30 m: J, 70°, Un, Ro, Cn 20.30 m: J, 10°, Pl, Ro, Ct 20.50-20.80 m: J, 80°, Un, Ro, Ct 20.90 m: J, 40°, Un, Sm, Vr, clay <1 mm 20.96 m: J, 30°, Pl, Sm, 3 mm, clay infill 21.05-21.25 m: J, 70°, Un, Ro, Cn 21.60-21.64 m: CZ, 10°, Pl, Ro, 40 mm, recovered gravel sized rock fragments and sandy clay infill 21.70-21.90 m: CZ, 10°, recovered non intact angular gravel fragments in soft clay matrix 22.00 m: J, 30°, Un, Ro, Cn 22.20 m: J, 60°, Un, Ro, Cn 22.30 m: J, 80°, Un, Ro, Cn 22.30-22.50 m: recovered non intact gravel fragments medium strength 22.50 m: J, 40°, Pl, Sm, Cn 22.70-22.90 m: J, 80°, Un, Sm, Vr, clay 23.00 m: J, 80°, Un, Sm, Vr, clay 23.20-23.70 m: J, Un, Sm, Vr, fractures spaced 40-110 mm, 10-40° 23.70-23.90 m: recovered non intact, rock strength very high 24.00 m: J, 10°, Pl, Sm, Ct 24.10 m: J, 40°, Pl, Sm, 3 mm, recovered with soft clay infill 24.15-24.30 m: CZ, recovered angular gravel sized rock fragment in clay matrix 24.45-24.63 m: CZ, recovered angular gravel fragments in clay matrix 24.60-24.80 m: DB, recovered non intact 24.90-26.00 m: rock with joints spaced 20-60 mm, 10-40° 25.50 m: SZ, Pl, Sm, 10 mm, infilled with fine sized gravel rock fragments in clay matrix 26.05 m: to 27.1 m recovered non intact possible fracture zone with drilling breaks, rock strength generally medium strength				
				20.20										
				20.96										
				20.40										
				22.16										
				21										
			79 0 (31)	21	21.25									
					21.40									
					21.50									
					23.26									
							CORE LOSS							
							to 21.55 m recovered non intact							
			100 11 (11)	22			ARGILLITE fine grained, dark grey, with quartz veining							
				23										
			100	24										
			100 0 (20)	25										
			100 0 (0)	26										
			100 50 (75)	27										
			95 0 (0)	28										
				29										
				30										
				30	27.10		END OF BOREHOLE @ 27.10 m DRILLED OVER WATER							
					28.86									
				28										
				29										
				30										

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