

 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL						Site M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI-CONTRACT 2			Borehole Number RC1259	
Machine: Flush : Core Dia: mm Method :		Casing Diameter 140mm cased to 7.50m		Ground Level (mOD) 122.20		Client Highways Agency		Job Number WAL060099A		
		Location 445298 E 363468 N		Dates 26/09/2006-29/09/2006		Engineer Arup		Sheet 1/4		
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00			0	0				Inspection Pit.		
			0	0			(1.20)			
1.20	38	0	0	0	1.4/4,3,2,3 SPT N=12 26/09/2006:	121.00	1.20 (0.30)	Open Hole.		
1.50					26/09/2006: 26/09/2006:	120.70	1.50	Poor recovery. MADE GROUND. Recovered as brown clay with gravel sized fragments of sandstone, mudstone and coal.		
1.50-1.95	25	0	0	0	27/09/2006:					
3.00-3.45					1.2/2,3,3,2 SPT N=10					
3.00	35	11	11	0			(4.50)			
4.50-4.77					4.4/3,35 SPT 38/116					
4.50	15	0	0	0						
6.00-6.45					2.3/3,4,5,5 SPT N=17	116.20	6.00	Poor recovery. MADE GROUND. Recovered as fragments of yellow brown subangular gravel and cobble sized fragments of sandstone.		
6.00	0	0	0	0			(1.50)			
7.50-7.95					2.2/3,3,4,5 SPT N=15	114.70	7.50	No recovery.		
7.50	100	0	0	0			(1.50)			
9.00-9.45					4.4/7,11,8,7 SPT N=33	113.20	9.00 (0.40)	Possible MADE GROUND. Recovered as soft and firm grey with occasional yellow brown mottling clay with subangular, fine to coarse of gravel sized fragments of mudstone and coal. Possible		
9.00	91	48	28	0						
9.40			0	0		112.80	9.40	Weak locally very weak, grey MUDSTONE. With occasional fossilized plant remains and occasional ironstone bands (100mm). Where core is intact, very closely to closely		
9.50										
Remarks								Scale (approx) 1:50	Logged By OP	
								Figure No.		




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		Location 445298 E 363468 N		Dates 26/09/2006- 29/09/2006		Engineer Arup		Sheet 2/4		
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.50	73	23	0	0				spaced, horizontal and subhorizontal, rough, clean. Occasional vertical and subhorizontal, undulating, rough and clean.		
	24	0	0	0			(4.42)			
12.00 12.00-12.14					6/35 SPT 6'/75 35/65			From 12.0m to 13.50m; poor recovery.		
13.50			0	0						
13.82 14.00			0	0		108.38 108.20	13.82 (0.18) 14.00	Very weak and weak vitreous black COAL. Generally extremely closely to very closely spaced, randomly orientated, rough and smooth with occasional pyrite coating < 1mm thick.		
			0	0			(0.85)	Very weak grey MUDSTONE locally clay with some fossilized plant remains.		
14.85 15.00	91	19	19	0		107.35	14.85	Weak, locally very weak grey MUDSTONE. With occasional fossilized plant remains. Where intact fractures are extremely closely to closely spaced horizontal and subhorizontal, smooth and rough, clean. From 14.90m to 15.08m; some medium gravel sized nodules of ironstone. From 15.1m to 15.57m; ironstone. From 15.60m to 15.66m; ironstone.		
15.68	100	57	41	0	P1		(2.83)	At 16.20m; 6mm band of black carbonaceous mudstone. From 16.35m to 16.80m; recovered as soft, grey clay with subangular to subrounded, fine to coarse gravel sized fragments of mudstone and ironstone.		
16.50			0	0	27/09/2006: 27/09/2006: 27/09/2006: DRY					
16.93					28/09/2006: P2			From 17.40m to 17.50m; ironstone.		
17.68 17.68 17.87 18.00	94	85	56	0	P3	104.52	17.68	Moderately weak dark grey MUDSTONE with extremely closely spaced thin and thick laminae and lenses (up to 55mm diameter) of light grey fine grained sandstone. Fractures are generally very closely to medium spaced, horizontal and subhorizontal, planar, rough and smooth, clean. From 17.68m to 17.87m; grey and light grey thinly and thickly interlaminated siltstone and fine grained sandstone. From 17.74m to 17.80m; with dewatering structures. From 18.00m; laminae and lenses of sandstone become thin and extremely closely to closely spaced. From 18.53m to 18.88m; moderately strong grey thinly interlaminated mudstone and siltstone. From 18.88m to 19.16m; moderately strong grey fine grained sandstone. From 18.98m to 19.16m; extremely close to very closely spaced thin and thick laminae of carbonaceous siltstone. Between 19.16m and 20.08m; with dewatering		
18.53			0	0			(2.40)			
18.88			0	0						
19.16	97	93	76	0						
19.50			0	0	Water strike(1) at 19.50m, no rise after 20 mins. U4					
19.64-19.88										
Remarks								Scale (approx) 1:50	Logged By OP	
								Figure No.		



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Core Dia: mm		Location 445298 E 363468 N		Dates 26/09/2006- 29/09/2006		Engineer Arup		Sheet 3/4		
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
20.08						102.12	20.08	structures. From 19.20m to 19.26m; ironstone.		
	100	76	71	0				Moderately strong light grey fine grained SANDSTONE. With occasional thin discontinuous laminae of carbonaceous mudstone.		
21.00							(1.67)	From 20.35m; no laminae of carbonaceous siltstone. From 20.71m to 20.81m; ironstone.		
21.00-21.52			0	0	U5			From 21.23m to 21.61m; discontinuities: 75 degrees, planar, rough, clean.		
21.60			0	0		100.45	21.75	At base; thinly and thickly interlaminated fine grained sandstone and siltstone.		
21.76			0	0		100.00	22.20	Weak, locally very weak dark grey MUDSTONE locally a clay. From 21.84m to 21.88m; ironstone.		
22.20	96	67	39	0				Moderately strong locally weakened dark grey and grey thinly and thickly interlaminated MUDSTONE and SILTSTONE with medium spaced thin beds with iron staining. Fractures are closely to medium spaced, horizontal, planar, smooth, rough. Occasional clay coating up to 1mm thick.		
22.50										
	95	60	35	0						
24.00										
24.41	84	69	53	0	P6					
							(6.42)			
25.50										
	100	47	7	0	P7					
26.50										
27.00										
	96	7	39	0						
28.50			0	0		93.58	28.62	Very weak black vitreous COAL with occasional white mineral coating generally <1mm thick.		
28.62			0	0			(0.57)			
29.19						93.01	29.19	Weak, locally very weak, grey MUDSTONE. With some fossilized plant remains. From 29.19m to 29.25m; grey clay with subangular to subrounded, fine to coarse gravel sized fragments of mudstone and coal.		
	95	67	46	0			(1.11)			
30.00										
Remarks								Scale (approx) 1:50	Logged By OP	
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		Location 445298 E 363468 N		Dates 26/09/2006-29/09/2006		Engineer Arup		Sheet 4/4		
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
30.30			0	0		91.90	30.30	Moderately strong thinly and thickly interlaminated light grey fine grained SANDSTONE and dark grey carbonaceous SILTSTONE. Fractures are extremely closely to closely spaced horizontal and subhorizontal, rough. Occasional clay infill, up to 8mm thick. From 30.73m to 30.91m; some gravel sized nodules of ironstone.		
			0	0			(1.06)			
31.36	97	22	0	0		90.84	31.36	Very weak and weak light grey MUDSTONE. Largely non-intact; where intact extremely closely to closely spaced horizontal and sub horizontal, rough, clean.		
31.50	94	40	16	0			(1.07)			
32.15			0	0	U8	89.77	32.43	Between 32.15m and 32.43m; moderately strong grey fine grained sandstone with extremely closely to closely spaced laminae of carbonaceous siltstone. Very weak and weak dark grey MUDSTONE locally a clay. Where intact fractures are very closely to medium spaced horizontal and subhorizontal rough and smooth, generally clean with occasional clay infill.		
32.15-31.36										
32.43	97	60	31	0						
33.75							(3.14)			
	57	9	0	0						
35.20			0	0	4.11/18.9.6.8 28/09/2006:19.50m	86.63	35.57	MUDSTONE recovered as stiff grey clay with subangular to subrounded fine to coarse gravel sized fragments of mudstone.		
35.20-35.65					28/09/2006: SPT N=41	86.28	(0.35)			
35.57	95	79	37	0	28/09/2006: 29/09/2006:		35.92	NO RECOVERY.		
							(0.70)			
36.55			0	0		85.58	36.62	Very weak and weak black vitreous COAL. Fractures are very closely to medium spaced horizontal, smooth and stepped. Occasional pyrite coating <1mm thick.		
							(0.82)			
37.44			0	0		84.76	37.44	Weak thinly and thickly interlaminated grey MUDSTONE and SILTSTONE. With some fossilized plant fragments.		
37.48			0	0		84.62	37.58			
37.58	86	51	48	0				Moderately strong grey fine grained SANDSTONE with occasional thin black convoluted laminae of carbonaceous siltstone and mudstone and dewatering structures. Fractures are very closely to medium spaced subhorizontal rough, clean. From 37.68m to 37.73m; with grey clay. From 38.27m to 38.28m; with grey clay.		
38.10							(1.32)			
38.70-38.90					U9	83.30	38.90	At 38.87m; ironstone nodule with some pyrite mineralisation.		
							(0.80)	Weak grey thinly and thickly interlaminated MUDSTONE and SILTSTONE.		
					29/09/2006:	82.50	39.70	Complete at 39.70m		
Remarks								Scale (approx) 1:50	Logged By OP	
								Figure No.		