

Site Investigation Report for land off
Gatewen Road, Wrexham

Appendix 6

Small Diameter Borehole Logs

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site GATEWEN ROAD, WREXHAM				Number WS01	
Machine : Archway Dart 239 Method : Drive-in Windowless Sampler		Dimensions 150mm to 4.00m		Ground Level (mOD)		Client Bellway Home North West				Job Number 7791			
		Location (Observed measurements)		Dates 27/05/2021		Engineer Coopers (Chester) Ltd				Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	Instr		
0.00-0.20	B		1,1/2,2,2,2		(0.20)	TOPSOIL. Grass over dark brown, slightly clayey, slightly gravelly, sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Contains rootlets throughout.							
0.20-0.60	B				0.20								
					(0.40)								
0.60-1.80	B				0.60	Orangish brown, slightly gravelly, slightly clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.							
1.00-1.45	SPT N=8				(1.20)	Firm, reddish brown, slightly gravelly, silty, sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Low cobble content.							
1.80-2.95	B		2,2/2,3,3,3		1.80	Firm, brown, slightly sandy, silty, very gravelly CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.							
2.00-2.45	SPT N=11				(1.15)								
2.95-2.45	B		3,2/2,2,2,2		2.95	Light brown, slightly clayey, very gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including coal. At 3.00m: Loose							
3.00-3.45	SPT N=8				(1.50)								
4.00-4.45	SPT N=11		2,2/3,2,3,3		4.45	At 4.00m: Medium dense							
						Complete at 4.45m							
Remarks Location CAT scanned prior to drilling. Hand dug inspection pit dug to 1.20m. Borehole not cased. Sides stable during drilling. No groundwater during drilling. Monitoring well installed between surface and 4.00m, comprising 1.00m plain pipe and 3.00m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone. Unable to take Shear vane, clay to disseminated. SPT energy ratio = 69%. Borehole drilled by Earth Engineering Ltd. Rig Ref: Archway Dart 239.									Scale (approx) 1:40	Logged By ST			
									Checked By PRS				

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk		Site GATEWEN ROAD, WREXHAM		Number WS02	
Machine : Archway Dart 239 Method : Drive-in Windowless Sampler		Dimensions 150mm to 4.00m		Ground Level (mOD)		Client Bellway Home North West		Job Number 7791	
		Location (Observed measurements)		Dates 27/05/2021		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	TOPSOIL. Grass over dark brown, slightly clayey, slightly gravelly, sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Contains rootlets throughout. Firm, reddish brown, slightly gravelly, silty, sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
0.30-1.00	B				0.30				
1.00-1.45 1.00-2.00 1.20	SPT N=7 B SV 40**kPa		2,2/1,2,2,2						
1.50	SV 70kPa								
1.70	SV 110kPa								
1.90 2.00-2.45 2.00-3.00	SV 114kPa SPT N=6 B		1,1/2,1,2,1		(3.30)	At 1.50m: Medium strength At 1.60m: Stiff At 1.70m: High strength At 2.40m: Firm			
3.00-3.45	SPT N=25		2,2/4,9,6,6						
3.60-4.45	B				3.60	Firm, brown, slightly sandy, silty, very gravelly CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Low cobble content.			
4.00-4.45	SPT N=34		5,5/7,9,7,11		(0.85)				
					4.45	Complete at 4.45m			
Remarks Location CAT scanned prior to drilling. Hand dug inspection pit dug to 1.20m. Borehole not cased. Sides stable during drilling. No groundwater during drilling. Monitoring well installed between surface and 4.00m, comprising 1.00m plain pipe and 3.00m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone. Samples dry. **Shear vane shattered. False shear. SPT energy ratio = 69%. Borehole drilled by Earth Engineering Ltd. Rig Ref: Archway Dart 239.							Scale (approx) 1:40	Logged By ST	Checked By PRS

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk		Site GATEWEN ROAD, WREXHAM		Number WS03	
Machine : Archway Dart 239 Method : Drive-in Windowless Sampler		Dimensions 150mm to 4.00m		Ground Level (mOD)		Client Bellway Home North West		Job Number 7791	
		Location (Observed measurements)		Dates 27/05/2021		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	TOPSOIL. Grass over dark brown, slightly clayey, slightly gravelly, sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Contains rootlets throughout.			
0.30-1.00	B				0.30				
1.00-1.45	SPT N=10		2,2/3,2,2,3						
1.00-2.00	B								
1.30	SV 74kPa					Below 1.20m: Becomes gravelly At 1.30m: Medium strength			
1.60	SV 60kPa								
1.90	SV 80kPa				(3.00)				
2.00-2.45	SPT N=20		2,3/4,4,6,6			At 1.90m: High strength			
2.00-3.00	B								
2.80	SV 120kPa								
3.00-3.45	SPT N=40		6,8/7,8,13,12						
3.00-3.30	B								
3.30-4.45	B				3.30	Stiff, brown, slightly sandy, silty, very gravelly CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including coal. Low cobble content.			
					(1.15)				
4.00-4.45	SPT N=38		7,8/11,8,10,9						
					4.45	Complete at 4.45m			
Remarks Location CAT scanned prior to drilling. Hand dug inspection pit dug to 1.20m. Borehole not cased. Sides stable during drilling. No groundwater during drilling. Monitoring well installed between surface and 4.00m, comprising 1.00m plain pipe and 3.00m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone. SPT energy ratio = 69%. Borehole drilled by Earth Engineering Ltd. Rig Ref: Archway Dart 239.							Scale (approx) 1:40	Logged By ST	Checked By PRS

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk		Site GATEWEN ROAD, WREXHAM		Number WS04	
Machine : Archway Dart 239 Method : Drive-in Windowless Sampler		Dimensions 150mm to 4.00m		Ground Level (mOD)		Client Bellway Home North West		Job Number 7791	
		Location (Observed measurements)		Dates 27/05/2021		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	TOPSOIL. Grass over dark brown, slightly gravelly, slightly clayey, sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
0.30-0.80	B				0.30				
					(0.50)	Orangish brown, slightly clayey, slightly gravelly, fine to coarse SAND.			
0.80-2.00	B				0.80				
1.00-1.45	SPT N=9		1,1/1,2,3,3			Firm, reddish brown, slightly gravelly, silty, sandy CLAY with a low cobble content. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. At 1.20m: Medium strength			
1.20	SV 40**kPa								
1.50	SV 50kPa				(1.70)				
1.90	SV 54**kPa								
2.00-2.45	SPT N=5		1,1/1,2,1,1						
2.00-3.00	B				2.50				
						Firm, reddish brown, slightly sandy, silty, very gravelly CLAY with a low cobble content. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
3.00-3.45	SPT N=14		2,1/2,3,4,5						
3.00-4.00	B				(1.95)				
4.00-4.45	SPT N=38		6,7/6,6,10,16		4.45				
						Complete at 4.45m			
Remarks Location CAT scanned prior to drilling. Hand dug inspection pit dug to 1.20m. Borehole not cased. Sides stable during drilling. No groundwater encountered during drilling. Monitoring well installed between surface and 4.00m, comprising 1.00m plain pipe and 3.00m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone. Poor recovery from 2.00-2.50m and 3.00-3.50m, which correlates with depth of SPT's. **Sample shattered. SPT energy ratio = 69%. Borehole drilled by Earth Engineering Ltd. Rig Ref: Archway Dart 239.							Scale (approx) 1:40	Logged By ST	Checked By PRS

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk		Site GATEWEN ROAD, WREXHAM		Number WS05	
Machine : Archway Dart 239 Method : Drive-in Windowless Sampler		Dimensions 150mm to 4.00m		Ground Level (mOD)		Client Bellway Home North West		Job Number 7791	
		Location (Observed measurements)		Dates 27/05/2021		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	TOPSOIL. Grass over dark brown, slightly clayey, slightly gravelly, sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Contains rootlets throughout.			
0.30-1.00	B				0.30				
1.00-1.45	SPT N=9		1,2/2,2,3,2		(1.50)	Reddish brown, slightly gravelly, very clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including coal. At 1.00m: Loose			
1.00-1.80	B								
1.80-3.00	B				1.80				
1.90	SV 78kPa		1,2/1,1,1,2			Firm, reddish brown, slightly gravelly, silty, very sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Low cobble content. At 1.90m: High strength			
2.00-2.45	SPT N=5				(1.60)				
3.00-3.45	SPT N=21		1,2/3,3,4,11						
3.00-3.50	B								
3.50-4.45	B		Seepage in sand band(1) at 3.40m.		(0.40)	Brown, clayey, fine to medium SAND.			
					(0.50)	Stiff, brown, slightly sandy, silty, very gravelly CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
4.00-4.45	SPT N=44		8,10/9,10,11,14		(0.95)				
					4.45	Complete at 4.45m			
Remarks Location CAT scanned prior to drilling. Hand dug inspection pit dug to 1.20m. Borehole not cased. Sides stable during drilling. Seepage in sand band from 3.40-3.50m. Monitoring well installed between surface and 4.00m, comprising 1.00m plain pipe and 3.00m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone. No shear vane below 1.00m, samples all shattered upon input in vane. SPT energy ratio = 69%. Borehole drilled by Earth Engineering Ltd. Rig Ref: Archway Dart 239.							Scale (approx) 1:40	Logged By ST	Checked By PRS