

### **Appendix 3 Borehole Logs**

## Silvertop Quarry

Borehole Logs WW01, WW02 and WW03 were drilled a number of years ago encompassing the wider quarry area and are now missing



# Percussion Drilling Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/07/2016	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358273.16 N560709.99	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW04	Hole Type RO	Level 232.00m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 5

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					1.70	230.30		Brown clay with limestone boulders (driller's description)	1
									Yellow/ brown limestone (driller's description)
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		












Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



# Percussion Drilling Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/07/2016	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358273.16 N560709.99	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW04	Hole Type RO	Level 232.00m AoD	Logged By	Scale 1:50	Page Number Sheet 2 of 5

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					10.50	221.50		Yellow/ brown limestone (driller's description)		
								Hard grey limeston (driller's description)	11	
										12
						13.20	218.80		Grey/ yellow sandstone (driller's description)	13
						14.60	217.40		Grey sandstone with mudstone bands (driller's description)	15
					16.20	215.80		Dark grey mudstone (driller's description)	16	
									17	
									18	
									19	
									20	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



# Percussion Drilling Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/07/2016	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358273.16 N560709.99	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW04	Hole Type RO	Level 232.00m AoD	Logged By	Scale 1:50	Page Number Sheet 3 of 5

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description						
		Depth (m)	Type	Results										
[Well ID]	[Water Strikes]				22.10	209.90	[Legend Pattern]	Dark grey mudstone (driller's description)	21					
								[Legend Pattern]	Hard grey limestone (driller's description)	22				
										23				
										24				
										25				
										26				
										27				
										27.20	204.80	[Legend Pattern]	Yellow/grey sandstone	28
													28.50	203.50
										30				


Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/07/2016	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358273.16 N560709.99	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW04	Hole Type RO	Level 232.00m AoD	Logged By	Scale 1:50	Page Number Sheet 4 of 5

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Mudstone (driller's description)	31	
				32.10	199.90		Coal (driller's description)	32	
				32.30	199.70		Mudstone (driller's description)		
				33.10	198.90		Grey sandstone(driller's description)	33	
				34.80	197.20		Dark grey mudstone (driller's description)	34	
				35.90	196.10		Dark grey mudstone with thin grey sandstone bands (driller's description)	35	
				37.20	194.80		Grey mudstone (driller's description)	36	
				37.80	194.20		Grey sandstone (driller's description)	37	
				38.30	193.70		Mudstone (driller's description)	38	
									39
								40	


Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/07/2016	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358273.16 N560709.99	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW04	Hole Type RO	Level 232.00m AoD	Logged By	Scale 1:50	Page Number Sheet 5 of 5

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Mudstone (driller's description)	41	
				41.10	190.90		Grey sandstone (driller's description)	42	
				42.50	189.50		End of Borehole at 42.500m	43	
								44	
								45	
								46	
								47	
								48	
								49	
								50	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date:	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358683.94 N560734.64	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW05	Hole Type RO	Level 241.50m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 3

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well								Top soil/over burden (driller's description)	1
									2
									3
									4
									5
									6
									7
					7.70	233.80		Mudstone (driller's description)	8
					8.20	233.30		Blue Shale (driller's description)	9
					9.10	232.40		Dark mudstone with blue shale (driller's description)	10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks







# Percussion Drilling Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date:	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358683.94 N560734.64	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW05	Hole Type RO	Level 241.50m AoD	Logged By	Scale 1:50	Page Number Sheet 2 of 3

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					10.80	230.70		Dark mudstone with blue shale (driller's description)	11
								Grey mudstone (driller's description)	12
									13
									14
					14.30	227.20		Blue shale (driller's description)	15
									16
									17
									18
									19
									20

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date:	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358683.94 N560734.64	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW05	Hole Type RO	Level 241.50m AoD	Logged By	Scale 1:50	Page Number Sheet 3 of 3

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					20.20	221.30		Blue shale (driller's description)	21
									23
									24
					25.00	216.50		End of Borehole at 25.000m	25
									26
									27
									28
									29
									30

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/06/2016	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358963.94 N560696.98	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW06	Hole Type RO	Level 251.00m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 4

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					2.70	248.30		TOPSOIL/brown CLAY. (driller's description)	1
								Red CLAY with occasional limestone boulders (driller's description)	2
									3
									4
									5
									6
									7
					8.10	242.90		Blue SHALE/MUDSTONE (driller's description)	8
									9
								10	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





# Percussion Drilling Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/06/2016	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358963.94 N560696.98	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW06	Hole Type RO	Level 251.00m AoD	Logged By	Scale 1:50	Page Number Sheet 2 of 4

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Blue SHALE/MUDSTONE (driller's description)	11	
					12.50	238.50	Blue SHALE (driller's description)	12	
								13	
								14	
					14.60	236.40	MUDSTONE (driller's description)	15	
								16	
								17	
					17.20	233.80	Blue SHALE (driller's description)	18	
								19	
								20	
					19.90	231.10			

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/06/2016	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358963.94 N560696.98	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW06	Hole Type RO	Level 251.00m AoD	Logged By	Scale 1:50	Page Number Sheet 3 of 4

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							MUDSTONE with band of blue shale (driller's description)	21	
								22	
								23	
								24	
								25	
								26	
								27	
					27.70	223.30		MUDSTONE (driller's description)	28
									29
									30

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks





# Percussion Drilling Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 12/06/2016	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358963.94 N560696.98	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW06	Hole Type RO	Level 251.00m AoD	Logged By	Scale 1:50	Page Number Sheet 4 of 4

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					30.50	220.50		MUDSTONE (driller's description)	
								End of Borehole at 30.500m	
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks



# Rotary Core Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 08/05/2019	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358350.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW08	Hole Type RO	Level 217.00m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 5

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
								1.20	215.80		Turf/topsoil/boulder clay (driller's description)	1
								2.60	214.40		Boulder clay/ limestone (driller's description)	2
								4.80	212.20		LIMESTONE BOULDER (driller's description)	3
								9.00	208.00		Stiff brown CLAY (driller's description)	4
												5
												6
												7
												8
												9
												10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks



# Rotary Core Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 08/05/2019	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358350.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW08	Hole Type RO	Level 217.00m AoD	Logged By	Scale 1:50	Page Number Sheet 2 of 5

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
											Hard LIMESTONE (driller's description)	11
								12.20	204.80		MUDSTONE (driller's description)	12
								13.00	204.00		SANDSTONE (driller's description)	13
								14.00	203.00		LIMESTONE (driller's description)	14
								15.00	202.00		SANDSTONE (driller's description)	15
												16
												17
												18
												19
								20.00	197.00			20

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks





# Rotary Core Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 08/05/2019	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358350.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW08	Hole Type RO	Level 217.00m AoD	Logged By	Scale 1:50	Page Number Sheet 3 of 5

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
											SANDSTONES/MUDSTONE (driller's description)	21
												22
												23
												24
												25
								26.00	191.00		MUDSTONE (driller's description)	26
												27
												28
												29
												30

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks



# Rotary Core Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 08/05/2019	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358350.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW08	Hole Type RO	Level 217.00m AoD	Logged By	Scale 1:50	Page Number Sheet 4 of 5

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
											MUDSTONE (driller's description)	31
												32
												33
												34
												35
												36
												37
								38.00	179.00		COAL (driller's description)	38
								39.00	178.00		Hard strata-loss of flush nil returns	39
												40

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks



# Rotary Core Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 08/05/2019	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358350.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW08	Hole Type RO	Level 217.00m AoD	Logged By	Scale 1:50	Page Number Sheet 5 of 5

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
											Hard strata-loss of flush nil returns	41
								43.00	174.00			42
											End of Borehole at 43.000m	43
												44
												45
												46
												47
												48
												49
												50

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks



# Rotary Core Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 14/05/2019	
Location: Silvertop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358449.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW09	Hole Type RO	Level 210.50m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
								1.20	209.30		Turf/topsoil/ CLAY (driller's description)	1
											Stiff brown CLAY with cobbles (driller's description)	2
								5.20	205.30		SANDSTONE (driller's description)	5
								6.00	204.50		LIMESTONE (driller's description)	6
								7.30	203.20		SANDSTONE (driller's description)	7
								8.30	202.20		LIMESTONE (driller's description)	8
								9.30	201.20		SANDSTONE with occasional bands of limestone (driller's description)	9
								10.00	200.50			10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks



# Rotary Core Log

Project Name: Silvetop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 14/05/2019	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358449.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW09	Hole Type RO	Level 210.50m AoD	Logged By	Scale 1:50	Page Number Sheet 2 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
											Brown SANDSTONE (driller's description)	11
								13.30	197.20		SANDSTONE with occasional bands of limestone (driller's description)	12
												13
												14
												15
												16
												17
								18.90	191.60		SANDSTONE/MUDSTONE (driller's description)	18
												19
												20

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks



# Rotary Core Log

Project Name: Silvertop Quarry Waste Application		Client: Thompson's of Prudhoe		Date: 14/05/2019	
Location: Silvetop Quarry, Cumbria		Contractor: Rotadrill		Co-ords: E358449.00 N560509.00	
Project No. : NT12629		Crew Name:		Drilling Equipment:	
Borehole Number WW09	Hole Type RO	Level 210.50m AoD	Logged By	Scale 1:50	Page Number Sheet 3 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
								20.50	190.00	[Pattern]	SANDSTONE/MUDSTONE (driller's description)	
										[Pattern]	MUDSTONE (driller's description)	21
								22.30	188.20	[Pattern]	End of Borehole at 22.300m	22
												23
												24
												25
												26
												27
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												29
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Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)

Remarks

