

Remarks									
Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.									

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Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH108	
				Sheet 3 of 6	
				Scale	1:25
				Drilled	KO
				Logged	AF/JJ
				Checked	AP

Drilling Flush					Hole Diameter		Casing Diameter		Water Added		Water Strikes						
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
0.00	30.00	Air/Mist	Black/ Grey	100%	30.00	145mm	3.00	150mm			17/11/2022 14:05		0.40		0.40	20mins	
Drill Bit Type		PCD			Drill Bit Condition		Good		Core Barrel Type		Conventional Triple Tube		Core Barrel Length			1.50	

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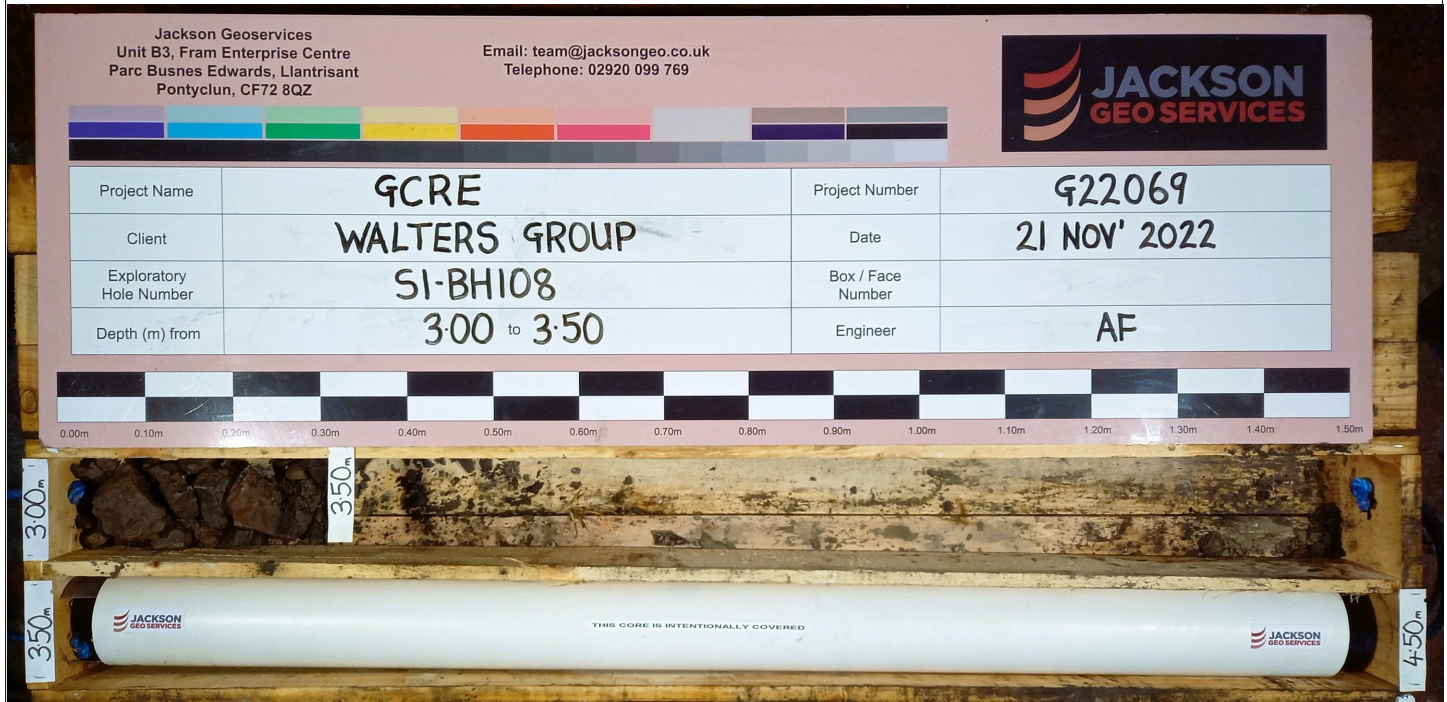
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		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 1 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	



S1-BH108 2.00 m to 3.00 m



S1-BH108 3.00 m to 3.50 m

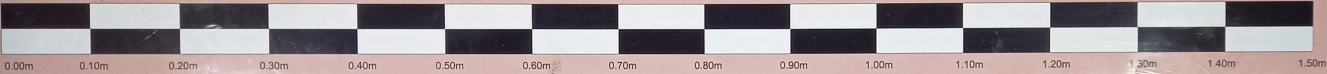
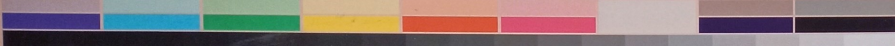
		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 2 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	21 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	3.50 to 4.50	Engineer	AF





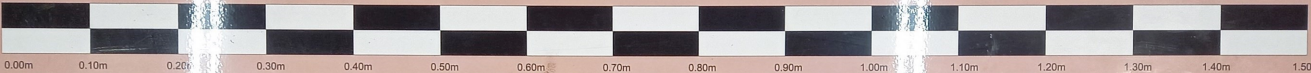
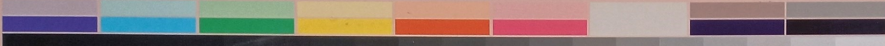
S1-BH108 3.50 m to 4.50 m

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	21 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	4.50 to 5.50	Engineer	AF





S1-BH108 4.50 m to 5.50 m

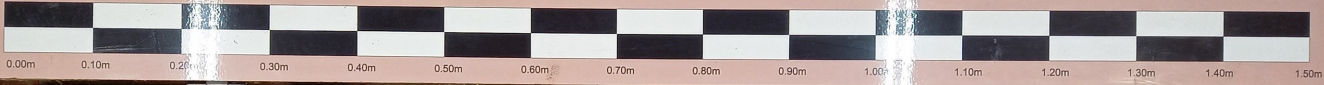
		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 3 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	21 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	5.50 to 7.00	Engineer	AF





S1-BH108 5.50 m to 7.00 m

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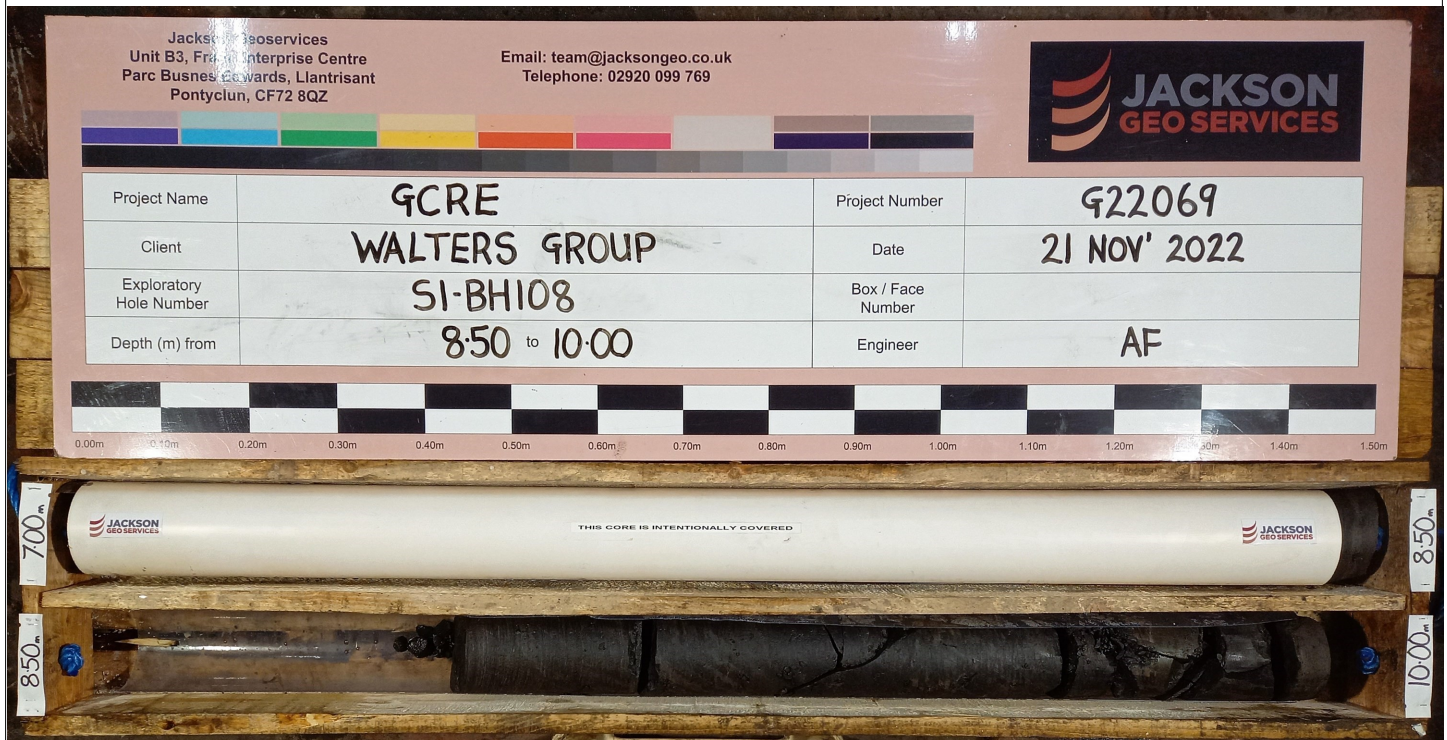
Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	21 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	7.00 to 8.50	Engineer	AF



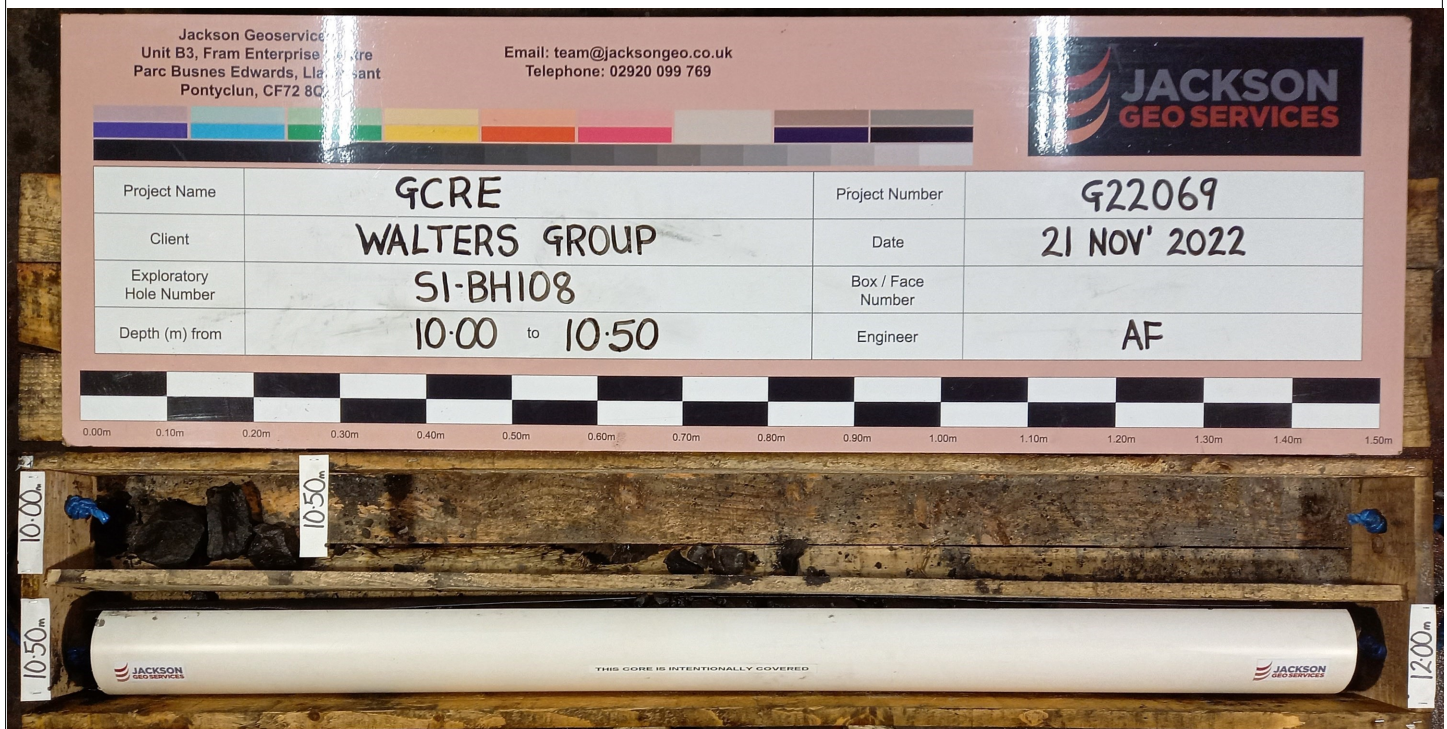


S1-BH108 7.00 m to 8.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 4 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	



S1-BH108 8.50 m to 10.00 m



S1-BH108 10.00 m to 10.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 5 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	



S1-BH108 10.50 m to 12.00 m

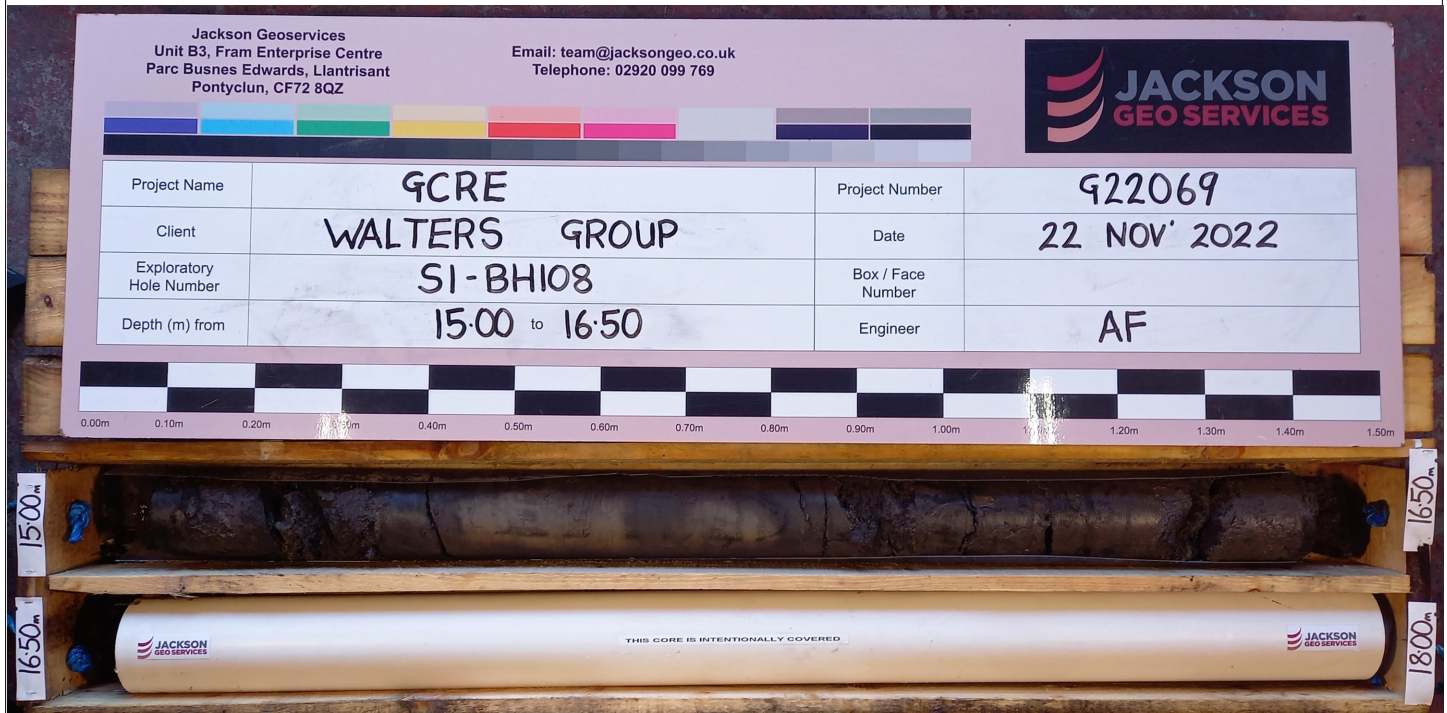


S1-BH108 12.00 m to 13.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 6 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	



S1-BH108 13.50 m to 15.00 m



S1-BH108 15.00 m to 16.50 m

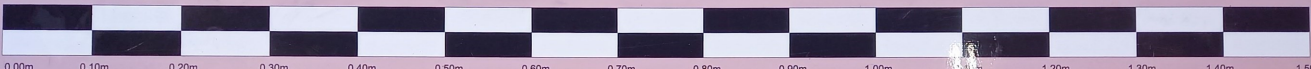
		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 7 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	

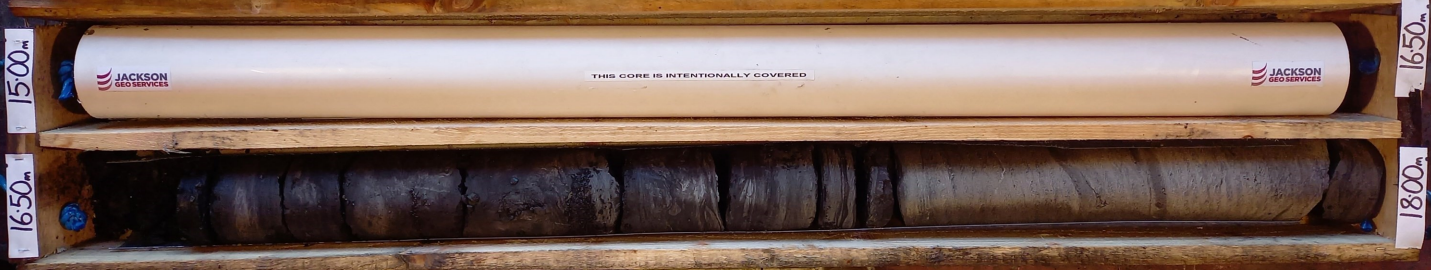
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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	22 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	16.50 to 18.00	Engineer	AF





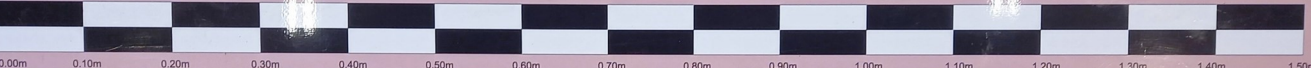
S1-BH108 16.50 m to 18.00 m

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	22 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	18.00 to 19.50	Engineer	AF





S1-BH108 18.00 m to 19.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 9 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	



S1-BH108 22.50 m to 24.00 m



S1-BH108 24.00 m to 25.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 10 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	



S1-BH108 25.50 m to 27.00 m



S1-BH108 27.00 m to 28.50 m

		EXPLORATORY HOLE PHOTOGRAPHS		Remarks Hand excavated inspection pit from GL to 0.40m. Dynamic sampling from 0.40m to 3.00m. Rotary coring from 3.00m to 30.00m.		Exploratory Hole S1-BH108
Project	Global Centre of Rail Excellence	Easting	284415.11	Equipment	Beretta T44/Insulated Hand Tools	Sheet 11 of 11
Client	Walters UK Limited	Northing	210631.95	Method	WLS/IP/RC	
Project No	G22069	Level	231.95 mAOD	Termination Reason	Scheduled depth	

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Project Name	GCRE	Project Number	G22069
Client	WALTERS GROUP	Date	25 NOV' 2022
Exploratory Hole Number	S1-BH108	Box / Face Number	
Depth (m) from	28.50 to 30.00	Engineer	A





S1-BH108 28.50 m to 30.00 m



Exploratory Hole Progress by Time				Exploratory Hole	
Date and Time	Depth	Casing Depth	Water Depth	S1-BH109	
06/12/2022 14:00	0.00	0.00	Dry		
06/12/2022 16:15	0.80	0.00	Dry		
07/12/2022 08:15	0.80	0.00	Dry		
07/12/2022 16:15	7.60	7.50	4.88	Sheet 1 of 4	
08/12/2022 09:00	7.60	7.50	5.66	Scale	1:25
08/12/2022 16:00	15.90	15.90	9.45	Drilled	TP
09/12/2022 08:30	15.90	15.90	8.97	Logged	AF
09/12/2022 12:00	15.90	15.90	Wet	Checked	AP

Drilling Flush					Hole Diameter		Casing Diameter		Water Added		Water Strikes						
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
11.40	15.90	Air/Mist	Dark Grey	100%	15.90	146mm	7.50	200mm			07/12/2022 11:20	1.20	4.78		4.62	20mins	
Drill Bit Type		PCD			Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube		Core Barrel Length			1.50	

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JACKSON GEO SERVICES		DYNAMIC SAMPLING AND ROTARY DRILLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time				Exploratory Hole					
								Date and Time		Depth	Casing Depth	Water Depth	S1-BH109				
Project		Global Centre of Rail Excellence			Equipment		Comacchio 305			Sheet 3 of 4							
Client		Walters UK Limited			Method		IP/DS/RC			Scale	1:25						
Project No		G22069		Level	236.37 mAOD		Inclination		90 degrees		Drilled	TP					
Easting		284752.18		Northing	210629.62		SPT Hammer Serial Number		JD01		Logged	AF					
Termination Reason		Scheduled depth			SPT Hammer Energy Ratio		70 %			Checked	AP						
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks			Drill Runs	TCR SCR RQD	Depth (Thickness)	Level (mAOD)	Legend	Description	If (min ave max)	Scale	Backfill				
14 D	10.40 - 10.85 10.40	SPT(S) N=82 (11,12/16,17,25,24) Casing: 8.40 Water: 9.73					(0.60)	225.77		Extremely weak locally very weak grey MUDSTONE. NI, recovered as very angular to angular fine to coarse clayey gravel. (Possible Weathered SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: GR	Set 1 NI NI NI	10.50					
							10.60										
					RC 10.40 - 11.40	100% 17% 0%											
							(2.60)										
					RC 11.40 - 12.90	97% 15% 0%											
						13.20	223.17		Extremely weak to very weak thickly laminated and very thinly bedded grey and dark grey MUDSTONE with occasional sub-ordinate beds of weak SILTSTONE. Weathering: loss of strength and increased fracture spacing throughout rock mass. Discontinuities: typically NI recovered as very angular to angular fine to coarse gravel. Possible sub-horizontal and randomly orientated extremely closely locally very closely spaced discontinuities. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: MST 10.60m - 10.77m Sub-horizontal to 15 degree very closely spaced bedding. 11.30m - 11.40m Weak grey SILTSTONE. 11.40m - 12.30m Dark grey carbonaceous MUDSTONE. 12.30m - 12.60m Randomly orientated extremely closely locally very closely spaced undulating smooth tight and incipient discontinuities. 12.67m - 12.75m Randomly orientated extremely closely locally very closely spaced undulating smooth tight and incipient discontinuities. 12.80m - 12.90m Weak grey SILTSTONE.	Set 1 NI NI 40	11.00						
						14.40	221.97		Very weak becoming weak very thinly to thinly bedded dark grey carbonaceous MUDSTONE locally grading to SILTSTONE. Weathering: occasional zones of increased fracture spacing and loss of strength. Discontinuities: sub-horizontal to 10 degree very closely and closely spaced locally extremely closely spaced planar smooth and rough tight and incipient bedding fractures, locally with <1-2mm silt infill. Joints are sub-vertical stepped rough tight. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: SZT 13.70m - 13.75m Extremely weak MUDSTONE. NI. 13.94m - 13.97m Extremely weak MUDSTONE. NI. 13.97m - 14.05m Medium strong ironstone. 14.00m - 14.40m Weak grey SILTSTONE. 14.05m - 14.08m Extremely weak MUDSTONE. NI.	Set 1 NI 60 180	13.50						
									Weak thickly laminated to very thinly bedded dark grey carbonaceous MUDSTONE. Weathering: increased fracture spacing throughout rock mass. Discontinuities: typically NI recovered as very angular to angular fine to coarse tabular gravel. Possible sub-horizontal to 10 degree extremely closely and very closely spaced planar rough bedding fractures. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: MST 14.40m - 14.50m Sub-horizontal extremely closely and very closely spaced bedding fractures.	Set 1 NI NI 40	14.50						
						(0.80)											
Continued on next Sheet																	
Drilling Flush					Hole Diameter		Casing Diameter		Water Added		Water Strikes						
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks
11.40	15.90	Air/Mist	Dark Grey	100%	15.90	146mm	7.50	200mm			07/12/2022 11:20	1.20	4.78		4.62	20mins	
Drill Bit Type		PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube		Core Barrel Length		1.50			
Remarks Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 10.40m. Rotary coring from 10.40m to 15.90m.																	
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		DYNAMIC SAMPLING AND ROTARY DRILLING EXPLORATORY HOLE LOG						Exploratory Hole Progress by Time				Exploratory Hole											
								Date and Time		Depth	Casing Depth	Water Depth	S1-BH109										
Project		Global Centre of Rail Excellence				Equipment		Comacchio 305				Sheet 4 of 4											
Client		Walters UK Limited				Method		IP/DS/RC				Scale 1:25											
Project No		G22069		Level		236.37 mAOD		Inclination		90 degrees		Drilled TP											
Easting		284752.18		Northing		210629.62		SPT Hammer Serial Number		JD01		Logged AF											
Termination Reason		Scheduled depth				SPT Hammer Energy Ratio		70 %				Checked AP											
Samples	Sampling and Testing Depths	Insitu Testing and Depth Related Remarks				Drill Runs	TCR SCR RQD	Depth (Thickness)	Level (mAOD)	Legend	Description	If (min ave max)	Scale	Backfill									
						RC 14.40 - 15.90	100% 10% 0%	15.20 (0.70)	221.17		Weak thickly laminated to very thinly bedded dark grey carbonaceous MUDSTONE. Weathering: increased fracture spacing throughout rock mass. Discontinuities: typically NI recovered as very angular to angular fine to coarse tabular gravel. Possible sub-horizontal to 10 degree extremely closely and very closely spaced planar rough bedding fractures. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: MST	Set 1 NI <10 <20	15.50										
									220.47		Very weak black COAL. No apparent weathering. Discontinuities: 45 to 60 degree and randomly orientated extremely closely spaced planar and stepped tight and incipient fractures. (SOUTH WALES LOWER COAL MEASURES FORMATION) Geology Code: SWCM 2nd Geology Code: COAL		16.00										
											End of Exploratory Hole at 15.90m												
													16.50										
													17.00										
													17.50										
													18.00										
													18.50										
													19.00										
													19.50										
													20.00										
Drilling Flush														Hole Diameter		Casing Diameter		Water Added		Water Strikes			
Depth Top	Depth Base	Type	Colour	Returns	Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Date and Time	Casing	Strike	Sealed	Rising to	Time	Remarks						
11.40	15.90	Air/Mist	Dark Grey	100%	15.90	146mm	7.50	200mm			07/12/2022 11:20	1.20	4.78		4.62	20mins							
Drill Bit Type		PCD		Drill Bit Condition		Good		Core Barrel Type		Wireline Triple Tube		Core Barrel Length		1.50									
Remarks																							
Hand excavated inspection pit from GL to 1.20m. Dynamic sampling from 1.20m to 10.40m. Rotary coring from 10.40m to 15.90m.																							
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