

Drilling Method Rotary Open Hole/Coring			Borehole Diameter 115mm to 13.00m		Casing Diameter 115mm to 4.10m		BOREHOLE No.		BH63050R			
Equipment Knebel							Coordinates (National Grid)		E N m OD			
Drill Fluid Air/Mist							Ground Level					
Crew/Vessel C Jones												
Dates Drilled Start 14/10/2015 End 15/10/2015			Logged by CC 16/10/2015		Compiled by cjm 14/10/2015		Approved by BC 20/01/2016					
Date & Time	Casing Depth (m)	Water Depth (m) (Flush Return) %	Sample/Core Recovery			SPT Blows /N	Fracture Index or Sample (Blow/Pene) or Test Result	Description of Strata	Depth (Thick-ness) (m)	Level m OD	Legend	
14/10	1.20		0.00-0.35	B	1			Firm dark brown gravelly slightly sandy CLAY with medium cobble content. Cobbles are subangular (190mm x 120mm) of mixed lithologies. Gravel is subangular fine to coarse of mixed lithologies including psammite and pelite. Sand is fine to coarse.	(0.40)			
			0.40	ES	2		PID	0.0		0.40	265.35	
			0.40									
			0.50-0.70	B	3							
			0.90-1.00	B	4					0.90	264.85	
			1.00	ES	5		PID	0.0		(0.30)		
			1.00									
			1.20-1.65							1.20	264.55	
			1.20-2.20	B	6		C39					
		(100)	1.20-2.20	OH	OH	OH		SAND and GRAVEL with cobbles (Driller's description).				
							RIVER TERRACE DEPOSIT					
	2.20		2.20-2.58									
			2.20-3.20	B	7		C50/ 230					
			2.20-3.20	OH	OH	OH				(2.70)		
	3.20		3.20-3.51									
		3.20-4.00	B	8		C50/ 155						
		3.20-4.00	OH	OH	OH							
	(100)	4.00-4.20	OH	OH	OH		Hard grey schist ROCK (Driller's description).	3.90	261.85			
								(0.30)				
		4.34-4.57	C	9			Weak pink grey coarse grained QUARTZITE with very thin closely to medium spaced locally extremely closely to very closely spaced bands of pelite. Black mineralisation infill from earlier phases of metamorphism resulting in local drilling induced non intact zones. Weathering: Fresh.					
	(100)	4.20-5.20	100	100	96		Probably: GAICK PSAMMITE FORMATION, Possibly: TUMEL QUARTZITE FORMATION	4.20	261.55			

Remarks 1 Prior to boring a Cable Avoidance Tool (CAT) survey was carried out. An inspection pit (minimum dimension approx 400mm x 400mm) was hand-dug to 1.20m depth and rescanned using the CAT to check for services. Services were not located.
 2 See separate sheet for installation.
 3 Groundwater not encountered during boring.


Scale 1:25

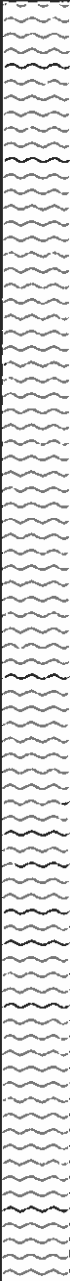

30/08/2016

Project
A9 PITAGOWAN TO GLEN GARRY
TRANSPORT SCOTLAND

Contract No. G151043UE


Figure No. FR41 (1 of 4)

Drilling Method Rotary Open Hole/Coring		Borehole Diameter 115mm to 13.00m		Casing Diameter 115mm to 4.10m		BOREHOLE No. BH63050R	
Equipment Knebel		Coordinates (National Grid)  E N m OD		Ground Level			
Drill Fluid Air/Mist		Logged by CC		Compiled by cjm		Approved by BC	
Crew/Vessel C Jones		16/10/2015		14/10/2015		20/01/2016	
Dates Drilled Start 14/10/2015		End 15/10/2015					

Date & Time	Casing Depth (m)	Water Depth (m) (Flush Return %)	Sample/Core Recovery				SPT Blows /N Core Size (mm)	Fracture Index or Sample (Blows/Perc) or Test Result	Description of Strata	Depth (Thickness) (m)	Level m OD	Legend									
			Depth (m) From To	Type TCR %	No. SCR %	RQD %															
14/10	4.10	(100)	5.20-6.20	100	100	100	1			(5.30)											
			6.35-6.65	C	10																
			6.20-7.20	100	100	100															
15/10	4.10	(100)	7.20-7.50	100	100	100							Very strong thinly foliated dark grey fine grained PELITE with very thin closely to medium spaced veins of quartz. Weathering: Fresh. Fracture set 1: inclined 10 degrees to 30 degrees medium to widely spaced planar smooth. Probably: GAICK PSAMMITE FORMATION, Possibly: TUMMEL PSAMMITE FORMATION	9.50	256.25						
			7.90-8.10	C	11																
			7.50-8.50	100	100	100															
		(100)	8.50-8.70	100	100	100															
			8.70-9.00	100	100	100															
			9.00-9.50	100	100	100															
		(100)	9.80-9.95	C	12																
			9.50-10.50	100	100	100															

Remarks
(See notes & keysheets)



Scale 1:25











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TRANSPORT SCOTLAND

Contract No. G151043UE
Figure No. FR41 (2 of 4)

304/03

Drilling Method Rotary Open Hole/Coring Equipment Knobel Drill Fluid Air/Mist Crew/Vessel C Jones Dates Drilled Start 14/10/2015 End 15/10/2015				Borehole Diameter 115mm to 13.00m Casing Diameter 115mm to 4.10m Logged by CC 16/10/2015 Compiled by cjm 14/10/2015 Approved by BC 20/01/2016		BOREHOLE No. BH63050R Coordinates (National Grid)  E Ground Level m OD						
Date & Time	Casing Depth (m)	Water Depth (m) (Flush Return %)	Sample/Core Recovery				SPT Blows /N Core Size (mm)	Fracture Index or Sample (Blow/Pene) or Test Result	Description of Strata	Depth (Thickness) (m)	Level m OD	Legend
			Depth (m)		Type	No.						
			From	To								
		(100)	10.50-11.80		100	100	100	2			(3.50)	
			11.42-11.65		C		13					
			11.90-12.10		C		14	AZCL				
		(100)	11.80-13.00		92	92	92	1	Between 11.80m and 11.90m: Assumed zone of core loss.			
15/10	4.10	6.70								13.00	252.75	
									End of Borehole			
Remarks (See notes & keysheets)												
Scale 1:25												
				Project A9 PITAGOWAN TO GLEN GARRY TRANSPORT SCOTLAND				Contract No. G151043UE Figure No. FR41 (3 of 4)				
30/06/2016									304/03			

Drilling Method Rotary Open Hole/Coring Equipment Knebel Air/Mist C Jones Crew/Vessel Dates Drilled Start 14/10/2015 End 15/10/2015		Borehole Diameter 115mm to 13.00m Logged by CC 16/10/2015 Compiled by cjm 14/10/2015 Approved by BC 20/01/2016		BOREHOLE No. BH63050R Coordinates (National Grid)  E Ground Level  m OD			
Installation Details			Installation Depth (m)	Level m OD	Water Strikes	Strata Depth (m)	Strata Details
Instrumentation: 50mm slotted section (SL) from 1.00 to 4.00m	Concrete					0.40	Sandy gravelly CLAY
	Bentonite Seal		0.50	265.25		0.90	Clayey gravelly cobbly SAND
	Gravel Filter		1.00	264.75		1.20	Silty gravelly SAND
							Sandy cobbly GRAVEL
	SL=1.00-4.00m						
							
	Bentonite Seal		4.00	261.75		3.90	Coarse/Medium grained Metamorphic (SCHIST)
		