



## **APPENDIX 8-3**























































### **2015 SITE INVESTIGATION – BOREHOLE LOGS**



IDL

**DRILLHOLE LOG**

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  RC-T4-PH1
Job No	Date 24-04-15 24-04-15	Ground Level (m) 73.61	Co-Ordinates () E 187,213.4 N 247,988.1		
Engineer Jennings O' Donovan Ireland					Sheet 1 of 2  Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
0.00	47 (-) -	(0/0mm)		    	(1.20)	0.00 - 12.30 : overburden.		Subangular to subrounded fine and medium assorted limestone GRAVEL with a little orange brown clay.		
1.50			72.41	    	1.20					
1.50			72.01	    	1.60			Brown speckled black slightly silty fine and medium SAND. CPT @ 1.50m: refusal.		
1.50	53 (-) -	(0/0mm)		    	(1.40)			Subangular to subrounded medium to coarse assorted limestone with occasional sandstone GRAVEL with a little orange brown clay.		
3.00			70.61	    	3.00					
3.00			70.31	    	3.30			CPT @ 3.00m: refusal.		
3.00	33 (-) -	(0/0mm)		    	(1.20)			Dark orangish brown CLAY. Subangular to subrounded medium to coarse assorted limestone with occasional sandstone GRAVEL with a little orange brown clay.		
4.50			69.11	    	4.50					
4.50			NA		    	(3.00)			Brown speckled black slightly silty fine and medium SAND. CPT @ 4.50m: refusal.	
6.00	33 (-) -	(0/0mm)		    	(3.00)			CPT @ 6.00m: refusal.		
6.00				    						
7.50	60 (-) -		(0/0mm)		    				CPT @ 7.50m: refusal.	
7.50		66.11		    	7.50					
9.00	87 (-) -	(0/0mm)			    	(0.50)			Subangular to subrounded medium to coarse assorted limestone with occasional sandstone GRAVEL with a little orange brown clay.	
9.00			65.61	    	8.00					
9.00					    	(1.00)			Brown speckled black slightly silty fine and medium SAND.	
9.00	73 (-) -	(0/0mm)		    				CPT @ 9.00m: refusal. Subangular to subrounded medium to coarse assorted limestone with occasional sandstone GRAVEL with a little orange brown clay.		
9.00			64.61	    	9.00					
9.00					    					

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
								0	15.20	water	100%	1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD	Logged By EAT	










IDL AGS3 UK DH SEVEN HILLS WF CORE MAY 11 2015.GPJ IDL TP TEMPLATE.GDT 12/5/15



IDL

# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-T4-PH1</b>
Job No	Date 24-04-15 24-04-15	Ground Level (m) 73.61	Co-Ordinates () E 187,213.4 N 247,988.1		
Engineer  Jennings O' Donovan Ireland					Sheet 2 of 2  Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
10.50		NA			(3.30)			Core run 9.00m to 10.50m: 1 No grey limestone boulder 230mm in length.		
	100 (-) -									
12.00			61.31			12.30 - 15.20 Discontinuities, medium spaced, dipping 20 to 22°, stepped, rough, with 0.5 to 1mm thick orange brown clay smear. 12.35 - 12.50 Joint, subvertical dip, undulating, tight.		Very strong thinly bedded grey bioclastic sparry fine to coarse grained LIMESTONE.		
	100 (85) 84	2								
13.60		2								
	100 (98) 97	3								
15.20			58.41		15.20			BH terminated at 15.20m bgl on REs instruction.		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD	Logged By EAT	

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IDL

# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-T5-PH1</b>
Job No	Date 22-04-15 23-04-15	Ground Level (m) 72.05	Co-Ordinates () E 187,530.5 N 247,834.1		
Engineer Jennings O' Donovan Ireland					Sheet 1 of 4  Rev.

RUN DETAILS						STRATA			Geology	Instrument/	Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION					
						Discontinuities	Detail	Main			
0.00	30 (-) -	(32)	70.05		(2.00)	0.00 - 20.10 : overburden.		Light orangish brown clayey fine and medium SAND.			
1.00	30 (-) -							CPT @ 1.00m: N = 32.			
2.00	30 (-) -	(37)	70.05		2.00			CPT @ 2.00m: N = 37.			
3.00	30 (-) -							Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is medium and coarse. Gravel is subrounded to subangular fine to coarse of assorted limestone with occasional sandstone clasts. Cobbles are of assorted limestone. Boulders are of assorted limestone. CPT @ 3.00m: refusal.			
4.60	38 (-) -	(25/0mm)	70.05		(8.45)			CPT @ 4.60m: refusal.			
6.00	79 (-) -	NA						CPT @ 6.00m: refusal.			
7.50	33 (-) -	(0/0mm)	70.05		(8.45)			CPT @ 7.50m: refusal.			
9.00	47 (-) -	(0/0mm)						CPT @ 9.00m: refusal.			
9.00	27 (-) -	(0/0mm)	70.05		(8.45)			CPT @ 9.00m: refusal.			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0 16.5	16.50	water	100%	1 gallon polydrill used. 50mm standpipe installed.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD	Logged By EAT	

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**DRILLHOLE LOG**

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No <b>RC-T5-PH1</b>
Job No	Date 22-04-15 23-04-15	Ground Level (m) 72.05	Co-Ordinates () E 187,530.5 N 247,834.1		
Engineer Jennings O' Donovan Ireland					Sheet 2 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/	Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION					
						Discontinuities	Detail	Main			
10.50		(0/0mm)	61.60		10.45			Light grey mottled orange brown SILT. CPT @ 7.50m: refusal. Core run 10.50m to 12.00m: 1 No grey limestone boulder 320mm in length.			
10.50	93 (-) -			(1.55)							
12.00		(0/0mm)	60.05		12.00			CPT @ 12.00m: refusal. Light grey SILT.			
12.00	100 (-) -		59.55		(0.50) 12.50						
13.60		(0/0mm)			(3.60)			Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is medium and coarse. Gravel is subrounded to subangular fine to coarse of assorted limestone with occasional sandstone clasts. Cobbles are of assorted limestone. Boulders are of assorted limestone. CPT @ 13.60m: refusal.			
13.60	71 (-) -										
15.00		NA			16.10			Light grey mottled light orange brown SILT.			
	47 (-) -		55.95								
16.50			55.70		16.35			Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is medium and coarse. Gravel is subrounded to subangular fine to coarse of assorted limestone with occasional sandstone clasts. Cobbles are of assorted limestone. Boulders are of assorted limestone. Core run 18.00m to 19.50m: 1 No grey limestone boulder 240mm in length. 1 No grey limestone boulder 230mm in length.			
	60 (-) -										
18.00					(3.75)						
	53 (-) -										
19.50											

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
									30	water	100%	1 gallon polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:62.5	Client Gaitech Energy Developments Ltd.	Method/ Plant Used	Hydreq	Bit Design	HQ	Driller BD	Logged By EAT
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## DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-T5-PH1</b>
Job No	Date 22-04-15 23-04-15	Ground Level (m)  72.05	Co-Ordinates ()  E 187,530.5 N 247,834.1		
Engineer  Jennings O' Donovan Ireland					Sheet 3 of 4  Rev.

RUN DETAILS						STRATA		Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Detail	Main	
21.00	93 (23) 0	NA	51.95		20.10	20.10 - 22.80 Non-intact as weathered rock.		Probable weathered LIMESTONE rock. Recovered as angular fine to coarse gravel cobble and boulder sized clasts.  21.00m to 21.45m: as light grey coarse grained limestone clasts. 21.45m to 22.80m: as light greyish orange brown coarse grained dolomitised limestone clasts with surficial orange brown and orange iron stain and a little orange brown clay.	
					(2.70)				
22.50	100 (39) 27	NI							
			49.25		22.80	22.80 - 30.00 Discontinuities, closely spaced to 26.00m, then medium spaced, locally closely spaced, dipping 30 to 34 and 54 to 56°, stepped, rough, with 1 to 3mm thick grey silt smear. 23.00 - 24.10 Joint, vertical dip, stepped, rough, with <0.5mm thick light orange brown clay smear and minor orange brown iron stain, open.		Very strong thinly bedded grey slightly bioclastic fine to coarse grained LIMESTONE with vertical and subvertical and horizontal to dipping 10° milky white and brownish milky white calcitic veinlets.	
24.00	100 (57) 15	18							
25.60	100 (91) 79	4							
27.00	100 (96) 88	3		(7.20)					
28.60	100 (97) 75	5							
30.00	100 (96) 88	3							
			42.05		30.00				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. 50mm standpipe installed.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used		Hydreq		Bit Design	HQ	Driller BD	Logged By EAT

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**DRILLHOLE LOG**

Project Seven Hills Wind Farm				Location Co Roscommon		DRILLHOLE No <b>RC-T5-PH1</b>	
Job No		Date 22-04-15 23-04-15		Ground Level (m) 72.05		Co-Ordinates ( ) E 187,530.5 N 247,834.1	
Engineer Jennings O' Donovan Ireland						Sheet 4 of 4 Rev.	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
								BH terminated at 30.00m bgl on REs instruction.		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. 50mm standpipe installed.

All dimensions in metres Scale 1:62.5	Client Galetch Energy Developments Ltd.	Method/ Plant Used Hydreq	Bit HQ Design	Driller BD	Logged By EAT
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**DRILLHOLE LOG**

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-SS-PH1</b>
Job No	Date 27-04-15 27-04-15	Ground Level (m) 76.61	Co-Ordinates () E 187,422.4 N 247,333.8		
Engineer  Jennings O' Donovan Ireland					Sheet 1 of 2  Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
0.00	30 (-) -	(0/0mm)			(5.50)	0.00 - 15.00 : overburden.				
1.00										
1.00						Light brown slightly silty gravelly fine and medium SAND with cobbles and boulders. Gravel is subangular to subrounded fine and of assorted limestone. Cobbles are of assorted limestone. Boulder is of limestone. CPT @ 1.00m: refusal.				
	13 (-) -					CPT @ 2.60m: refusal. Core run 2.60m to 4.00m: 1 No light grey limestone boulder 290mm in length.				
2.60		(0/0mm)				CPT @ 4.00m: refusal.				
2.60										
	29 (-) -									
4.00		(25/0mm)								
4.00										
	58 (-) -	NA	71.11							
5.70		(0/0mm)				Light orangish brown slightly sandy gravelly CLAY with cobbles. Sand is fine and medium. Gravel is subrounded to subangular fine to coarse of assorted limestone. Cobbles are of assorted limestone. CPT @ 5.70m: refusal.				
5.70										
	53 (-) -					CPT @ 7.20m: refusal.				
7.20		(25/0mm)								
7.20										
	31 (-) -									
8.80		(91/225mm)				CPT @ 8.80m: refusal.				
8.80										
	28 (-) -									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	15.00	water	100%	1 gallon polydrill used. BH backfilled.

All dimensions in metres Scale 1:62.5	Client Gaitech Energy Developments Ltd.	Method/ Plant Used	Hydreq	Bit Design	HQ	Driller BD	Logged By EAT
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IDL

# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-SS-PH1</b>
Job No	Date 27-04-15 27-04-15	Ground Level (m) 76.61	Co-Ordinates () E 187,422.4 N 247,333.8		
Engineer Jennings O' Donovan Ireland					Sheet 2 of 2  Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
10.40		(0/0mm)			(9.50)			Light orangish brown slightly sandy gravelly CLAY with cobbles. Sand is fine and medium. Gravel is subrounded to subangular fine to coarse of assorted limestone. Cobbles are of assorted limestone. (continued) CPT @ 10.40m: refusal.		
10.40	57 (-)									
11.80		(49/75mm)								
11.80	94 (-)									
13.40		(0/0mm)								
13.40	94 (-)									
15.00			61.61	15.00			BH terminated at 15.00m bgl on REs instruction.			

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Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.

All dimensions in metres Scale 1:62.5	Client Gaitech Energy Developments Ltd.	Method/ Plant Used Hydreq	Bit HQ Design	Driller BD	Logged By EAT
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# DRILLHOLE LOG

Project Seven Hills Wind Farm				Location Co Roscommon		DRILLHOLE No  <b>RC-T3-PH2</b>
Job No	Date 20-04-15 21-04-15	Ground Level (m) 81.80		Co-Ordinates () E 188,105.5 N 243,121.6		
Engineer Jennings O' Donovan Ireland						Sheet 1 of 4 Rev.

RUN DETAILS						STRATA		Geology	Instrument/ Backfill	
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail			Main
0.00	50 (-) -	(0/0mm)			(13.50)	0.00 - 30.00 : overburden.		Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone. Core run 0.00m to 2.00m: 1 No grey limestone boulder 210mm in length. 1 No grey limestone boulder 220mm in length. CPT @ 2.00m: refusal.		
2.00	50 (-) -									
3.00	29 (-) -	(0/0mm)				CPT @ 3.00m: refusal.				
4.40	89 (-) -	(0/0mm)				CPT @ 4.40m: refusal.				
5.30	100 (-) -	NA (0/0mm)				CPT @ 5.30m: refusal.				
6.80	60 (-) -	(0/0mm)				CPT @ 6.80m: refusal.				
7.80	40 (-) -	(26/0mm)				Core run 6.80m to 7.80m: 1 No grey limestone boulder 280mm in length.				
8.80	30 (-) -	(20/0mm)				CPT @ 7.80m: refusal.				
10.00	50 (-) -					Core run 7.80m to 8.80m: 1 No grey coarse grained limestone boulder 270mm in length.				
						CPT @ 8.80m: refusal.				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0	30.00	water	100%	1 gallon polydrill used. BH back filled.

All dimensions in metres Scale 1:62.5	Client Gaitech Energy Developments Ltd.	Method/ Plant Used	Hydreq	Bit Design	HQ	Driller BD	Logged By EAT
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# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-T3-PH2</b>
Job No	Date 20-04-15 21-04-15	Ground Level (m) 81.80	Co-Ordinates () E 188,105.5 N 243,121.6		
Engineer Jennings O' Donovan Ireland					Sheet 2 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill			
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION							
						Discontinuities	Detail	Main					
10.00	90 (-) -	(0/0mm)						Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone. (continued) CPT @ 10.00m: refusal. CPT @ 11.10m: refusal. Core run 11.10m to 11.80m: 1 No grey coarse grained limestone boulder 260mm in length. CPT @ 11.80m: refusal.					
11.10		(0/0mm)											
11.10	100 (-) -	(0/0mm)											
11.80		(0/0mm)											
11.80	41 (-) -		68.30	13.50									
13.50					(1.00)								
	92 (-) -		67.30	14.50						Orange brown CLAY.			
14.80		NA									Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone. Core run 15.80m to 17.40m: 1 No grey fine and medium grained limestone boulder 250mm in length.		
	100 (-) -												(3.30)
15.80													
	75 (-) -												
17.40													
17.80	100 (-) -					64.00	17.80						
	47 (-) -								Orange brown CLAY.				
19.30								(3.40)					
	53												

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit Design HQ	Driller BD	Logged By EAT		





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# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-T3-PH2</b>
Job No	Date 20-04-15 21-04-15	Ground Level (m)  81.80	Co-Ordinates ()  E 188,105.5 N 243,121.6		
Engineer  Jennings O' Donovan Ireland					Sheet 3 of 4  Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill	
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION					
						Discontinuities	Detail	Main			
20.80	(-) -	NA					Orange brown CLAY. <i>(continued)</i>				
			60.60	21.20							
	53 (-) -		60.30	21.50				Orange brown clayey fine and coarse SAND. 21.30m: becoming grey.			
22.30								Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone.			
23.30	30 (-) -						Core run 23.30m to 24.80m: 1 No grey limestone boulder 250mm in length.				
24.80	87 (-) -										
26.00	100 (-) -					(8.50)					
27.80	44 (-) -										
28.40	100 (-) -						Core run 26.00m to 27.80m: 1 No orangish grey coarse grained limestone boulder 260mm in length.				
30.00	63 (-) -		51.80		30.00		Core run 27.80m to 28.40m: 1 No light grey coarse grained limestone boulder 360mm in length.				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit Design HQ	Driller BD	Logged By EAT		

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**DRILLHOLE LOG**

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No <b>RC-T3-PH2</b>
Job No	Date 20-04-15 21-04-15	Ground Level (m) 81.80	Co-Ordinates ( ) E 188,105.5 N 243,121.6		
Engineer Jennings O' Donovan Ireland					Sheet 4 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION				
Date						Discontinuities	Detail	Main		
								BH terminated at 30.00m bgl on REs instruction.		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD		Logged By EAT

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**DRILLHOLE LOG**

Project <b>Seven Hills Wind Farm</b>				Location Co Roscommon		DRILLHOLE No <b>RC-T8-PH2</b>
Job No	Date 30-04-15 01-05-15	Ground Level (m) 71.53	Co-Ordinates () E 188,620.6 N 243,974.1			
Engineer						Sheet 1 of 3 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
0.00	38 (-) -	(0/0mm)			(5.80)	0.00 - 5.80 : overburden.				
1.80										
1.80	58 (-) -									
3.00										
3.00	100 (-) -	NA (0/0mm)				CPT @ 3.00m: refusal.				
4.00		(0/0mm)				CPT @ 4.00m: refusal.				
4.00	77 (-) -									
5.80			65.73		5.80					
	100 (65) 51	0 NI 4				5.80 - 20.00 Weathered rock.				
7.20		6.10 - 6.50 Non-intact as clayey gravel.								
	92 (64) 54	NI NR? 4				7.20 - 7.40 Non-intact as clayey gravel. 7.40 - 7.50 No recovery? Possible area of core loss as washout of fines during drilling. No record of cavity.				
8.50	100 (37) 0	NI				8.50 - 9.30 Non-intact as clayey gravel.				
9.10		15				9.40 - 9.90 Possible joint, subvertical dip, stepped, rough, with 0.5 to 2mm thick light orange brown clay smear,				
	100 (76)					8.50m to 9.30m: subrounded to subangular fine limestone gravel with a little light brown clay.				

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Water Strike	Standing	From (m)	To (m)	Type	Return (%)	
								0 6	6.00 24.80	water water	100% 0%	1 gallon polydrill used. BH backfilled.

All dimensions in metres Scale 1:62.5	Client	Method/ Plant Used Hydreq	Bit Design HQ	Driller BD	Logged By EAT
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# DRILLHOLE LOG

Project Seven Hills Wind Farm				Location Co Roscommon		DRILLHOLE No  RC-T8-PH2
Job No	Date 30-04-15 01-05-15	Ground Level (m) 71.53	Co-Ordinates () E 188,620.6 N 243,974.1			
Engineer						Sheet 2 of 3 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
10.70	30	7			(9.00)	open.	Probable weathered LIMESTONE rock. As very strong thinly bedded light grey fine to coarse grained LIMESTONE with a little light orange brown clay. <i>(continued)</i>			
11.80	81 (36) 19	NI			11.00 - 11.50 Possible joint, subvertical dip, stepped, rough, with 40 to 1mm thick light grey mottled orange brown medium and coarse sandy clay infill. 11.50 - 11.80 No recovery? Possible area of core loss as washout of fines during drilling. No record of cavity.					
		NR?								
13.40	100 (80) 65	6								
		3								
14.80	100 (88) 69	7	56.73		14.80					
17.20	8 (0) 0	NR	54.43		(2.30)	14.80 - 17.10 CAVITY.	CAVITY.			
17.80	100 (35) 28	NI			(2.90)	17.10 - 17.20 Non-intact as clay. 17.20 - 17.60 Non-intact as clay.	17.10m to 17.20m: Light orange brown CLAY. Probable weathered LIMESTONE rock. As very strong thinly bedded light grey fine to coarse grained LIMESTONE with a little light orange brown clay. 17.20m to 17.60m: Dark orangish brown CLAY. 18.30m to 18.90m: Dark orangish brown CLAY.			
		4				18.30 - 18.90 Non-intact as clay.				
	81 (32) 28	NI								
		1								
		1								
20.00		NI/NR	51.53			20.00	19.60 - 20.00 No recovery? Possible area of core loss as washout of fines			

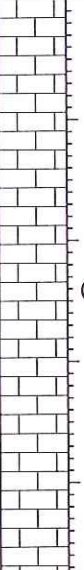

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD	Logged By EAT	

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# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No <b>RC-T8-PH2</b>
Job No	Date 30-04-15 01-05-15	Ground Level (m) 71.53	Co-Ordinates () E 188,620.6 N 243,974.1		
Engineer					Sheet 3 of 3 Rev.

RUN DETAILS						STRATA		Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities	Main		
20.80	100 (92) 63	7	46.73		(4.80)	during drilling. No record of cavity. 20.00 - 24.80 Discontinuities, medium spaced, locally closely spaced, dipping 28 to 30°, stepped, rough, with ~0.5mm thick orange brown clay smear. 20.50 - 20.65 Joint, vertical dip, stepped, rough, with <0.5mm thick light orange brown clay smear, open.	Very strong thinly bedded light grey fine to coarse grained LIMESTONE with a little light orange brown clay.		
22.40	100 (91) 84	5							
23.80	100 (96) 95	1							
		2							
24.80	100 (98) 87	4							
						BH terminated at 24.80m bgl on REs instruction.			

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client			Method/ Plant Used Hydreq				Bit HQ Design		Driller BD	Logged By EAT

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# DRILLHOLE LOG

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No <b>RC-T19-PH2</b>
Job No	Date 15-04-15 17-04-15	Ground Level (m) 89.91	Co-Ordinates () E 191,469.9 N 244,082.8		
Engineer Jennings O' Donovan Ireland					Sheet 1 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
0.00	45 (-) -	(45/75mm)	88.31		(1.60)	0.00 - 30.00 : overburden.				
1.00										
1.00						CPT @ 1.00m: refusal.				
	44 (-) -	(37/75mm)			(4.05)	Light greyish brown slightly sandy gravelly CLAY. Sand is fine and medium. Gravel is subrounded to subangular fine to coarse of assorted limestone.				
2.80										
2.80										
	29 (-) -	(0/0mm)				CPT @ 4.00m: refusal.				
4.00										
4.00										
	28 (-) -	NA								
5.80		(0/0mm)	84.26		5.65	Light orange brown slightly sandy CLAY. Sand is medium.				
5.80	71 (-) -		84.11		5.80	CPT @ 5.80m: refusal.				
6.50						Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone. Core run 5.80m to 6.50m: 1 No light grey limestone boulder 240mm in length.				
	55 (-) -									
7.60										
	50 (-) -									
8.80										
	50 (-) -									
9.60										
	100 (-) -									

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
								0 5.8	5.80 30.00	water water	100% 100%	1 gallon polydrill used. BH backfilled.

All dimensions in metres Scale 1:62.5	Client Gaitech Energy Developments Ltd.	Method/ Plant Used	Hydreq	Bit Design	HQ	Driller BD	Logged By EAT
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**DRILLHOLE LOG**

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No  <b>RC-T19-PH2</b>
Job No	Date 15-04-15 17-04-15	Ground Level (m) 89.91	Co-Ordinates () E 191,469.9 N 244,082.8		
Engineer Jennings O' Donovan Ireland					Sheet 2 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
10.20	-	NA			(24.20)			Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone. (continued)		
11.80	94 (-) -									
13.10	84 (-) -									
14.80	100 (-) -							Core run 13.10m to 13.80m: 1 No light grey limestone boulder 570mm in length.		
16.20	79 (-) -									
17.50	84 (-) -							Core run 17.50m to 20.80m: 1 No light grey limestone boulder 600mm in length.		
	72 (-) -							18.50m to 26.90m: becoming light orangish brown.		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD	Logged By EAT	

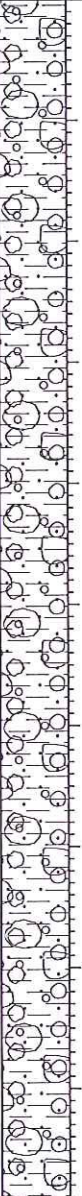
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**DRILLHOLE LOG**

Project Seven Hills Wind Farm				Location Co Roscommon		DRILLHOLE No <b>RC-T19-PH2</b>
Job No	Date 15-04-15 17-04-15	Ground Level (m) 89.91		Co-Ordinates () E 191,469.9 N 244,082.8		
Engineer Jennings O' Donovan Ireland						Sheet 3 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'ed Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
20.80		NA				Light orangish brown slightly sandy gravelly CLAY with cobbles and boulders. Sand is fine and medium. Gravel is subangular to subrounded fine to coarse of assorted limestone. Cobbles are of assorted limestone. Boulders are of assorted limestone. (continued)				
22.40	88 (-) .									
23.40	100 (-) .									
27.00	19 (-) .									
28.50	80 (-) .		26.90m to 30.00m: becoming orange brown. Sand is fine. Core run 27.00m to 28.50m: 1 No light grey limestone boulder 340mm in length. 1 No light grey limestone boulder 360mm in length.							
30.00	100 (-) .									
			59.91		30.00					

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.
All dimensions in metres Scale 1:62.5		Client Gaitech Energy Developments Ltd.			Method/ Plant Used Hydreq			Bit HQ Design		Driller BD	Logged By EAT	

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**DRILLHOLE LOG**

Project Seven Hills Wind Farm			Location Co Roscommon		DRILLHOLE No <b>RC-T19-PH2</b>
Job No	Date 15-04-15 17-04-15	Ground Level (m) 89.91	Co-Ordinates () E 191,469.9 N 244,082.8		
Engineer Jennings O' Donovan Ireland					Sheet 4 of 4 Rev.

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
Date						Discontinuities	Detail	Main		
								BH terminated at 30.00m bgl on REs instruction.		

Drilling Progress and Water Observations								Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia	Core Dia mm	Water Strike	Water Standing	From (m)	To (m)	Type	Return (%)	
												1 gallon polydrill used. BH backfilled.

All dimensions in metres Scale 1:62.5	Client Gaitech Energy Developments Ltd.	Method/ Plant Used Hydreq	Bit HQ Design	Driller BD	Logged By EAT
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PHASE 1







Seven Hills  
Windfarm,  
Co. Roscommon  
15RN101

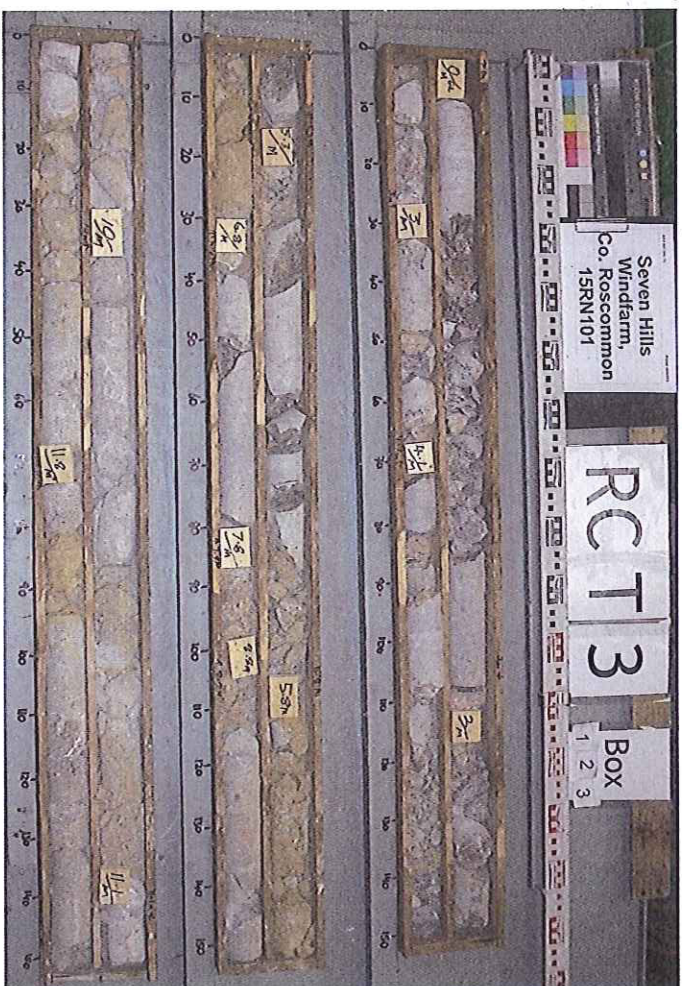
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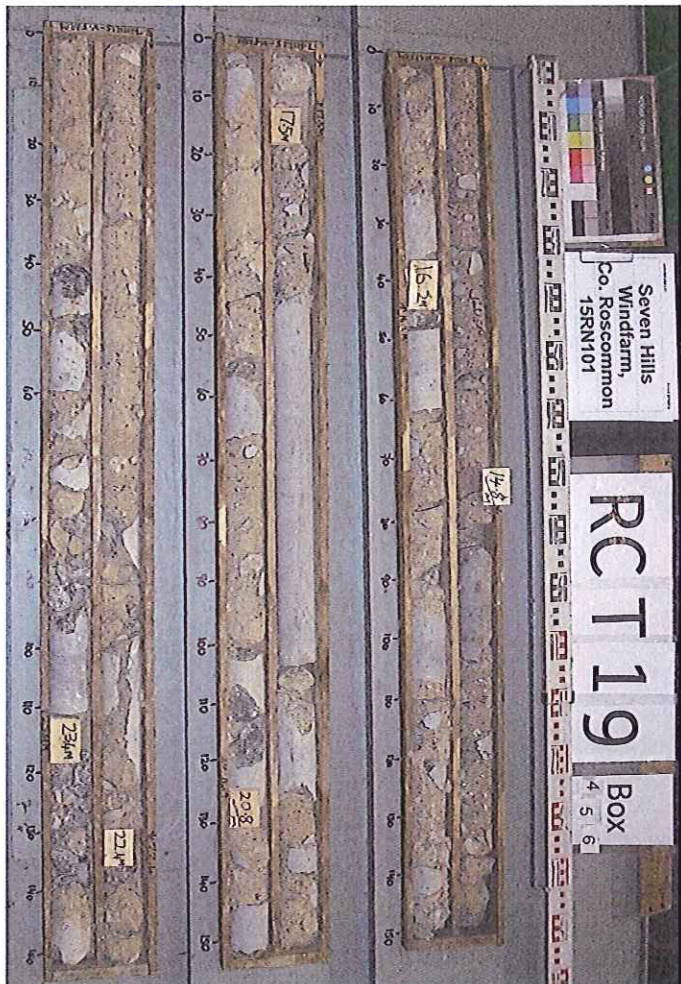


Phase 2





PHASE 2



Phase 2

