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-	Title: Figu	ire A.	5: Soli	d Geo	logy
	Key				
		Site Surve	/ Boundarv		
1000		· Proposed t	urhine		
1			avisting trac	k	
		Droposod t	rock	, K	
-					
		Proposed I	nardstandin	g	
-		Proposed of	control build	ing and su	bstation compound
		Proposed e	energy stora	ige / constr	ruction compound
	!	Existing Gr	uig Wind F	arm substa	tion
1	•	Water cros	sing		
1	Bedroc	k geology	*		
		Interbasalti	c formation		
		Lower basa	alt formation		
/		Unnamed o	dyke, Palae	ogene	
		Upper basa	alt formatior	1	
/	* Data rei	produced from	GSNI 250k ber	trock geology (dataset
	Dutu io			lioon geology (
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1	The Natura The Green	a Power Cons House	uilants Limited		202-
	Castle Do Tel: +44 (0	uglas, DG7 3X))1644 430008	S, UK	natu	ural `
/	Fax: +44 (Email: say	0)845 299 12 hello@natural	36 power.com	p	ower
1	www.natu	alpower.com			



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Project: Carnbuck Wind Farm, Co. Antrim, Northern Ireland Title: Figure A.6: Superficial Geology Key Site Survey Boundary • Proposed turbine Upgraded existing track Proposed track Proposed hardstanding Proposed control building and substation compound Proposed energy storage / construction compound Existing Gruig Wind Farm substation Water crossing Superficial geology* Glacial till Peat * Data reproduced from GSNI 250k superficial geology dataset Microsoft product screen shots reprinted with permission from Microsoft Corporation. © Bing. Reproduced from the Geological Survey of Northern Ireland, with the permission of the Director. © Crown Copyright. Scale @ A3: 1:12,000 Coordinate System: TM75 Irish Grid Ν 125 250 375 500 m 0 Checked by: SF Date: 18-04-22 Prepared by: IW Layout: 280322_12t_A Ref: GB201993_M_001_D Drawing by: The Natural Power Consultants Limited The Green House Forrest Estate, Dairy Castle Douglas, DG7 3XS, UK Tel: +44 (0)1644 430008 Fax: +44 (0)845 299 1236 Ø natural power

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Carnbuck Wind Farm, Co. Antrim, Northern Ireland

Title:

Figure A.7: Peat Stability Risk Zonation

Key							
	Site Su	rvey Bo	oundary				
•	Propos	ed turb	ine				
	Infrastr	ucture	footprint				
•	Water	crossing	g				
	Waterc	ourse					
Existi	ng area	of pea	t instab	ility			
\bigotimes	Mediur	n risk					
\bigotimes	High ris	sk					
Peat s	tability	risk *					
	1 - 4 N	egligibl	е				
	5 - 10 I	_ow					
	11 - 16	Mediu	m				
	17 - >2	5 High					
* Risk ı	ank = (p	eat dept	h score +	slope angle	score) x EIZ score		
Microsof Corporat	t product s ion. © Bing	creen sho 3.	ots reprinte	d with permissi	on from Microsoft		
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Ref: G	B20199	3_M_0	07_C	Layout: 2	70120_12t_A		
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The Natural Power Consultants Limited The Green House							
Forrest I Castle D	Forrest Estate, Dalry Castle Douglas, DG7 3XS, UK						
Tel: +44 (0)1644 430008 Fax: +44 (0)845 299 1236							
Email: sayhello@naturalpower.com www.naturalpower.com							



contents.

Project:

Carnbuck Wind Farm, Co. Antrim, Northern Ireland

Title:

Figure A.8: Factor of Safety

Key

Site Survey Boundary • Proposed turbine

- Infrastructure footprint
- Water crossing

Factor of Safety (FoS)

<= 0.99 1.0 - 1.3 1.3 - 2.0 2.0 - 10.0

10.0 - 30.0

>30.0

Microsoft product screen shots reprinted with permission from Microsoft Corporation. $\textcircled{\sc opt}$ Bing.

Scale @ Coordinate Sy 0 0.25	A3: 1: ystem: TM7 5 0.5	25,000 5 Irish Grid 0.75	1 km	N		
Date: 18-0	4-22	Prepare	d by: IW	Checked by: SF		
Ref: GB20)1993_N	L_008_C	Layout: 280322_12t_A			
Drawing by: The Natural Power Consultants Limited The Green House Forrest Estate, Dalry Castle Douglas, DG7 3XS, UK Tel: +44 (0)1644 430008 Fax: +44 (0)845 299 1236 Email: sayhello@naturalpower.com www.naturalpower.com						

B. Site Photographs, In-situ Testing, Laboratory Results and Peat Coring

- B.1 Site Photographs
- B.2 Hand Shear Vane Results
- B.3 Peat Core Logs
- B.4 Peat Core Photos
- B.5 Laboratory Testing Results



Site Overview



View south-west towards T04 and T05





View south towards T07



Heather covered lower slopes of Skerry Hill.



North edge of new development and the existing Gruig Windfarm



Peat slide on Skerry Hill, identified on geomorphological map.

Project Name: Project ID :		Gruig Windfarm 13167UKC	natural power
HSV Results		Corrected Hand S	Shear Vane Results
Location	Depth	Peak	Residual
T04	0.25	44	24
Т06	0.25	26	20
Т06	0.5	25	18
Т06	0.75	34	20
Т06	1	20	15
Т06	1.25	22.5	12
T11	0.25	15	7
T11	0.5	24	16
T11	0.75	24	10.5
T11	1	17.5	13
T11	1.25	21	16
T11	1.5	35	22
Т09	0.25	X	Х
T09	0.5	20	10
Т09	0.75	22	11
T09	1	25	16
T09	1.25	17	11
T09	1.5	24	17.5
Т09	1.75	27	15
Т09	2	47	25
P1	0.5	29	21
P1	1	25.5	20
P4	0.5	42.5	15
Р3	0.5	22	10.5
P3	1	11	10
P2	0.4	36	12.5
P6	0.3	31.5	11.5
P7	0.5	28	26.5
P8	0.5	55	12
P9	0.4	34	14.5
P10	0.3	37.5	22
P11	0.5	39	22
P12	0.2	32	13
P13	0.5	28	12.5
P14	0.5	59	35
P15	0.5	47.5	26.5
P16	0.5	13	7
P16	1	16	14
P16	1.5	27.5	17.5
P25	0.5	22	12
P25	0.9	31.5	16
P26	0.5	52	33.5
P17	0.5	22	9.5
P17	1	36	16

Project Name: Project ID .



HSV Results		Corrected Hand Shear Vane results			
Location	Depth	Peak	Residual		
P17	1.25	43	20		
P18	0.5	33	20		
P18	1	36	26		
P18	1.2	31	30		
P19	0.5	23.5	17.5		
P19	1	18	9		
P19	1.2	20	12		
P20	0.5	16.5	13.5		
P20	1	16	13		
P20	1.5	8.5	6		
P20	2	26	17.5		

Peat Core Descriptions - Gruig Windfarm						
		Bottom				
Location ID	Top depth	depth	Log	Sample	Notes	
T04			TOPSOIL - Grass and green			
	0.00	0.05	moss.			
			Firm dark brown plastic pseudo-			
			fibrous PEAT, no water released			
	0.05	0.50	on squeezing. (H7,B2)	(4A 0.05-0.50)	Refused on stiff clay	
т06			TOPSOIL - No recovery, very wet			
	0.00	0.15	moss.			
			Soft brown plastic pseudo-			
			fibrous PEAT, dark brown water			
	0.15	0.40	released on squeezing. (H4, B3)			
			Firm brown plastic pseudo-			
			fibrous PEAT, dark brown water			
	0.40	1.50	released on squeezing. (H5, B3)	(6A 0.40-1.0)		
T09						
			Soft brown plastic pseudo-			
			fibrous PEAT, brown water			
	0.00	0.35	released on squeezing. (H4, B3)			
			Firm brown plastic pseudo-			
			fibrous slightly silty PEAT, brown		Peat grades into a	
			water released on squeezing.		lacustrine mud and	
	0.35	2.05	(H4, B3)	(9A 0.10-0.90)	clay from 2.05m	
T10						
			Firm dark brown plastic			
			amorphous PEAT, no water			
	0.00	0.20	released on squeezing. (H8, B2)			
			Firm to stiff greyish brown			
			slightly sandy CLAY with organic		Thin bands of peat	
	0.20	2.00	content.	(10A 0.20-1.0)	present in the core.	
T11			No recvoery - assumed to be	· · · · · ·		
	0.00	0.35	very wet peat.			
			· ·			
			Firm brown plastic psuedo-			
			fibrous PEAT, no water released		Refused on gravelly	
	0.35	1.50	on squeezing. (H4, B1)	(T11A 0.30-1.0)	clay.	
T12				, ,	,	
	0.00	0.10	TOPSOIL - Grass and rootlets.			
	0.10	0.25	Stiff brown slightly sandy CLAY.			
				(7124 0 10		
			Soft dark prown plastic pseudo-	(112A 0.10 -		
	0.25	0.40	tibrous PEAT. (H4, B3)	0.45)		
			Ctiff because all above and a CLAY			
			Stiff brown slightly sandy CLAY			
	0.40	0.60	with high organic content.			

P1			TOPSOIL - Green moss and		
(128251,	0.00	0.05	grass.		Grass, fairly dry.
576585)					
			Soft brown plastic pseudo-		
			fibrous PEAT brown water		
	0.05	0.20	relased on squeezing. (H4. B2)		
			Soft dark brown plastic pseudo-		
			fibrous PEAT no water released		
	0.20	1 00	on squeezing (H8 B3)	(P1 0 20-1 00)	
D7	0.20	1.00	on squeezing. (10,05)	(1 1 0.20 1.00)	
(129792			Soft light brown plastic fibrous		
(128782,			DEAT brown water released on		Heather and heary
576941)	0.00	0.10	PEAT, brown water released on		
	0.00	0.10	squeezing. (H4,B3)		wet ground.
			Soft dark brown plastic pseudo-		
			fibrous PEAT. Dark brown water		
	0.10	0.30	released on squeezing. (H5,B3)	(P2 0.10-0.40)	
			Firm dark brown plastic pseudo-		
			fibrous PEAT. No water released		
	0.30	0.42	on squeezing (H8,B1)		
P3					Heather,
(129099,					vegetation, wet
577115)	0.00	0.05	TOPSOIL - Grass and moss.		ground.
			Soft brown to dark brown		
			plastic pseudo-fibrous PEAT,		
			dark brown water released on		
	0.05	0.73	squeezing. (H4,B4)	(P3 0.05-0.73)	
	0.73	1.10	No recovery, very wet.		
P4					
(127694,	0.00	0.10	TOPSOIL - Grass and moss		Grass, wet ground.
577136)			Firm brown spongey fibrous		
-	0.10	0.15	PEAT. (H2,B3)		
			Soft dark brown plastic pseudo-		
			fibrous PEAT. Brown water		
	0.15	0.50	released on squeezing. (H5.B3)	(P4 0.15-0.80)	
				(******************	
			Firm dark brown plastic pseudo-		
			fibrous slightly sandy PFAT		
	0 15	ባ ያባ	Sand is fine brown (H7 R2)		
P6	0.13	0.00			
(127522	0.00	0 10	TOPSOIL - Grass		Grass dry ground
(12, 500,				1	
5787/101	0.00	0.10			
578249)	0.00	0.10	Soft brown plactic proude		
578249)	0.00	0.10	Soft brown plastic pseudo-		
578249)	0.00	0.10	Soft brown plastic pseudo- fibrous PEAT, dry no water		

			Stiff orange slightly sandy sligtly		
			gravelly silty CLAY. Sand is		
			medium to coarse gravel is fine		
			sub-angular of various		
	0.25	0 30	lithologies		
P7	0.23	0.50			Damp grass and
(127372 57	0.00	0.05	TOPSOIL - green moss		hog
8065)	0.00	0.05			00g.
8005,			Soft dark brown plastic pseudo-		
			fibrous PEAT, brown water		
	0.05	0.50	released on squeezing (H6 P4)		
	0.03	0.50	Teleased on squeezing. (H0,B4)	(F7 0.05-0.50)	Long grass and
P0					
(12/34/,	0.00	0.05			moss, damp
577769)	0.00	0.05	TOPSOIL - grass and moss.		ground.
			First deal have a stratic second		
			Firm dark brown plastic pseudo-		
			fibrous PEAT, brown water	/	
	0.05	0.40	released on squeezing. (H5,B2)	(P8 0.05-0.57)	
			Stiff dark brown plastic pseudo-		
			fibrous PEAT, brown water		
	0.40	0.57	released on squeezing. (H5,B2)		
P9					Long grass, fairly
(127520,	0.00	0.07	TOPSOIL - grass and roots.		dry ground.
577452)					
			Firm black plastic pseudo-		
			fibrous PEAT, no water released		
	0.07	0.47	on squeezing. (H8,B2)	(P9 0.07-0.47)	
P10					Short grass, wet
(127711,	0.00	0.08	TOPSOIL - grass and roots.		ground.
577335)					
			Soft dark brown plastic pseudo-		
			fibrous PEAT. Muddy water		
	0.08	0.15	released on squeezing. (H4,B3)	(P10 0.08 -0.36	
			Firm to stiff dark brown plastic		
			pseudo-fibrous PEAT. No water		
	0.15	0.36	released on squeezing. (H7,B2)		
P11					
(127942,			Soft light brown spongey fibrous		
577716)			PEAT, clear water released on		Heather and moss,
	0.00	0.13	squeezing. (H2,B4)		wet ground.
			Soft brown plastic fibrous PEAT,		
			dark brown water released on		
	0.13	0.40	squeezing. (H4,B3)	(P11 0.13-0.60)	
			Firm brown plastic fibrous PEAT.		
			dark brown water released on		
	0.40	0.60	squeezing. (H4,B3)		

P12					Heather and grass
(127663,57	0.00	0.08	TOPSOIL - Grass and moss.		fairly dry ground.
7942)					
			Firm dark brown plastic pseudo-		
			fibrous PEAT, brown water		
	0.08	0.23	released on squeezing. (H6,B3)	(P12 0.08-0.23)	
P13					Grass and moss,
(128478,57	0.00	0.02	TOPSOIL - Grass and moss.	(P13 0.02-0.95)	fairly dry.
8073)					
			Soft dark brown plastic pseudo-		
			fibrous PEAT, brown water		
	0.02	0.95	released on squeezing. (H5,B2)		
P14			TOPSOIL - Green moss and		Grass and moss,
(128558,57	0.00	0.07	grass.		fairly dry.
7865)					
			Soft brown plastic pseudo-		
			fibrous PEAT, no water released		
	0.07	0.35	on squeezing. (H5,B2)	(P14 0.07-0.62)	
			Firm dark brown plastic pseudo-		
			fibrous PEAT, no water released		
	0.35	0.62	on squeezing. (H7,B2)		
P15					
(128534,57					Heather and moss,
7566)	0.00	0.05	TOPSOIL - Grass and rootlets		wet ground.
			Soft dark brown plastic pseudo-		
	0.05	0.00	fibrous PEAL, no water released		
	0.05	0.63	on squeezing. (H6,B2)	(P15 0.05-0.63)	
P16					
(128518,57	0.00	0.07	TOPSOUL Upother and reatlets		Heather and moss,
/368)	0.00	0.07	Coft to firm brown plastic		wet ground.
			solt to film brown plastic		
			water released on squeezing		
	0.07	1 70	water released on squeezing.	(D16010100)	
D17	0.07	1.70	(114,04)	(F10 0.10-1.00)	Grass fairly dry
(128793 57	0 00	0.05	TOPSOIL - Heather and rootlets		ground
8245)	0.00	0.05	Very soft brown spongey		
0245)			nseudo-fibrous PEAT muddy		
			water released on squeezing		
	0.05	0.20	(H3 B3)		
	0.05	0.20			
			Firm dark brown plastic pseudo-		
			fibrous PEAT, brown water		
	0.20	1.30	released on squeezing. (H5.B2)	(P17 0.20-1.00)	
P18				/	
(128885,75			Firm black plastic pseudo-		
8139)			fibrous PEAT, very little water		Long grass, fairly
	0.00	0.23	released on squeezing. (H6,B2)		wet ground.

			Firm orangish brown plastic		
			pseudo-fibrous very sandy		
	0.23	1.20	РЕАТ. (H7,B2)	(P18 0.30-1.00)	
P19			TOPSOIL - very wet green moss,		Boggy very wet
(128967,57	0.00	0.24	not recovered.		ground.
7931)			Soft to very soft brown plastic		
			pseudo-fibrous PEAT. Brown		
			water released on squeezing.		
	0.24	1.20	(H4.B4)	(P19 0.30-1.00)	
P20					
(129050.57					Grass and heather.
7722)	0.00	0.04	TOPSOIL - green moss.		wet ground.
,			Soft to very soft dark brown		
			plastic pseudo-fibrous PEAT.		
			Brown water released on	(P20 0.05-1.00)	
	0.04	2 20	squeezing (H4 B4)	(P20B 1.00-2.00)	
P21	0.01	2.20	546002	(1200 1100 2100)	
(129123.57					Grass and heather.
7416)	0.00	0.08	TOPSOIL - Grass and moss.		wet ground.
			Soft dark brown plastic pseudo-		
			fibrous PEAT, dark brown water		
	0.08	0.36	released on squeezing (H5 B3)		
	0.00	0.50	Very soft to soft black plastic		
			nseudo-fibrous slightly gravelly		
			PEAT dark brown water		
			released on squeezing Gravel is		
			fine grained sub-angular		
	0.36	0 50	(H5 B3)	(P21.0.08-0.50)	
P22	0.50	0.50	TOPSOIL - Green moss and	(1210.000.00)	Grass fairly dry
(129457 57	0 00	0.05	grass		ground
7785)	0.00	0.00	5.0001		Broanar
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Firm dark brown plastic pseudo-		
			fibrous PEAT, no water released		
	0.05	0.25	on squeezing (H6 B1)	(P22.0.05-0.25)	
	0.00	0.20	011040222.11g. (110)22/	(1 22 0100 0120)	
			Firm brownish orange slightly		
			gravelly CLAY Gravel is fine to		
	0.25	0 47	sub-rounded		
P23	0.23	0.17			
(129673.57			TOPSOIL - Green moss and		Grass and heather
7969)	0.00	0.05	grass		wet ground
75057	0.00	0.05	5.000.		Wet Bround.
			Soft black plastic pseudo-fibrous		
			PFAT, dark brown water		
	0.05	1 00	released on squeezing. (H5 B3)	(P23 0.05-1.00)	
P74	0.05	1.00	TOPSOIL - Grass, rootlets and	. 20 0.00 1.00/	Grass, fairly dry
(129491 57	0 00	0 05	moss		ground
_ ,	0.00	0.05			0.00101

8186)					
-			Firm black plastic pseudo-		
			fibrous PEAT, dry no water		
	0.05	0.15	released on squeezing. (H4/B1)		
			Soft to firm brown plastic		
			pseudo-fibrous PEAT, brown		
			water released on squeezing		
	0 15	1 05	(H5 B3)	(P24 0 15-1 00)	
P25	0.13	2.00	TOPSOIL - Grass and green	(Heather. wet
(128400.57	0.00	0.04	moss.		ground.
7176)					0
			Firm dark brown plastic pseudo-		
			fibrous PFAT dark brown water		
	0.04	0 90	released on squeezing (H6 B3)	(P25 0 10-0 90)	
P26	0.04	0.50		(1 25 0.10 0.50)	Heather and grass
(128116 57	0.00	0.08	TOPSOIL - Grass and rootlets		fairly dry
7300)	0.00	0.08			lainy dry.
/399			Firm dark brown plastic pseudo-		
			fibrous DEAT, no water released		
	0.00	0.47	inditious PEAT, no water released		
	0.08	0.47	Chiff light group CLAY	(P26 0.10-0.50)	
	0.47	0.73	Stiff light grey CLAY.		
P27	0.00	0.00	TOPSOIL - Heather, grass and		Heather, fairly wet
(129410,57	0.00	0.09	rootlets.		ground.
8394)			Soft to dark brown plastic		
			pseudo-fibrous PEAT, dark		
			brown water released on		
	0.09	2.40	squeezing. (H5,B3)	(P27 0.10-1.00)	
P28					Heather, fairly wet
(129217,57	0.00	0.06	TOPSOIL - Heather and rootlets.		ground.
8511)			Soft light brown to brown		
			pseudo-fibrous PEAT, brown		
			water released on squeezing		
	0.06	1.90	(H4,B5)	(P28 0.00-1.00)	
P29			Soft to very soft brown plastic		
(129725,57			pseudo-fibrous PEAT. Clear		
8568)			water released on squeezing.		Heather, wet
	0.00	2.10	(H3,B5)	(P29 0.10-1.00)	ground.
P30					
(129832,57					Grass, fairly wet
8659)	0.00	0.05	TOPSOIL - Grass and rootlets.		ground
			Firm to stiff black plastic pseudo-		
			fibrous PEAT, no water released		
	0.05	0.56	on squeezing. (H7,B1)	(P30 0.05-0.55)	





T04 Peat Core







T06 Peat Core





T09 Peat Core





T10 Peat Core





T11 Peat Core





T12 Peat Core

LABORATORY TEST CERTIFICATE

C Ferrie (Director)

Approved for Issue

Issue No. 01

Certificate No :

To:

Client :

Sam Fisher **The Natural Power Consultants** The Green House Forrest Estate Dalry **Castle Douglas** DG7 3XS

19/408 - 01



Tel: 0141 774 4032

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LABORATORY TESTING OF SOIL

Introduction

Dear Sirs.

We refer to samples taken from Gruig Windfarm and delivered to our laboratory on 25th March 2019.

Material & Source

Sample Reference	:	See Report Plates
Sampled By	:	Client
Sampling Certificate	:	Not Supplied
Location	:	See Report Plates
Description	:	See Page 2
Date Sampled	:	Not Supplied
Date Tested	:	25th March 2019 Onwards
Source	:	13167UKC - Gruig Windfarm

Test Results;

As Detailed On Page 2 to Page 3 inclusive

Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation This report should not be reproduced except in full without the written approval of the laboratory All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks;

09/04/2019

Date







BOREHOLE	SAMPLE	DEPTH (m)	SAMPLE DESCRIPTION
P1	SB	0.20	Brown PEAT. (Von Post Classification - H5)
P3	SB	0.05	Brown PEAT. (Von Post Classification - H9)
P4	SB	0.15	Brown PEAT. (Von Post Classification - H6)
P8	SB	0.05	Brown PEAT. (Von Post Classification - H7)
P10	SB	0.08	Brown PEAT. (Von Post Classification - H6)
P12	SB	0.08	Brown PEAT. (Von Post Classification - H6)
P14	SB	0.07	Brown PEAT. (Von Post Classification - H7)
P16	SB	0.10	Brown PEAT. (Von Post Classification - H9)
P18	SB	0.30	Brown clayey PEAT. (Von Post Classification - H1)
P21	SB	0.08	Brown PEAT. (Von Post Classification - H9)
P22	SB	0.05	Brown PEAT. (Von Post Classification - H6)
P24	SB	0.15	Brown PEAT. (Von Post Classification - H6)
P26	SB	0.10	Brown PEAT. (Von Post Classification - H5)
P28	SB	0.00	Brown PEAT. (Von Post Classification - H4)
P30	SB	0.05	Brown PEAT. (Von Post Classification - H5)

SUMMARY OF SAMPLE DESCRIPTIONS

NATURAL POWER CONSULTANTS GRUIG WINDFARM



BOREHOLE	SAMPLE	DEPTH		BULK DENSITY	DRY DENSITY
		(m)	(%)	(19/111)	(1019/111)
P1	SB	0.20	212	1.17	0.38
P3	SB	0.05	821	1.04	0.11
P4	SB	0.15	194	1.30	0.44
P8	SB	0.05	169	1.28	0.48
P10	SB	0.08	282	1.12	0.29
P12	SB	0.08	290	1.27	0.33
P14	SB	0.07	411	0.96	0.19
P16	SB	0.10	789	1.14	0.13
P18	SB	0.30	82	1.46	0.80
P21	SB	0.08	249	1.15	0.33
P22	SB	0.05	254	1.06	0.30
P24	SB	0.15	347	1.31	0.29
P26	SB	0.10	402	0.93	0.19
P28	SB	0.00	789	1.01	0.11
P30	SB	0.05	324	1.02	0.24

Tested in accordance with BS1377 Part 2 : 1990 Bulk Density : Linear Measurement

SUMMARY OF MOISTURE CONTENT AND DENSITY TEST RESULTS



Certificate Number 19-06284

Client MATTest Ltd. 10 Queenslie Point 120 Stepps Road Glasgow G33 3NQ

- Our Reference 19-06284
- *Client Reference* 19/408
 - Order No MATSC2245
 - Contract Title Gruig Windfarm
 - Description 15 Soil samples.
 - Date Received 04-Apr-19
 - Date Started 04-Apr-19
- Date Completed 09-Apr-19
- Test Procedures Identified by prefix DETSn (details on request).
 - *Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Jen

Adam Fenwick Contracts Manager



09-Apr-19



Summary of Chemical Analysis

Soil Samples

Our Ref 19-06284 Client Ref 19/408 Contract Title Gruig Windfarm

		Lab N	0 1483756	1483757	1483758	1483759	1483760	1483761	1483762	1483763	1483764	1483765	1483766
		Sample I	D P1	P3	P4	P8	P10	P12	P14	P16	P18	P21	P22
		Dept	h 0.20	0.09	0.15	0.09	0.08	0.08	0.07	0.10	0.30	0.08	0.05
		Other I	D Peat	Peat	Peat	Peat	Peat	Peat	Peat	Peat	Peat	Peat	Peat
		Sample Typ	e SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampling Dat	e 02/04/19	02/04/19	02/04/19	02/04/19	02/04/19	02/04/19	02/04/19	02/04/19	02/04/19	02/04/19	02/04/19
		Sampling Tim	e n/s	n/s									
Test	Method	LOD Uni	s										
Inorganics													
Carbon, Total	DETSC 2084*	0.5	6 19	33	15	32	39	16	45	43	5.0	23	14
Total Organic Carbon	DETSC 2084#	0.5	6 19	33	15	28	37	16	41	43	4.9	23	14



Summary of Chemical Analysis

Soil Samples Our Ref 19-06284

Client Ref 19/408 Contract Title Gruig Windfarm

			Lab No	1483767	1483768	1483769	1483770
		Sa	ample ID	P24	P26	P28	P30
			Depth	0.15	0.10		0.05
			Other ID	Peat	Peat	Peat	Peat
		Sam	ple Type	SOIL	SOIL	SOIL	SOIL
		Sampl	ling Date	02/04/19	02/04/19	02/04/19	02/04/19
		Sampl	ing Time	n/s	n/s	n/s	n/s
Test	Method	LOD	Units				
Inorganics							
Carbon, Total	DETSC 2084*	0.5	%	22	46	37	36
Total Organic Carbon	DETSC 2084#	0.5	%	22	40	38	36



Information in Support of the Analytical Results

Our Ref 19-06284 Client Ref 19/408 Contract Gruig Windfarm

Containers Received & Deviating Samples

		Date		Holding time exceeded for	Inappropriate container for
Lab No	Sample ID	Sampled	Containers Received	tests	tests
1483756	P1 0.20 SOIL	02/04/19	PT 1L		
1483757	P3 0.09 SOIL	02/04/19	PT 1L		
1483758	P4 0.15 SOIL	02/04/19	PT 1L		
1483759	P8 0.09 SOIL	02/04/19	PT 1L		
1483760	P10 0.08 SOIL	02/04/19	PT 1L		
1483761	P12 0.08 SOIL	02/04/19	PT 1L		
1483762	P14 0.07 SOIL	02/04/19	PT 1L		
1483763	P16 0.10 SOIL	02/04/19	PT 1L		
1483764	P18 0.30 SOIL	02/04/19	PT 1L		
1483765	P21 0.08 SOIL	02/04/19	PT 1L		
1483766	P22 0.05 SOIL	02/04/19	PT 1L		
1483767	P24 0.15 SOIL	02/04/19	PT 1L		
1483768	P26 0.10 SOIL	02/04/19	PT 1L		
1483769	P28 SOIL	02/04/19	PT 1L		
1483770	P30 0.05 SOIL	02/04/19	PT 1L		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425μm sieve, in accordance with BS1377. Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis. The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



CREATING A BETTER ENVIRONMENT





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