

Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 3

Technical Appendix A12.2: Peat Landslide Hazard and Risk Assessment

Document prepared by Fairhurst LLP for Beinneun 2 Ltd

July 2025



Beinneun 2 Wind Farm

Peat Landslide Hazard and Risk Assessment

July 2025



FAIRHURST

CONTROL SHEET

CLIENT: Envams
PROJECT TITLE: Beinneun 2 Wind Farm
REPORT TITLE: Peat Landslide Hazard and Risk Assessment
PROJECT REFERENCE: 162008
DOCUMENT NUMBER: 162008/GL/G/PSRA/01

Original Issue	Issue 1 FINAL		Name	Signature	Date	
	Prepared by	Ivy de Groot Daniel Milner-Smith		Held on file	25/07/2025	
	Checked by	Kirsty Walker		Held on file	25/07/2025	
	Approved by	Alan Blair Simon Shillington		Held on file	28/07/2025	
Update Record	Issue	Date	Status	Description	Signature	
	2				Prepared By	
					Checked	
					Approved	
	3				Prepared By	
					Checked	
					Approved	
	4				Prepared By	
					Checked	
					Approved	

This document has been prepared in accordance with the Fairhurst Quality and Environmental Management System and in accordance with the instructions of the client, Envams for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk. Any information provided by third parties and referred to herein has not been checked or verified by Fairhurst unless otherwise expressly stated within this report.

Unless otherwise agreed in writing, all intellectual property rights in, or arising out of, or in connection with this report, are owned by Fairhurst. The client named above has a licence to copy and use this report only for the purposes for which it was provided. The licence to use and copy this report is subject to other terms and conditions agreed between Fairhurst and the client.

Fairhurst is the trading name of Fairhurst Group LLP, a limited liability partnership registered in Scotland with the registered number SO307306 and registered office at 43 George Street, Edinburgh EH2 2HT.

CONTENTS

1.	Introduction.....	1
1.1	Objectives & Scope	1
1.2	Peat Classification & Considerations in Peat Slide Risk	2
1.3	Geographical, Geological, Hydrology Setting.....	5
2.	Peat Probing.....	10
2.1	General	10
2.2	Peat Probing Results (Phase 1 and Phase 2 Combined)	10
2.3	Recorded Peat at Proposed Turbine Locations	12
2.4	Recorded Peat at BESS and substation, Met Mast, borrow pits and site compound	14
2.5	Recorded Peat at Proposed Track	15
2.6	Substrate	17
3.	Peat Slide Risk.....	20
3.1	Wind Turbines.....	21
3.2	BESS, Substation, Met Mast, and borrow pits	33
3.3	Access Tracks	35
4.	Mitigation.....	36
4.1	Design Mitigation	36
4.2	Peat Management During Construction	43
5.	Conclusion.....	46
6.	References.....	47

Appendices

Appendix A – Drawings

162008-9201	Site Location Plan
162008-9202	Proposed Development Plan
162008-9203	Final Peat Probes
162008-9204	Pre-mitigation Peat Risk Rating
162008-9205	Post-mitigation Peat Risk Rating

Appendix B – Site Walkover Record

Appendix C – Factual Report

1. Introduction

Fairhurst were instructed by Envams, to carry out Phase 2 Peat Probing followed by an assessment of peat landslide risk and the preparation of a peat management plan for Beinneun 2 Wind Farm (hereafter referred to as Beinneun 2). The proposed development includes the construction of 19 wind turbines, a Battery Energy Storage System (BESS), substation, a Met Mast, four borrow pits, site compound and access tracks.

The intention is to undertake the assessment with reference to the guidance provided by the Scottish Government in their document:

- Peat Landslide Hazard and Risk Assessment – Best Practice Guide for Proposed Electricity Generation Developments, 2nd Edition, April 2017, Scottish Government

The site is an irregular shaped area of land located north of the A87 at Loch Garry, south of the existing Beinneun Wind Farm (Beinneun 1). The site is bound to the west by woodland / open ground north of Loch Loyne, the A87 and woodland/open ground with the A87 and Loch Garry present to the south. Access can be gained off the A87 towards the northwest of the site.

The site is shown on the site location plan presented as Drawing No. 162008/9201 in Appendix A. The National Grid Reference (NGR) for the centre of the site is NH 23398 05392.

The site comprises upland terrain, with sporadic exposed rock, as well as peat hags, deeply incised channels and ponded surface water bodies. There is limited forestry with mostly open hillside. It is located upgradient from the A87, Loch Garry and Loch Loyne. The site contains numerous small watercourses that generally traverse from the north of the site towards the south (Loch Garry). To the north and generally uphill, Beinneun 1 contains access tracks and continuations of the aforementioned watercourses.

The proposed development plan is provided in Appendix A, Drawing No. 162008/9202. A site walkover has been conducted by an Engineering Geologist in May 2025, and a record of this is provided in Appendix B.

This report describes the peat distribution across the site, presents the results of the peat landslide risk assessment and provides the outline peat management plan to be adopted during the construction phase. It is understood that a Habitat Management Plan will be developed by others, which will include the proposals for peatland restoration / enhancement. This report will form a technical appendix to the Environmental Impact Assessment Report (EIAR) and be considered in support of the consent application process.

1.1 Objectives & Scope

The main objectives of the assessment are to:

- report on investigations to establish the extent and thickness of peat present across the site and to assess if these are considered as a potential landslide hazard and, if identified, assess peat landslide risks;
- identify those areas requiring mitigation to reduce landslide risk to 'low' and propose suitable mitigation; and
- outline the peat management plan to be adopted during the construction of the wind farm.

The assessment is undertaken in accordance with the Scottish Government Peat Landslide Hazard and Risk Assessment: Best Practice Guide for Proposed Electricity Generation Developments (April 2017) and Scottish Environmental Protection Agency (SEPA) guidance. The peat slide risk as outlined in the guidance document is largely driven by slope angle, peat type, peat depth and the nature of the underlying substrate. Intermittent areas of peat have been identified across the site that will trigger medium risk criteria given the nature of the sloping ground whereby mitigation will be required to reduce the risk rating to low. Given the limited extent of the peat deposits, it is considered that mitigation can be introduced without significant environmental impact. This is considered to be a conservative approach given the intermittent nature of the peat distribution.

1.2 Peat Classification & Considerations in Peat Slide Risk

Peat is an organic soil comprising the decayed organic remains of plants. It accumulates where the rate of deposition of dry vegetative matter exceeds its rate of decay with physical, chemical, and biological processes associated with wetland conditions, which would allow the decaying matter to retain some of its plant structures for extended periods of time (Mills & Rushton, 2023).

The Scottish Government (Peat Landslide Hazard and Risk Assessments, Scottish Government, April 2017) characterises peat as follows:

- Peaty (or organo-mineral) soil: a soil with a surface organic layer less than 0.5m deep;
- Peat: a soil with a surface organic layer greater than 0.5m deep which has an organic matter content of more than 60%; and
- Deep peat: a peat soil with a surface organic layer greater than 1.0m deep.

For peat greater than 0.5m depth, unmodified peat typically has two layers:

- Acrotelm (surface layer) – often around 0.30m thick, but can vary widely in depth depending on local conditions, is highly permeable and receptive to rainfall. It generally has a high proportion of fibrous material and often forms a crust under dry conditions.
- Catotelm (base layer) – lies beneath the acrotelm and forms a stable colloidal substance which is generally impermeable. As a result, the catotelm usually remains saturated with little groundwater flow. This material has a low structural integrity and may act as a liquid in terms of physical / geotechnical qualities.

In addition, peat classification is aided by its designation in accordance with the Von Post Humification Scale. This scale is a measurement of the degree of decomposition of dead plant matter using parameters such as fibre integrity, colour and viscosity of the exudate, and the presence of colloidal particles. The scales ranges from 1 (10% or undecomposed) to 10 (100% decomposed / colloidal) (Von Post, 1924). Most shallow to moderate depth peats will typically have lower humification scales (H1 to H5) within the zone of seasonal water table fluctuation (the acrotelm) and higher humification values of H6 to H8 at their base (the zone of permanent saturation or catotelm) (Mills & Rushton, 2023). This classification affects how the peat will behave and hence how it should be treated/managed within developments. The usual pattern is for the H-value to increase steadily with increasing depth, unless the origin of the peat changes drastically.

To complement the Von Post classification, the Peatland Survey Guidance (SEPA, 2017) outlines that surface firmness should be included within observations of peat; as well as a quantification of fibres, rootlets, and wood. The firmness of the peat is used to estimate the bearing capacity which will influence

the type and weight of machinery that should be recommended for initial and subsequent exploration (SEPA, 2017). The table below summarises these additions. This guidance was used during the sample collection as outlined in the SKF Ltd (the geotechnical contractor) Factual Report in Appendix C.

Table 1: Additional Peat Classification

Classification	Scale			
Firmness (P)¹	P0 Too soft to walk on	P1 Just passable	P2 Fairly firm	P3 Firm
Fibres (F)²	F0 Nil	F1 Low content	F2 Moderate content	F3 High content
Rootlets (R)³	R0 Nil	R1 Low content	R2 Moderate content	R3 High content
Wood remains (W)⁴	W0 Nil	W1 Low content	W2 Moderate content	W3 High content
<p>¹ An average person standing on one foot applies a pressure to the ground between 5 – 6lbs/psi. This is used to estimate bearing capacity</p> <p>² Fine fibres <1mm in diameter or width,</p> <p>³ Coarse fibres, stems, and rootlets greater than 1mm in diameter or width</p> <p>⁴ Wood remnants content</p>				

The hydrology of peat is an important factor in the consideration of peat stability. The hydrological characteristics of peat as described within the Von Post classifications are complex, and they vary laterally and with depth over short distances. Where a well-decayed catotelm is relatively impermeable, water transfer can occur within natural soil pipes, typically situated at boundaries within the peat (i.e., decomposed and lesser decomposed; or between the peat and the underlying substrate) (Mills & Rushton, 2023). The majority of the water movement is described to occur within the acrotelm. Whether the peat will absorb the water or cause ‘flashier’ runoffs is governed by the degree of saturation (i.e., low saturation leads to more absorption, high saturation can lead to flashy runoffs) (Mills & Rushton, 2023). Moisture content is measured by the laboratory from samples of peat. The water content parameters reported from the laboratory are listed as such:

- 0% Dry peat
- 0 – 500%¹ Low moisture content
- 500 – 1000%¹ Medium Moisture content
- 1000 – 2000%¹ High moisture content
- > 2000%¹ Very high moisture content

Another important factor in assessing the instability risks associated with peat is the slope angle. The table below provides a summary of the Peat Landslide Hazard and Risk Assessment (PLHRA) document as prepared by the Scottish Government.

¹ Water content is expressed as a percentage of dry content and therefore can be more than 100%.

Table 2: Peat landslides types and key controlling parameters, taken from Peat Landslide Hazard and Risk Assessment: Best Practice Guide for Proposed Electricity Generation Developments (pg. 15) (After Dykes and Warburton, 2007a)

Peat landslide type	Definition	Typical slope range	Typical peat thickness
Bog burst	Failure of a raised bog (i.e. bog peat) involving the break-out and evacuation of (semi-) liquid basal peat.	2° – 5°	2m – 5m
Bog flow	Failure of a blanket bog involving the break-out and evacuation of semi-liquid highly humified basal peat from a clearly defined source area.	2° – 5°	2m – 5m
Bog slide	Failure of a blanket bog involving sliding of intact peat on a shearing surface within the basal peat.	5° – 8°	1m – 3m
Peat slide	Failure of a blanket bog involving sliding of intact peat on a shearing surface at the interface between the peat and the mineral substrate material or immediately adjacent to the underlying substrate.	5° – 8° (inferred)	1m – 3m (inferred)
Peaty debris slide	Shallow translational failure of a hillslope with a mantle of blanket peat in which failure occurs by shearing wholly within the mineral substrate and at a depth below the interface with the base of the peat such that the peat is only a secondary influence on the failure.	4.5° – 32°	<1.5m
Peat flow	Failure of any other type of peat deposit (fen, transitional mire, basin bog) by any mechanism, including flow failure in any type of peat caused by head-loading.	Any of the above	Any of the above

With regards to construction, peat is described as thixotropic: its viscosity decreases under applied stress (Atkins & Mouchel, August 2018). Where the major constituent is organic in peat, the geotechnical definition of shear strength does not strictly apply. Within the acrotelm or near surface layers, peat is more likely to contain fresh and slightly decomposed roots and fibres which have a significant role to play within the tensile shear strength capacity of the material which provides it with a load capacity. Geotechnically, the acrotelm could be defined as a fibre reinforced soil. The catotelm, comprising of decomposed to highly decomposed material, has a reduced shear strength (i.e., peat is likely to decrease in strength with depth). This decrease in shear strength is offset to a limited degree by strength gained through overburden pressure, therefore a correlation is present between the shear strength of a sample and the thickness of overburden above it. Whilst the correlation exists, difficulties exist with imposing a shear strength on peatland due to the natural variability that exists within the peat, both vertically and horizontally. As such, a visual classification (e.g., Von Post) together with the water content can provide an early indication of many important parameters required for subsequent design.

The construction of 'floating roads' can be considered as the most effective way to construct an access track on top of peat, along with the more traditional use of 'cut and fill' (where the peat / soft soils are removed to allow construction onto a suitable bearing layer). As described in the Floating Roads on Peat Report (FCE & SNH, August 2010), peat under floating roads can either react slowly and steadily

settle, with a volume change as water is forced out of the peat mass; or peat can react rapidly, accompanied by a sudden spread and shear of the peat causing failure. Where floating roads are recommended for access tracks, detailed design of such tracks will be undertaken as part of the detailed design stage of this project following ground investigation.

It is necessary to ensure the water balance remains positive to ensure the survival of peatland, i.e., more water will be required to enter the ecological system. Where peat is dehydrated, it will not rehydrate, therefore this habitat might be lost, leading to degradation of the peatland system. This degradation can eventually lead to instability. Therefore, in order to maintain the stability of the surrounding areas, the retention of existing water pathways should be an integral part of the detailed design.. Such drainage will need to take into account appropriate buffer zones and culverts/bridges so that impact on the surrounding environment is minimised (Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland, & Historic Environment Scotland, September 2015).

Furthermore, it is considered that historic peat slides can significantly influence the consideration of the risk of peat instability which can be assessed through satellite images, walkovers, or through confirmation of the landowner(s). Evidence of failure scars, compression or extension features, the extent of a debris runout, and other potential evidence denoting an area of instability is a high risk to the development due to the presence of such pre-conditioning factors for a failure. Further, where a 'historic' failure has occurred, these not only highlight the presence of a failure, but also note the possibility of this failure to be reactivated, therefore posing a risk to the development.

1.3 Geographical, Geological, Hydrology Setting

1.3.1 General Setting & Topography

The site is situated south/southeast of the existing Beinneun 1 wind farm and The Peat Slide Risk Assessment for that development was reviewed for wider context. Beinneun 1 is on an exposed hillside north of Loch Garry, situated in an area referred to as Beinneun Forest. The terrain of the site can be described as hummocky with morainic deposits. The hillside, outwith the site boundary, has three named peaks (in accordance with Ordnance Survey 1:25,000 map): Carn Dearg (680m), Carn Tarsuinn (687m), and Meall Dubh (788m). The only hilltop with a named peak situated on site is located between T04 and T05, named: Mullach Coire Ardachaidh (539m).

The Beinneun 2 site is situated on general sidelong ground, with the elevation varying between 389m (T15) and 514m (T16). Turbines T01 – T04 are situated on the westerly flank of the hill with Loch Loyne at its base, where the remainder of the turbines are located on southern facing slopes towards Loch Garry. The slope angle has been extracted from the Digital Elevation Model as provided using QGIS and was found that the slope angle at the proposed wind turbines varies between 5.40° (T01) and as steep as 17.30° (T02).

The elevations and slope angles at the proposed wind turbine locations are summarised in Table 3 below.

Table 3: Wind Turbines Elevation Level and slope angle derived from Digital Elevation Model (DEM)

Wind Turbine	E	N	Elevation (m) (approximate)	Slope angle (°) (approximate)*
T01	220661.000	806534.000	400	5.40
T02	220767.000	805955.000	447	17.30
T03	220181.691	805374.007	480	9.50

Wind Turbine	E	N	Elevation (m) (approximate)	Slope angle (°) (approximate)*
T04	220236.000	804794.000	497	9.20
T05	220633.000	804335.000	446	7.10
T06	221377.309	804593.025	412	12.10
T07	222090.000	804595.000	410	10.20
T08	222735.734	804789.190	429	16.10
T09	222944.520	804298.701	352	10.15
T10	223449.000	805199.000	439	6.70
T11	224176.000	805530.000	457	6.40
T12	224483.000	805104.000	408	11.30
T13	224850.000	805801.000	480	4.00
T14	225411.899	805717.169	456	7.10
T15	225768.000	805387.000	389	8.30
T16	225607.000	806484.000	514	5.75
T17	226228.000	806492.000	493	8.30
T18	226530.000	806045.000	465	5.60
T19	226435.915	805411.716	398	6.60

* The approximate slope angle has been taken as an average from within the laydown area.

The access track for the proposed wind farm will be from the A87 on the west of the site, situated around NGR 219584, 806812.

The proposed BESS and substation are centred at approximately NGR 223461, 804859, at an estimated elevation of 400m AOD, between T09 (574m SE) and T10 (187m N). The existing slope angle here is between 3.5° and 7°.

There is a Met Mast, proposed to be located near to NGR 220260, 805748. This feature is at an approximate elevation of 450m AOD, with an existing slope angle ranging between 4-15°. It is situated roughly 560m West Southwest of T02, and approximately 360m north of T03.

It is understood that the stone won during the construction of Beinneun 1 was of such quality that it had been possible to be used for concrete batching. It is therefore expected that sufficient volumes and quality of stone will be available for use in the construction of within Beinneun 2. As such, four possible locations for borrow pitting have been identified using satellite images and information gathered during the site walkover. The first borrow pit (BP01) is situated at 220285, 806854 at 380m AOD with an estimated slope angle of 26°, situated 370m from T01 towards the northwest. The second borrow pit (BP02) is situated opposite T03 (25m distance towards the north), at 220176, 805502 at 480m AOD with an angle of ~9°. The third (BP03) is situated adjacent to T05 (53m towards the northwest) at 220509, 804373 at an elevation of 463m AOD and a current existing angle of 21.60°. The fourth borrow pit (BP04) is situated adjacent to T11 (20m distance towards the south) at 224107, 805424 at 458m AOD and a current existing angle of 6.30°.

These borrow pits will be subject to further investigation and inspection as part of the detailed design and will be microsituated based on the findings of these assessments.

Lastly, the proposed site compound has been located to be situated at NGR 220555, 805946, 89m to the west from Turbine T02. The site compound is situated at an elevation ranging between 446m AOD and 437m AOD, with an average slope angle of $\sim 7^\circ$.

1.3.2 *Geology*

Superficial Geology

According to the British Geological Survey (BGS) Online GeoIndex and 1:50 000 Scotland Sheet 72E (Glen Affric, Superficial Deposits) and Sheet 62E (Loch Lochy), where documented, the site is recorded to be underlain by Hummocky Glacial Deposits which consists of Diamicton, sand and gravel. This stratum is often described as very poorly sorted and consolidated deposits of boulders, gravel, sand, silt, and sandy Diamicton, forming mounds up to 10m high. Commonly, this is overlying very compact, silty, clayey, sandy, stony Diamicton (till), which is more widespread towards lower ground. According to Sheet 62E, the lower-lying areas are documented as Morainic Drift (silty or sandy till commonly interbedded with varying proportions of gravel, sand, and silt).

The BGS also recorded numerous areas of peat to be situated within the overall proposed development boundary.

However, the majority of the site does document that the bedrock is exposed or near surface. Therefore, the substrate underlying the peat is likely to comprise glacial deposits or bedrock.

Considering the nature of the glacial deposition, the anticipated granular material will allow groundwater to flow within the substrate. However, where clay and silt are present, the flow of water may be hampered due to the presence of localised less permeable materials.

Soil Composition

Gleys, as described by the Scottish Soil Classification (2013), are soils described to be periodically or permanently waterlogged and have a lack of oxygen within their pore spaces through which the grey colour arises within the soil. As such, Gleys are poorly drained material.

Podzols are described as acidic soils with a grey leached layer just below the surface and bright orangey-brown coloured subsoils and/or dark brown to black, organic rich subsoils. The Gleyed Podzol is described as freely draining below the iron layer.

Dystrophic semi-confined peat is described as being fed by waters that are poor in minerals and usually supports vegetation communities dominated by heathers and nutrient-poor grasses. These, as such are poorly drained, partly confined, acidic and nutrient poor peat soils with no mineral layer within 0.50m of the surface.

Soil maps provided by the Scottish Government outline the majority of the Beinneun Woods to be underlain by peaty gleys with dystrophic semi-confined peat, with parent material being derived from schists, gneisses, granulites, and quartzites principally of the Moine Series. Towards the east of the site, there are peaty gleyed podzols present, with dystrophic semi-confined peat and peaty gleys. These drifts are derived of the same material as described above.

Further at higher elevation, the soil components are described as subalpine podzols with dystrophic blanket peat, which may be present at higher elevation towards the east of the site.

Solid Geology

According to the BGS GeolIndex 1:50,000 (and also 50:000 Sheet 72 E and 62 E), the bedrock comprises of the Upper Garry Psammite formation (part of the Loch Eil Group), with occasional granodiorite, quartz-diorite, and leucogranite veins present within the formation.

Towards the northwestern part of the site, i.e., Section 1 of the track and T01, the BGS records the presence of the West Highland Granite Gneiss Intrusion, which are originally igneous rocks formed by intrusions of silica-rich magma and have subsequently been altered by high grade regional metamorphism.

Furthermore, there is a fault running SW-NW, dipping 50° towards the SE present from NGR 219484, 805022 towards 221077, 806015 within the western part of the site. Another fault is present towards the north-western section of the site, trending NW-SE between NGR 219698, 806974 and 221029, 806257. Through the deformation of the bedrock geology, faults have the potential for the creation of more brittle rocks.

In addition, it is prudent to assume that the bedrock present at surface has undergone weathering due to the historic glacial activity and therefore may be retrieved as granular material.

The hydrogeology of the solid geology is described to be a low productivity aquifer: small amounts of groundwater may be present near surface in weathered zones or within secondary fractures.

1.3.3 Hydrology

There are numerous small unnamed watercourses situated within the proposed development area. These water courses generally flow from the north, towards the south, to Loch Garry, and are associated with the natural drainage from the hillside. These converge at various points across the hillside. While the majority of these tributaries are unnamed the following are named on the map:

Allt Dubh is a named water course that traverses north to south, approximately 300m west of the centre of the BESS site and 380m northeast of T09 (at its closest point).

Allt Achaidh Luachraich is a water course that traverses north to south, and at its closest point is approximately 70m south of T15, although this is a smaller tributary of the main watercourse.

Allt a' Chlachain traverse south/southwest, at the eastern extent of the site. At its closest point, it is approximately 90m to the south of T19.

Allt Daingean traverses north to south between T10 and T12. At its closest point it is approximately 200m to the east of T10.

Caochan Riabhach traverses between multiple of the larger surface water features on the western extent of the site. At its closest point it is approximately 150m east of the Met Mast. It flows from the anemometer of Beinneun Phase 1 towards the north before traversing west to Loch Loyne.

Feith Ghrainach is a watercourse on the western extent of the site, which traverses from east to west towards Loch Loyne. At its closest point, this is approximately 100m southeast of T03. To the immediate east of this point, the watercourse becomes a surface water feature, associated with flatter, lower lying ground compared to the surrounding area.

The site also contains multiple ponded surface water bodies, which are generally associated with lower lying, flat, areas of the site. They are most prevalent on the western extent of the site, with a smaller number also situated near Turbines 13, 14 and 18.

The turbines and laydown area have been initially located with a 50m buffer around watercourses in order to avoid any direct impact on these features.

The access track route has been designed wherever practically possible to avoid the water course and surface water features, however given the terrain and the frequency of the features across the hillside, they cannot be avoided. Water course crossings will be required within the track design works.

Scottish Environment Protection Agency (SEPA)'s online available Flood Maps highlights that there are numerous localised areas considered to have a high likelihood of surface water flooding and river flooding. These generally appear to be associated with the aforementioned water courses and that the flooding is contained within the riparian zones of the onsite watercourses.

During the visit to the site undertaken by Fairhurst and SKF Ltd in May 2025, numerous areas of ponded water beyond those shown on published mapping are apparent across the site. These were relatively localised in extent, but common, and generally associated with flat, low-lying areas with shallow rockhead in close proximity.

1.3.4 *Historic Evidence of Peat Instability*

During the site walkover undertaken by Fairhurst, no significant signs of extensive instability were observed, however localised erosion/cragging of peat was noted in certain areas of the site. Satellite imagery has been consulted to complement the site walkover, in order to aid the identification of historic instability events. There appears to be no visible evidence of large scale extension or compression features or visible failure scars on the satellite imagery viewed. However this should be confirmed by detailed geomorphological mapping including inspection of peat drainage and appropriate ground investigation as part of the detailed design.

During the development of Beinneun Windfarm 1 (situated uphill from Beinneun Windfarm 2), no known significant instability events have been recorded, however initial walkovers did record relatively minor, non-extensive areas of instability in the form of collapsed natural peat drainage, drainage flushes, and areas of broken ground. In addition, it is understood that the mitigation implemented for Beinneun 1 is understood to have been successful with no peat slides known to have been reported to date since its construction.

Changes have been made to the development design, and peat has been avoided where possible, specifically, areas that note major breaks in slope where peat may be present, or where haggling / erosion could occur. It was not possible to completely avoid all peat given its intermittent nature across the site and as such further assessment has been undertaken as reported in Sections 2 and 3, with the required mitigation outlined in Section 4.

2. Peat Probing

2.1 General

Phase 1 peat probing was undertaken in early 2024. This was undertaken on a 100m grid across the developable area and a total of 947No. probes were progressed.

The Phase 2 peat probing was scoped by Fairhurst and undertaken in April 2025. An additional 959No. probes were undertaken on site using a proprietary peat probe. Russian corers were used to sample the peat where encountered. The Phase 2 peat probing was scoped to include a coverage within areas of the revised layout not covered in Phase 1, and to further delineate peat deposits recorded by the Phase 1 peat probing.

Following the Phase 2 probing, the results were initially analysed to highlight potential areas where peat landslide was considered to be a hazard, or where further data would aid analysis. In May 2025, Fairhurst and SKF Ltd undertook a site walkover, with the objective of sampling the peat in pre-selected areas, as well as furthering the understanding of the conditions present across the site with regard to development areas including the access tracks. A 50cm Russian corer was used to further sample peat at selected locations.

18No. samples were undertaken in Phase 2, and a total of 1943No. probes were progressed across Phases 1 and 2, which have been used to characterise the peat on site. Samples were tested to establish moisture content, bulk, and dry density (results provided within Section 2.2), which will inform the peat landslide risk assessment undertaken within Section 3.

From the peat probes undertaken across the site, a total of 1292No. of the probes recorded only “Peaty Soils” (less than 0.50m in thickness and likely representative of topsoil). This equates to approximately 66% of the probed area being free of peat deposits. Approximately 18% of the survey recorded pockets of “Peat” to be present (depths greater than 0.50m but less than 1.0m), with only 15% of the investigated area having recorded pockets of “Deep Peat” (greater than 1m). The peat probing location plan, incorporating both Phase 1 and Phase 2 probes and resultant depths can be found on drawings in Appendix A.

2.2 Peat Probing Results (Phase 1 and Phase 2 Combined)

Peat thickness at each probe position has been recorded and analysed using GIS. Results have been further analysed and are discussed further in Section 3 and Section 4 of the report. The classifications are based on the Scottish Government Best Practice Guide for Peat Landslide Hazard and Risk Assessments (Scottish Government, Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, April 2017).

For the 18No. locations throughout the site where peat samples were collected through a Russian corer, the results are shown in Table 4 below and positions are provided in Drawing No. 162008/9202 in Appendix A. The raw test data is also provided in the SKF Ltd Factual Report in Appendix C.

Table 4: Overview of the Peat Samples collected

Peat Sampling (Depth (m))	Peat recorded (m)	Description	Von Post Class.	Water content (%)	Bulk Density (Mg/m ³)	Dry Density
SP01 (0.80 -1.30)	1.40	Very soft dark brown pseudo fibrous PEAT (H8,P2,F2,R1,W0). At 1.05m slightly sandy band.	H8	313	1.01	0.24
SP02 (0.40 – 0.90)	2.40	Very soft brown pseudo fibrous PEAT (H7,P2,F1,R1,W0). Sample refusal at 0.90m.	H7	-	-	-
SP03 (0.20 – 0.70)	1.40	Very soft dark brown pseudo fibrous PEAT (H8,P2,F2,R1,W0).	H8	363	1.07	0.23
SP04 (0.20 – 0.70)	2.80	Very soft dark brown fibrous PEAT (H6,P2,F3,R2,W0).	H6	1117	1.03	0.08
SP05 (2.20 – 2.70)	2.60	Very soft dark brown pseudo fibrous PEAT (H7,P2,F2,R1,W0).	H7	-	-	-
SP06 (1.50 – 2.20)	2.00	Very soft dark brown pseudo fibrous PEAT (H7,P2,F2,R1,W0).	H7	-	-	-
SP07 (2.10 – 2.60)	3.30	Very soft dark brown fibrous PEAT (H8,P2,F2,R1,W0)..	H8	917	1.04	0.10
SP08 (2.40 – 2.65)	2.65	Very soft dark brown pseudo fibrous PEAT (H8,P2,F1,R1,W0).	H8	708	1.05	0.13
SP08 (2.65 – 2.90)	2.65	Very soft slightly greyish brown peaty clay with traces of gravel.	n/a	235	1.19	0.36
SP09 (1.00 – 1.50)	1.30	Very soft dark brown pseudo fibrous PEAT (H8,P2,F1,R1,W0).	H7	-	-	-
SP10 (1.00 – 1.50)	1.90	Very soft dark brown fibrous PEAT (H8,P2,F2,R1,W0).	H8	-	-	-
SP11 (0.00 – 0.50)	1.00	Very soft dark brown pseudo fibrous PEAT (H7,P2,F2,R2,W0).	H7	1042	1.02	0.09
SP12 (1.40 – 1.90)	3.00	Very soft dark brown pseudo fibrous PEAT (H7,P2,F2,R1,W0). R2 at base.	H7	1134	1.00	0.08
SP13 (0.50 – 1.00)	2.00	Very soft dark brown fibrous PEAT (H7,P2,F1,R2,W0).	H7	-	-	-

Peat Sampling (Depth (m))	Peat recorded (m)	Description	Von Post Class.	Water content (%)	Bulk Density (Mg/m ³)	Dry Density
SP14 (0.70 – 1.20)	1.50	Very soft dark brown pseudo fibrous PEAT (H8,P2,F2,R1,W0).	H8	-	-	-
SP15 (1.55 – 2.05)	2.80	Very soft dark brown pseudo fibrous PEAT (H7,P2,F1,R1,W0).	H7	-	-	-
SP16 (2.50 – 3.00)	3.60	Very soft dark brown fibrous PEAT (H7,P2,F1,R1,W1).	H7	941	1.00	0.10
SP17 (0.20 – 0.70)	2.70	Very soft dark brown fibrous PEAT (H7,P2,F2,R2,W0).	H7	-	-	-
SP18 (0.50 – 1.00)	1.00	Very soft dark brown fibrous PEAT (H7,P2,F2,R1,W0).	H7	818	1.03	0.11

2.3 Recorded Peat at Proposed Turbine Locations

As described above, while peat has been recorded throughout the site, including in proximity to the turbines, it is generally intermittent in distribution with no significant areas of widespread peat recorded. Table 5 below describes the maximum peat depth within the laydown areas at turbines, the maximum peat depth within 150m of the turbine's location and the average peat depth recorded.

Table 5: Wind Turbines Maximum Peat Depth within the proposed area and within its surrounding area

Wind Turbine	E	N	Peat Average Depth	Max Peat Depth (m) # / total probes*	Max Peat Depth within ~150m (m)	Type of peat** (distance to closest sampling point (m))
T01	220661.000	806534.000	0.51m (8 probes)	1.00 (Peat) (2 / 8)	2.36m (36m SE)	H7 (SP01, 250m N, SP02, 36m SE)
T02	220767.000	805955.000	0.86m (11 probes)	1.90 (Deep Peat) (7 / 11)	2.20m (4m N)	H7 (SP03, 0m)
T03	220181.691	805374.007	0.35m (22 probes)	1.20 (Deep Peat) (6 / 22)	2.06m (77m SW)	H6 (SP04, 170m SW)
T04	220187.000	804862.600	0.17m (14 probes)	0.40 (Peaty Soil) (0 / 14)	2.50m (80m NW)	H7 (SP06, 90m NW)
T05	220633.000	804335.000	0.54m (14 probes)	2.60 (Deep Peat) (4 / 14)	2.98m (115m S)	H7 (SP07, 20m W)

Wind Turbine	E	N	Peat Average Depth	Max Peat Depth (m) # / total probes*	Max Peat Depth within ~150m (m)	Type of peat** (distance to closest sampling point (m))
T06	221377.309	804593.025	0.90m (3 probes)	1.80 (Deep Peat) (2 / 3)	2.65m (150m E)	H8 (SP08, 150m E)
T07	222090.000	804595.000	0.41m (8 probes)	0.70 (Peat) (1 / 8)	1.40wm (63m SE)	H7 (SP09, 100m W)
T08	222735.734	804789.190	0.16m (7 probes)	1.50 (Deep Peat) (1 / 7)	0.97m (44m NW)	-
T09	222944.520	804298.701	0.37m (7 probes)	1.50 (Deep Peat) (2 / 7)	1.90m (26m N)	H8 (SP10, 0m)
T10	223449.000	805199.000	0.51m (9 probes)	0.91 (Peat) (3 / 9)	1.74m (120m S)	H7 (SP11, 0m)
T11	224176.000	805530.000	0.74m (7 probes)	2.00 (Deep Peat) (2 / 7)	2.90m (5m N)	H8 (SP12, 0m)
T12	224483.000	805104.000	0.80m (8 probes)	2.00 (Deep Peat) 5 / 8	2.10m (120m W)	H7 (SP13, 182m SSE)
T13	224850.000	805801.000	0.29m (11 probes)	0.70 (Peat) 1 / 11	1.44m (23m NE)	H8 (SP13, 23m NE)
T14	225411.899	805717.169	0.53m (4 probes)	0.92 (Peat) 1 / 4	2.94m (108m W)	-
T15	225729.200	805403.600	0.75m (11 probes)	2.00 (Deep Peat) 6 / 11	2.80m (11m E)	H7 (SP15, 15m SE)
T16	225607.000	806484.000	0.35m (9 probes)	0.60 (Peat) 2 / 9	1.14m (135m E)	-
T17	226228.000	806492.000	0.33m (8 probes)	0.60 (Peat) 1 / 8	1.05m (18m W)	-
T18	226530.000	806045.000	0.32m (18 probes)	0.80 (Peat) 2 / 18	2.70m (100m WNW)	H7 (SP17, 108m NW)
T19	226435.915	805411.716	0.65m (11 probes)	1.70 (Deep Peat) 6 / 11	2.54m (5m W)	H8, (SP16, 100m WSW) H8, (SP18, 0m)

* # / number of probes - # refers to the amount of probes that recorded peat thickness of >0.50m

** Type of peat is based on the Von Post Classification.

Overall, areas of extensive connected peatland have not been identified by the investigation.

Peaty soils were encountered at T04 with a maximum depth of 0.40m, with isolated peat observed within 150m. Areas of peat were recorded in eight of the turbine locations (T01, T07, T10, T13, T14, T16, T17,

T18), ranging between depths of 0.51m (T16) and 1.00 (T02). All of these locations recorded isolated localised deeper peat within 150m from the proposed turbine locations. Further isolated areas of deeper peat were recorded in ten of the turbine positions (T02, T03 T05, T06, T08, T09, T11, T12, T15 and T19), with maximum recorded depths ranging between 1.20m (T03) and 2.60m (T05). Nine of the turbines recorded an average depth within the hardstanding falling within the range of peaty soils (i.e., <0.50m), at turbines T03, T04, T07, T08, T09, T13, T16, and T18. The remainder of the ten turbines (T01, T02, T05, T06, T10, T11, T12, T14, T15, T19) recorded peat to be present between 0.50m and 1.0m depth. The maximum average that has been recorded is 0.90m, i.e., no turbine recorded an average high enough to fall within the deep peat category. These averages highlight the intermittent and limited nature of the peat and deep peat recorded across site.

For the sampling of the peat at the 18No. locations shown Drawing No. 162008/9203 in Appendix, Von Post Classification, water content, bulk density, and dry density have been tested for in 10 of these locations. Details of samples are provided in Table 4. The results of the Von Post Classification describe the peat (where present) to be between H6 to H8. H6 is described as moderately to highly decomposed with very indistinct plant structure, which has been correlated with T03 and T04 through the proximity of SP04.

H7 is described as highly decomposed peat, containing moderate quantities of amorphous material with very faintly recognisable plant structure. This has been observed in SP01, SP02, SP03, SP05, SP06, SP07, SP09, SP11, SP12, SP13, and SP15 to SP18, which can be correlated with T01, T02, T04, T05, T07, T10, T12, T15 and T18.

H8 is described as very highly decomposed peat with large quantity of amorphous (no clearly defined shape) material and very indistinct plant structure. H8 has been identified at T06 (SP08), T09 (SP10), T11 (SP12), T13 (SP13) and T19 (SP16, SP18).

2.4 Recorded Peat at BESS and substation, Met Mast, borrow pits and site compound

Peaty soils and peat were recorded to be present at the BESS and substation, Met Mast, and borrow pits. See the table below for a summary provided. Proposed borrow pit locations have been selected on the basis of recorded rock outcrops as depicted in the satellite imagery and from information gathered during the site walkover.

Table 6: Peat Depth at Infrastructure (excluding Turbines)

Infrastructure	E	N	Max Peat Depth (m) # / total probes	Max Peat Depth within ~150m (m)	Type of peat* (distance to closest sampling point (m))
Met Mast	220250.10	805732.50	<0.50m No probes	1.15m (150m NE)	-
BESS and substation	223459.30	804860.00	<0.50m 0 / 2	1.75m (66m N)	H7 (SP11, 240m N)
Borrow pit 1	220277.40	806841.10	<0.50m 0 / 2	0.90m (90m NW)	-
Borrow pit 2	220277.90	806844.30	<0.50m 0 / 1	2.30m (130m S)	H6 (SP04, 240m SSW)
Borrow pit 3	220177.00	805505.50	<0.50m 0 / 1	1.10m (150m SE)	H7 (SP07, 150m SE)

Infrastructure	E	N	Max Peat Depth (m) # / total probes	Max Peat Depth within ~150m (m)	Type of peat* (distance to closest sampling point (m))
Borrow pit 4	224111.30	804374.50	1.0m 1 / 1	3.13m (53m W)	H8 (SP12, 103m N)
Site compound	220555.90	805946.20	<0.50m 0 / 1	2.10 (100m NW)	H7 (SP03, 163m E)

The probes recorded a range in depth between 0.20m (Borrow Pit 3, site compound) and 1.0m (Borrow Pit 4). Peaty soils were recorded at Borrow Pit 1, 2, 3, and the site compound (0.10m, 0.20m, 0.20m and 0.20m depth, respectively), the BESS / Substation (0.50m) and at the Met Mast (0.50m). Peat was recorded to be present at Borrow Pit 4 at a depth of 1.0m within the 1 probe recorded within the proposed area.

Based on the sampling, the peat recorded at Borrow Pit 2 and Borrow Pit 3 is recorded to be H6 (SP04, 240m SSW). H6 is described as moderately to highly decomposed with very indistinct plant structure. H7 was recorded 240m North of the proposed BESS / Substation location (SP11). The site compound and Borrow Pit 3 also recorded a Von Post classification of H7 (SP03, 163m E and SP07, 150m SE, respectively). H7 is described as highly decomposed peat, described to contain a lot of amorphous material with very faintly recognisable plant structure. Borrow Pit 4 recorded a Von Post classification of H8 situated 103m N (SP12).

2.5 Recorded Peat at Proposed Track

The proposed track has been subdivided into 12No. individual sections based on the presence of peat, slope angle, and general terrain morphology, described in the table below. The sections are shown on Drawing No. 162008/9202.

Table 7: Access Track sections along with the maximum peat. The sections of track are subdivided based on the terrain morphology

Access track section	Location	Most Common Peat Depth range (m)	Max Peat Depth (m)	Type of peat (distance to closest sampling point (m))
Section 1	A87 to T01	<0.5	0.60	H7 (SP01, 27m NE)
Section 2	T01 to T02	~1.0	2.40	H7 (SP02, 0m, SP03, 0m)
Section 3	T02 to T03, including Met Mast	<0.50	1.00	-
Section 4	T03 to T04, including T04 access track	1.0 – 2.0	2.80	H6 (SP04, 0m, SP06, 0m)
Section 5	T04 (from junction) to T05	<0.50	2.45	H7 (SP07, 0m)
Section 6	T05 to T08	0.20 – 0.80	2.65	H7 (SP07, 135m W) H8 (SP08, 0m) H7 (SP09, 0m)
Section 7	T08 until junction, including T09 and BESS access track	<0.60	1.70	H8 (SP10, 31m S) H7 (SP11, 0m)

Access track section	Location	Most Common Peat Depth range (m)	Max Peat Depth (m)	Type of peat (distance to closest sampling point (m))
Section 8	Junction to T16, including T11 and T14 access track	0.30 – 0.80	1.50	H8 (SP12, 50m NE) H8 (SP14, 31m S)
Section 9	Junction to T15	<0.50	2.10	H7 (SP13, 200m S)
Section 10	T15 to T19	0.60 – 1.20	2.40	H8, (SP16, 20m S) H8, (SP18, 25m SE)
Section 11	T18 to T19	0.30 – 0.80	1.10	H8, (SP16, 210m S) H8, (SP18, 90m SW)
Section 12	T17 to T18	<0.50	0.90	H7 (SP17, 130m W)

Section 1, running from the access point to T01, is recorded to have minimal peat with peaty soils present on the approach towards T01. Sampling had been undertaken 27m north-east of the track, outlining that the peat at this location has a Von Post classification of H7: “highly decomposed peat, containing moderate quantities of amorphous material with very faintly recognisable plant structure”.

Section 2, from T01 towards T02 has isolated pockets of peat present along the majority of the route, with a mean peat depth of approximately 1.0m. Pockets of isolated deeper peat are located along this section, where peat has been recorded to be between 0.50m to 2.40m depth. Towards T01 and towards T02, at SP02 and SP03 respectively, the recorded peat has a Von Post classification of H7.

Section 3 is between T02 and T03, which includes the access track for the Met Mast. Peaty soils were recorded to be present with a mean depth of less than 0.5m. An isolated pocket of peat was encountered towards the access track of the Met Mast where a maximum depth of 1.0m was recorded. There were no samples taken within proximity of this section given its general minimal thickness.

Section 4, from T03 towards T04, including the access track of T04, recorded areas of peat with isolated pockets of deep peat to be present along the majority of the track, ranging from depths between 0.50m to 2.80m, with a mean depth of between ~1.0m and 2.0m. SP04 was collected at the deepest section of the peat (2.80m), recorded peat to be H6 on the Von Post classification, described as moderately to highly decomposed with very indistinct plant structure. SP06 towards T04 also recovered a classification of H6.

Section 5, situated between T04 and T05, recorded a mean peat depth of below <0.5m. Peaty soils are thus present along the majority of this section, with an area of peat towards the middle of the section as deep as 1.40m. Towards T05, an isolated pocket of deep peat is present with a depth of 3.30m. A sample had been taken at this location (SP07), classifying the peat to be H7.

Section 6, between T05 and T08, follows the same 400m AOD contour, but is slightly higher in elevation at T05. Isolated pockets of deeper peat are located intermittently adjacent to the track, with a maximum depth of 2.65m towards T06. The majority of the peat / deep peat recorded is between T06 and T07, where the morphology of the slope remains consistent. Towards T06 at SP08, and again towards T07 at SP09, peat samples were collected identifying the peat as H8 and H7, respectively.

Pockets of peat are present within Section 7, situated between T08 and the junction where the track splits, going towards T12 and T15. Section 7 includes the BESS, T09 and T10. Along this section of track, peat is recorded to be <0.60m depth, whereby the majority can be classed as a peaty soil or shallow peat. The deepest isolated pocket of peat is 2.0m, situated above the proposed BESS location

towards the access track for T10. A peat sample has been collected from this location, recording the peat to be classified as H7. Another peat sample was collected at SP10, identifying the peat as H8.

In Section 8, from the aforementioned junction towards T16 (northern section), the majority of the probes recorded a peat depth of between 0.30m to 0.80m, with a maximum peat depth recorded of 1.50m towards T13, identifying a pocket of peat. A sample had been collected near T11, recording the localised deep peat present to have a Von Post classification of H8 (SP12, 50m NE from the track). Another peat sample was collected at SP14, noting the peat to also be H8.

In Section 9, from the junction towards T15 (southern section of the track), pockets of peat were encountered, with the deepest pocket of isolated deep peat recorded to be 2.10m towards the start of the section, between the junction and T12. The majority of peat in this area, however, has been recorded to be <0.50m and therefore designated as soil. A peat sample was collected 200m south of the track, noting the peat at this location to be H7.

For Section 10, from T15 towards T19 along the southern section of the track, probes recorded depths between 0.60m and 1.20m as the mean, with an isolated pocket of deeper peat up to 2.40m recorded directly adjacent to the track towards T19. Two samples were collected at SP16 and SP18, classifying the peat to be H8.

Section 11 is situated between T18 and T19 which records peat between 0.30m and 0.80m, with a maximum peat depth of 1.10m. The samples collected of the peat are located towards T19, recording the peat to be H8 (SP18 90m SW and SP16 210m S of the track).

Section 12 runs from T17 (excluding the access track of T17) towards T18. The probes recorded minimal peat to be present, with the majority of the peat recorded to be less 0.50m and therefore classified as soil.

There is a potential for peat to be present just north of T18 for a section of approximately 200m in length, due to the correlation with deep peat present 80m east and 137m south-west of the track. A peat sample was collected at SP17, situated 130m west of the track, noting the peat to be classified as H7.

2.6 Substrate

As outlined in section 1.3, the BGS highlighted the substrate to likely comprise psammite. In some of the areas, hummocky glacial till / morainic deposits are likely to be present. Where the BGS has reported peat on the superficial / drift maps, it has been interpreted that the peat recorded as part of this risk assessment as likely being underlain by either psammite or glacial deposits. No ground investigation to prove the substrate below the peat has been undertaken for the purposes of this report. A proven understanding of the substrate from a ground investigation (as proposed in Section 4.1 of this report), will aid the development of detailed mitigation measures as part of the detailed design. The substrate plays a key role within an instability factor, where the shear failure mechanism can be within a discrete shear plane at the peat / substrate interface. As such, a smooth and / or impermeable substrate is considered to be favourable for an instability event, providing little friction.

Table 8 below provides an overview of the likely substrate present in relation to the proposed structures.

Table 8: Anticipated substrate and slope angle at Proposed Development

Location	Max Peat Depth (m)	Max Peat Depth within ~150m (m)	Likely substrate*	Slope angle (°) (min – max)
T01	0.47 (Peaty Soil)	2.30	Gneiss / Granite	3.5 – 11

Location	Max Peat Depth (m)	Max Peat Depth within ~150m (m)	Likely substrate*	Slope angle (°) (min – max)
T02	1.00 (Peat / Deep Peat)	2.20	Psammite	6.6 - 18
T03	0.82 (Peat)	2.50	Psammite	3.5 – 8
T04	0.25 (Peaty Soil)	2.25	Psammite	7 – 11
T05	1.95 (Deep Peat)	2.57	Psammite	2 – 11
T06	1.42 (Deep Peat)	3.25	Hummocky / Morainic Glacial Deposits	2 – 18
T07	0.70 (Peat)	2.05	Hummocky / Morainic Glacial Deposits	4.6 – 22
T08	1.17 (Deep Peat)	1.54	Hummocky / Morainic Glacial Deposits	3.5 – 17
T09	1.45 (Deep Peat)	1.67	Hummocky / Morainic Glacial Deposits	3.5 – 10
T10	0.91 (Peat)	1.88	Hummocky / Morainic Glacial Deposits	3.2 – 18
T11	2.34 (Deep Peat)	2.76	Hummocky / Morainic Glacial Deposits	1 – 11
T12	1.50 (Deep Peat)	2.00	Hummocky / Morainic Glacial Deposits	4 – 16
T13	0.70 (Peat)	1.44	Hummocky / Morainic Glacial Deposits	3 – 9
T14	0.92 (Peat)	2.94	Hummocky / Morainic Glacial Deposits	4 – 8
T15	1.56 (Deep Peat)	2.68	Hummocky / Morainic Glacial Deposits	4 – 10
T16	0.51 (Peat)	1.14	Hummocky / Morainic Glacial Deposits	1 – 13.5
T17	0.58 (Peat)	1.05	Hummocky / Morainic Glacial Deposits	6 – 10
T18	0.75 (Peat)	2.70	Hummocky / Morainic Glacial Deposits	1 – 9
T19	1.43 (Deep Peat)	2.28	Hummocky / Morainic Glacial Deposits	2 – 12

Location	Max Peat Depth (m)	Max Peat Depth within ~150m (m)	Likely substrate*	Slope angle (°) (min – max)
BESS	0.60 (Peat)	1.95	Hummocky / Morainic Glacial Deposits	3.5 – 10
Met Mast	0.50 (Peaty Soils / Peat)	1.00	Hummocky / Morainic Glacial Deposits	6 – 13
Site Compound	<0.5m (Peaty Soils)	2.10	Psammite	1 – 12
Access Track	Variable (see Sections 3.3 and 4.1.3)	Variable (see Sections 3.3 and 4.1.3)	Hummocky/Morainic Glacial Deposits or Psammite or Gneiss/Granite (dependent on section)	Variable (see Sections 3.3 and 4.1.3)
Borrow Pits	<0.5m (Peaty Soils)	3.13	Gneiss/Granite or Psammite	1 – 20

* Based on interpretation of information provided by the BGS.

3. Peat Slide Risk

The peat probing has identified the presence of peaty soils, peat, and localised intermittent pockets of deeper peat across the site. Where a structure, compound or section of track has recorded peaty soils to be present, in most cases there is also peat or an intermittent pocket of deeper peat recorded within the close proximity. Therefore, conservatively the assessment progresses from the position that there is potential for land slide risk and all areas should be subject to analysis. The risk is based on the substrate, the slope angle, and the depth of peat, as described in the table below. No ground investigation has been undertaken to confirm the substrate of the peat; therefore, the substrate is derived from BGS maps and site visit observations, and where relevant, comments made using satellite imagery.

The table below presents the Peat Landslide Risk Rating and is generally based on the Scottish Government Guidance. The Peat Landslide Risk rating in this section is based on the pre-mitigation stage. The mitigation of the Peat Slide Risk is outlined in Section 4.

Table 9: Peat Slide Risk Rating

Potential stability risk	Description	Action
Very low risk	<p><u>Slope</u>: <2°; or sloping away from proposed design</p> <p><u>Depth</u>: <0.5m (peaty / organic soils)</p> <p><u>Substrate</u>: Sand/gravel, rock substrate, or very stiff glacial till</p>	No mitigation required. See Peat Management Plan as per Section 4.2 to be followed in the event peat is encountered in areas outwith the probing undertaken. The need for monitoring and mitigation to be considered as part of detailed design.
Low risk	<p><u>Slope</u>: 2° ≤ 4°</p> <p><u>Depth</u>: 0.5m – 1.5m (thin peat)</p> <p><u>Substrate</u>: Sand/gravel, rock substrate, or very stiff glacial till</p>	No mitigation required pending ground investigation but and with additional considerations to be adopted within design. Peat Management Plan as per Section 4.2 to be followed.
Medium risk	<p><u>Slope</u>: 4° ≤ 8°</p> <p><u>Depth</u>: 0.5m – 1.5m (thin peat), >1.5m (deep peat)</p> <p><u>Substrate</u>: Sand/gravel, rock substrate, or very stiff glacial till, or clay, or not proven</p>	Mitigation required to either avoid or remove peat. Further ground investigation / slide risk assessment required as part of detailed design to confirm that proposed mitigation is suitable to reduce risks to low or very low without significant environmental impact.
High Risk	<p><u>Slope</u>: 8° ≤ 15° or above</p> <p><u>Depth</u>: 0.5m – 1.5m (thin peat) situated on steep slopes, >1.5m (deep peat)</p> <p><u>Substrate</u>: Any of the above or not proven.</p> <p>Any evidence of slip material or evidence of previous</p>	The area should be avoided.

Further, comments are made using satellite imagery where relevant on geomorphological features, such as potential locations for hags and concentration features (defined as areas where there is a potential for water to accumulate, such as gullies). See Appendix 1, Drawing No. 162008/9204 for the pre-mitigation peat slide risk at each of the turbines, and infrastructure proposed at Beinneun 2 to date.

3.1 Wind Turbines

As outlined in Section 2, peat was observed to be present at the location of most of the turbines but where present was generally intermittent in its distribution. This section will discuss the Peat Landslide Risk outlining the specific conditions within which the individual turbines are located.

3.1.1 Turbine T01

Turbine T01, as described in Table 5 in Section 2.3, has recorded a maximum peat depth of 1.0m beneath the turbine and proposed laydown area. The majority of the probes undertaken (6 out of 8 probes) recorded a depth of <0.5m, indicating the likely presence of peaty soils only. Peat and deeper peat were recorded surrounding the laydown area, towards the west, south and east, with the thickest peat recorded 40m towards the south with a depth of 2.40m. A peat sample has been collected from this location, describing it as a very soft brown pseudo fibrous (H7, P2, F1, R1, W0). The peat between 0.40m and 0.9m was recorded to be firm (P2), with a low content of fibres (F1), low content of rootlets (R1) and no wood remains (W0). The H7 indicates the peat to be highly decomposed. Further, peat is present directly east of the proposed laydown area, with a probe recording 2.00m depth at 7m east.

The majority of the slope angles at the laydown area range between 2° – 4° (low) and 4° – 8° (medium). Towards the northern part of the laydown area, the slope angle increases to 8° – 15° (high). It slopes from southwest towards the northeast, where directly out with the laydown area a localised >15° (very high) slope angle is present, correlating with a fault line trending northwest to southeast, where bedrock is likely to be exposed. It is anticipated that the substrate of the peat in this area is most likely psammite (bedrock). The anticipated water runoff is from southwest towards the northeast.

On the basis of this information, the peat present towards the southern parts of the laydown area have the potential for instability, based on the following: The peat recorded at 7m east though this part is situated at a low slope angle, the peat recorded north of this point (0.70 – 0.90m depth) is at a 4° – 8° angle, therefore at potential of a peat slide is present. The other area of peat recorded 40m S is situated at a steeper slope angle, 8° – 15°, towards the toe of the fault line (a 30m step across 100m). Thus, there is a potential for instability towards the south-eastern corner of the laydown area.

Based on the above information, Turbine T01 is considered to be a **medium** risk of peat landslide pre-mitigation.

3.1.2 Turbine T02

Turbine T02 recorded a maximum peat depth of 1.90m within the turbine laydown area, with peat thickness ranging between 0.50m to 1.90m within 7 out of a total of 11 probes undertaken within the laydown area, with the remainder of the peat probes within the laydown area recording less than 0.50m depth. The majority of the probes that recorded such peat depths are situated within the peat to deeper peat range. A sample was collected from SP03 (0.20m – 0.70m bgl), situated within the laydown area, describing the peat to be very soft dark brown pseudo fibrous PEAT (H8, P2, F2, R1, W0). The high Von Post classification indicates the peat to be very highly decomposed (H8), though it being fairly firm (P2) with moderate fibre content (F2), low rootlets content (R1) but no wood remains (W0).

Directly out with the proposed turbine area, approximately 4m towards the north, a probe recorded the presence of deep peat (2.20m depth), with one further probe recording such a depth ~100m further north. Towards the east and the south, generally the probes record depths <0.50m; with the exception of two probes (18m south) where a depth of 1.10m of peat was recorded and another (50m south) where 1.60m peat was recorded. Directly towards the west, there is a lighter coverage of probes, with the first probe present 100m west recording a maximum depth of 2.10m. Consulting the satellite imagery of this area, it is highly likely that peat will be present between this probe and the laydown area as a similar topography and vegetational cover appears to be present here.

The slope angle northwest of the laydown area is 4° – 8° (medium), increasing to 8° – 15° (high) to >15° (very high) at the south-eastern corner of the area. The slope tapers from southeast towards northwest, with current levels of the laydown area (as assumed by the DEM) of 429m AOD at the southeast corner and 452m AOD at the north east corner. Another fault is present 100m towards southeast, trending north east to southwest. Bedrock is likely to be shallow or exposed around the area of the fault, thus anticipating psammite to be the substrate around the turbine.

With the anticipated slope angles towards the north-eastern corner, it is likely that the peat present will be irregular and in pockets rather than representing a consistent area of peat. However, about halfway along the laydown area, the slope tapers off dramatically where the peat depth also increases. There's a potential for water to flow down and saturate the peat located at the lower end of the slope.

Considering the slope angle and the peat depth, the area to the north of the turbine where the deepest peat is recorded could potentially be at risk from peat slide. The slope angle tapers off further towards the north, at the location of the current laydown the slope is considered to be medium (4° – 8°) to high angles (8° – 15°), therefore Turbine 2 is considered to be a **medium** risk with respect to the pre-mitigation peat landslide risk.

3.1.3 Turbine T03

Turbine T03 has a maximum recorded peat of 1.20m within the proposed laydown area, towards its northern extent. A further five probes recorded peat (0.60m, 0.60m, 0.80m, 1.0m, 1.01m) to be present periodically across the laydown area. The majority of the probes (16 out of 22 probes) however did not record depths deeper than 0.50m. Surrounding the laydown area, towards the east, south and west, peat to deep peat was recorded to be present, with probes recording depths of 1.50m (100m east), 1.80m (80m south) and 2.10m (95m southwest).

The recorded slope angle of the laydown area ranges between 2° – 4° (low) and 4° – 8° (medium), with a slight steepening of the slope towards the southern part of the laydown area, increasing towards 8° – 15°. Turbine T03 is situated on an elevated area, with the majority of the laydown area situated between 480m AOD and 484m AOD. The peat recorded out with the proposed turbine is thus at lower elevations and therefore has a low probability of impacting the turbine. A peat sample was collected from the peat downslope of the turbine, situated 170m towards the southwest, recording the deep peat (2.80m) to be very soft dark brown fibrous PEAT, with a H6 marking the peat to be moderately to highly decomposed, being medium firm (P2), high content of fibres, low content of rootlets and no wood particles.

The peat present within the laydown area can be regarded as minimal risk due to its intermittent nature, likely confined in small gullies as depicted from satellite imagery (as these gullies are too small / fine to be picked up by the digital elevation model provided (1m accuracy)). Further, a rock outcrop can be seen on the satellite imagery, therefore indicating that the substrate is likely to be psammite (bedrock), which is also indicative of a shallow superficial thickness.

Considering the intermittent nature of the peat (between 0.50m and 1.0m), despite the overall presence of peaty soils (<0.50m), as well as the low to medium slope angles upon which the peat are present, it is considered that Turbine T03 has a **medium** risk with regards to the pre-mitigation peat landslide hazard.

3.1.4 *Turbine T04*

Minimal peat was recorded across the laydown area for Turbine T04, with all fourteen peat probes recording a depth of <0.50m, with the maximum depth recorded to be 0.40m. The majority of the probes recorded a superficial depth of between 0.10m to 0.20m. Directly surrounding the laydown area of the turbine, the maximum peat recorded was 0.50m. Probes recorded peat depth of 2.00m (10m west) increasing to 2.50m (80m west). About 30m to 50m north, peat depths of between 0.80m and 1.00m were recorded.

The majority of the turbine laydown area falls within the high slope angle category (8° – 15°), with the slope falling from southeast towards the northwest, from 500m AOD to 481m AOD. The majority of the peat present is situated at a lower elevation from the turbine, and as such it is unlikely that this will impact the turbine. Further, towards higher elevation from the turbine, peat is present, though situated at a different slope azimuth (south towards north) and this is therefore unlikely to impact the turbine.

Satellite imagery shows the presence of a rock outcrop directly adjacent to the laydown area, noting that the substrate to be bedrock as well as being indicative of the superficial deposits being of minimal thickness in this area.

Considering that the maximum depth of peat recorded within the laydown area is 0.40m and the peat surrounding the turbine is situated at a lower elevation, Turbine T04 is recorded to have a pre-mitigation Peat Landslide Risk of **Low**.

3.1.5 *Turbine T05*

The majority of the probes within the laydown area of T05 recorded a superficial depth of <0.50m (10 out of 14 probes), though towards the west of the laydown area, the maximum peat depth in an isolated pocket was 2.60m. Within the central area of the laydown, a peat depth of 0.90m was recorded, however the probes surrounding this probe recorded peat <0.50m. Outwith of the laydown area, towards the west, the peat increases to a depth of 3.30m. A sample has been collected (SP07), that recorded the peat to be very soft dark brown fibrous PEAT, with a Von Post scale of H8 (very highly decomposed peat), being of firm strength (P2), with medium fibres but low content of rootlets and no wood fragments present. Further west of the laydown area, at 90m, the probes recorded a peat depth of 0.90m to 1.60m.

Directly north of the turbine, peat was recorded to be present to 1.80m depth decreasing to 0.90m at 32m north. Peat was again recorded 130m north of the site at a depth of 1.20m. Towards the northeast of the laydown area, at 43m and 73m distance, deep peat was recorded to a total depth of 2.20m and 2.40m. At about 100m towards the east, peat thickness was recorded to be 1.00m. 112m towards the south, the peat increases to a depth of 3.40m, though between this position and the laydown area, only minimal peaty soils were recorded (<0.50m).

The majority of the slope angle within the laydown area can be classed as a medium slope (4° – 8°), though around the edges of the laydown area, the slope category increases to high (8° – 15°). With regards to the peat present, the medium to high category, this coincides with the deep peat present, ranging between 0.90m to 3.30m.

The laydown area is situated on a mound-like feature with its highest point 449m AOD and its lowest towards the southwest of 438m AOD. With the presence of another fault 27m towards the north trending

east-southeast to north-northwest, the slope azimuth is from north to south. Towards the west of the mound, the satellite imagery highlights the presence of a gully flowing north to south, changing course south of the laydown area flowing northwest to southeast.

With regards to the peat situated north from the laydown area, another concentration feature is noted from the satellite imagery where flow is recorded from northwest towards the southeast, therefore away from the laydown area. Further, the peat present northwest of the site is situated at a lower elevation than the mound and at a gradient falling away from the laydown area. Both these instances are unlikely, in the event of a peat slide, to impact the laydown area. Similarly with regard to the peat identified towards the south of the site, considering the distance and slope azimuth, it is unlikely that this will impact the turbine laydown area.

The peat that is present within the laydown area towards the west, and directly out with the laydown area, however, has the potential to impact the laydown area considering the depth, slope angle, and proximity to the proposed design. Although the majority of the turbine laydown area is in an optimal position with regard to the minimal peat present (<0.50m across the majority of the laydown), the section towards the west highlights a concern that would raise the pre-mitigation Peat Landslide Risk towards a **medium** risk.

3.1.6 *Turbine T06*

A small number of peat probes have been undertaken in this position and peat depths were recorded as 0.30m, 0.60m and 1.80m towards the southeast of the laydown area. Directly towards the south of the turbine, it is considered that the fault trending east-southeast to west-northwest can be projected further to the extent of the gully feature, until about 175m east from the laydown area. Peat has been associated with this gully, recording depths from west to east of 1.05m (140m west), 1.00m (80m west), 0.90m (43m southwest), 0.60m (5m south), 1.50m (30m south), 1.70m (100m southeast), and 2.65m (150m southeast). The latter position coincides with sample SP08, which recorded very soft dark brown pseudo fibrous peat, that is very highly decomposed (H8), firm (P2), low fibre content (F1), low rootlets content (R1) and no wood (W0). From 2.65 to 2.90m depth, the sample recorded very soft slightly greyish brown peaty clay with traces of gravel.

The laydown area is predominantly situated on a high slope angle (8° – 15°). The aforementioned gully has a low (2° – 4°) or very low slope angle (<2°), situated at a lower elevation ~405m AOD, where the laydown area is situated 405m AOD at its lowest elevation, and 425m AOD at its highest elevation. The slope azimuth is towards the south, towards the large gully. The peat recorded to be present within the laydown area (0.60m depth) likely coincides with a concentration feature observed on the satellite imagery, thus likely being a pocket of peat, rather than indicating a more extensive area of peat. Further, considering the steeper slope angles present, it is unlikely that peat or deep peat will be present on such angles, though this will be required to be confirmed during the ground investigation phase.

With the current information, it is likely that peat will be associated with the gully, though due to the low angles present and the likelihood of the peat to be contained within this feature, it is unlikely to affect the proposed construction of the laydown area. In addition, the slopes are likely too steep to allow for any significant peat to accumulate. As such, the likelihood for peat to be present within the proposed laydown area is considered to be low. Therefore, the Peat Slide Risk for T06 is considered to be **medium** risk pre-mitigation.

3.1.7 *Turbine T07*

The majority of the peat probes covering the laydown area for Turbine T07 recorded minimal peat (<0.50m) (7 out of 8 probes), though one probe recorded peat to be present to a depth of 0.70m. 40m towards the north, a singular probe recorded peat to be present to a depth of 0.70m, where other probes at a similar distance recorded peat <0.50m. 65m towards the southeast of the laydown area, peat was recorded to be present to a depth of 1.40m, where another probe 80m from the laydown area recorded a depth of 0.90m.

80m towards the south of the laydown area, a peat probe recorded peat to be present until a depth of 0.80m. Further, 100m towards the west of the turbine, peat was recorded to be present to a depth of 1.30m. At this location, a sample (SP09) had also been collected between 1.00 and 1.50m bgl, marking the peat to be very soft dark brown pseudo fibrous PEAT, that is highly decomposed (H7), firm (P2), with low contents of fibres (F1) and rootlets (R1) and no wood particles.

A large part of the laydown area falls into the high slope angle (8° – 15°), where the northern part of the laydown area could be classed as a very high slope angle (>15°) and the middle part of the laydown area a medium slope angle (4° – 8°). The slope azimuth varies slightly though is predominantly towards the south, with variations towards the southwest but largely towards the southeast. The probe located 40m north is situated in a concentration feature as depicted from the satellite imagery. The feature appears to be flowing towards the proposed laydown.

Considering the steepness of the slope around this peat probe situated 40m north, there is a potential for peat instability. However, the peat is likely to be localised and / or intermittent and unlikely to affect construction. This should however be confirmed by the ground investigation required to support detailed design.

The sporadic nature of the peat is further corroborated by the probes closer towards the laydown, where peat had been recorded <0.5m. The one probe that recorded peat to be present to a depth of 0.70m appears to be situated where the slope angle shallows, thus increasing the likelihood of further peat accumulation.

As such, due to the peat present within the vicinity of the laydown area, a likelihood of a peat instability event, thus requiring mitigation in accordance to the table as outlined in section 3.0. The Peat Slide Risk therefore is classed as **medium** risk, pre-mitigation.

3.1.8 *Turbine T08*

The probes within the laydown area for Turbine T08 predominantly record peat to be <0.50m, with the exception of one out of a total of seven peat probes situated towards the western side of the laydown, recording peat to be present to a depth of 1.50m. Directly surrounding the laydown area, peaty soils were recorded to be present (<0.50m), with the exception of a probe 50m towards the northwest of the laydown area, recording peat to be present (1.0m depth). Further, another probe 86m north recorded peat to be present to a depth of 0.70m. Another probe situated 1.20m towards the east of the laydown area recorded peat to be present to a depth of 0.90m.

Regarding slope angle, the majority of the laydown area is situated on a high slope angle (8° – 15°), where the northeastern side of the laydown area could be classified as a very high slope angle (>15°). The slope azimuth undulates slightly, though generally is towards the south, where the highest point of the laydown area is situated north (432m AOD) and the lowest in the south (414m AOD). Consulting the satellite imagery, a gully feature appears to be present, trending approximately northwest to southeast. The probe that recorded the 1.50m peat depth is situated at a shallower slope angle (low to

medium). The probe recording peat situated 50m towards the northwest coincides with the gully, therefore it is anticipated that any peat present within the laydown area and slightly beyond it will be confined by this gully feature.

Another water feature is present towards the north / east of the laydown area, flowing towards the southeast, slightly changing course towards the south. The peat that had been recorded north and east of the site coincides with this water feature.

The gully that crosses over the laydown infers the presence of a potential for peat instability, considering the peat depth and the slope angles of which the peat is located. Therefore, the pre-mitigation Risk of Peat Landslide is classed as **medium**.

3.1.9 Turbine T09

The peat probes of Turbine T09 largely recorded a peat depth of below 0.50m (5 out of 7 probes), though towards the northeast of the laydown, peat and deep peat were recorded to depths of 0.70m and 1.50m. 26m north of the laydown area, deep peat was recorded to a depth of 1.90m. Situated 14m towards the east, peat was recorded to a depth of 1.0m, and directly south of the site, a probe recorded peat to a depth of 1.90m. Further south, about 41m, a probe recorded 0.65m of peat. 73m towards the west, a probe recorded 0.60m of peat. A sample was collected from the position directly south of the laydown (SP10), describing the peat to be very soft dark brown fibrous PEAT, very highly decomposed (H8), firm (P2), with medium content of fibres (F2), low rootlets content (R1) and no wood particles (W0).

The majority of the laydown falls into the high category with regard to slope angles ($8^{\circ} - 15^{\circ}$), with both the northwest and the southeast of the site falling into the medium slope angle ($4^{\circ} - 8^{\circ}$). Generally, the slope azimuth falls towards the southeast in this area. A gully feature across the eastern section of the laydown, running from north to south, where a marked water course is present 53m to the east and another 63m to the west. The steep slope angles indicate that minimal peat would be likely to accumulate to significant depths, where peat had not been recorded surrounding the laydown area.

In addition, the peat recorded north, west and directly south of the laydown area are situated within the aforementioned gully feature, thus likely to be confined within this and therefore have a low likelihood of impacting the laydown area.

The pre-mitigation Risk of Peat Instability, however, remains, and therefore should be classed as **medium** risk, considering the angles and peat depth present towards the east within the laydown area.

3.1.10 Turbine T10

The probes towards the north and the south of turbine laydown T10 recorded a peat depth of <0.50m (6 out of 9 probes), where three probes recorded peat to be present between depths of 0.80m and 1.00m. Peat was recorded directly north of the laydown area at a depth of 0.60m, with deep peat present 72m northeast. Though 30m east, a probe recorded <0.50m of peat depth, 120m from the site recorded peat at 1.20m depth, with another probe recording 1.20m of peat 35m southeast. 44m towards the southwest, a probe recorded peat to a depth of 0.80m. The probes along the proposed access track for T10 recorded peat <0.50m, with a probe recording 2.0m of peat 4m along the proposed track and 123m south from the laydown area of T10. 130m NW of the laydown area, peat of 0.90m was recorded.

A sample had been collected at probe SP11 situated within the laydown area classified the peat as very soft dark brown pseudo fibrous peat, with a Von Post of H7 (highly decomposed), firm (P2), with medium fibre (F2) and rootlets (R2) content and no wood particles (W0).

Approximately half of the laydown area is situated in the medium slope angle category ($4^{\circ} - 8^{\circ}$), with the southern half of the area falling within the high category with regards to slope angle ($8^{\circ} - 15^{\circ}$). Small pockets within the northern part of the laydown area fall within the low category ($2^{\circ} - 8^{\circ}$). The northern part of the laydown area is situated at 441m AOD, with the slope falling towards the southeast to 425m AOD.

The peat recorded by the probes highlight the periodic nature of peat present within the site. From inspecting satellite imagery, the terrain appears to be rugged, with small mounds (~20m diameter) present surrounding the laydown area. Small drainage pathways coincide with the peat recorded surrounding T10. For this reason, the peat towards the east is unlikely to impact the laydown area as any instability is likely to be confined within these gullies. It is unlikely that during the construction of the laydown area that the peat north of the area will be disturbed.

The steeper slope angles are associated with the area within the central part of the laydown area that recorded peat between 0.80m and 1.0m. There is a likelihood that the intermittent peat surrounding the laydown area may reach the laydown area within a peat instability event. Therefore, the pre-mitigation Peat Landslide Risk is considered to be **medium** risk.

3.1.11 *Turbine T11*

Towards the south of the site, the probes recorded <0.50m of peat depth (5 out of 7 probes), where the satellite imagery rock outcrop is observed, therefore likely the bedrock being close to the surface. However, T11 recorded deeper peat to be present within the proposed laydown area, recording a maximum of 2.0m of peat depth. Directly towards the north of the laydown area, probes recorded peat to be present until a maximum depth of 3.0m, with the majority of the peat situated between 2.0m and 2.5m. A peat sample had been collected from the 3.0m deep peat (SP12), noting the peat to be very soft dark brown pseudo fibrous PEAT with a Von Post scale of H7 (highly decomposed), being firm (P2), moderate content of fibers (F2), low content of rootlets (R1) and no wood particles (W0).

The southern part of the laydown area is situated on a medium slope ($4^{\circ} - 8^{\circ}$), where the northern half is situated on a shallower slope (within the low slope category ($2^{\circ} - 4^{\circ}$)). Directly outwith the site, coinciding with where the deep peat located, the slope is $<2^{\circ}$. Further, the laydown area is situated between 456m AOD and 460m AOD. Towards the south of the laydown area, the slope slopes down towards the southeast, whereas the slope slopes down towards the west, west of the site. Towards the north, the relatively flat area is likely to drain towards the southwest through a gully, across the proposed laydown area.

Where the southern end of the laydown does not have any peat recorded, the northern end appears to be situated in a large wet area as noted on satellite imagery, estimated to span 100 to 165m. This peat is situated on a very shallow slope, therefore in terms of the likelihood of sliding, will be low.

Despite the angle of the slope being considered shallow where the peat is deepest, because of the deep peat present and its encroachment into the laydown area of the turbine, it is considered that Turbine T11 has a pre-mitigation Peat Landslide Risk Rating of **medium**.

3.1.12 *Turbine T12*

T12 recorded a maximum deep peat depth of 2.0m in one of the eight probes undertaken on the proposed laydown area. Four additional probes recorded peat to depths of 0.60m to 0.80m depth, where the two remaining probes recorded peaty soils of <0.50m depth. 140m north of the laydown area, a peat probe recorded 1.30m depth of peat present, where another probe recorded 1.00m depth of peat 140m northeast of the area. The peat probes between (~50m) did not record peat to be present (<0.50m). A

singular probe situated 5m east of the laydown area recorded peat to be present to 0.60m depth. Towards the south, situated 22m away from the laydown area, a probe recorded peat depth of 1.60m, and again at 130m peat was recorded but to a depth of 0.65m. Further towards the west, at 80m and again at 120m, peat was recorded to be present at depths of 1.0m and 2.10m, respectively. The closest sample is collected 182m towards the south (SP13), recording the peat in this location to have a Von Post classification of H7 (highly decomposed), firm (P2), low content of fibres (F1), medium content of rootlets (R2) and no wood fragments (W0); described as very soft dark brown fibrous peat.

The majority of the site falls within the high slope angle ($8^{\circ} - 15^{\circ}$), with part of the laydown area recorded to be within the very high slope angles ($>15^{\circ}$). Towards the northeast of the site, the slope shallows out towards a medium angled slope ($4^{\circ} - 8^{\circ}$). The slope azimuth falls towards the southwest, with its highest point situated in the northeast at 415m AOD and its lowest point at 400m AOD.

The peat recorded is likely to be intermittent nature, where the lower angle of the slope situated towards the northeast of the laydown area is associated with the deeper peat present. Other probes within the vicinity of the deeper peat recorded depths of $<0.50\text{m}$, therefore corroborating the likelihood of only patches of peat to be present. The satellite imagery suggests a gully may be present, where water flows from north to south across the current proposed laydown area.

The peat present towards the west of the turbine is situated at a lower elevation within an unnamed marked watercourse show on the 1:25,000 OS map, and therefore it is unlikely to affect the proposed construction. While deeper peat is identified 140m north from the laydown area it is unlikely to be effected by construction.

Despite the peat present in an intermittent nature, the low angles of the slope where the peat and deep peat is present, Turbine T12 is considered to have a pre-mitigation **medium** risk of Peat Landslide.

3.1.13 *Turbine T13*

Peat has been recorded in 1 out of 11 probes within the laydown area of wind turbine T13, recording a depth of 0.60m. The remainder of the probes recorded depths of $<0.50\text{m}$. Situated 50m towards the north, a probe is present recording a depth of peat 1.0m. Further, towards the northeast of the site (94m), peat is at a depth of 0.80m. Closer towards the laydown area, 23m west of the site peat was recorded to a depth of 1.50m, where a sample was collected recording the peat to be very soft dark brown pseudo fibrous PEAT (SP14). The peat has a Von Post rating of H8 (very highly decomposed), firm (P2), moderate fibres (F2), low content of rootlets (R1) and no wood particles present (W0).

Towards the southeast of the site, situated at 30m, a peat probe records peat present at a depth of 1.0m, where another peat probe records at 120m southeast records peat to be present at 0.70m. Directly south of the site 76m from the laydown area, a probe records deep peat at a depth of 1.10m. Peat is also recorded west of the area, probes recording at 12m and 60m southwest peat to a depth of 1.0m. Northwest of the site, at a distance of 30m, peat was recorded to a depth of 0.80m.

The laydown area is situated at a medium to low slope angle ($2^{\circ} - 4^{\circ}$ to $4^{\circ} - 8^{\circ}$, respectively), with parts of the angles being at an angle of $<2^{\circ}$. Within the centre of the laydown area, a part of the area is classed as having a high slope angle ($8^{\circ} - 15^{\circ}$). The slope azimuth is northeast towards southwest, with the highest point at 481m AOD and the lowest at 472m AOD. From the satellite imagery, unmarked burns are present flowing along the azimuth, along the northern part of the proposed laydown area, where the water appears to be pooling at the southwest of the laydown area in a location sizing 40m length by 20m width.

Considering only one peat probe recorded peat to be present within the laydown area, as well as the angles upon within the laydown area being shallow, the likelihood of a peat slide occurring within the laydown area is considered to be low. However, peat is present, albeit intermittently, upslope of the area and directly downslope of the proposed area. The peat upslope towards the north of the area has the potential to reach the laydown area if a peat instability even occurs. The peat situated directly downslope of the laydown area, towards the southwest, has the potential to undermine the turbine laydown area.

As such, the pre-mitigation Risk of Peat Instability is considered to be **medium** risk, due to the peat present surrounding the wind turbine.

3.1.14 *Turbine T14*

1 out of the 4 probes have recorded peat to be present within the proposed laydown area for T14, recording a depth of 0.92m. The remainder of the probes recorded peaty soils (<0.50m). North of the laydown area, at 15m and again at 35m, probes recorded a depth of 1.50m and 1.0m, respectively. Southeast of the proposed laydown, peat was recorded at 5m and 20m distance at depths of 1.0m and 0.80m. Further peat was recorded to be present southwest of the Turbine at a distance of 34m, and again at 108m southwest recording a depth of 3.0m. The probes situated northwest and northeast, as well as further south from the aforementioned probes, did not record depths deeper than <0.50m. No samples have been taken within the vicinity of the laydown area (within 150m). Much as mentioned before, the peat appears to be present in irregular patches, where it appears to be contained by features such as gullies.

Almost the entirety of the laydown area is marked as a medium slope angle in relation to the peat stability (4° – 8°). A small part of the laydown area towards the west can be marked as a low slope angle (2° – 4°). The slope azimuth towards the south of the laydown area falls towards the northeast, where towards the north of the laydown, the slope falls toward the east, with its highest point situated at the west at 465m AOD, and its lowest point at 455m AOD. Satellite imagery marks the presence of a body of water situated towards the west at 100m distance, with apparent unmarked burns flowing towards the west, crossing over the laydown area towards the south and also the north of the site.

The deep peat recorded within the vicinity is situated adjacent to the aforementioned body of water, which is situated upslope of the laydown area. The slope angle here is <2°, with a slight fall towards the body of water. The peat recorded south within the laydown area (including southeast and southwest of the laydown area) is situated within an unmarked burn / water course that is fed by the water body, flowing downhill towards the east. The construction of the laydown area, therefore, has the potential to alter the hydrological regime of the surrounding peat, with potential for water logging towards the west and potential for degradation of the peat through dehydration of the peat, which in turn may increase the likelihood of peat instability.

Although the laydown area will not prevent the flow of water from the waterbody to the peat situated towards the north of the proposed laydown area, the is situated at a medium slope angle with peat having been recorded at 1.50m depth.

As such, due to the peat and deeper peat present within and surrounding the laydown area, despite the peat being present intermittently and likely will be contained within the gullies / watercourses, the pre-mitigation Risk of Peat Slide is considered to be **medium** risk.

3.1.15 *Turbine T15*

6 out of the 14 probes recorded peat to be present, ranging from 0.60m depth to 2.0m depth. The remainder of the peat probes recorded soils to be <0.50m.

80m towards the northeast of the laydown area, peat has been recorded to a depth of 1.20m. Closer to the laydown area, 20m east of the site, a probe recorded a depth of 1.0m, where another probe towards the east at 21m recorded a depth of 2.80m. Slightly further south, at 9m, 30m and 52m distance, peat was recorded at a depth of 0.70m, 2.50m and 2.20m, respectively. South of the site, clockwise, at 43m, 33m, 18m and at 9m distance, peat was recorded at depths of 0.55m, 0.60m, 1.0m and 1.90m, respectively. 110m towards the south, another probe recorded peat to be present at a depth of 1.20m. Peat was also recorded to be present towards the west of the site, at a depth of 1.80m situated 15m west. 90m towards the southwest and 130m towards the west, peat was recorded in an additional two probes, recording depths of 0.70m and 1.00m, respectively.

A sample was collected from the probe situated 11m east of the site (SP15, 2.80m depth), recording the peat to be present as very soft dark brown pseudo fibrous PEAT, with a Von Post classification of H7 (highly decomposed), firm (P2), low content of fibres and rootlets (F1 and R1), and no wood particles (W0).

With regard to the slope angles, a large section of the laydown can be classed as a high slope angle ($8^{\circ} - 15^{\circ}$), with sections towards the edges of the laydown area classed as medium ($4^{\circ} - 8^{\circ}$) or low ($2^{\circ} - 4^{\circ}$). The slope azimuth is towards the southeast, with its highest point situated at the north of the site at 399m AOD, and its lowest at 388m. From the satellite imagery and the DEM, a concentration feature appears to be present, running from the north to the site towards the southwest, crossing through the centre of the laydown. A marked unnamed water feature runs ~50m south of the laydown area, flowing from the west to east, then changing course towards the southeast at ~50m south. The aforementioned concentration feature flows towards this watercourse.

The deep peat highlighted to be present towards the east / southeast of the site is situated on a medium to high slope angle, however the slope is away from the turbine position and therefore it will not effect construction. The peat marked present 15m towards the west of the site is situated on an azimuth towards the southeast, and therefore its stability should be considered in the detailed design.

Considering the peat present within the laydown area is situated on medium to high slopes, as well as the peat situated surrounding the areas having the potential to be effected by the proposed laydown area, the pre-mitigation Peat Landslide Risk is considered to be **medium** risk.

3.1.16 *Turbine T16*

At T16, 2 of the 9 probes undertaken within the proposed laydown area recorded peat to be present, at depths of 0.60m. The other seven probes recorded soil depths of <0.50m. 90m towards the north of the laydown area, a probe recorded peat to be present at a depth of 0.60m. 134m towards the east of the area, deep peat was recorded to be present at a depth of 1.20m. 140m towards the southeast, a probe recorded peat to be present at 0.60m depth. Further north, out with the likely zone of influence, peat is situated upslope at distances of 200m, 180m, and 210m (clockwise), at depths of 0.70m, 1.0m and 0.90m, respectively.

The angles of the slope are considered to be medium ($4^{\circ} - 8^{\circ}$) towards the northwest and the southeast and high ($8^{\circ} - 15^{\circ}$) within the centre of the laydown area. The slope azimuth is towards the south, with its highest point at the north situated at 514m AOD, and its lowest point 505m AOD. An unnamed watercourse is situated 50m towards the west from the laydown area, with water flowing from the north towards the west.

The deep peat mentioned towards the east is at a slope azimuth that will not impact the laydown or turbine.

Therefore, considering the low amount of peat recorded within the turbine laydown, and the peat upslope of the turbine considered to be unlikely to be disturbed, the pre-mitigation Peat Slide Risk is considered to be **low** risk.

3.1.17 *Turbine T17*

1 probe out of the 8 undertaken within the turbine laydown area has recorded peat to be present, at a depth of 0.60m, with the remainder of the peat probes within the laydown area recording less than 0.50m depth. 80m towards the south of the laydown area, a probe recorded a peat depth of 0.70m, where another probe situated 95m towards the southwest recorded a depth of 1.0m. 25m towards the west of the site, a probe recorded a depth of 1.10m. The remainder of the peat probes surrounding the laydown area for Turbine T17 did not record peat to be present beyond 0.50m depth.

The slope angle within the laydown area can be considered as medium to high angles (4° – 8° to 8° – 15°). The slope azimuth generally towards the south, though a slight variation is present where the western side slopes towards the southeast and the eastern side slopes towards the southwest. The satellite imagery indicates a concentration feature / gully flowing along the slope azimuth. The peat probe recording a depth of 0.60m within the turbine laydown area is situated within this gully.

Considering the one probe within the laydown area that indicates the presence of an isolated pocket of peat, and peat recorded towards the south considered to have a low likelihood of affecting the laydown area, the Peat Landslide Risk is therefore considered to be **low**.

3.1.18 *Turbine T18*

2 out of 18 probes undertaken within the laydown area of Turbine T18 recorded peat to be present at depths of 1.0m and 0.80m, where the remainder of the peat probes recording less than 0.50m depth. A probe situated 11m north of the laydown area, recorded peat to be present to a depth of 0.80m. 130m northeast of the turbine, a probe recorded peat to be present to a depth of 2.50m. Further, 50m east of the turbine, and again at 145m east, peat was recorded to a depth of 1.80m and 2.70m respectively. Directly towards the south of the site at 65m and 71m, two probes recorded depths of 0.70m and 1.30m, respectively. Further towards the south, at 116m and slightly towards the south-southwest at 132m, probes recorded depths of 1.0m and 1.50m. Another probe situated 135m SW recorded peat to be present to a depth of 1.70m.

100m towards the west-northwest, a probe recorded peat to be present to a depth of 2.70m, where a peat sample had been recovered (SP17), recording peat to be very soft dark brown fibrous PEAT with a Von Post classification of H7 (highly decomposed), being firm (P2), with a medium content of fibres (F2) and rootlets (R2) and no wood particles (W0).

The eastern side of the laydown area is situated on a flat slope angle ($<2^{\circ}$), which increases within the western side of the laydown area from low (2° – 4°) to high (8° – 15°). The slope falls from west towards the east. The satellite imagery demonstrates that towards the east of the site, where the flat ground has been noted, the surface appears to be waterlogged where minor bodies of water are present, along with small, unnamed and unmapped tributaries that flow towards the south of the laydown area before flowing along the slope azimuth towards the west.

The peat situated within the aforementioned area therefore has a low likelihood of movement towards the laydown area. The probes south of the laydown area that recorded peat are situated within a gully, flowing towards the southwest, away from the laydown area. It is considered that where the peat is located, it is unlikely to affect the laydown area. Similarly to the peat recorded to be present west-northwest of the site, which is situated at a lower elevation and at a far enough distance that it would be

considered unlikely to affect the laydown area. Further, the peat recorded to be present northeast of the site, again, appears to be situated at a slightly lower elevation and within a marked watercourse, running towards the west, before turning about 100m northwest of the site to continue towards the southwest – away from the turbine location. It is considered that the turbine also is unlikely to affect the water regime of the marked peat locations due to the position and the topography of the area.

While localised, mitigation will be required due to the peat present and the angles of the slope in this area. Therefore, the pre-mitigation Peat Landslide Risk is considered to be **medium** risk.

3.1.19 *Turbine T19*

6 out of 11 probes progressed within the laydown area recorded peat to be present, with probes recording peat depths of 0.60m and 0.70m and deep peat depths of 1.0m, 1.20m, 1.50m, and 1.70m. The remainder of the peat probes within the laydown area recorded less than 0.50m depth. 40m towards the north, a probe recorded peat depths of 0.70m. Another probe 128m north recorded peat at a depth of 1.0m. 36m towards the east, a probe recorded deep peat to be present at 1.50m depth. Further southeast of the area, at 33m, 56m and 60m, deep peat was recorded to be present at depths of 1.50m, 2.10m and 2.0m. Further southeast, a probe recorded 2.0m at 150m distance. At 55m towards the south-southeast, a probe recorded peat to be present at 1.30m depth.

Peat and deep peat was recorded in an area towards the south of the proposed laydown area for Turbine T19, with the peat probes recording depths between 0.60m and 1.00m, situated between 20m S and 70m S. Deep Peat was recorded towards the south-southwest, with two probe situated at 5m distance from the laydown area recording a depth of 2.10m and 2.54m, with depths between 1.50m and 2.10m situated between this probe and 50m towards the southwest. Between 80m and 90m, a row of probes recorded <0.50m of soils to be present. Between 80m and 130m southwest of the site, deep peat was recorded to be present between 1.50m and 3.60m. Towards the northwest of the area at 10m distance, a probe recorded a peat depth of 1.10m. Further towards the northwest at distances of 80m and 140m, peat was recorded to be present at 0.75m and 1.05m depth, with deeper deep peat recorded at depths of 2.40m and 1.70m at 76m and 123m towards the north-northwest, respectively.

Two peat samples have been collected within the vicinity of T19, with SP16 situated 100m west-southwest and another SP18 situated within the laydown area, both classifying the peat to be very soft dark brown fibrous PEAT. SP16 has a Von Post classification of H7 (highly decomposed), firm (P2), low content of fibres (F1), rootlets (R1) and wood (W1). SP18 has a Von Post classification of H7, firm (P2), high content of fibres (F2), low content of rootlets (R1) and no wood particles (W0).

The peat probes within the laydown area which did not record any peat or deep peat (i.e., <0.50m) coincided with the high slope angle category (8° – 15°), with medium slope angles (4° – 8°) present towards the north and towards the south of the laydown area, and low slope angles at the northwest of the laydown area (2° – 4°). The slope azimuth varies slightly within the laydown area, but generally is from north to south, with its highest point at 410m AOD and its lowest point at 395m AOD. A gully is crossing over through the northeast of the laydown area, flowing towards the southeast. Another gully is present towards the south of the laydown area, flowing towards the south / southeast. Further, the satellite imagery also smaller, unmapped watercourses flowing through the laydown area towards the south.

The peat present surrounding the turbine laydown area is in localised pockets with probes recording <0.50m between these zones. The peat situated north of T19 is on a medium slope angle, therefore has a potential for instability. The peat noted towards the east of the laydown area, and also towards

the south / southwest of the site, is situated within proximity of the turbine and should be considered in the design to ensure it is not effected by construction.

Localised deeper peat was recorded within the laydown area, where the northern area can be linked to a gully, which potentially connects the identified peat towards the northwest and the east.

As such, due to the peat surrounding the laydown area as well as the pocket of deeper peat situated within the laydown area and the slopes upon which these have been observed, the pre-mitigation Peat Landslide Risk is determined to be **medium** risk.

3.2 BESS, Substation, Met Mast, and borrow pits

3.2.1 BESS and Substation

The two peat probes undertaken within the proposed BESS and Substation location did not record any peat to be present (<0.50m depth). Peat was noted to be present uphill within 100m from the BESS locations, however, noting depths between 0.60m and 2.0m – with the majority of the probes (6 out of 10) recording depths between 0.60m and 1.0m. Peat has been recorded situated downslope of the location at >100m distances, therefore considered to be out with the zone of influence.

The BESS / substation is generally situated at medium slope angles (4° – 8°), with areas towards the north of the proposed location situated at a high slope angle (8° – 15°), and towards the south low slope angles (2° – 4°). The slope azimuth is towards the south / southeast, with its highest point situated at 414m AOD and its lowest point at 395m AOD. The satellite imagery notes the presence of potential water flowing from the northwest towards the southeast through the proposed BESS location.

As the peat is present uphill of the BESS / substation the pre-mitigation Peat Slide Risk is **medium** risk.

3.2.2 Met Mast

While there were no probes situated within the proposed area of the Met Mast, 4 probes were situated within its close vicinity, 2 of these recorded peat to be present 90m towards the northeast and 90m towards the southeast at 1.0m and 1.10m depth respectively. The remainder of the probes recorded 0m and 0.10m. Whilst it is assumed that the peat depth is considered to be minimal at the proposed location of the Met Mast, the ground investigation required for detailed design will confirm this and position micrositied to avoid peat deposits.

The peat recorded towards the east is situated upslope of the proposed Met Mast, where the slope azimuth falls towards the north, with its highest point at 452m AOD and its lowest point at 446m AOD. The proposed Met Mast is situated on a medium to high slope angle (4° – 8° to 8° – 15°). The peat situated upslope is situated adjacent to a low angle (2° – 4°), but had been recorded to be within a medium angle (4° – 8°). The satellite images note bedrock to be present at the location of the proposed Met Mast. There is a concentration feature running from uphill from the southeast towards the north, crossing over the proposed area of the Met Mast. The 1.10m depth peat probe is situated in such gully, thus indicating the presence of peat within these features. Another, more prominent gully is present 100m towards the east, where the flow of water appears to be falling away from the proposed Met Mast. This gully appears to be connected to the 1.10m probe and also the 1.0m probe.

Whilst it is unlikely that peat is present at the actual proposed Met Mast, due to the angles of the peat present upslope, the Peat Landslide Risk is considered to be **medium** prior to mitigation.

3.2.3 *Borrow Pits*

The four potential borrow pits have been selected on the basis that rock outcrops were visible through both satellite imagery and also observed during the site walkover. The borrow pits did not record peat to be present within their footprint, with a maximum depth of 0.20m recorded at these locations.

Peat or deep peat has been recorded within the vicinity of the borrow pits, however, these are unlikely to influence their use. With regards to Borrow Pit 1, the peat identified is situated downslope, away from the borrow pit and therefore unlikely to be encountered during construction or pose a peat slide risk. Similarly to Borrow Pit 2, the peat situated within proximity to the borrow pit is correlated with the laydown area of Turbine T03 and the track. The peat therefore will be addressed at the construction stage of the track and thus will be part of the mitigation for the track and / or turbine, and as such, will unlikely pose a risk to Borrow Pit 2.

Borrow pit 3 is situated ~50m northwest of Turbine T05. Deep peat was recorded towards the western side of the turbine, as highlighted in Section 3.1.5, and towards the end of Section 5 of the access track, as outlined in Section 3.3. While peat is recorded in proximity to the borrow pit, the mitigation implemented in relation to T05 will also be suitable to mitigate the risk of peat slide to the borrow pit excavation, whereby no additional mitigation is considered to be required.

Borrow Pit 4 recorded peat in one probe directly adjacent to its location (1.0m thick) and deep peat 53m towards the west (2.90m). Inspection and satellite imagery, however record bedrock to be present at the surface whereby peat is unlikely to be present within its footprint but cannot be fully ruled out until such times as ground investigation is carried out. In summary, peat is not anticipated to be present within the footprints of the proposed borrow pits. Where mitigation is required in relation to peat slide risk from peat located up slope from the proposed locations, it is noted that the mitigation required in relation to the adjacent track and turbines will be sufficient to address any risks to the borrow pits.

Given the absence of peat and the visible presence of bedrock confirmed on satellite imagery and by site walkover, the peat slide risk is considered to be **low** for the 4 No. proposed borrow pits. The proposed borrow pits will be subject to detailed ground investigation as part of the detailed design and micro-siting will occur as required to ensure that their locations avoid peat deposits.

3.2.4 *Site Compound*

Much like the borrow pits above, the location of the temporary site compound has been selected due to the minimal presence of peaty soils / peat. One probe recorded peaty soils to be present to a depth 0.2m within the selected site compound area. Within proximity of the area, 10m towards the west and 18m towards the east, two probes identified peat to be present at 0.60m thickness. The peat identified towards the east is associated with the track, thus the mitigation for the track will be suitable to address the risks at the site compound area.

The probe highlighting the presence of peat towards the west, indicates potential for peat to be present in proximity to the compound area and may be an indicator of thicker overburden, albeit still of minimal thickness (0.6m). In addition, this probe is situated at a slope azimuth towards southwest, away from the site compound.

Overall, the risks of peat being present or presenting a slide risk to the proposed compound is recorded to be **low / medium**. However, ground investigation should be undertaken as part of detailed design to confirm absence of peat and / or infirm micro-siting as required.

3.3 Access Tracks

The proposed access track as shown on Drawing 162008/9202 in Appendix A was subdivided into twelve sections for assessment as outlined in this report. A high-level overview of peat conditions is provided below with further detailed Peat Landslide Risk set out in Table 12.

Considering the presence of pockets of intermittent peat present across the site, it is considered that all sections of track, with the exception of Sections 1,6 and 12 will fall within the **medium** risk category of the Peat Landslide Risk assessment simply on the basis that peat is present within or in proximity to part of the track. Albeit the risks are recorded to be localised to pockets as opposed to significant areas.

Due to the presence of peaty soils only (<0.50m), a **low** risk has been identified for Sections 1 and 6. However, some form of mitigation is required due to the presence of peat upslope and as such the risk rating has been increased slightly to **low / medium** risk. Section 12 has a **low** Peat Landslide Risk due to peaty soils of depths of <0.50m recorded, which are considered to be representative of 'thicker' overburden as opposed to the presence of peat.

The remainder of the sections of access track are classed as **medium** Peat Slide Risk due to the presence of peat, albeit of intermittent distribution along the proposed alignment of the track. Where peat wasn't recorded directly beneath the proposed track alignment, peat had been noted to be present upslope. Furthermore, the construction of the access track is situated on the slope of a hill, where medium and high angled slopes (4° – 8° to 8° – 15°) are observed throughout the site.

In addition to this, with particular note to Section 6 and Section 7, the track is to cross existing hydrological features as marked by the OS 1:25,000 Map and as seen on the satellite imagery. These watercourses or gullies provide a downward pathway for peat debris that might slide in an instability event and therefore warrant particular attention during detailed design.

4. Mitigation

As noted in Section 3, peat has been recorded across the site with some intermittent confined pockets of deeper peat recorded within proximity (<150m) of proposed elements of the development. Whilst the survey undertaken at a majority of the turbine positions encountered peat within the proposed laydown / foundation areas, it is generally present in small intermittent pockets and not connected. Similarly, peaty soils (and occasionally an intermittent area of peat) have been encountered within sections of the proposed track alignment.

Where a Risk of Peat Landslide has been identified within Section 3, this Section describes the mitigation proposed to lower that risk. The National Planning Framework 4 (NPF4) and the Scottish Government Guidance on Peat Landslide Hazard and Risk Assessments for Proposed Electricity Generation Developments outlines the mitigation hierarchy to which all development proposals should adhere to:

- Avoid – by removing the impact at the outset.
- Minimise – by reducing the impact.
- Restore – by repairing damaged habitats.
- Offset – by compensating for residual impact that remains, with preference to onsite over offsite measures.
- Enhance – Biodiversity, including by restoring degraded habitats and building and strengthening networks.

Section 4.1 highlights the overall applicable design mitigation, where 4.1.1 specifically addresses the Wind Turbines, 4.1.2 for the BESS, substation, Met Mast, and borrow pit, and Section 4.1.3 for the Access Track.

Micrositing

Micrositing of the current design is likely to continue into the construction phase of the project. Additional ground investigation will be undertaken at a later stage, required for the detailed design to minimise construction risk and further minimise any potential local environmental effects, which will establish the localised ground conditions across the proposed development. Where micrositing does occur, the peat slide risk will require to be reviewed and the risk rating/mitigation confirmed. It should be evaluated at the detailed design stage, along with any specific mitigation required for the slide risk to be low.

4.1 Design Mitigation

A summary of mitigation relevant to the proposed wind farm at Beinneun 2 is provided below:

Avoid

Where possible, peat should remain in place to avoid conducting works in these sensitive areas. The proposed development has undergone several design changes to avoid pockets of significant deep peat deposits where ever possible. Given the intermittent nature of the peat across the site, peat could not be completely avoided and therefore alternate measures under the NPF4 hierarchy are applied.

Minimise

Wind Turbines

The layout of the proposed development requires mitigation measures in order to address the potential to induce landslide occurrence. While the majority of the turbines (16 out of 19) have a pre-mitigation risk rating of Medium, construction measures will lower the risk of a peat landslide and given the intermittent distribution of the peat are likely to cause low environmental impact. Where turbines are proposed, peat and weathered soft materials will be removed as part of the construction process in order to level surfaces for foundations and laydowns. The removal of intermittent peat pockets will minimise the risk to landslide, and engineering measures will include support to any cut slopes and the use of bunds or ditches. Slope stability and protection will be subject to detailed design going forward.

Drainage measures for turbine and laydown construction have the potential to interrupt the hydrological regime of the surrounding peat, and they can impact stability. Targeted drainage measures would mitigate changes to the hydrology and the design of these would be confirmed when a full ground investigation has been undertaken at the detailed design stage.

Access Track

Investigations on the route of the access track have recorded peaty soils to be present, with localised areas of peat and rare pockets of deeper peat. In terms of construction of the access track, peat is considered to have poor engineering properties and is unsuitable as a founding strata. Where peat has to be removed to create the access track, support to cut slopes will be provided. Where the track alignment crosses sections of peat requiring embankment or floating road construction, due regard to the impact on the down, and upslope, deposits will be required in the form of drainage measures and construction management. In areas where the track crosses watercourses, careful design and construction controls must be implemented to mitigate effects on the hydrological regime currently present. Pre-earthworks drainage measures are an effective way to manage this.

Detailed design, including catchment studies and slope stability assessments, are required for the development of these mitigation measures. In addition, a ground investigation will be undertaken to confirm the ground conditions as well as the current assumptions made within this report prior to detailed design.

Restore / Enhance

Peat deposits will be encountered during excavation work to construct the development, and this peat will be retained on site for reuse in peatland restoration. Potential areas for restoration or enhancement have been highlighted in the Drawing No. 9202 in Appendix A.

Peat can be used as backfill outside the turbine foundation footprints and to dress the verges to the tracks and the laydown areas of the turbines so long as these adhere to the good practice guidelines. Whilst there is a potential for peatland to be reinstated, these locations should not be classed as additional areas for restoration or enhancement.

Borrow pits are likely to be used for the generation of site won stone, which can likely be reinstated as peatland habitat in line with the Good Practice During Windfarm Construction Guidance (Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland, & Historic Environment Scotland, September 2015).

Methodologies for the storage and use of peat during reinstatement are described in Section 4.2 of this report with further details on restoration and enhancement of the peatland described in the EIA Report and other reports in support of the application including the Habitat Management Plan.

4.1.1 Wind Turbines

Table 10 below provides a summary of the assessed risk at each turbine, the appropriate mitigation option, and the residual peat slide risk following mitigation. It is noted that this assessment relates to the current proposed location of each turbine

Table 10: Residual Peat Slide Risk Following Mitigation at Wind Turbines

Wind Turbine	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
T01	Medium*	Deep Peat present within laydown area (>1m) and situated on a 4° – 8° slope.	Removal of peat (as part of the construction), with engineered design of side slopes.	Low
T02	Medium*	Deep Peat present within the laydown area (>1m), and situated on a 4° – 8° and 8° – 15°	Removal of peat (as part of the construction), with engineered design of side slopes.	Low
T03	Medium*	Irregular Peat (>0.5m) and Deep Peat (>1.0m) present situated on a 4° – 8° slope	Removal of peat (as part of the construction), with engineered design of side slopes.	Low
T04	Low	Peaty soils (<0.50) within laydown area and peat surrounding T04 is situated at a lower elevation.	Removal of peat (as part of the construction process). Monitoring during construction.	Low
T05	Medium*	Deep Peat present within the laydown area (>1m) and directly outwith towards west, situated on a 4° – 8° and 8° – 15°	Removal of peat (as part of the construction). Engineering Mitigation required, such as drainage to mitigate the water regime towards the west of the turbine. Existing track likely to be floating track due to proposed level.	Low
T06	Medium*	Deep peat present within the laydown area (>1m) at 4° – 8° to 8° – 15° slope angles.	Removal of peat (as part of the construction). Possible requirement for drainage mitigation. Engineered design of side slopes.	Low
T07	Medium*	Peat (>0.50m) situated upslope (40m N) on an 8° – 15° slope with a path towards the laydown.	Removal of peat (as part of the construction). Due to the minor peat present upslope, engineering mitigation likely to be required including design of side slopes.	Low

Wind Turbine	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
T08	Medium*	Deep Peat present within the laydown area (>1m) and Peat (>0.50m) present upslope with a path towards the laydown area at 8° – 15°.	Removal of peat (as part of the construction process). The peat present upslope can be remediated through and slope stabilisation. A formalised drainage channel may be required.	Low
T09	Medium*	Deep peat (>1m) present within laydown area at angles of 8° – 15° and upslope.	Removal of peat (as part of the construction process). The construction of drainage measures will be required to allow the natural flow of water. The peat upslope of the area will be situated at a lower angle than the proposed turbine, and confined within the gully. Engineered design of side slopes.	Low
T10	Medium*	Peat present situated at 8° – 15° angles within the laydown area and upslope.	Removal of peat (as part of the construction process). Engineering mitigations required, likely toe reinforcement or bunds, and possibly formalised drainage channels.	Low
T11	Medium*	Deep Peat present (>1.0m within the laydown area and directly outwith the laydown area situated on a 4° – 8° slope.	Removal of peat (as part of the construction process). Engineered design of side slopes and design of formalised drainage channels.	Low
T12	Medium*	Deep Peat (>1.0m) present within the laydown area situated at 2° – 4°.	Removal of peat (as part of the construction process). Drainage measures likely to be required. Engineered design of side slopes.	Low
T13	Medium*	Peat (>0.50m) and Deep Peat (>1.0m) present upslope at 4° – 8° angles.	Removal of peat (as part of the construction process). Drainage measures required to divert the minor natural channel. Engineered design of side slopes.	Low
T14	Medium*	Peat (>0.50m) and Deep Peat (>1.0m) present within the laydown area at 4° – 8°.	Removal of peat (as part of the construction process). Drainage measures likely to be required. Engineered design of side slopes.	Low
T15	Medium*	Peat (>0.50m) and Deep Peat (>1.0m) present within the laydown area at 4° – 8° to 8°– 15° slope angles.	Removal of peat (as part of the construction process). Drainage measures required, taking cognisance	Low

Wind Turbine	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
			of the peat situated directly downslope. Engineered design of side slopes.	
T16	Low	Peaty soils (<0.50m) present at 4° – 8° to 8°– 15° slope angles with minimal peat present surrounding the laydown area.	Removal of peat (as part of the construction process). Monitoring during construction.	Low
T17	Low	Peaty soils (<0.50m) present at 4° – 8° to 8°– 15° slope angles with minimal peat present surrounding the laydown area.	Removal of peat (as part of the construction process). Monitoring during construction.	Low
T18	Medium*	Peat present (>0.50m) within the laydown area, at low and high angles (2° – 4° and 8°– 15°) and Deep Peat (>1.0m) present within proximity.	Removal of peat (as part of the construction process). Drainage measures required. Engineered design of side slopes.	Low
T19	Medium*	Deep Peat (>1.0m) present within the laydown area as well as surrounding the turbine location situated at 4°– 8° angles	Removal of peat (as part of the construction process). Drainage measures and engineered design of side slopes.	Low

*Note that the medium risk identified is conservatively based on an intermittent presence of peat and is not of significant extent.

It is likely that the locations for the turbines will be microsited following detailed ground investigation and this will continue into the construction phase to ensure peat disturbance is minimised as far as possible.

4.1.2 BESS, Substation, Met Mast, borrow pits and site compound

Table 11 below provides an overview of the pre-mitigation Peat Slide Risk and the Residual Peat Slide Risk for the BESS and substation, Met Mast, borrow pits and site compound.

Table 11: Residual Peat Slide Risk Following Mitigation at BESS and Met Mast

Access track section	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
BESS and substation	Medium*	Deep Peat (>1.0m) present upslope at medium slope angle (4° – 8°).	Peat will be removed during the construction of the access track upslope from the BESS / substation location. In addition, due to the natural slope, the BESS / substation location will likely be required to be cut into the slope, therefore peat removal will mitigate risk.	Low

Met Mast	Medium*	Deep Peat (>1.0m) present upslope within a gully at medium slope angle (4° – 8°).	Minor works / light access only required, with deeper peat zones avoided at detailed design stage.	Low
Borrow pit 1	Low	Peaty soils are present across the borrow pit, with minimal peat in the surrounding area.	Monitoring during construction.	Low
Borrow pit 2	Low	Peaty soils are present across the borrow pit, with minimal peat in the surrounding area.	The peat present will be mitigated as part of the track design. Monitoring during construction.	Low
Borrow pit 3	Low	Peaty soils are present across the borrow pit, with minimal peat in the surrounding area.	The peat present will be mitigated as part of the track design. Monitoring during construction.	Low
Borrow pit 4	Low	Peat was recorded to be present directly adjacent to the outlined borrow pits	Micrositing of the borrow pit to avoid peat is required. Monitoring during construction.	Low
Site compound	Low / Medium	Peat was recorded to be present within close proximity of the compound, possibly indicating the presence of peat (0.50m – 1.0m).	Micrositing of the compound may avoid the peat, therefore lowering the risk to low. This will be required to be investigated during the next phase. Likely that minor works / light access only required.	Low

*Note that the medium risk identified is conservatively based on an intermittent presence of peat and is not of significant extent.

It is likely that the locations for the borrow pits and site compound will be microsited following development specific ground investigation with this process continuing into the construction phase to ensure peat disturbance is minimised wherever possible. The locations for the borrow pits have been deliberately chosen for the quarrying of stone with no anticipated peat removal anticipated.

4.1.3 Access Track

Table 12 below provides a detailed overview of the peat slide risk assigned to each section of the track (refer to Table 7 for track section descriptions).

Table 12: Residual Peat Slide Risk Following Mitigation at Wind Turbines for Access Track

Access track section	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
Section 1	Low / Medium	Minimal peat present (<0.50m) within the vicinity of the track, however, closer towards T01, Peat (>0.50m) is recorded along the proposed line of the track.	Track will be in cut which will mitigate risk. Areas above and below track will require careful drainage management.	Low
Section 2	Medium*	A patch of Deep Peat (>1.0m) present within <50m	The cut required for the track will remove the majority of the peat. A	Low

Access track section	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
		of the track situated on medium slopes (4° – 8°). Potential for track to be build up on peat.	floating track may be required towards T02.	
Section 3	Medium*	Irregular Peat (>0.50m) present, track relatively level with the existing elevation.	Floating track may be required in short sections, adequately culverted for hydrological connectivity.	Low
Section 4	Medium*	Deep Peat (>1.0m) present at max 2.80m depth at low (2° – 4°) and medium (4° – 8°) slopes. Track relatively level with existing elevation.	Floating track likely to be required, along with culverts for hydrological connectivity.	Low
Section 5	Medium*	Peat (>0.50m) present irregularly, Deep Peat (>1.0m) present towards T05 on medium (4° – 8°) slopes.	Floating track may be used where deeper peat is present in localised areas, but likely a requirement towards Turbine T05. Drainage to be provided in this section.	Low
Section 6	Low / Medium	Limited peat recorded within the proposed track. Track at grade. Occasional probe recording presence of Deep Peat (>1.0m) Some Peat (>0.50m) recorded within 50m of track. Track situated on medium (8° – 15°) slopes.	Culverts required for watercourse connectivity. Floating track may be used where deeper peat is present in localised areas.	Low
Section 7	Medium*	Peat (>0.50m) recorded along the proposed track, with deep peat encountered towards the access track of T10. Track predominantly situated on high (8° – 15°) slopes.	Culverts required for watercourse connectivity. Floating track may be used where deeper peat is present in localised areas.	Low
Section 8	Medium*	Peat (>0.50m) recorded along the proposed track, track situated on medium to high slopes (4° – 8° to 8° – 15°).	Culverts required for watercourse connectivity. Floating track may be used where deeper peat is present in localised areas.	Low
Section 9	Medium*	Pockets of Peat (>0.50m) present within the track, with patches of Deep Peat	Floating track may be used where deeper peat is present in localised areas. Adequate drainage required.	Low

Access track section	Peat Slide Risk	Reasoning	Proposed mitigation	Residual Peat Slide Risk
		(>1.0m), situated on medium to high slopes (4° – 8° to 8° – 15°). Track predominantly at grade, with sections required to be raised or cut.		
Section 10	Medium*	Deep Peat (>1.0m) recorded along the track and directly outwith the track as low and medium slope angles (2° – 4° to 4° – 8°). Track to be raised.	Floating track may be used where deeper peat is present in localised areas. Adequate drainage required	Low
Section 11	Medium*	Irregular patches of Peat (>0.50m) and Deep Peat present (>1.0m) along the track. Track to be cut into the slope.	Cut and Fill required, which likely will remove the Peat / Deep Peat present.	Low
Section 12	Low	Peaty soils (<0.50m) present along the track. Track at grade.	Drainage measures only.	Low

*Note that the medium risk identified is conservatively based on an intermittent presence of peat and is not of significant extent.

4.2 Peat Management During Construction

It is unavoidable that peat deposits of varying depths will be disturbed by the proposed development and therefore a construction peat management plan is required. The construction peat management plan should be based on SEPA's good practice guidelines, and its main objective is to outline how peat is to be excavated and managed to maximise the potential for re-use and reinstatement. The principal elements of the construction phase peat management plan would be:

Excavation

Where peat is excavated, the following should apply:

- The upper layers of peat should be excavated as turves, including the acrotelm (surface vegetation) and a layer of adjoining catotelm (humified peat) typically up to 300mm thick in total, or as blocks of catotelm. The acrotelm should not be separated from its underlying peat.
- The turves should be as large as possible to minimise desiccation during storage.
- Contamination of excavated peat with substrate materials should be avoided.
- Construction should consider the timing of excavation activities to avoid very wet weather to minimise the likelihood of excavated peat remoulding into peat slurry (with potential consequences off site).

Storage

Excavated peat can temporarily be stored, though consideration should be given to the risk of dehydration given that once it is dried, it will not rewet. The following should be adhered to when storing peat:

- No peat will be placed on access track verges where the local topography is steep and / or a watercourse is in close proximity.
- Peat turves should be stored in wet conditions, for example, within waterlogged former excavations, or should be irrigated in order to prevent desiccation. Peat should be laid only to a thickness and slopes that maintain hydrological conditions and to prevent drying out. Peat will not be used as a thin layer or on steeper non-peat slopes as this promotes dehydration. Low verges and landscaping will be formed to permit surface water to drain off the access tracks.
- Peat should be stockpiled in large volumes to minimise exposure to wind and sun which can lead to desiccation, but with due consideration for slope stability.
- Excavated topsoils should be stored on geotextile matting to a maximum of 1.00m thickness
- Stores of non-turf (catotelm) peat should be bladed off to reduce the surface area and desiccation of the stored peat.
- Peat storage areas and areas of steep peat should be monitored during periods of very wet weather, or during snowmelt, to identify early signs of peat instability.
- Cognisance should be given to the location of stockpiles and storage areas to be within areas of, at the most, peaty soils (<0.50m of peat) and shall consider slope stability. Potential areas for stockpile are highlighted in Drawing No. 9202 in Appendix A, and these shall be confirmed on site prior to construction by a Geotechnical Engineer.

Transport

Movement of excavated turves should be kept to a minimum, and it is preferable to transport peat intended for translocation to its destination at the time of excavation. If vehicles that are used for transporting non-peat material are also to be used for peat materials, measures should be taken to minimise cross-contamination of peat soils with other materials.

Reuse and Restoration

Reuse and restoration of the excavated / disturbed peat should be sought where possible as this will promote biodiversity, wildlife, and improves the carbon balance of the development. The following is recommended:

- The evaluation of the potential for peat to be reused and restored for areas within the site for their suitability should be in consultation with the Ecologist and their habitat specialists. Areas 1 and 2 are considered to be potentially suitable habitats for enhancement, however, the exact details of proposed enhancement works are to be agreed with the Ecologist prior to reuse and restoration.
- Reuse and restoration should be conducted concurrently with construction, rather than at its conclusion.
- Reuse, restoration, and revegetation works should be undertaken outside winter months.

Monitoring

Where peat habitat restoration is to be implemented, monitoring might be required to ensure the restoration continues to have a positive impact on the habitat as this often is a slow process. Monitoring refers to the ongoing restoration measures and inspection of the integrity of the proposed scheme. This should be placed around major scheme components within peat to check for water table drawdown.

Settlement of floating tracks (if used) during and post-construction should be monitored to determine if consolidation is occurring as expected, and to identify signs of lateral displacement.

Comprehensive inspection and maintenance records should be kept for all floating tracks on site to enable reasons for track degradation to be identified.

There should be a commitment to the monitoring of rehabilitating peatland through the life of the development, given the typical timescale for peat restoration projects to achieve their objectives (from 5 to 30 years).

5. Conclusion

This Peat Landslide Risk assessment at Beinneun 2 Wind Farm is based on the following:

- A total of 1943 Peat Probes have been undertaken to investigate the depth of substrate / peat present, with a total of 1708 Peat Probes undertaken within the current site boundary. 485 of these probes are directly associated with the proposed development.
- A total of 18 peat samples conducted throughout the site, providing a Von Post classification, moisture content, and bulk density.
- A thorough inspection of the DEM, Ordnance Survey maps (1:25,000), and satellite imagery has been undertaken to inform on the general morphology of the site (including slope angles and azimuths), the presence of watercourses and any other potential landscape features identified within the satellite images.
- A thorough inspection of the BGS Geological Maps has been undertaken to inform on the likely substrate.
- A walkover conducted by an Engineering Geologist.

The peat probes have noted the presence of peaty soils across the site, with localised intermittent areas of peat and / or deeper peat. Out of the 1708 probes undertaken within the current site boundary, 57% have recorded a depth less than 0.50m (peaty soils), 21% recorded a depth between 0.50 and 1.0m (peat), and 22% recorded a depth greater than 1.0m (deep peat). Several design changes have occurred to avoid pockets of deeper peat where possible. 485 probes are related to the current development layout (28% of the total), only 83No. of probes where deep peat (>1.0m) has been recorded will be disturbed which equates to 4.8% of the overall probes undertaken within the current site boundary. An additional 93No. probes recorded peat to be present (>0.50m), which equates to 5.4% of the total undertaken probes within the current site boundary. It was not possible to completely avoid the (deep) peat due to its localised intermittent nature, however it is considered that appropriate mitigation can be implemented as part of the development that will not cause significant environmental impact.

The overall pre-mitigation Peat Landslide Risk for the turbine locations, access track, BESS, and Met Mast is generally classified as **medium** (with a smaller number being classed as **low** or **low / medium**). This is considered a conservative assessment based on the presence of intermittent pockets of peat which are not continuous. With mitigation as set out within Section 4 of this report, which includes the localised removal of peat and engineering design during construction normal to wind farm developments, all post-mitigation Peat Landslide Risk has been reduced assessed as **low**. Post-construction monitoring should be undertaken in accordance with the Peat Landslide Hazard and Risk Assessment – Best Practice Guide for Proposed Electricity Generation Developments, 2nd Edition, April 2017 (Scottish Government).

These recommendations are based on the available information at the time of reporting. A detailed ground investigation will be undertaken post consent. The investigation, along with the data collected for this assessment and the commitments set out in the EIA Report, will inform the detailed design.

6. References

- Atkins, & Mouchel. (August 2018). *19 Dualling (Perth to Inverness) Appendix 10.2: Peat Stability Risk Assessment*. Report Reference: A9P11-AMJ-EGT-A_ZZZZ_ZZ-RP-EN-0001 : Transport Scotland. Retrieved from <https://www.transport.gov.scot/media/42751/appendix-102-peat-stability-risk-assessmentpdf.pdf>
- Blackland Centre. (2025, June 26). *Agricultural Research and Practice in the Outer Hebrides*. Retrieved from Von Post Humification Scale: <https://www.blacklandcentre.org/the-science/von-post-humification-scale/>
- British Geological Survey - online GeolIndex and available online mapping
- Forestry Civil Engineering, & Scottish Natural Heritage. (August 2010). *Floating Roads on Peat*. FCE, SNH. Retrieved from <https://www.roadex.org/wp-content/uploads/2014/01/FCE-SNH-Floating-Roads-on-Peat-report.pdf>
- Forestry Civil Engineering, & Scottish Natural Heritage. (August 2010). *Floating Roads on Peat*.
- Mills, A., & Rushton, D. (2023). *NatureScot Research Report 1259 - A risk-based approach to peatland restoration and peat instability*. NatureScot. Retrieved from <https://www.nature.scot/doc/naturescot-research-report-1259-risk-based-approach-peatland-restoration-and-peat-instability>
- NatureScot. (November 2023). *Advising on peatland, carbon-rich soils and priority peatland habitats in the development management*. NatureScot. Retrieved from [https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#National+Planning+Framework+4+\(NPF4\)+2023](https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management#National+Planning+Framework+4+(NPF4)+2023)
- Ridgewind Renewables Ltd. (November 2011). *Appendix A9.1: Beinneun Windfarm: Peat Slide Hazard and Risk Assessment*. SLR.
- Scottish Government. (April 2017). *Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Second Edition)*. Scottish Government. Retrieved from <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2017/04/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/documents/00517176-pdf/00517176-pdf/govscot%3Adocument/00517176.pdf>
- Scottish Government, Scottish Natural Heritage, & SEPA. (2017). *Guidance on Development on Peatland*. Peatland Survey. Retrieved from <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/07/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/documents/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated->
- Scottish Renewables, & SEPA. (2012). *Developments on Peat Land: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Vol. Version 1)*. Scottish Renewables; SEPA. Retrieved from <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/07/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/documents/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated->

Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland, & Historic Environment Scotland. (September 2015). *Good Practice during Wind Farm Construction*. Scotland: Scottish Renewables; Scottish Natural Heritage; SEPA; Forestry Commission Scotland; Historic Environment Scotland;. Retrieved from <https://www.nature.scot/sites/default/files/2018-08/Guidance%20-%20Good%20Practice%20during%20wind%20farm%20construction.pdf>

Ordnance Survey Terrain Model supplied by the Client

Ordnance Survey 1:25,000 and 1:50,000 supplied by the Client

Soil Mapping Scotland – online at [https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/Scotland's Environment](https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/Scotland's%20Environment)

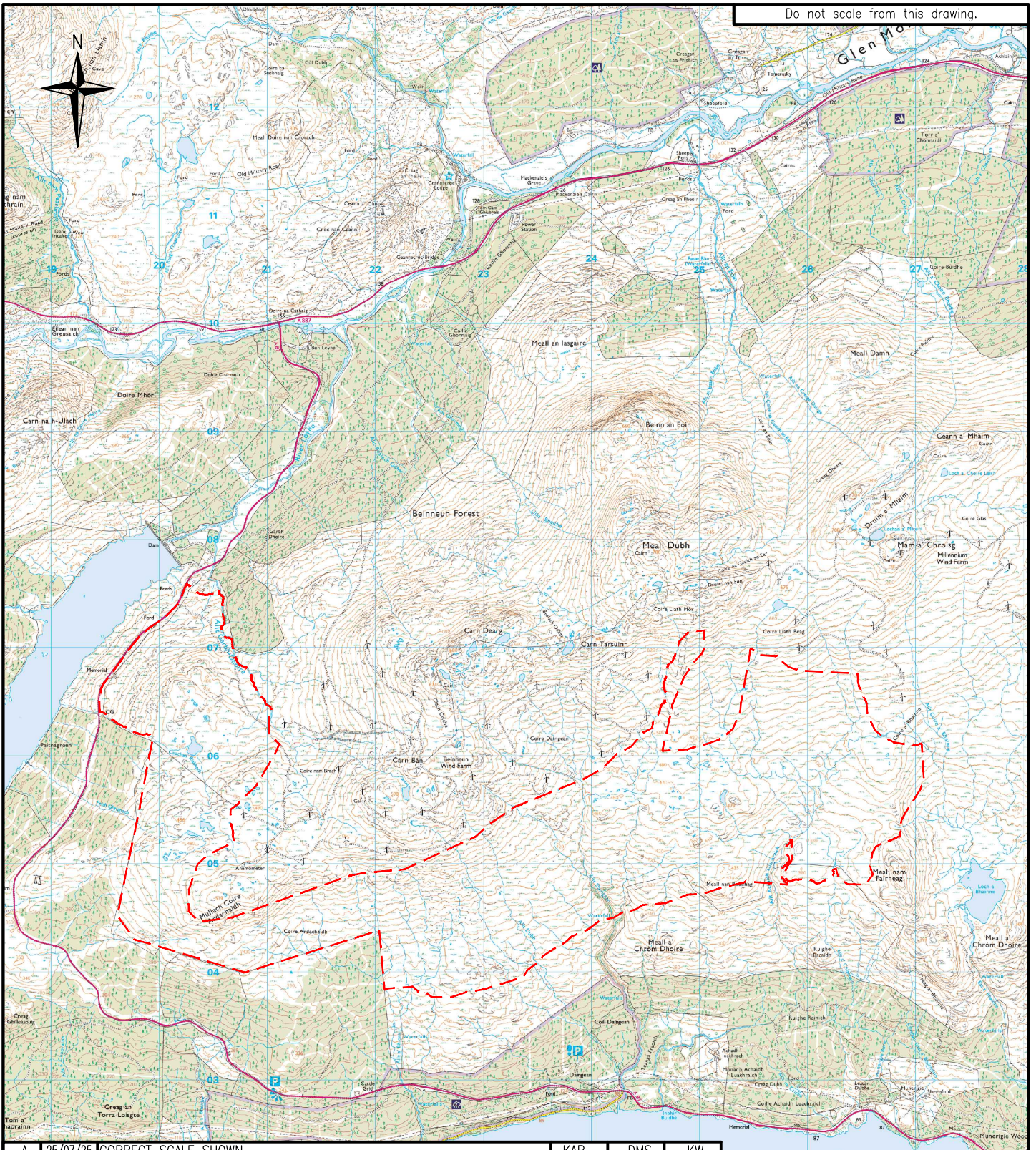
Von Post, L. (1924). Das genetische System der Organogenen Bildungen Schwedes. *Memoires sur la nomenclature et la classification des sols*. *International Committee of Soil Science*, 287-304.

Appendix A

Drawings



Do not scale from this drawing.



A	25/07/25	CORRECT SCALE SHOWN.	KAB	DMS	KW
Rev.	Date	Description	Drawn	Checked	Approved

©Crown copyright and database rights
2025. Ordnance Survey AC0000808122

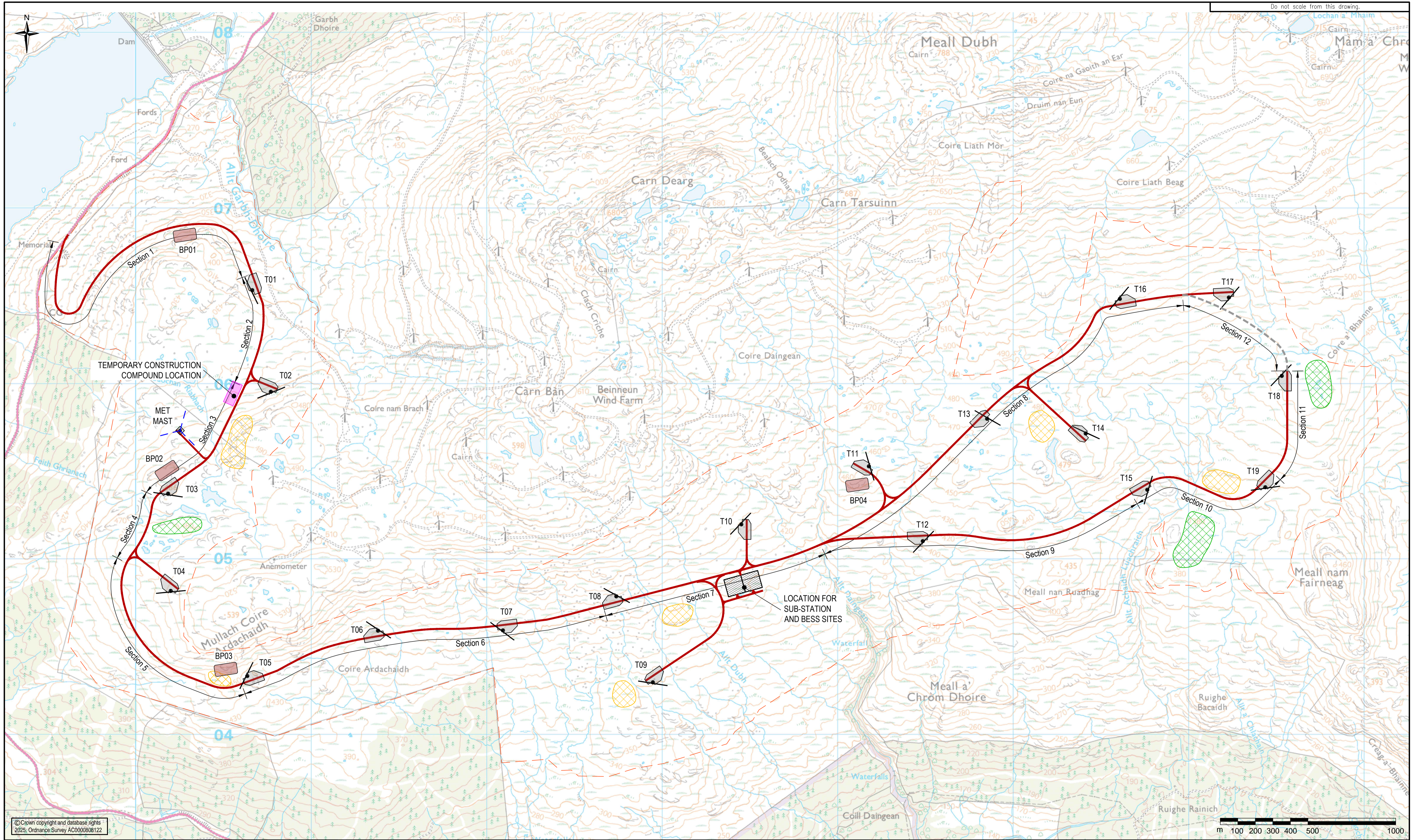


Client:
 Project Title: **BEINNEUN WIND FARM**
 Drawing Title: **SITE LOCATION PLAN**

FAIRHURST

4th Floor, 300 Bath Street,
Glasgow, G2 4JR
Tel: 0141 204 8800 www.fairhurst.co.uk

Scale at A4: NTS	Status: For Information	
Drawn: KAB	Checked: DMS	Approved: ARB
Date: 01/07/25	Date: 11/07/25	Date: 15/07/25
Drawing No.: 162008/9201	Revision: A	



© Crown copyright and database rights
2025, Ordnance Survey AC000080122

Do not scale from this drawing.
m 100 200 300 400 500 1000

Rev.	Date	Description	Drawn	Checked	Approved
A	25/07/25	TEMPORARY CONSTRUCTION COMPOUND AND BORROW PIT LOCATIONS SHOWN.	KAB	DMS	KW

GENERAL LEGEND:

- WIND TURBINE ACCESS ROUTE
- MAINTENANCE TRACK (T18 to T19)
- TURBINE AND LAYDOWN LOCATION
- MET MAST LOCATION
- TRACK SUB-DIVISION REFERENCE

LEGEND:

- POTENTIAL AREAS FOR PEATLAND RESTORATION
- POTENTIAL TEMPORARY PEAT/SOIL STORAGE AREA
- BORROW PIT LOCATION
- TEMPORARY CONSTRUCTION COMPOUND

NOTES:

- PEATLAND RESTORATION AREAS ARE SUBJECT TO APPROVAL FROM A COMPETENT ECOLOGIST. A SUBSEQUENT PEAT SLIDE RISK ASSESSMENT SHOULD BE UNDERTAKEN DURING THE DETAILED DESIGN PHASE.
- TEMPORARY STORAGE OF PEAT/SOIL MUST BE CONDUCTED IN ACCORDANCE WITH GUIDANCE AND SAFE PRACTICES.



Client: **BEINNEUN 2 WIND FARM**

Project Title: **PROPOSED DEVELOPMENT PLAN**

FAIRHURST

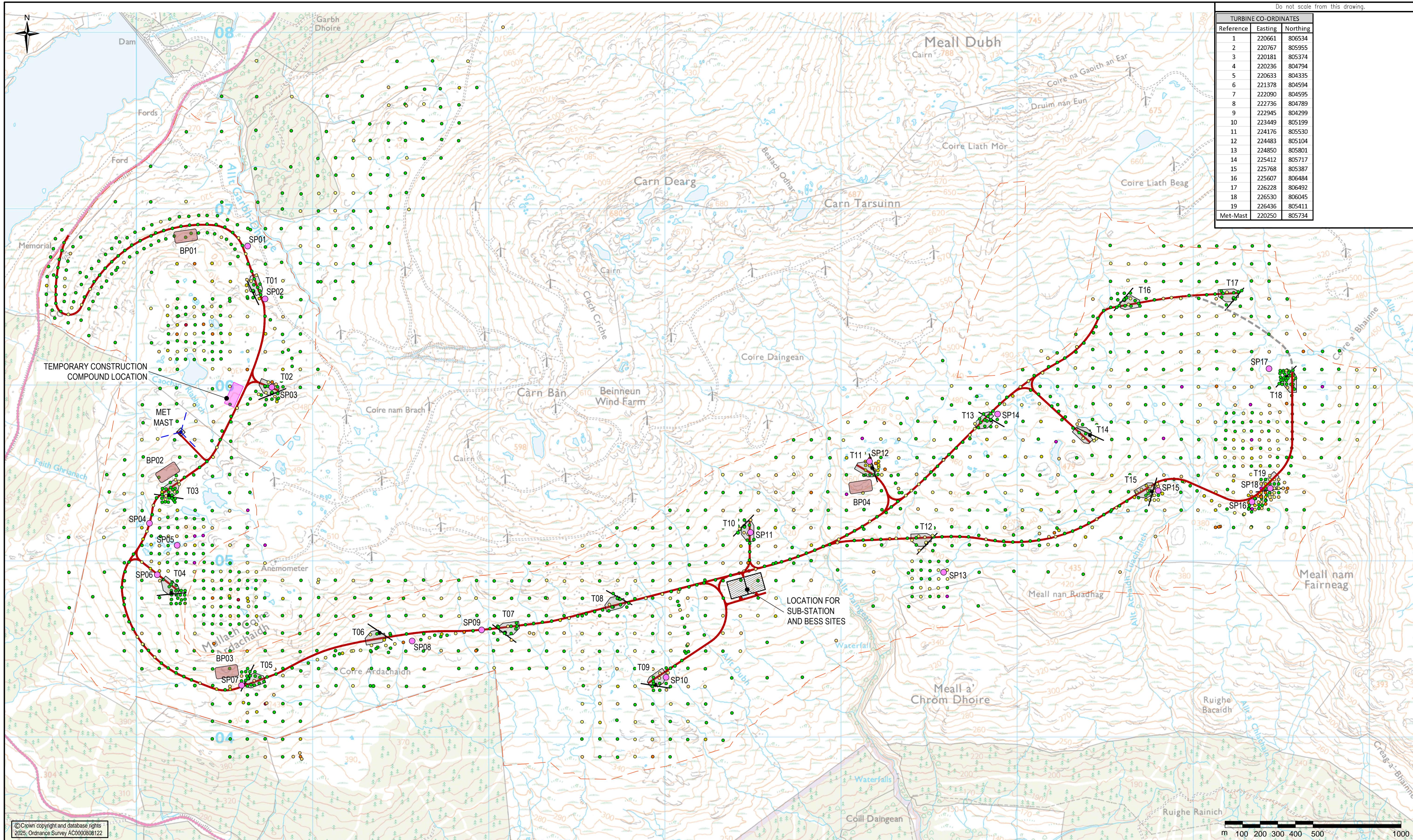
4th FLOOR, 300 Bath Street,
GLASGOW, G2 4JR
Tel: 0141 204 8800 www.fairhurst.co.uk

Scale at A1: 1:10000	Status: For Information	
Drawn: KAB	Checked: DMS	Approved: ARB
Date: 01/07/25	Date: 11/07/25	Date: 15/07/25
Drawing No.:	Revision:	

162008/9202 A

Do not scale from this drawing.

TURBINE CO-ORDINATES		
Reference	Easting	Northing
1	220661	806534
2	220767	805955
3	220181	805374
4	220236	804794
5	220633	804335
6	221378	804594
7	222090	804595
8	222736	804789
9	222945	804299
10	223449	805199
11	224176	805530
12	224483	805104
13	224850	805801
14	225412	805717
15	225768	805387
16	225607	806484
17	226228	806492
18	226530	806045
19	226436	805411
Met-Mast	220250	805734



© Crown copyright and database rights 2025. Ordnance Survey AC000080122



Rev.	Date	Description	Drawn	Checked	Approved
A	25/07/25	TEMPORARY CONSTRUCTION COMPOUND AND BORROW PIT LOCATIONS SHOWN.	KAB	DMS	KW

NOTES:
1. PROBE LOCATION POSITIONS AND DEPTHS BASED ON INFORMATION RECEIVED 30/04/2025.

GENERAL LEGEND:
 WIND TURBINE ACCESS ROUTE
 MAINTENANCE TRACK (T18 to T19)

GENERAL LEGEND (cont):
 LAYDOWN LOCATION
 MET MAST LOCATION
 PEAT PROBE SAMPLE LOCATION
 BORROW PIT LOCATION
 TEMPORARY CONSTRUCTION COMPOUND

PEAT PROBING LEGEND:

- <0.5m
- 0.5-1.0m
- 1.0-1.5m
- 1.5-2.0m
- 2.0-2.5m
- 2.5-3.0m
- >3.0m



Project Title:
BEINNEUN 2 WIND FARM

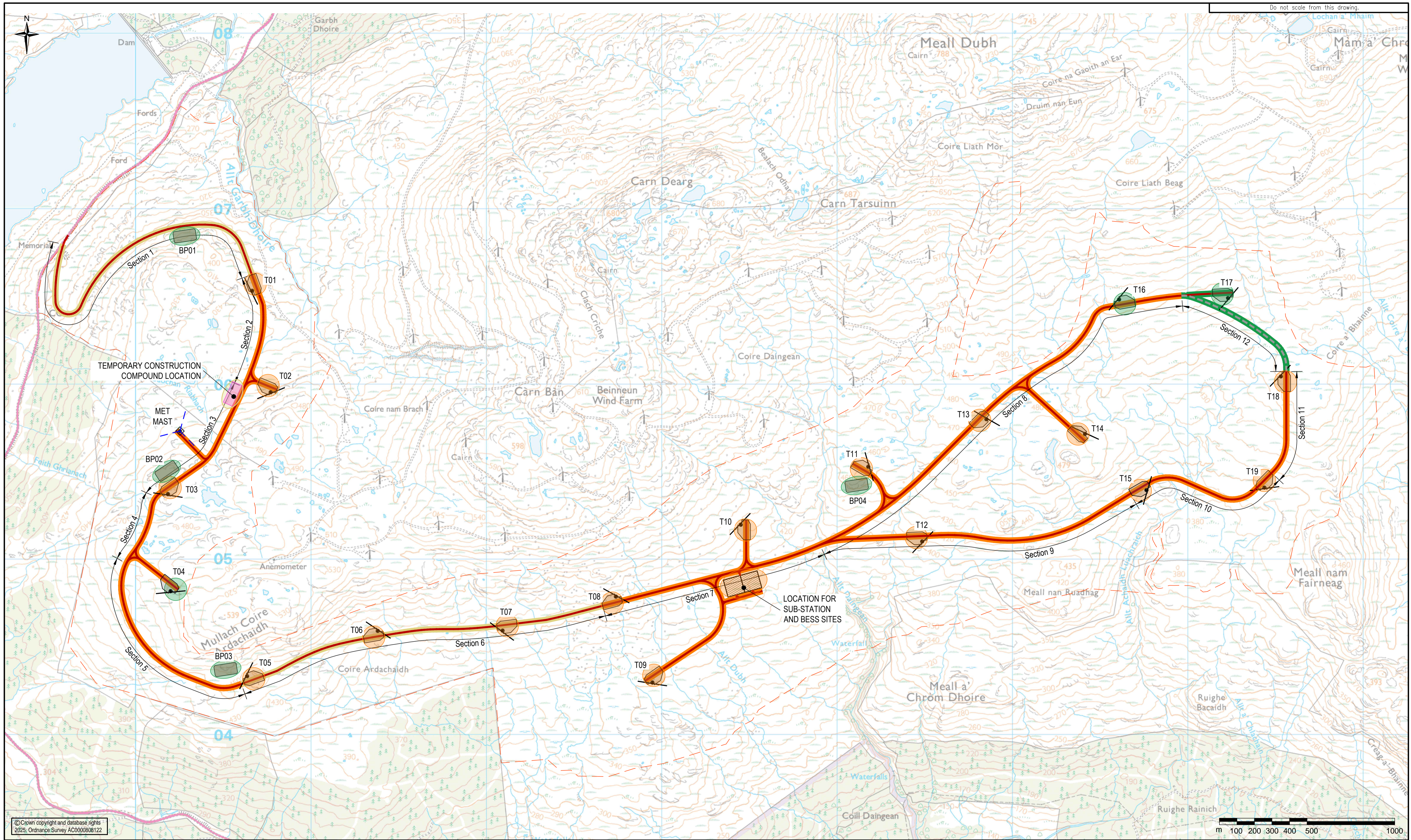
Drawing Title:
FINAL PEAT PROBES

FAIRHURST
4th FLOOR, 300 Bath Street, GLASGOW, G2 4JR. Tel: 0141 204 8800 www.fairhurst.co.uk

Scale at A1: 1:10000
Status: For Information

Drawn: KAB	Checked: DMS	Approved: ARB
Date: 01/07/25	Date: 11/07/25	Date: 15/07/25

Drawing No.: 162008/9203
Revision: A



Rev.	Date	Description	Drawn	Checked	Approved
A	25/07/25	TEMPORARY CONSTRUCTION COMPOUND AND BORROW PIT LOCATIONS SHOWN.	KAB	DMS	KW

GENERAL LEGEND:

- WIND TURBINE ACCESS ROUTE
- MAINTENANCE TRACK (T18 to T19)
- LAYDOWN LOCATION
- MET MAST LOCATION
- BORROW PIT LOCATION

GENERAL LEGEND (cont.):

- TEMPORARY CONSTRUCTION COMPOUND

NOTE:
THE MEDIUM RISK IDENTIFIED IS CONSERVATIVELY BASED ON AN INTERMITTENT PRESENCE OF PEAT AND IS NOT OF SIGNIFICANT EXTENT. PLEASE REFER TO THE ASSOCIATED PEAT LANDSLIDE HAZARD AND RISK ASSESSMENT (REF.: 162008/GL/G/PSRA/01).

RISK RATING LEGEND:

- PEAT SLIDE RISK RATING - LOW
- PEAT SLIDE RISK RATING - LOW/MEDIUM
- PEAT SLIDE RISK RATING - MEDIUM
- TRACK PEAT SLIDE RISK RATING - LOW
- TRACK PEAT SLIDE RISK RATING - LOW/MEDIUM
- TRACK PEAT SLIDE RISK RATING - MEDIUM



Client: **BEINNEUN 2 WIND FARM**

Project Title: **PRE-MITIGATION PEAT RISK RATING**

FAIRHURST

4th FLOOR, 300 Bath Street,
GLASGOW, G2 4JR
Tel: 0141 204 8800 www.fairhurst.co.uk

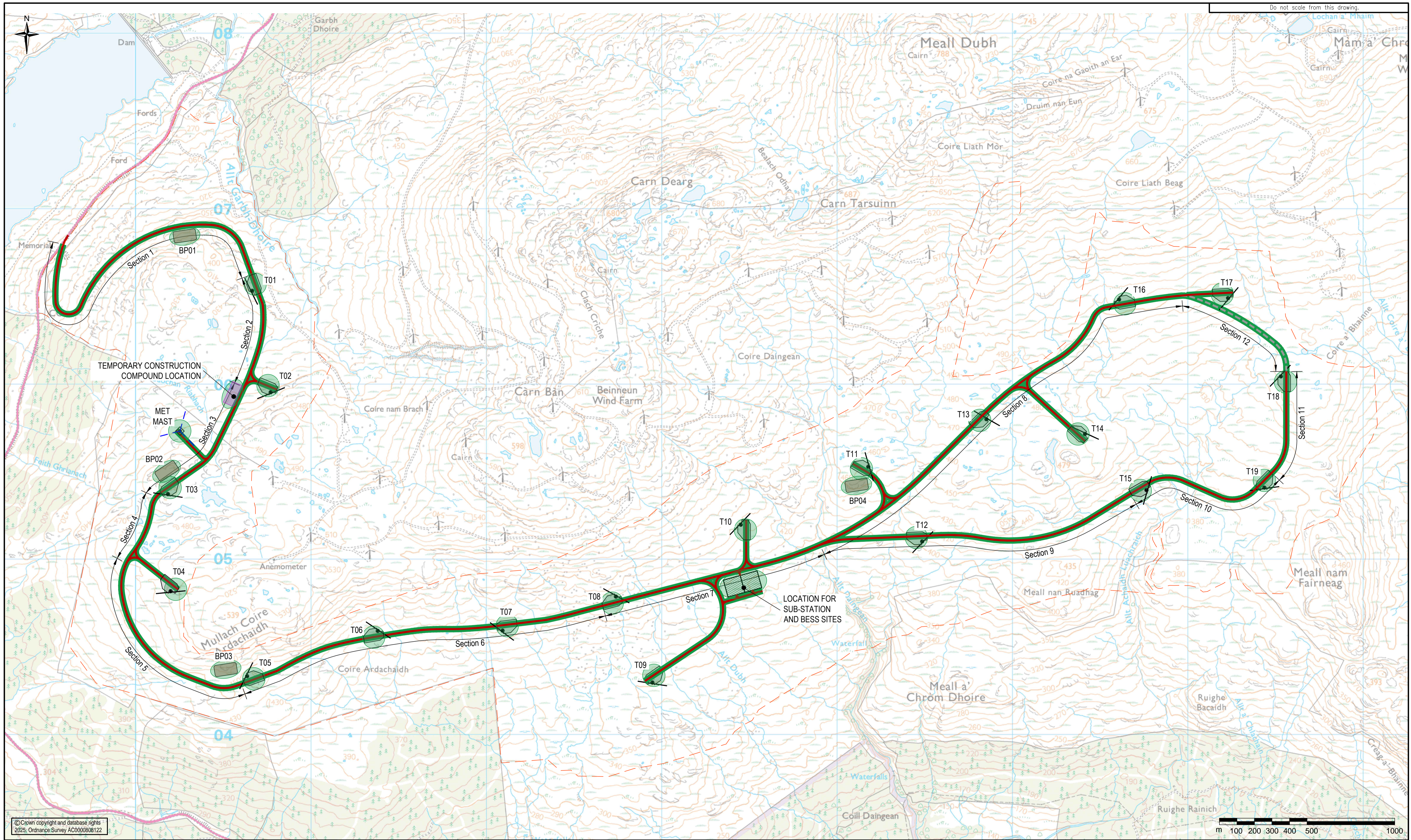
Scale at A1: 1:10000

Status: For Information

Drawn: KAB	Checked: DMS	Approved: ARB
Date: 08/07/25	Date: 11/07/25	Date: 15/07/25

Drawing No.: 162008/9204

Revision: A



© Crown copyright and database rights
2025, Ordnance Survey AC000080122

Rev.	Date	Description	Drawn	Checked	Approved
A	25/07/25	TEMPORARY CONSTRUCTION COMPOUND AND BORROW PIT LOCATIONS SHOWN.	KAB	DMS	KW

GENERAL LEGEND:

- WIND TURBINE ACCESS ROUTE
- MAINTENANCE TRACK (T18 to T19)
- LAYDOWN LOCATION
- MET MAST LOCATION
- BORROW PIT LOCATION

GENERAL LEGEND (cont):

- TEMPORARY CONSTRUCTION COMPOUND

RISK RATING LEGEND:

- PEAT SLIDE RISK RATING - LOW
- TRACK PEAT SLIDE RISK RATING - LOW
- TRACK PEAT SLIDE RISK RATING - LOW



Project Title:
BEINNEUN 2 WIND FARM

Scale at A1:
1:10000

Drawing Title:
POST-MITIGATION PEAT RISK RATING

FAIRHURST

4th FLOOR, 300 Bath Street,
GLASGOW, G2 4JR
Tel: 0141 204 8800 www.fairhurst.co.uk

Drawn: KAB	Checked: DMS	Approved: ARB
Date: 09/07/25	Date: 11/07/25	Date: 15/07/25
Drawing No.: 162008/9205		Revision: A

Appendix B

Site Walkover

SITE VISIT RECORD

FAIRHURST

Job Number:	162008	Project :	Beinneun Windfarm	Date of Site Visit:	05-07.05.25
Present:		Prevailing Weather:		Time: (Arrival)	
DMS – Fairhurst SKF Ltd x2		Warm and Dry		N/A	
		Purpose of visit:		Time: (Departure)	
		Scope the extent of Peat across the proposed development and sample peat for analysis		N/A	
Observations\Queries\Comments:				Follow up Action Required:	
<p>Peat was present sporadically across the site, as is shown in pre-existing probing data.</p> <p>The site has numerous areas of surface water and streams.</p> <p>Samples were taken of the peat in 18 No. locations.</p> <p>Photos were taken across the site.</p>					
Information requested\Instructions given:				Follow up Action Required:	
Additional Information: <i>(photographs, samples, records, certificates)</i>				Follow up Action Required:	
<p>Photographs and Samples taken.</p> <p>Photos shown in this document are not exhaustive of the conditions present on the site, but are representative of what was encountered.</p>					
Prepared by: DMS		Signature: DANIEL MILNER-SMITH		Date: 03.07.25	
Distribution:					

SITE VISIT RECORD



Above photos: Haggling photos taken near to T12



Photos above: Shows further areas of Haggling and surface water at the western extent of the site.

SITE VISIT RECORD



Photos above: Shows further areas of Haggling and surface water at the western extent of the site.

SITE VISIT RECORD

FAIRHURST



Photos above: Shows further areas of Haggling and surface water at the western extent of the site.

SITE VISIT RECORD

FAIRHURST



Photos above: Shows further areas of Hagging and surface water at the western extent of the site.

SITE VISIT RECORD

FAIRHURST



Photos above: Shows further areas of Haggling and surface water at the western extent of the site.

Appendix C

Factual Report

GROUND INVESTIGATION REPORT



CONTRACT: BEINNEUN WINDFARM
CONTRACT NO: 7940 - 162008
DATE: 11/07/2025
CLIENT: ENVAMS LTD
ENGINEER: FAIRHURST LLP



Contract no: 7940 - 162008
Contract name: BEINNEUN WINDFARM
Client: ENVAMS LTD
Engineer: FAIRHURST LLP
Date: 11/07/2025



1.0 INTRODUCTION

The contents of this report relate to a ground investigation carried out at the proposed extension to the Beinneun Windfarm. The purpose of the investigation was to provide a general overview of the peat depths, peat characteristics and soil conditions beneath the site. The report was commissioned by the Engineer, Fairhurst LLP, 4th Floor, Tay House, 300 Bath Street, Glasgow, G2 4JR on behalf of the Client, Envams Ltd, 54 Hunters Way, York, YO24 1JJ

2.0 DESCRIPTION OF THE SITE

The site is an irregular area of land located north of the A87 at Loch Garry, adjacent to the already existing Beinneun Windfarm. The site is bounded to the north by Beinneun windfarm, to the west by Loch Loyne, the A87, and a wooded area/field, and to the south the A87 and Loch Garry. Access can be gained off the A87 towards the northwest of the site. The National Grid Reference (NGR) for the centre of the site is NH 23444 04632. The site comprises of limited forestry, few tracks with areas of significant peat deposits, on an open hillside/undulating landscape.

3.0 FIELDWORK

3.1 Areas of Investigation

The exploratory hole locations were accessed via the main road and site entrance off the A87. Further access into the site was taken on the existing windfarm gravel tracks. An ATV was used to access the locations off the tracks and onto the hill. The locations of the exploratory holes were determined prior to mobilisation to site, agreed with the Engineer and are shown on the location sketch provided by the Engineer and contained in Appendix 1.0 of this report. The approximate locations were recorded with a handheld GPS. Fieldwork was carried out during normal dayshift hours between 05/05/2025 and 07/05/2025 in accordance with BS.5930; "Site investigations".

3.2 Peat Probing

Thirty seven number peat probes, SP03-P1 to P18 and SP18, SP18-1 to SP18-26 were sunk by a two man crew using steel probing rods. The rods were manually pushed into the ground until through the peat / refusal. Peat probe locations were recorded on a handheld GPS. Where shallow obstructions or possible early termination of probes was encountered multiple probes were carried out the location and a representative peat probe depth recorded.

3.3 Russian Core Peat Sampling

Eighteen number peat samples, SP01 to SP18 were recovered on site using s Russan Corer. The corer was manually pushed into the ground at the location and depth specified by the Engineer. The corer was then rotated to obtain a 0.50m long peat core at the discreet depth. The sample was then recovered to surface for logging and photographing. Sample were then taken in appropriate containers for laboratory testing.

3.4 Logs & Insitu Testing

All peat strata encountered were described on site by SKF's Engineer using guidelines detailed in BS.5930. This included classification of the peat samples in terms of its water, vegetation and root content. Peat sample descriptions, peat probe results and photographs are contained in Appendix 2.0 of this report.

3.5 Termination Depths

All peat probes were terminated when the probing rods could no longer be pushed into the ground by hand. The Russian core peat samples were terminated and samples recovered at discrete depths as requested by the Engineer.

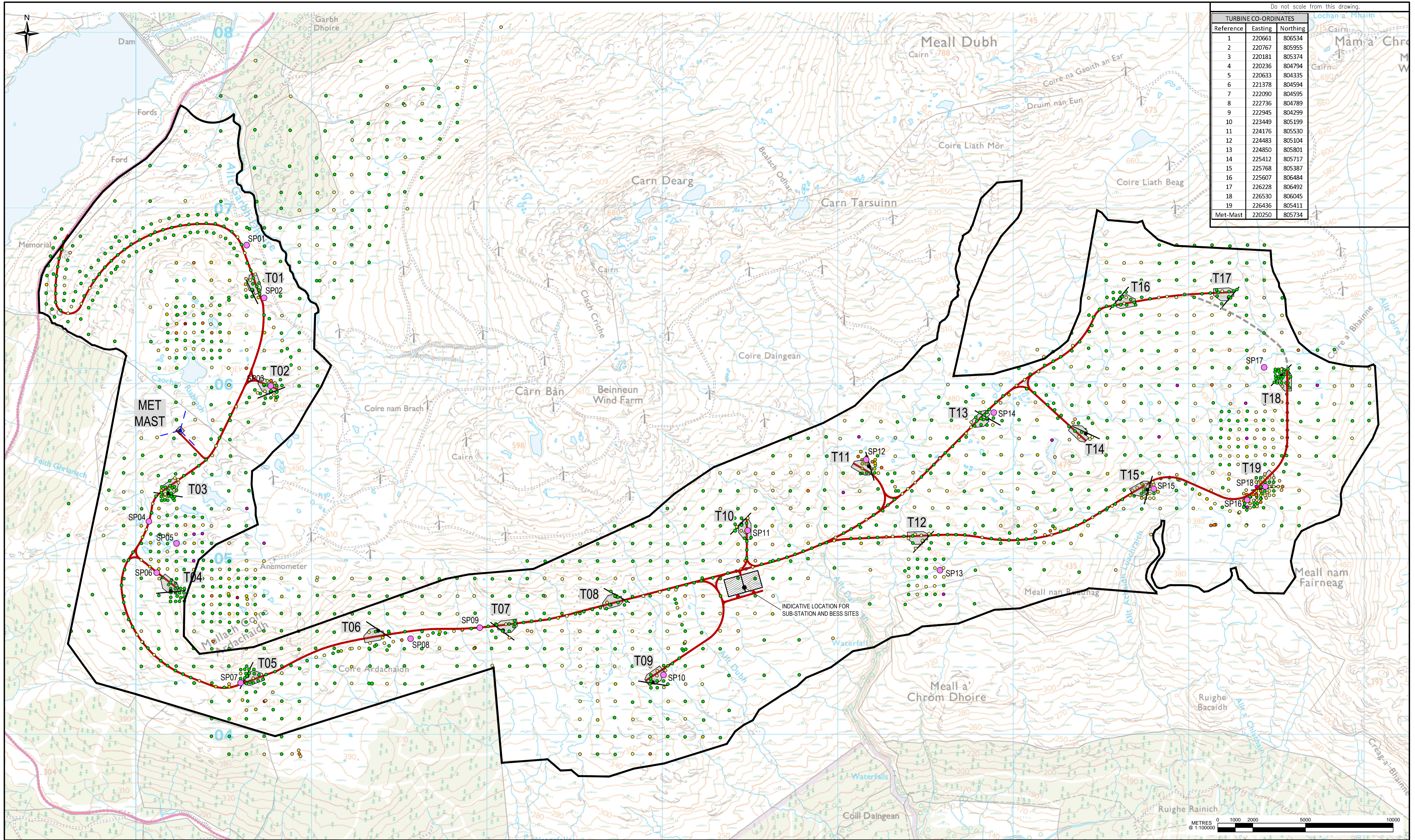
4.0 LABORATORY WORK

4.1 Soil

A programme of laboratory testing (geotechnical) proposed by the Engineer was carried out on selected peat samples. References and methods for each test are detailed on the appropriate results sheets. The results of all laboratory tests are contained in Appendix 3.0 of this report.



APPENDIX 1.0 LOCATION PLAN



Do not scale from this drawing.

TURBINE CO-ORDINATES		
Reference	Easting	Northing
1	220661	806534
2	220767	805955
3	220181	805374
4	220236	804794
5	220633	804335
6	221378	804594
7	222090	804595
8	222736	804789
9	222945	804299
10	223449	805199
11	224176	805530
12	224483	805104
13	224850	805801
14	225412	805717
15	225768	805387
16	225607	806484
17	226228	806492
18	226530	806045
19	226436	805411
Met-Mast	220250	805734

NOTES:

1. PROBE LOCATION POSITIONS AND DEPTHS BASED ON INFORMATION RECEIVED 30/04/2025.

GENERAL LEGEND:

- PROPOSED WIND TURBINE ACCESS ROUTE
- PROPOSED MAINTENANCE TRACK (T18 to T19)
- INDICATIVE LAYDOWN LOCATION
- INDICATIVE MET MAST LOCATION
- SPx PEAT PROBE SAMPLE LOCATION

PEAT PROBING LEGEND:

- <0.5m
- 0.5-1.0m
- 1.0-1.5m
- 1.5-2.0m
- 2.0-2.5m
- 2.5-3.0m
- >3.0m

Rev.	Date	Description	Drawn	Checked	Approved



Client: **BEINNEUN 2 WIND FARM**

Project Title: **FINAL PEAT PROBES**

Scale at A1: 1:10000

Status: For Information

Drawn: KAB

Checked:

Approved:

Date: 01/07/25

Date:

Date:

Drawing No.: 162008/9203

Revision:

FAIRHURST

4th FLOOR, 300 Bath Street,
GLASGOW, G2 4JR
Tel: 0141 204 8800 www.fairhurst.co.uk

APPENDIX 2.0 – EXPLORATORY HOLE LOGS

CONTRACT NO: 7940
 CONTRACT NAME 162008 BEINNEUN WINDFARM
 CLIENT: FAIRHURST LLP



PROBE LOCATION	E	N	PEAT DEPTH (M)
SP03-P1	220769	805981	1.05
SP03-P2	220763	805998	1.90
SP03-P3	220747	806017	0.95
SP03-P4	220768	806018	2.20
SP03-P5	220790	806006	1.10
SP03-P6	220743	805995	0.40
SP03-P7	220784	805936	1.10
SP03-P8	220800	805953	0.50
SP03-P9	220804	805926	0.30
SP03-P10	220795	805907	1.60
SP18	226436	805415	1.00
SP18-1	226384	805465	0.10
SP18-2	226409	805465	0.25
SP18-3	226434	805465	0.50
SP18-4	226459	805465	0.60
SP18-5	226484	805465	1.20
SP18-6	226384	805440	1.10
SP18-7	226409	805440	1.60
SP18-8	226434	805440	0.45
SP18-9	226459	805440	0.40
SP18-10	226484	805440	0.40
SP18-11	226384	805415	2.55
SP18-12	226409	805415	0.30
SP18-13	226459	805415	0.70
SP18-14	226484	805415	0.50
SP18-15	226509	805415	1.50
SP18-16	226534	805415	2.10
SP18-17	226384	805390	1.90
SP18-18	226409	805390	2.10
SP18-19	226434	805390	0.60
SP18-20	226459	805390	0.50
SP18-21	226484	805390	0.30
SP18-22	226384	805365	2.10
SP18-23	226409	805365	1.80
SP18-24	226434	805365	0.80
SP18-25	226459	805365	0.50
SP18-26	226484	805365	1.30

CONTRACT NO: 7940
CONTRACT NAME: 162008 BEINNEUN WINDFARM
CLIENT: FAIRHURST LLP



LOCATION: SP01
PEAT PROBE DEPTH: 1.30M
SAMPLE DEPTH: 0.80-1.30M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT (H8,P2,F2,R1,W0). AT 1.05M SLIGHTLY SANDY BAND.



LOCATION: SP02
PEAT PROBE DEPTH: 1.40M
SAMPLE DEPTH: 0.40-0.90M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT (H7,P2,F1,R1,W0). UNABLE TO PUSH SAMPLER PAST 0.90M.



LOCATION: SP03
PEAT PROBE DEPTH: 1.05M
SAMPLE DEPTH: 0.20-0.70M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT (H8,P2,F2,R1,W0).



CONTRACT NO: 7940
CONTRACT NAME: 162008 BEINNEUN WINDFARM
CLIENT: FAIRHURST LLP



LOCATION: SP04
PEAT PROBE DEPTH: 2.60M
SAMPLE DEPTH: 0.20-0.70M
DESCRIPTION: VERY SOFT DARK BROWN FIBROUS PEAT
(H5,P2,F3,R2,W0).



LOCATION: SP05
PEAT PROBE DEPTH: 2.70M
SAMPLE DEPTH: 2.20-2.70M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H7,P2,F2,R1,W0).



LOCATION: SP06
PEAT PROBE DEPTH: 2.20M
SAMPLE DEPTH: 1.50-2.00M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H7,P2,F2,R1,W0).



CONTRACT NO: 7940
CONTRACT NAME: 162008 BEINNEUN WINDFARM
CLIENT: FAIRHURST LLP



LOCATION: SP07
PEAT PROBE DEPTH: 2.60M
SAMPLE DEPTH: 2.10-2.60M
DESCRIPTION: VERY SOFT DARK BROWN FIBROUS PEAT
(H8,P2,F2,R1,W0).



LOCATION: SP08
PEAT PROBE DEPTH: 2.90M
SAMPLE DEPTH: 2.40-2.90M
DESCRIPTION: 2.40-2.65 VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H8,P2,F1,R1,W0).
2.65-2.90 VERY SOFT SLIGHTLY GREYSIH BROWN PEATY CLAY
WITH TRACES OF GRAVEL.



LOCATION: SP09
PEAT PROBE DEPTH: 1.50M
SAMPLE DEPTH: 1.00-1.50M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H7,P2,F1,R1,W1).



CONTRACT NO: 7940
CONTRACT NAME: 162008 BEINNEUN WINDFARM
CLIENT: FAIRHURST LLP



LOCATION: SP10
PEAT PROBE DEPTH: 1.80M
SAMPLE DEPTH: 1.00-1.50M
DESCRIPTION: VERY SOFT DARK BROWN FIBROUS PEAT
(H8,P2,F2,R1,W0).



LOCATION: SP11
PEAT PROBE DEPTH: 1.00M
SAMPLE DEPTH: 0.00-0.50M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H7,P2,F2,R2,W0).



LOCATION: SP12
PEAT PROBE DEPTH: 1.90M
SAMPLE DEPTH: 1.40-1.90M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H7,P2,F2,R1,W0). R2 AT BASE.



CONTRACT NO: 7940
CONTRACT NAME: 162008 BEINNEUN WINDFARM
CLIENT: FAIRHURST LLP



LOCATION: SP13
PEAT PROBE DEPTH: 1.50M
SAMPLE DEPTH: 0.50-1.00M
DESCRIPTION: VERY SOFT DARK BROWN FIBROUS PEAT
(H7,P2,F1,R2,W0).



LOCATION: SP14
PEAT PROBE DEPTH: 1.20M
SAMPLE DEPTH: 0.70-1.20M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H8,P2,F2,R1,W0).



LOCATION: SP15
PEAT PROBE DEPTH: 2.05M
SAMPLE DEPTH: 1.55-2.05M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H7,P2,F1,R1,W0).



CONTRACT NO: 7940
CONTRACT NAME: 162008 BEINNEUN WINDFARM
CLIENT: FAIRHURST LLP



LOCATION: SP16
PEAT PROBE DEPTH: 3.50M
SAMPLE DEPTH: 2.50-3.00M
DESCRIPTION: VERY SOFT DARK BROWN FIBROUS PEAT
(H7,P2,F1,R1,W1).



LOCATION: SP17
PEAT PROBE DEPTH: 2.50M
SAMPLE DEPTH: 0.20-0.70M
DESCRIPTION: VERY SOFT DARK BROWN FIBROUS PEAT
(H7,P2,F2,R2,W0).



LOCATION: SP18
PEAT PROBE DEPTH: 1.00M
SAMPLE DEPTH: 0.50-1.00M
DESCRIPTION: VERY SOFT DARK BROWN PSEUDO FIBROUS PEAT
(H8,P2,F2,R1,W0).



APPENDIX 3.0 – LABORATORY TEST RESULTS

LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Certificate No : 25/552 - 01-1
To : Scott Farquhar
Client : SKF Ltd.
Constablewood Estate
Brisbane Glen
Largs
KA30 8SN

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

LABORATORY TESTING OF SOIL

Introduction

We refer to samples taken from Beinneun Windfarm and delivered to our laboratory on 13th May 2025.

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 : 13th May 2025 Onwards
Source : 162008 - Beinneun Windfarm

Test Results


As Detailed On Page 2 to Page 4 inclusive

Comments

The results contained in this report relate to the sample(s) as received
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

Approved for Issue


T McLelland (Director)

Date 27/05/2025



BOREHOLE	SAMPLE	DEPTH (m)	SAMPLE DESCRIPTION
SP01	D	0.80-1.30	Brown PEAT (Von Post Classification - H7)
SP03	D	0.20-0.70	Brown PEAT (Von Post Classification - H7)
SP04	D	0.20-0.70	Brown PEAT (Von Post Classification - H6)
SP07	D	2.10-2.60	Brown PEAT (Von Post Classification - H7)
SP08	D	2.40-2.65	Brown PEAT (Von Post Classification - H5)
SP08	D	2.65-2.90	Brown slightly clayey PEAT (Von Post Classification - H5)
SP11	D	0.00-0.50	Brown PEAT (Von Post Classification - H7)
SP12	D	1.40-1.90	Brown PEAT (Von Post Classification - H8)
SP16	D	2.50-3.00	Brown PEAT (Von Post Classification - H8)
SP18	D	0.50-1.00	Brown PEAT (Von Post Classification - H8)

SUMMARY OF SAMPLE DESCRIPTIONS

BOREHOLE	SAMPLE	DEPTH (m)	WATER CONTENT (%)
SP01	D	0.80-1.30	313
SP03	D	0.20-0.70	363
SP04	D	0.20-0.70	1117
SP07	D	2.10-2.60	917
SP08	D	2.40-2.65	708
SP08	D	2.65-2.90	235
SP11	D	0.00-0.50	1042
SP12	D	1.40-1.90	1134
SP16	D	2.50-3.00	941
SP18	D	0.50-1.00	818

BS EN ISO 17892-1 : 2014 + A1 : 2022
BS 1377-2 : 2022

SUMMARY OF WATER CONTENT TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	WATER CONTENT (%)	BULK DENSITY (Mg/m ³)	DRY DENSITY (Mg/m ³)
SP01	D	0.80-1.30	313	1.01	0.24
SP03	D	0.20-0.70	363	1.07	0.23
SP04	D	0.20-0.70	1117	1.03	0.08
SP07	D	2.10-2.60	917	1.04	0.10
SP08	D	2.40-2.65	708	1.05	0.13
SP08	D	2.65-2.90	235	1.19	0.36
SP11	D	0.00-0.50	1042	1.02	0.09
SP12	D	1.40-1.90	1134	1.00	0.08
SP16	D	2.50-3.00	941	1.00	0.10
SP18	D	0.50-1.00	818	1.03	0.11

BS EN ISO 17892-2 : 2014 : 5.1 - Linear Measurement Method
BS 1377 - 2 : 2022

**SUMMARY OF WATER CONTENT
AND BULK DENSITY TEST RESULTS**

CIVIL ENGINEERING • STRUCTURAL ENGINEERING • TRANSPORTATION • ROADS & BRIDGES
PORTS & HARBOURS • GEOTECHNICAL & ENVIRONMENTAL ENGINEERING • PLANNING &
DEVELOPMENT • WATER SERVICES • HEALTH & SAFETY / CDM SERVICES

www.fairhurst.co.uk

Aberdeen	Leeds
Aberdeen Westhill	London
Bristol	Newcastle upon Tyne
Dundee	Plymouth
Edinburgh	Sevenoaks
Elgin	Taunton
Glasgow	Thurso
Huddersfield	Watford
Inverness	

FAIRHURST