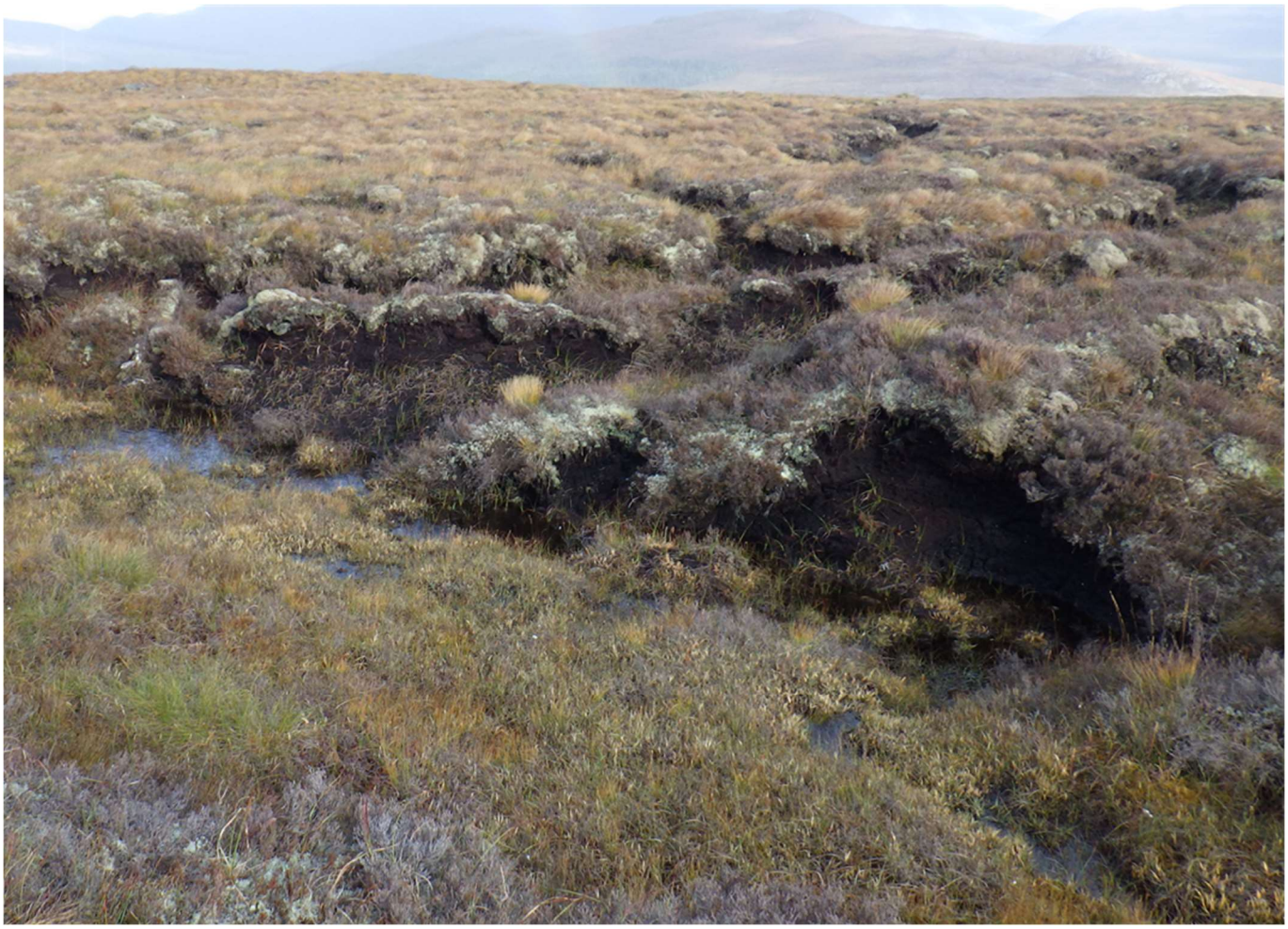

ESB Asset Development UK Limited

Millmoor Rig Wind Farm: Outline Peat Management Plan

Technical Appendix 10.1

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RSK GENERAL NOTES

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1 INTRODUCTION

1.1 This report provides an Outline Peat Management Plan for Millmoor Rig Wind Farm (hereafter referred to as the 'Proposed Development').

1.2 The report forms a Technical Appendix to the Environmental Impact Assessment (EIA) Report for the Proposed Development and should be read in conjunction with the EIA Report. It has been produced to address the requirement for excavation of peat and peaty soils during the construction process.

1.3 This report will consider total volumes of peat that need to be excavated and will set out options for reuse of the excavated material. Guidance on management and handling of excavated peat and soils will be provided.

Site Location

1.4 The Proposed Development site (the 'site') is located in the Scottish Borders, within a large area of commercial forestry in the Wauchope Forest (Figure 1.1, Chapter 1). The site is close to the Scotland/England border, being around 2.5 km at its closest point.

1.5 The land use within the site consists entirely of commercial forestry plantation. The plantation is currently active with some sections being felled, and other areas presenting recent crop plantation as well as mature stands. Only a few areas within the site are not covered by forestry:

- small areas kept clear around the abandoned settlement of Westshiels;
- forestry rides;
- areas adjacent to the streams and burns; and
- a large quarry located in the western part of the site. The quarry area is recorded on OS mapping as disused but appears to be currently active.

1.6 Soils within the site predominantly comprise peaty soils and peat. No soils within the site are classified as nationally important carbon-rich soils or priority peatland habitat (Figure 10.2; NatureScot, 2016).

Development Proposals

1.6.1 The Proposed Development infrastructure would include:

- up to 13 wind turbines, of approximately 6 MW each, five with a maximum tip height of 180 m, two with a maximum tip height of 200 m, four with a maximum tip height of 210 m and two with a maximum tip height of 230 m;
- hardstanding areas at the base of each turbine, with a permanent area of approximately 2,156 m^2;
- site entrance and access track from the A6088 using the route of an existing forestry track, and access track linking the turbine locations. Total length of access tracks is 14,909.9 m, of which 3,897.7 m is new access track with

associated new watercourse crossings and 11,012.2 m is existing access track and watercourse crossings which will need to be upgraded;

- an operations control building with parking and welfare facilities;
- two potential substation compounds;
- an energy storage facility with a capacity of *c.* 14.8 MW;
- telecommunications equipment;
- up to two temporary construction compounds;
- three borrow pit search areas, to provide suitable rock for access tracks, turbine bases and hardstandings; and
- underground cabling linking the turbines with the substation.

1.7 Full details of the Proposed Development infrastructure and design are provided in **Chapter 2** of the EIA Report.

Aims

1.8 This report aims to undertake a review of all available peat depth information for the Proposed Development and immediate environs, and to provide a series of calculations determining the estimated volumes of peat that will require excavation in order to allow the Proposed Development to progress. Options will be provided to address use of the excavated peat within necessary restoration of the Proposed Development's infrastructure. A series of good practice measures relating to peat and soil handling and storage will also be provided.

Assessment Method

1.9 The assessment has involved the following stages:

- Desk-study;
- peat depth surveys and infrastructure design;
- volume calculations for excavation and reuse; and
- peat handling and storage guidance.

Study Area

1.10 The study area for this Technical Appendix includes the land within the application boundary plus a buffer zone of 500 m around the boundary. Within this area, two sub-areas are described:

- the turbine area refers to everything within the application boundary except for the access route to the site; and
- the access area refers to the land within the access corridor from the A6088 to the turbine area.

2 PEAT CONDITION

Developments on Peat

Definition of Peat

2.1 Scotland's Soils (2022a) classifies peat as:

An accumulation of partially decomposed organic material, usually formed in waterlogged conditions. Peat soils have an organic layer more than 50 cm deep from the soil surface which has an organic matter content of more than 60%.

2.2 Organic soils which are 50 cm or thinner can also support peatland vegetation and as a result are also considered within Scotland's broader peatland system in Scotland's National Peatland Plan (NatureScot, 2015). These are often described as 'peaty gleys' or 'peaty podzols', reflecting key aspects of the underlying soil. Peaty soils have a higher plant fibre content and are less decomposed than peat.

2.3 Active peatland typically consists of two layers: the surface layer or *acrotelm* and the deeper layer or *catotelm*. The acrotelm contains the living vegetation and consists of living and partially decayed plant material. It typically has a low but variable hydraulic conductivity and allows some through-flow of water within the plant material. The underlying catotelm is denser, with a very low hydraulic conductivity, and is formed from older decayed plant material. The catotelm varies in structure, in some areas retaining a proportion of fibrous material and in other areas being more humified and amorphous. The degree of humification typically increases with depth.

2.4 Underneath the peat-forming layers, the basal substrate can be a mineral soil, a superficial deposit such as glacial material, or bedrock. There may be a transition zone through a mineral-rich peaty layer at the base of the peat, although this is usually no more than 5 cm in thickness.

Importance of Peat

2.5 Peatland forms a key part of the Scottish landscape, covering more than 20% of the country's land area, and forming a significant carbon store (Scotland's Soils, 2022b). In addition, peatland is an internationally important habitat.

2.6 Active and healthy peatlands develop continuously, removing carbon dioxide from the atmosphere and storing it within the peat soil. Peatland protection and restoration form key parts of the Scottish Government's Climate Change Plan, which targets restoration of 250,000 ha by 2030 (Scottish Government, 2018). As of March 2020, over 25,000 ha of peatland had begun restoration, and in 2020 the government announced a £250 million ten-year funding package to support the restoration of degraded peat (Scottish Government, 2020). Restoration will need to be conducted at a faster pace to reach peatland restoration targets (Scottish Government, 2020).

2.7 It is, therefore, important that developments in peatland areas take recognition of the importance of peatland as a habitat and carbon store. Careful planning of developments, and careful infrastructure design, can remove or minimise the disturbance of peat that would be needed to allow the development to proceed.

Development Setting

Topography and Geomorphology

2.7.1 The turbine area lies on relatively high ground, with elevations over 200 m above Ordnance Datum (AOD). The topography is characterised by higher ground in the south east and west, and lower ground in the central and northern parts of the turbine area, in the Jed Water valley. Five prominent hills surround the site; Green Law (368 m AOD) in the south, Wardmoor Hill (365 m AOD) in the west, Highlee Hill (307 m AOD) in the north, and Charlie's Knowe (258 m AOD) and Tamshiel Rig (280 m AOD) in the east. The highest point within the turbine area is north east of the summit of Wardmoor Hill, where the site reaches an elevation of 365 m AOD. The lowest elevations are primarily located around the Jed Water, where elevation dips below 205 m AOD in the north eastern most portion of the turbine area.

2.7.2 The turbine area is situated within an SRF plantation, and as such areas of peatland within the site have been highly modified due to felling and planting activities. Peat within the turbine area has also been modified due to the presence of an extensive network of drainage channels throughout the site. There is evidence of highly degraded peat in many of the clear fell areas and, in general, existing peat is not deep (**Figure 10.3**).

Habitats and Vegetation

2.8 National Vegetation Classification (NVC) survey mapping indicates that the majority of the site consists of active SRF plantation; mature stands are present within the site as well as areas of felling and recent crop plantation. Between areas of forestry – in clearings and along roadside verges – mosaic habitats are dominant. The main communities present within the site are:

- M6 *Carex rostrata – Sphagnum squarrosum* mire;
- M15 *Scirpus cespitosus – Erica tetralix* wet heath;
- M23 *Juncus effusus/acutiflorus – Galium palustre* rush-pasture;
- M25 *Molinia caerulea - Potentilla erecta* mire;
- M27 *Filipendula ulmaria - Angelica sylvestris* mire;
- MG9 *Holcus lanatus - Deschampsia cespitosa* grassland;
- MG10 *Holcus lanatus - Juncus effusus* rush-pasture;
- S7 *Carex acutiformis* swamp;
- W2 *Salix cinerea - Betula pubescens - Phragmites australis* woodland;
- W4 *Betula pubescens - Molinia caerulea* woodland; and
- W7 Residual alluvial forests (*Alnus glutinoso-incanae*).

2.9 The soils underlying the Proposed Development are dominated by peaty gleys and peat with some noncalcareous gleys and brown forest soils.

Hydrology

2.10 The site lies across two main watercourse catchments: the Jed Water catchment and the Catlee Burn catchment. Most of the site lies within the Jed Water catchment, but the north west part of the site is drained by the Catlee Burn catchment (**Figure 10.4**).

Jed Water Catchment

2.11 The Jed Water catchment has a total area of 49.5 km^2 (CEH, 2022) and drains 95.5% of the site.

2.12 The Jed Water provides the main drainage for the site, the watercourse flows north east through the site. The Rough Sike and Westshiels Burn tributaries drain the central region of the turbine area into the Jed Water at Westshiels, while the Battling Sike tributary drains the northern and central regions of the turbine area into the Jed Water. Several smaller unnamed tributaries drain into to the Jed Water as it flows north east. The Black Burn and its tributary, the Fell Burn, drain the eastern region of the turbine area around the hill named Millmoor Rig. The Black Burn and Jed Water merge in the very north-eastern region of the turbine area, flowing out of the site northwards.

2.13 The Jed Water catchment is an upland region characterised by moorland, commercial forestry in the south and agricultural fields in the north. The site watercourses look to be in their natural or near-natural conditions, with generally high levels of sinuosity, defined as having lots of river meanders.

Catlee Burn Catchment

2.14 The Catlee Burn catchment has a total area of 18.3 km^2 (CEH, 2022) and drains 4.5% of the site.

2.15 Within the turbine area, key watercourses in the Catlee Burn catchment are the Hass Sike and Harecairn Sike which drain the very south western section. Both watercourses drain into the Hyndlee Burn. The very north western part of the turbine area is drained by the Wolfehopelee Burn and its tributaries. The Wolfehopelee Burn drains directly into the Catlee Burn.

2.16 The Catlee Burn catchment is an upland region characterised by moorland, commercial forestry and agricultural fields in the north central region. The site watercourses look to be in their natural or near-natural conditions, with generally high levels of sinuosity, defined as having lots of river meanders.

Catchment Statistics

2.17 Catchment statistics are derived from the Flood Estimation Handbook Web Service (CEH, 2022) and summarised in **Table 10.1.1**.

2.18 The catchment wetness index (PROPWET) for the Jed Water and Catlee Burn is 0.57, indicating soils in the site are wet for 57% of the time. The catchment has a base flow index (BFI HOST19) between 0.32 and 0.45, indicating a moderate to low input of groundwater baseflow to surface watercourses. The standard percentage runoff (SPR HOST) is 37-50%, indicating that this percentage of site rainfall is converted into surface runoff from rainfall events; this represents a high runoff risk where soils have a limited capacity to store rainfall and/or a slow infiltration rate and will quickly saturate, leading to rapid runoff.

Table 10.1.1: Site Catchment Statistics

Catchment Name	Catchment Wetness Index (PROPWET)	Base Flow Index (BFI HOST19)	Standard Percentage Runoff (SPR HOST)	Area %
Jed Water	0.57	0.451	37.12 %	95.5
Catlee Burn	0.57	0.322	50.03 %	4.5

Peat Characteristics

2.19 The site consists of a patchwork of peat soils with some areas of shallow peat and rare pockets of deep peat (**Figure 10.3**). Peat depth surveys indicate that the majority of the soils across the site are less than 0.5 m in depth and are, therefore, not classified as peat.

2.20 Areas of peat deeper than 1 m are rare and appear as isolated pockets scattered throughout the site. The majority of these areas are found from north to south through the centre of the turbine area, with the deepest areas (1.52 m – 2.05 m) being found in the north east.

2.21 Across the majority of the site peatland has been considerably disrupted by SRF and is no longer in near-natural condition. Drainage ditches have been excavated throughout the forested areas in an attempt to improve the ground for tree growth. Some areas have recently been clear-felled and replanted, resulting in additional disruption to the ground conditions.

Peat at the Proposed Development

2.22 The Proposed Development was identified to include some areas of peat at an early stage, as indicated by superficial geology and soils mapping for the region. Data from a broad-scale peat depth survey on a 100 m grid from the former, now withdrawn Highlee Hill Wind Farm application were provided by the applicant and the peat depth data from this survey were used to inform the infrastructure layout design process in December 2021[1].

2.23 A second phase of peat depth surveying was undertaken by RSK in April 2022, focusing on the proposed infrastructure layout.

2.24 The combined peat depth data were used to generate a detailed map of peaty soil and peat depth for the Proposed Development. This is provided in **Figure 10.3**. Measured peat and soil depths range from 0 (bedrock at surface) to 2.05 m. A total of 1,581 peat depth measurements have been recorded for the Proposed Development and immediate surroundings.

2.25 In designing the Proposed Development the intention has been to avoid peat areas where possible, and to minimise incursion into peat where it has not been possible to avoid it altogether. Approximately 94.5% of the Proposed Development infrastructure, including

[1] Phase 1 peat data were purchased by ESB. Neither ESB nor any of the consultants contracted for the Millmoor Rig project were involved in collection of this information or with the Highlee Hill application.

drainage, is underlain by peaty soil or topsoil no greater than 0.5 m deep, with 5.5% of infrastructure underlain by peat.

Peat Excavation Volumes

2.26 The tables below set out the estimated volumes of peat that need to be excavated in order to allow construction of the Proposed Development to proceed. The calculations are provided per 'scheme element', as totals for each element type, and as an overall total. Each set of calculations provides subdivision into 'acrotelm' and 'catotelm'.

2.27 For the purposes of these calculations, the acrotelm has been assumed to form the uppermost 0.5 m where peat is present. Acrotelm is known to vary in thickness, but it is recommended that peat turves are excavated to approximately 0.5 m where possible, including the uppermost part of the catotelm, to promote quicker regeneration of disturbed areas following reinstatement.

2.28 Volumes of peaty soil and topsoil have not been included, in line with the definition of peat quoted in paragraph 2.1 above. Soils would also require excavation but are less sensitive than peat to both excavation and restoration.

2.29 **Table 10.1.2** provides peat volumes that require excavation in order to allow construction of the access track network and associated drainage. The proposed new access track width will be approximately 5.5 m, and up to 7 m on bends. Additionally there will be a 1 m shoulder verge on each side of the track Turning heads present directly adjacent to the access track have been included as part of the access track.

2.30 Upgraded existing access track final width will be between 5.5 m and 7 m. The existing access track has been assumed to be approximately 4 m wide. For excavation calculations an additional 1.5 m of track hardstanding.

Table 10.1.2: Peat Excavation Volumes for Access Tracks

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
New Track			
Main access	648	97	745
Section 1 – access to T1, T2 and T3	230	138	369
Section 2 – access to T4, T5, T7 and T8	528	195	723
Section 3 – access to T6, T9, T10, T11, T12 and T13	271	97	368
Existing Track			
Main access	0	0	0
Section 1 – access to T1, T2 and T3	1,262	495	1,757
Section 2 – access to T4, T5, T7 and T8	934	255	1,190
Section 3 – access to T6, T9, T10, T11, T12 and T13	2,057	679	2,735
Total	**5,931**	**1,957**	**7,888**

2.31 **Table 10.1.3** provides peat volumes that require excavation in order to allow construction of the turbine foundations, hardstanding areas and crane pads, plus associated drainage.

Calculations have been made for each turbine base plus necessary hardstanding areas, making use of peat depth data for the relevant turbine and hardstanding footprint.

Table 10.1.3 Peat Excavation Volumes for Turbines, Hardstandings, Crane Pads and Associated Drainage

Scheme element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Turbine T1	637	70	707
Turbine T2	0	0	0
Turbine T3	350	98	448
Turbine T4	0	0	0
Turbine T5	0	0	0
Turbine T6	0	0	0
Turbine T7	0	0	0
Turbine T8	0	0	0
Turbine T9	0	0	0
Turbine T10	0	0	0
Turbine T11	350	70	420
Turbine T12	0	0	0
Turbine T13	0	0	0
Total	**1,337**	**238**	**1,575**

2.32 **Table 10.1.4** provides peat volumes that require excavation in order to allow construction of additional infrastructure, such as construction compounds and borrow pits, plus associated drainage. Calculations have been made for each footprint, making use of peat depth data for the relevant scheme element.

Table 10.1.4: Peat Excavation Calculations for Other Infrastructure Elements

Scheme element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Borrow Pit BP1	0	0	0
Borrow Pit BP2	0	0	0
Borrow Pit BP3	0	0	0
Construction Compound	2,124	850	2,974
Mobilisation Compound	0	0	0
Substation Option 1	0	0	0
Substation Option 2	0	0	0
Total	**2,124**	**850**	**2,974**

2.33 A summary of the total peat excavation volumes is provided in **Table 10.1.5**.

Table 10.1.5: Summary of Estimated Peat Excavation Volumes

Scheme element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
All tracks	5,931	1,957	7,888
All turbine infrastructure	1,337	238	1,575
All other infrastructure	2,124	850	2,974
Total	**9,392 (76%)**	**3,045 (24%)**	**12,437 (100%)**

Peat Reuse

2.34 The guidance document '*Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste*' (Scottish Renewables/SEPA, 2012) identifies a number of reuse options for excavated peat within wind farm developments. These have all been tested in practice and found to be effective, if undertaken with care and appropriate handling of the peat.

Dressing-off Edges of Constructed Infrastructure

2.35 Excavated peat can provide a valuable means for dressing-off and reinstating the slopes and edges of constructed infrastructure. This should be undertaken as soon as practicable after construction and should be managed such that a suitable tie-in to the surrounding topography is created as part of the process. This has a two-fold purpose – to reduce the visual effect of the infrastructure and to retain as much of the existing habitat as possible.

2.36 A secondary part of this would involve full reinstatement of elements of infrastructure only required for the construction phase, principally temporary construction compounds. Temporary parts of the turbine hardstandings may also be reinstated following installation of the turbines.

Verge Reinstatement on Track Sections

2.37 For cut tracks, the track margins can be reinstated to form a verge slightly raised above the track level. This acts as a partial visual screen for the track network. Well-designed track margins also help to direct track surface runoff into trackside drainage, where it can be directed for treatment.

2.38 Where existing tracks require upgrading, new works are typically focused on one side of the track and reinstatement would also usually be focused on the track side with new works. Reinstatement of the already-existing track verge can be undertaken where the ground has been left raw or where previous reinstatement has not been effective.

Borrow Pit Restoration

2.39 Excavated peat has been used successfully in borrow pit restoration, where the method of reuse and the final restoration profile is in keeping with overall habitat and environmental reinstatement objectives.

2.40 However, for the Proposed Development it is considered that the volumes of peat estimated to be excavated during construction would be insufficient for use in borrow pit restoration and would be better targeted in other parts of the site.

Peat Reuse Volumes

2.41 Calculations have been made to determine where excavated peat can usefully be reused within the Proposed Development, for the purposes of reinstatement and restoration. Estimated volumes for reuse are provided in **Table 10.1.6**, subdivided by the different reinstatement and restoration methods that are appropriate for the Proposed Development.

Table 10.1.6: Estimated Soil and Peat Volumes for Different Reuse Options

Reuse Option	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Dressing-off edges of turbine hardstandings	6,200	4,100	10,300
Dressing-off edges of additional construction compound	200	100	300
Proposed new access track verge reinstatement	11,600	0	11,600
Modified existing access track verge reinstatement	16,500	0	16,500
Totals	**34,500**	**4,200**	**38,700**

2.42 All figures provided in **Table 10.1.6** have been rounded down to the nearest 100 m^3, to make allowance for the uncertainties present within the figures.

2.43 It has been assumed that limited catotelmic peat would be reused for dressing-off edges and reinstatement of construction infrastructure. In areas with natural hollows, use of some catotelmic peat may be appropriate but it is likely in practice that most of this work would make use of acrotelmic peat.

2.44 It has been assumed that all track verge reinstatement would use entirely acrotelmic peat, although some catotelmic peat may be used in areas with natural hollows.

2.45 Reinstatement and dressing-off have assumed a maximum depth of 0.6 m and a maximum width of 2.5 m from the infrastructure or track margin, to be varied in practice as best suits the local ground conditions.

2.46 It will be observed from comparison of **Table 10.1.5** and **Table 10.1.6** that potential reuse options could make use of approximately three times the anticipated excavation volume. With this in mind, peat reuse would be guided on site by local site conditions and would be under supervision by the Environmental Clerk of Works (ECoW), to ensure that reuse is located in the most favourable areas for the peat to return to active status.

3 PEAT HANDLING & STORAGE

Peat Excavation

3.1 During the construction of the Proposed Development, the appointed Contractor would adopt the following good practice guidelines with relation to peat excavation:

- Given the restricted and patchy coverage of peat at the site, it is anticipated that it will not be possible to excavate intact peat turves. As a result, the upper layer of peat should be removed as divots or mulch rather than as turves. Careful handling would help to keep the vegetated sections largely the right way up.
- Underlying peat would be extracted as close to intact as is feasible within the constraints of the area. Remoulding of the peat by the excavator would be kept to a minimum.
- Excavated materials would be classified depending on their composition, and each type would be stored separately. Anticipated material classes are: peaty soils and topsoil, subsoil, acrotelmic peat, catotelmic peat, mineral soil, and rock.
- Excavated peat would be transported as short a distance as practicable for either reuse or temporary storage, in order to minimise loss of structure during transport.

3.2 Peat and soil stripping can be adversely affected by wet weather. The following 'stop' conditions are recommended to guide any peat and soil stripping activity (**Table 10.1.7**).

Table 10.1.7: Recommended 'Stop' Conditions (CH2M & Fairhurst, 2018)

'Stop' Rule	Requirements
High intensity rainfall	Rainfall during construction greater than 10 mm per hour
Long duration rainfall	Rainfall in the preceding 24 hours greater than 25 mm
7-day cumulative rainfall (1)	Preceding 7 days of rainfall greater than 50% of the monthly average
7-day cumulative rainfall (2)	Preceding 7 days of rainfall greater than 50 mm

3.3 Monitoring of rainfall for 'stop' conditions would require access to a suitable local source of data, such as the Met. Office's monitoring stations at Redesdale Camp (19.7 km south east of the site) and Eskdalemuir (20 km west of the site), or a site-specific rainfall station, to allow identification of these conditions being exceeded in order to allow appropriate action to be taken.

Temporary Storage

3.4 Temporary storage of peat should be avoided or minimised wherever possible. This is best achieved by transporting the peat to an allocated reuse location as soon as practicable following excavation. This would help to retain its structural integrity as far as possible, would minimise volumes of peat requiring storage and would help to prevent the peat drying out.

3.5 The ECoW would maintain a schedule of reuse and restoration areas and would direct whether excavated peat should be stored or transported directly to a suitable reuse location. Immediate reuse is likely to be more practicable in the later stages of construction.

3.6 Soils, peat turves/divots and peat would all be stored separately. The following outline good practice would be applied to all areas of peat and soil storage:

- Excavated materials would not be stored immediately above excavation faces, in order to prevent overburden-induced failure.
- Local drainage lines, areas of very wet ground and locally steep slopes would be avoided for excavated material storage, including peat.
- Careful handling of upper-layer peat divots, from areas where peat turves cannot be excavated, would help to retain vegetated blocks the right way up.
- Catotelmic peat would be stored separately from vegetated peat blocks, in mounds up to 1 m high.
- Limited smoothing or 'blading' of stockpiled catotelm peat, topsoil and subsoil would help to shed rainwater and prevent ponding of water on the stockpile.
- In periods of dry weather, light spraying of the temporary peat stores would be applied in order to minimise drying.
- All temporary storage areas for excavated peat and soils would be at least 50 m from any watercourse.
- Runoff from stored peat and soils would be managed to avoid impacts to habitats and watercourses. Where necessary, drainage control measures such as use of silt fences or straw bales would be put in place.
- Monitoring of peat storage areas may be required during wet weather or snowmelt. This would be undertaken by the Contractor, with findings reported to the ECoW.

3.7 Areas identified as potentially suitable for peat and soil stockpiles are detailed in **Table 10.1.8** and shown on **Figure 10.1.1**, Volume 2. Storage areas would be assessed for suitability during construction works and priority would be given to areas near to the material source; key constraints would be slope, watercourses and sensitive habitats. Suggested locations may require moving depending on the planned felling schedule at that time.

Table 10.1.8: Potential Areas for Peat and Soil Stockpiles

Location	Grid Reference
Main access near Substation Option 1	364167 606841
Near Turbine T3 access	363616 606488
Between Turbine T8 and Borrow Pit 3	361567 606989
Near Turbine T11 access	361013 606083

Reinstatement

3.8 The following principles would be applied in all situations where peat is being reinstated:

- Reinstatement of peat turves and vegetated peat divots would ensure that surface re-vegetation is encouraged as early as possible. Vegetated peat must only be used for surface layer reinstatement.
- Re-seeding of any significant areas of bare peat would be undertaken with a suitable species mix appropriate to the surrounding habitats. Careful planning of reinstatement should minimise areas of bare peat by appropriate distribution of vegetated peat turves and divots.
- Grazing by livestock and deer may need to be prevented in sensitive areas, by selective use of fencing, until re-vegetation has become established.
- In the event that stored peat becomes dewatered or desiccated, this material would not be exposed in the upper part of any reinstatement area in order to minimise any further character loss. Storage of excavated peat would be minimised in order to prevent or limit dewatering and desiccation.

Updated Peat Management

3.9 The Outline Peat Management Plan presented here would be updated and refined as necessary with further site-specific detail once ground investigation results become available. This would involve recalculation of peat volumes requiring excavation and storage. Location-specific reinstatement would be directed by the ECoW, taking account of specific local variation in topography and natural ground conditions. The Construction Peat Management Plan, to be prepared post-consent, would be a live document, with revisions added as necessary during the construction process.

4 SUMMARY

4.1 This Outline Peat Management Plan provides an assessment of the likely volumes of peat that would require excavation during the construction of the Proposed Development, and of the volumes of peat that can legitimately be used in reinstatement of development infrastructure. The assessment has included consideration of all proposed infrastructure that would require construction and excavation work where peat would require removal.

4.2 The assessment indicates that all peat would be able to be reused within the Proposed Development. As more reinstatement opportunities exist than calculated excavation volumes, target restoration areas would be identified by the ECoW for areas where peat restoration would be most beneficial. Restoration work in other parts of the site would make use of excavated soil materials in lieu of peat.

4.3 Approximately 76% of the excavated peat would be acrotelmic, which provides good opportunities for promoting re-establishment of peatland vegetation around construction areas. Sensitive reinstatement would help to minimise the visual impact of the construction works as well as minimising the habitat loss from construction.

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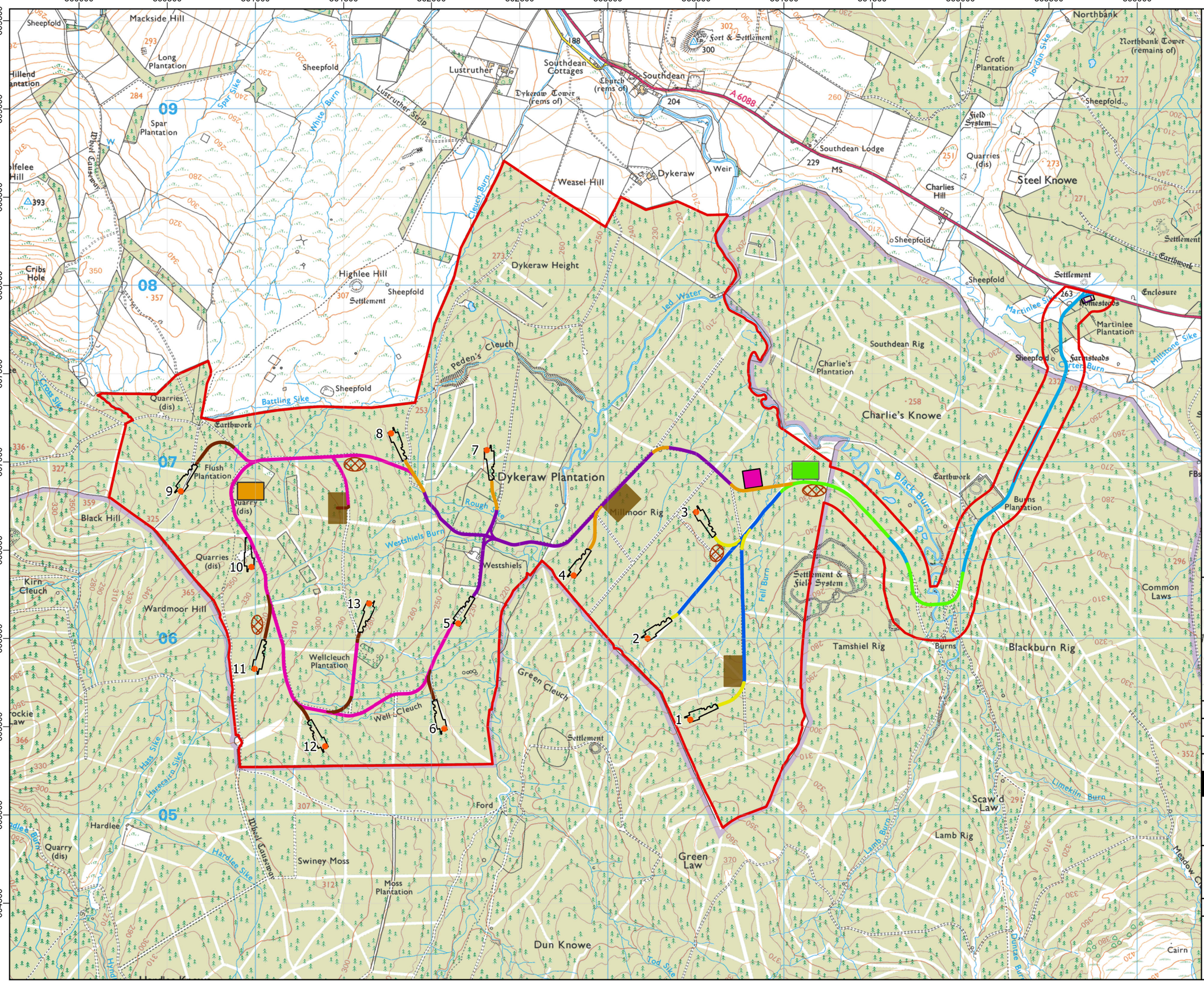

Legend:

- Application Boundary
- Turbine
- Hardstands
- Mobilisation Compound
- Borrow Pit Search Areas
- Construction Compound
- Substation Compound
- Alternate Substation Option
- Temporary Turbine Layover Area

New Track
- Main access
- Section 1
- Section 2
- Section 3

Existing Track
- Main access
- Section 1
- Section 2
- Section 3

- Potential Peat Storage Areas

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
01	16/11/2022	Revised Symbology	DL	RB	RB
00	09/11/2022	First Draft	DL	CI	CI

Millmoor Rig Wind Farm

TITLE: Figure 10.1.1
Track sections and peat storage

ID:P663320 Peat Management Plan_Track Sections Peat Storage

0 0.5 1
Kilometres
Scale: 1:20,000 @ A3

N W E S

REV 01

Path: H:\600000 - Glasgow\663320 Millmoor Rig Wind Farm EIA\01 - GIS\03Figures\02Draft