Technical Appendix 10.3: Peat Slide Hazard Risk Assessment

TECHNICAL APPENDIX 10.3: PEAT LANDSLIDE HAZARD RISK ASSESSMENT

10.1 Introduction

The Proposal

10.1.1 This Technical Appendix presents information relevant to the proposed Harris-Stornoway 132 kV OHL Replacement. It should be read in conjunction with **EIAR Volume 2** in particular **Chapter 2: Description of Proposed Development (EIAR Volume 2)** for details of the Proposed Development, and **Chapter 10: Hydrology, Hydrogeology, Geology and Soils (EIAR Volume 2).** The location of the Proposed Development is shown in **Figure 1.1: Location Plan and Overview (EIAR Volume 3a).**

Requirement for this Report

10.1.2 This report presents baseline data collected from a desk-based review of published data and current data from field surveys.

10.1.3 The objectives of the Peat Landslide Hazard and Risk Assessment (PLHRA) are to:

- undertake a desk based review of published information including geological, hydrogeological and topographical information, to inform the baseline for the PLHRA;
- undertake site visits to identify evidence of, and potential for, active, incipient or relict peat instability, including identification of the location of features as required;
- report on evidence of any active, incipient or relict peat instability, and the potential risk of future instability, describing the likely causes and contributory factors;
- identify potential controls to be imposed during the construction phase to minimise the risk of any peat instability at the Site; and
- provide recommendations for further work or specific construction methodologies to suit the ground conditions to mitigate against any increased risk of potential peat instability.

10.1.4 The scope of the PLHRA is as follows:

- characterise the peatland geomorphology to determine whether there have been prior occurrences of instability, and whether contributory factors that might lead to instability in future are present across the Site;
- determine the likelihood of a future peat landslide under natural conditions and in association with construction activities associated with the Proposed Development;
- identify potential receptors that might be affected by peat landslides, should they occur, and quantify the associated risks; and
- provide appropriate mitigation and control measures to reduce the risks to acceptable levels such that the Proposed Development is constructed safely with minimal risks to the environment.

10.1.5 The contents of this PLHRA have been prepared in accordance with the Scottish Government's Best Practice Guidance[1], noting that the guidance "*should not be taken as prescriptive or used as a substitute for the developer's [consultant's] preferred methodology*".

[1] Scottish Government (2017). Peat Landslide Hazard and Risk Assessments, Best Practice Guide for Proposed Electricity.

10.2 Methodology

Desk Study

10.2.1 The PLHRA was undertaken following SEPA best practice guidance[1]. A desk study and field surveys were implemented to gather baseline conditions of the Site and allow a PLHRA to be completed. The desk study included an overview of the following elements to inform the baseline design:

- Bedrock and superficial geology from (BGS)[2] Mapping;
- Peatland and peat characteristic information from Scottish Natural Heritage (now NatureScot) carbon rich soils, deep peat and priority habitat[3];
- Habitat survey information from **Chapter 8: Ecology (EIAR, Volume 2)**;
- Hydrogeological and Hydrology information from **Chapter 11: Water Environment (EIAR Volume 2)**; and
- Topographical information taken from published Digital Terrain Model (DTM) LIDAR data.

Field Survey

10.2.2 Two rounds of peat surveys were undertaken across the Site, based on the Proposed Development design. The surveys were designed based on best practice guidance for surveying developments on peatland .

10.2.3 The first survey was undertaken during June/July 2022 and included:

- Poles: Peat probing was carried out at the proposed location of each wooden pole and at 10 m intervals in the four cardinal directions to a limit of 50 m from the centre point.

10.2.4 The second survey was undertaken in August 2022 and included:

- Poles: Peat probing was carried out at the proposed location of each wooden pole and at 10 m intervals in the four cardinal directions to a limit of 50 m from the centre point.

10.2.5 Peat cores were taken using a Russian auger, with a sample volume of 0.5 l, and a number of field tests and observations were undertaken to identify:

- Depth of acrotelm;
- Degree of humification (using Hodgson, 1974[4],) to establish amorphous, intermediate, fibrous and content; and
- Degree of humification using the Von Post, (Hobbs, 1986[5]) classification scale.

10.2.6 Samples were subsequently submitted to a soils testing laboratory to analyse each sample for Bulk Density, Loss on Ignition (Organic Content), Moisture Content, and pH. Results of the testing are required for peat stability analysis detailed within this Technical Appendix.

10.2.7 During each survey observations of peat instability or peat geomorphological conditions were recorded to inform this assessment.

Limitations and Assumptions

10.2.8 Surveying has been undertaken based on the Proposed Development design Pole locations only and the design available at the time of the survey. As such the reporting can only present an assessment of peat slide risk within the survey area of each of the proposed pole locations, at the point of the s37 application submission. Should the

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[2] BGS Geological Mapping (https://geologyviewer.bgs.ac.uk/).

3 Scottish Natural Heritage. (2016). Carbon and Peatland 2016 map (https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/)

[4] Hodgson, J.M (1974) Soil Survey Field Handbook.

[5] Hobbs N.B. (1986). Mire morphology and the properties and behaviour of some British and Foreign peats. Quarterly Journal of Engineering Geology, 19, pp7-80

pole locations change, outside the incorporated limits of deviation, then further surveying and subsequent amendments to the PLHRA reporting may be required.

10.3 Results

Desk Study

Topography

10.3.1 The Site topography is varied along the 58 km route of the Proposed Development from relatively low lying blanket bog in the north and becoming more mountainous from approximately where the A858 intersects the A859 (which the route of the transmission line follows) until Balallan where the terrain returns to relatively level topography. Continuing south, the route becomes increasingly mountainous from the Aline Community Woodland with the route following the mountainside from approximately Ath Linne crossing through the Abhainn Sgaladail river valley before returning to the mountain side and then following the western side of Giolabhal Glas and descending in to Tarbert. From Tarbert the route ascends back up into mountainous terrain until reaching the Harris Grid Supply Point (GSP). The terrain crossed is typical of glacial and peri-glacial landforms with blanket bogs covering shallow sloping and low-lying ground.

10.3.2 Topography elevations are shown on **Figure 10.3.1** (**Annex A)**.

10.3.3 Slope angles at the Site, as shown on **Figure 10.3.2 (Annex A)**, are summarised below:

- Sheet a Harris GSP to Tarbert - generally moderate (5.1 to 10°); to steep (15.1 to 20º)
- Sheet b Tarbert to Gormal Maraig - generally steep (15.1 to 20º); to very steep (> 20º)
- Sheet c Gormal Maraig to Loch Cleit - generally moderate (10.1 to 15°); to steep (15.1 to 20º). Localised areas of very steep ground (>20º) around mountains and hills
- Sheet d Loch Cleit to Baile Ailein - generally shallow (2.1 to 5º); to moderate (5.1 to 10º)
- Sheet e Baile Ailein to Junction A858- generally moderate (5.1 to 10°); to moderately steep (10.1 to 15º); and
- Sheet f Junction A858/A859 to Stornoway substation - generally shallow (<5°) to moderate (5.1 to 10º).

10.3.4 The steeper gradients >20°identified to the west of the Site are associated with upland hill and moorland terrain.

Geology

10.3.5 The 1:50,000 scale geological mapping available from the British Geological Survey (BGS)[6] shows the majority of the site to be underlain by the Lewissian Gneiss Complex, the recorded geology has been broken down into 10 km sections, with the origin at the northern end of the route.

- 0 km to 10 km - Outer Hebrides Thrust Zone Mylonites Complex - Protocataclasite. Metamorphic bedrock formed between 4000 and 541 million years ago between the Archean Eon and Ediacaran period.
- 10 km to 20 km - Outer Hebrides Thrust Zone Mylonites Complex - Protocataclasite and Cataclasite. Metamorphic bedrock formed between 4000 and 541 million years ago between the Archean Eon and Ediacaran period.
- 20 km to 30 km - Outer Hebrides Thrust Zone Mylonites Complex - Protocataclasite and Cataclasite and Lewisian Complex - Gneiss. Metamorphic bedrock formed between 4000 and 541 million years ago between the Archean Eon and Ediacaran period.
- 30 km to 40 km - Scourie Dyke Swarm - Ortho-amphibolite. Metamorphic bedrock formed between 2500 and 1600 million years ago between the Siderian and Statherian periods, Scourian Gneisses - Amphibolite. Metamorphic bedrock formed between 4000 and 2500 million years ago during the Archean Eon period, Outer Hebrides Thrust Zone Mylonites Complex - Protocataclasite and Lewisian Complex - Gneiss. Metamorphic bedrock formed between 4000 and 541 million years ago between the Archean Eon and Ediacaran period

[6] BGS Geological Mapping https://geologyviewer.bgs.ac.uk/.

- 40 km to 50 km – Lewisian Complex - Gneiss. Metamorphic bedrock formed between 4000 and 541 million years ago between the Archean Eon and Ediacaran period.
- 50 km to 60 km - Lewisian Complex – Gneiss and Amphibolite. Metamorphic bedrock formed between 4000 and 541 million years ago between the Archean Eon and Ediacaran period, Uig Hills - Harris Igneous Complex – Granite, Vein Complex (marginal Zone) - Granite and porphyritic granite. Igneous bedrock formed between 2500 and 1600 million years ago between the Siderian and Statherian periods.

10.3.6 The 1:50,000 BGS mapping is shown on **Figure 10.3.3a (Annex A)**.

10.3.7 Following uplift and faulting (which is present across the 56km of the route, including crossing the Outer Hebrides Thrust Zone) the landscape underwent considerable change during cycles of glacial and inter glacial periods with up to 700m of ice covering the mountains of north Harris during the most recent glacial period, the Main Late Devension glaciation.

10.3.8 The superficial geology of the Site predominantly comprises Peat (which began forming approximately 6000 years ago with occasional Glacial Till underlying the peat. The 1:50,000 BGS mapping is shown on **Figure 10.3.3b (Annex A).**

10.3.9 The Scottish Natural Heritage (now NatureScot) carbon rich soils, deep peat and priority habitat[7] mapping (**Figure 10.6: Carbon and Peatland Mapping 2016 (EIAR Volume 3a)**) shows Class 1, Class 2, Class 3, Class 5 materials along the route with the most predominant class of soils present being Class 1 followed by Class 2.

10.3.10 The definition of the soils present is as follows:

- Class 1: Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value;
- Class 2: Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential;
- Class 3: Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat; and
- Class 5: Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

Hydrogeology

10.3.11 The BGS 1:625,000 scale hydrogeology mapping defines the geology along the route as a low productivity aquifer, no designations are given to the surface water features present across the route.

Land Use

10.3.12 Further details on land use are presented in **Chapter 6: Landscape and Visual Amenity (EIAR Volume 2)**, and further details on the habitats present are found in **Chapter 8: Ecology (EIAR Volume 2).**

Geomorphology

10.3.13 Digital aerial photography and Digital Terrain Model (DTM) LIDAR data was used to interpret and map geomorphological features within the Site. This interpretation and the resulting geomorphological map, as shown in **Figure 10.3.4 (Annex A)** were subsequently verified during site walkover surveys undertaken by an experienced peatland geomorphologist and engineering geologists in June/July and August 2022.

10.3.14 The geomorphological features recorded are shown on **Figure 10.3.4 (Annex A)**. The presence, characteristics and distribution of peatland geomorphological features have been defined to understand the hydrological function

[7] Scottish Natural Heritage. (2016). Carbon and Peatland 2016 map (https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/).

of the peatland, with reference to the balance of erosion and peat accumulation (or condition), and the sensitivity of peatland to potential land-use changes.

10.3.15 Several areas, predominantly to the north and central regions of the Site, have been subject to peat cutting. In most areas this was noted as historical, however, current peat cutting activities were noted at discrete locations within moorland and peatland areas to the north.

10.3.16 Aline Community Woodland, located within the central region of the Site, is the main area of forestry with artificial drainage measures used. In some areas diffuse natural drainage systems were also noted. Within the commercial plantation and other forestry areas (Semi natural and/ or Ancient Woodland) it was noted that the acrotelmic peat was highly modified as a result of planting and felling activities. No evidence of peat erosion or instability were generally noted within the forestry areas.

10.3.17 Several areas of minor instability features were noted comprising haggs, groughs, or other peat erosion noted as bare ground. Additionally, several localised areas of peat flushes were recorded across the Site which displayed surface erosion of peat due to surface water run-off. No major instability features, evidence of incipient instability or past landslides were noted.

Field Survey

10.3.18 Results from the peat surveys are detailed within **Technical Appendix 10.1: Peat Depth Results Report (EIAR Volume 4)**.

Peat Depth and Character

10.3.19 Most of the Site has either no peat present or has a shallow depth of peat present (approximately 74.2 % of peat probes were <0.5 m in depth). These areas of shallow peat can be considered as organo-mineral soils. These are further summarised as follows:

- 6,083 no. samples (47 %) located on land with no peat/ absent;
- 3,517 no. samples (27.2 %) located on land with less than or equal to 50 cm depth of peat or organomineral soil;
- 1,585 no. samples (12.2 %) fell on land with between 51 cm and 100 cm depth of peat; and
- 1,754 no. samples (13.6 %) located on land with more than 100 cm depth of peat.

10.3.20 The survey results indicate that the peat depth is variable ranging between 0.0 m and 5.3 m thickness. Peat on the Site was found to be mostly shallow, with some areas of deeper peat. The peat probe depth and interpolated contours are shown on **Figure 10.3.5 (Annex A)**. The mean peat depth recorded was 0.47 m (47 cm).

10.3.21 Overall, the peat depths sampled across the Site were relatively shallow, with occasional deep pockets recorded. The peat was found to be generally in a state of weak to strong decomposition. For areas of peat within the forestry, this is likely to be due to the coniferous plantation and associated extensive artificial drainage, which has resulted in modification to the integrity and composition of the peat and carbon rich soils.

Peat Instability

Types of Peat instability

10.3.22 Peat instability can be defined as either ‘minor instability’ or ‘major instability’ and observed by both field observations and through desk top review of aerial/satellite imagery of the Site:

- Minor instability can be defined as localised and small scale features that are not generally precursors to major failure and including gully sidewall collapses, pipe ceiling collapses, minor slumping along diffuse drainage pathways (e.g., along flushes). Indicators of minor instability include presence tension cracks, compression ridges, or bulges; and
- Major instability can be defined by peat landslides.

10.3.23 For the purposes of this assessment, landslide classification is simplified and split into three main types:

- multiple peat slides with displaced slabs and exposed substrate;
- bog burst with peat retained within the failed area; and
- multiple peat soil slides with displacement of thin soils exposing substrate.

10.3.24 The term 'peat slide' is used to refer to large-scale landslides and occur 'top-down' from the point of initiation on a slope in thinner peats (between 0.5 and 1.5 m) and on moderate slope angles (typically 5-15°).

10.3.25 The term 'bog burst' is used to refer to very large-scale failures where peat is typically deeper (greater than 1.0 m and up to 10 m) and more amorphous than sites experiencing peat slides, with shallower slope angles (typically 2-5°).

10.3.26 'Peaty soil slide' is used to refer to small-scale slab-like slides in organic soils generally <0.5 m thick.

Factors Contributing to Peat Instability

10.3.27 Peat landslides are caused by a combination of factors, triggering factors and preconditioning factors. The combined factors are discussed in greater detail in the Landslide Susceptibility Approach section. Triggering factors have an immediate or rapid effect on the stability of a peat deposits, whereas preconditioning factors can influence peat stability over a much longer period of time.

10.3.28 Preconditioning factors may influence peat stability over long periods of time (years to hundreds of years), and include:

- impeded drainage caused by a peat layer overlying an impervious clay or mineral base;
- slope convexity/concavity;
- proximity to local drainage, either from flushes, pipes or streams;
- connectivity between surface drainage and the peat substrate interface;
- artificially cut transverse drainage ditches, or grips;
- increase in mass of the peat slope through peat formation, increases in water content or afforestation;
- reduction in shear strength of peat or substrate caused by progressive creep, chemical or physical weathering or clay dispersal in the substrate;
- loss of surface vegetation effecting tensile strength (e.g., by burning or pollution induced vegetation change);
- increase in buoyancy of the peat slope through formation caused by wetting up of desiccated areas; and
- afforestation/deforestation of peat areas, causing desiccation of peat or rehydration/swelling due to subsequent forest harvesting.

10.3.29 Triggering factors are typically of short duration (minutes to hours) and any individual trigger event can be considered as a result of cumulative events:

- intense rainfall or snowmelt causing high pore pressures;
- rapid ground accelerations (e.g., from earthquakes or blasting);
- unloading of the peat mass by drainage or by artificial excavations (e.g., cutting);
- drainage in susceptible parts of a slope by alterations to natural drainage patterns (e.g.by pipe blocking or drainage diversion); and
- loading by plant, spoil or infrastructure.

10.3.30 External environmental triggers such as rainfall and snowmelt cannot be mitigated, though they can be managed (e.g., by limiting construction activities during periods of intense rain).

10.3.31 Unloading of the peat mass by excavation, loading of the peat by plant and focusing of drainage can be managed and mitigated by careful design, site specific stability analyses, informed working practices and monitoring.

Approaches to Assessing Peat Instability

10.3.32 This report considers a qualitative contributory factor-based approach and conventional stability analysis (through limit equilibrium or Factor of Safety (FoS) analysis).

10.3.33 The advantage of the former is that many observed relationships between reported peat landslides and ground conditions can be considered together where a FoS is limited to consideration of a limited number of geotechnical parameters. The disadvantage is that the outputs of such an approach are better at illustrating relative variability in landslide susceptibility across a site rather than absolute likelihood.

10.3.34 The advantage of the FoS approach is that clear thresholds between stability and instability can be defined and modelled numerically. However, in reality, there is considerable uncertainty in input parameters and it is a generally held view that geotechnical stability analysis in peat is limited given the nature of peat as an organic material, rather than mineral soil.

10.3.35 To reflect these limitations, both approaches are adopted and outputs from each approach integrated in the assessment of landslide likelihood.

Assessment of Peat Landslide Likelihood

Introduction

10.3.36 This section provides details on the landslide susceptibility and limit equilibrium approaches to the assessment of peat landslide likelihood used in this report. The assessment of likelihood is a key step in the calculation of risk, where risk is expressed as follows:

Risk = Probability of a Peat Landslide x Adverse Consequences

10.3.37 The probability of a peat landslide is expressed in this PLHRA as peat landslide likelihood and is considered below.

Limit Equilibrium Approach

10.3.38 Stability analysis has been undertaken using the infinite slope model to determine the FoS for a series of 25 m x 25 m cells within the Site. The limit equilibrium approach has been applied within areas where the peat thickness is over 0.5 m. The limit equilibrium approach is the most frequently cited approach for the quantitative assessment of the stability of peat slopes. The approach assumes that failure occurs by shallow translational land sliding, which is the mechanism usually interpreted for peat slides. Due to the relative length of the slope and depth to the failure surface, end effects are considered negligible and the safety of the slope against sliding may be determined from analysis of a 'slice' of the material within the slope.

10.3.39 The stability of a peat slope is assessed by calculating a Factor of Safety, F, which is the ratio of the sum of resisting forces (shear strength) and the sum of driving forces (shear stress):

$$\frac{c' + (\gamma - h\gamma_w)\, z\, cos^2\, \beta\, tan\ \phi')}{\gamma z\, sin\, \beta\, cos\, \beta}$$

In this formula:

- c is the effective cohesion (kPa);
- γ is the bulk unit weight of saturated peat (kN/m3);
- γw is the unit weight of water (kN/m3);
- z is the vertical peat depth (m),
- h is the height of the water table as a proportion of the peat depth;
- β is the angle of the substrate interface (°); and
- ϕ' is the angle of internal friction of the peat (°).

10.3.40 This form of the infinite slope equation uses effective stress parameters, and assumes that there are no excess pore pressures, i.e., that the soil is in its natural, unloaded condition.

10.3.41 The choice of water table height reflects the full saturation of the soils that would be expected under the most likely trigger conditions, i.e., heavy rain.

10.3.42 Where the driving forces exceed the shear strength (i.e., where the bottom half of the equation is larger than the top), F is <1, indicating instability. A FoS between 1 and 1.4 is normally taken in engineering terms to indicate marginal stability (providing an allowance for variability in soil strength, depth to failure). Slopes with a FoS greater than 1.4 are generally considered to be stable.

10.3.43 There are numerous uncertainties involved in applying geotechnical approaches to peat, not least because of its high water content, compressibility and organic composition[8]. There is also a tensile strength component to peat which is assumed to be dominant in the acrotelm, which reduces with regards to decomposition and depth. As a result, analysis utilising a purely geotechnical approach is used to show an overall estimate of peat stability using published values rather than an absolute estimate of stability.

Data Inputs

10.3.44 Stability analysis was undertaken using GIS software and a 25 m x 25 m grid was superimposed on areas of peat only, with key input parameters derived for each grid cell. A 25 m x 25 m cell size was chosen because it is sufficiently small to define a minimum credible landslide size and avoid 'smoothing' of important topographic irregularities. Given the cell size of the input DTM, which provides a key input parameter, any smaller cell size would be unlikely to provide significant benefits.

10.3.45 **Table 10.3.1** shows the input parameters and assumptions for the stability analyses undertaken. The shear strength parameters c' and ϕ' are usually derived in the laboratory using undisturbed samples of peat collected in the field and therefore site specific values are often not available ahead of detailed site investigation for a development. Therefore, for this assessment, a literature search has been undertaken to identify a range of credible but conservative values for c' and ϕ' quoted in fibrous and humified peats. FoS analysis was undertaken with conservative ϕ' of 20° and values of 2 kPa and 5 kPa for c'.

Table 10.3.1 Geotechnical Parameters for Drained Infinite Slope Analysis

Parameter	Values	Rationale	Source
Effective Cohesion (c')	2, 5	Credible conservative cohesion values for humified peat based on literature review.	5.5 - 6.1 - peat type not stated (Long, 2005)9 3, 4 - peat type not stated (Long, 2005)**9** 5 - basal peat (Warburton et al., 2003) 10 8.74 - fibrous peat (Carling, 1986)11 4 - peat type not stated (Dykes and Kirk, 2001)12 7 – 12 - H8 peat (Huat et al, 2014)13
Bulk Unit Weight (γ)	10.5	Credible mid-range value for humified catotelmic peat.	Laboratory testing of peat cores.
Effective Angle of Internal Friction (ϕ')	22	Credible conservative friction angle for humified peat based on literature review.	40 – 65 - fibrous (Huat et al, 2014)**13** 50 – 60 - amorphous (Huat et al, 2014)**13** 36.6 - 43.5 - peat type not stated (Long, 2005)**9**

[8] Boylan N and Long M (2014) Evaluation of peat strength for stability assessments.
[9] Long M (2005) Review of peat strength, peat characterisation and constitutive modelling of peat with reference to landslides.
[10] Warburton et al (2003) Anatomy of a Pennine peat slide, Northern England. Earth Surface Processes and Landforms.
[11] Carling (1986) Peat slides in Teesdale and Weardale, Northern Pennines, July 1983: description and failure mechanisms.
[12] Dykes and Kirk (2001) Initiation of a multiple peat slide on Cuilcagh Mountain, Northern Ireland.
[13] Huat et al (2014) Geotechnics of organic soils and peat.

Table 10.3.1 Geotechnical Parameters for Drained Infinite Slope Analysis			
Parameter	**Values**	**Rationale**	**Source**
			31 – 55 - Irish bog peat (Hebib, 2001)14 34 – 48 - fibrous sedge pear (Farrell & Hebib, 1998)15 32 – 58 - peat type not stated (Long, 2005)**9** 23 - basal peat (Warburton et al, 2003)**10** 21 - fibrous peat (Carling, 1986)**11**
Slope Angle from Horizontal (β)	Various	Mean slope angle per 25 m x 25 m grid cell.	5 m DTM of site.
Peat Depth (z)	Various	Mean peat depth per 25 m x 25 m grid cell.	Interpolated peat depth model of site.
Height of Water Table as a Proportion of Peat Depth (h)	1	Assumes peat mass is fully saturated (normal conditions during intense rainfall events or snowmelt, which are the most likely natural hydrological conditions at failure).	Assumed.

Results

10.3.46 **Figure 10.3.6 (Annex A)** shows the results for drained analysis of the peat areas at the Site for the more conservative of the two parameter sets above (ϕ' of 22° and c' of 5 kPa). The results indicate that even with conservative parameters, Factors of Safety demonstrate stability across most of the Site (FoS >1.5). This is consistent with the lack of observation of instability features during the site walkover and on review of aerial imagery.

Landslide Susceptibility Approach

10.3.47 The landslide susceptibility approach is based on the layering of contributory factors to produce unique 'slope facets' that define areas of similar susceptibility to failure. The number and size of slope facets will vary from one part of the Site to another according to the complexity of ground conditions. As with the limit equilibrium approach, facets were only defined in areas of true peat.

10.3.48 Eight contributory factors are considered in the analysis:

- slope angle (S);
- peat depth (P);
- substrate geology (G);
- peat geomorphology (M);
- drainage (D);
- forestry (F);
- slope convexity (C); and
- land use (L).

[14] Hebib (2001) Experimental investigation of the stabilisation of Irish peat

[15] Farrell and Hebib (1998) The determination of the geotechnical parameters of organic soils

10.3.49 For each factor, a series of numerical scores between 0 and 3 are assigned to factor 'classes', the significance of which is tabulated for each factor. The higher a score, the greater the contribution of that factor to instability for any particular slope facet. Scores of 0 imply neutral/ negligible influence on instability.

10.3.50 Factor scores are summed for each slope facet to produce a peat landslide likelihood score (SPL), the theoretical maximum being 24 (8 factors, each with a maximum score of 3):

$$SPL = SS + SP + SG + SM + SD + SF + SC + SL$$

10.3.51 In practice, a maximum score is unlikely, as the chance of all contributory factors having their highest scores in one location is very small.

10.3.52 Figures to show the spatial distribution of each factor across the Site are shown in **Figures 10.3.7a-h (Annex A)**.

Slope Angle (S)

10.3.53 **Table 10.3.2** shows the slope ranges, their significance and related scores for the slope angle contributory factor. Slope angles were derived from the 5 m DTM and scores assigned based on reported slope angles associated with peat landslides rather than a simplistic assumption that 'the steeper a slope, the more likely it is to fail'.

Table 10.3.2 Slope Ranges, Significance and Scores

Slope Range (°)	Significance	Score
>20.0	Failure typically occurs as peaty debris slides due to low thickness of peat	1
15.1-20.0	Failure typically occurs as peaty debris slides due to low thickness of peat	2
10.1-15.0	Failure typically occurs as peat slides, bog slides or peaty debris slides, a key slope range for reported population of peat failures	3
5.1-10.0	Failure typically occurs as peat slides, bog slides or peaty-debris slides, a key slope range for reported population of peat failures	3
2.1-5.0	Failure typically occurs as bog bursts, bog flows or peat flows; peat slides and peaty debris slides rare due to low slope angles	2
≤2.0	Failure is very rarely associated with flat ground, neutral influence on stability	0

10.3.54 **Figure 10.3.7a (Annex A)** shows the distribution of slope angle scores across the Site. The results show the slope angles across most of the north of the Site are generally either shallow (2.1 to 5.0º) or moderate (5.1 to10º) with some steeper gradients around mountain, upland hill and river valley formations to the south of the Site.

Peat Depth (P)

10.3.55 **Table 10.3.3** shows the peat depths, their significance and related scores for the peat depth contributory factor. Peat depths were derived from the peat depth model shown on **Figure 10.3.5 (Annex A)** and reflect the peat depth ranges most frequently associated with peat slides (Evans and Warburton, 2007)[16] .

[16] Evans & Warburton (2007) Geomorphology of Upland Peat: Erosion.

Table 10.3.3 Peat Depths, Significance and Scores		
Depth Range (m)	**Significance**	**Score**
>1.5	Sufficient thickness for any type of peat failure	2
1.0-1.5	Sufficient thickness for peat slide or bog slide	3
0.5-1.0	Sufficient thickness for peat or bog slide and peaty-debris slide but not for bog burst	3
<0.5	Organic soil rather than peat, failures would be peaty-debris slides	1
No Organic Soil	No organic soil and therefore failures cannot be interpreted as peat slides, neutral influence on stability	0

10.3.56 **Figure 10.3.7b (Annex A)** shows the distribution of peat depth scores across the Site. The results indicate that the south of the Site is predominantly covered by peat thicknesses <0.5 m (Sheet a & b). Forested Areas (Sheet c & d) show areas of peat accumulation of generally <1.5 m but in places up to 4.1 m. Areas of peat bog and moorland, particularly found to the north of the Site generally show deposits >1.5m in depth but with areas of 0.5 to 1.5m of peat accumulations particularly within peatland at Aird an Triom (Sheet d) and between pole locations 485 and 671 (Sheets e & f).

Substrate Geology(M)

10.3.57 **Table 10.3.4** shows substrate type, significance and related scores for the peat depth contributory factor. The shear surface or failure zone of peat failures typically overlies an impervious clay or mineral (bedrock) base giving rise to impeded drainage. This, in part, is responsible for the presence of peat, but also precludes free drainage of water from the base of the peat mass, particularly under extreme conditions (such as after heavy rainfall, or snowmelt).

10.3.58 Peat failures are frequently cited in association with glacial till deposits in which an iron pan is observed in the upper few centimetres[17] . They have also been observed over glacial till without an obvious iron pan, or over impermeable bedrock. They are rarely cited over permeable bedrock, probably due to the reduced likelihood of peat formation.

Table 10.3.4 Substrate Geology Classes, Significance and Scores		
Substrate Geology	**Significance**	**Score**
Glacial Till with Iron Pan	Failures often associated with underlying till; particularly where impermeable iron pan provides polished shear surface	3
Glacial Till	Failures often associated with underlying till	2
Impermeable Bedrock	Failures sometimes associated with bedrock, particularly if smooth top surface	1
Permeable Bedrock	Failures rarely associated with permeable bedrock (peat is often thin or absent), neutral influence on stability	0

10.3.59 **Figure 10.3.7c (Annex A)** shows the distribution of substrate geology scores across the Site. The results indicate that the Site is underlain mostly by impermeable bedrock, which is consistent with the solid geology recorded.

Peat Geomorphology (G)

10.3.60 **Table 10.3.5** shows the geomorphological features identified across the Site, their significance and related scores.

[17] Dykes A. and Warburton J. (2007) Mass movements in peat: A formal classification scheme. Geomorphology 86. (Evans & Warburton, 2007).

Table 10.3.5 Peat Geomorphology Classes, Significance and Scores		
Geomorphology	**Significance**	**Score**
Adjacent/ upslope (<50 m) to existing instability (peat slide, peaty-debris slide, bank failure)	Failures often associated with underlying till; particularly where impermeable iron pan provides polished shear surface	3
Incipient instability (tension crack, compression ridge, bulging, quaking bog)	Failures are likely to occur where incipient failure morphology is observed	3
Undrained intact planar peat	Failures are most frequently recorded in intact peat, planar peat	2
Diffuse natural drainage/ pool/ flush	Failures are often associated with areas of diffuse subsurface drainage (such as flushes)	2
Pipe/ Collapsed Pipe	Failures are often associated with areas of soil piping	2
Existing Peat Slide	Failures typically stabilise and do not reactivate after the initial event	1
Gullied/ Dissected/ Hagged/ Eroded Peat/ Bare Peat/ Bare Ground	Failures are rarely recorded in peat fragmentated by erosion	1

10.3.61 **Figure 10.3.7d (Annex A)** shows there are no significant geomorphological features within the development area that are associated with historic peat slide failure. Areas of peat exposures, including haggs and groughs, are shown to be across the peatland areas predominantly to the north of the Site. Localised areas where peat flush/diffuse drainage were recorded were within the peat bogs within the central and northern Site areas:

Drainage (D)

10.3.62 **Table 10.3.6** shows artificial drainage feature classes, their significance and related scores. Transverse/oblique drainage lines may reduce peat stability by creating lines of weakness in the peat slope and encouraging the formation of peat pipes. Review of published literature indicates that a number of peat failures have been identified which have failed over moorland grips[18] . The influence of changes in hydrology become more pronounced the more transverse the orientation of the drainage lines are relative to the overall slope.

Table 10.3.6 Drainage Feature Classes, Significance and Scores	
Significance	**Score**
Failures are sometimes reported in association with artificial drains oblique/transverse to slope	3
Failures are rarely associated with artificial drains parallel to slope	1
Neutral influence on stability	0

10.3.63 **Figure 10.3.7e (Annex A)** shows the distribution of drainage feature scores across the Site. Artificial drainage was observed within commercial forestry and across moorland areas (e.g., open moorland habitat areas characterised by underlying peat). These were found to be parallel to the slope.

[18] Warburton J, Holden J and Mills AJ (2004). Hydrological controls of surficial mass movements in peat

Forestry (F)

10.3.64 **Table 10.3.7** shows forestry classes, their significance and related scores. Only the Aline Community Woodland was noted to have been extensively managed for both afforested and deforested areas. In both cases it was noted that the alignment of the forestry was predominantly aligned to the slope.

Table 10.3.7 Forestry Classes, Significance and Scores

Forestry Class	Significance	Score
Afforested area (with mature trees), ridge and furrows oblique to slope	Peat underlying forestry stands with rows aligned oblique to slope has inter ridge cracks which are conducive to slope instability	2
Afforested area (with mature trees), ridge and furrows aligned to slope	Peat underlying forestry stands with rows aligned with slope is conducive to slope instability, but less so than where rows are aligned oblique to slope	1
Deforested area (few or no trees), ridge and furrows oblique to slope	Peat underlying deforested stands has a higher water table and more neutral buoyancy, but retains inter ridge cracks (lines of weakness) conducive to instability; alignment of cracks oblique to slope is most conducive to instability	3
Deforested area (few or no trees), ridge and furrows aligned to slope	Peat underlying deforested stands has a higher water table and more neutral buoyancy, but retains inter ridge cracks (lines of weakness), however, orientation of these cracks is less critical when aligned to slope	2
Not Afforested	Neutral influence on stability	0

10.3.65 **Figure 10.3.7f (Annex A)** shows the distribution of forestry feature scores across the Site.

Slope Convexity (C)

10.3.66 **Table 10.3.8** shows profile convexity classes, significance and related scores. Convex and concave slopes (i.e., positions in a slope profile where slope gradient changes by a few degrees) can be associated with the initiation point of peat landslides. Convexities are often associated with thinning of peat; such that thicker peat upslope applies stresses to thinner 'retaining' peat downslope. Conversely, buckling and tearing of peat may trigger failure at concavities.

Table 10.3.8 Convexity Feature Classes, Significance and Scores

Convexity Feature	Significance	Score
Convex Slope	Peat failures are often reported on or above convex slopes	3
Concave Slope	Peat failures are occasionally reported in association with concave slopes	1
Rectilinear Slope	Rectilinear slopes show no particular predisposition to failure, neutral influence on stability	0

10.3.67 **Figure 10.3.7g (Annex A)** shows the distribution of convexity feature scores across the Site. Slopes are noted to be predominantly rectilinear in nature across the Site.

Land use (L)

10.3.68 **Table 10.3.9** shows land use classes, significance and related scores. Several forms of land uses have been associated with peat failures which form the scoring and potential for failure.

Table 10.3.9 Land Use Feature Classes, Significance and Scores		
Land Use	**Significance**	**Score**
Cutting/ Turbary	Peat failures are often associated with peat cuttings/turbary	3
Adjacent Quarrying	Failures are occasionally reported adjacent to quarries (usually as bog bursts, bog flows or peat flows)	2
Burning	Failures are rarely associated with burning though this activity may create pathways for water to the base of peat	1
Other Land Use	Failures are rarely associated with other forms of land use	0

10.3.69 **Figure 10.3.7h (Annex A)** shows that no significant land use areas are situated within the Site. Areas of peat cutting are noted across the peatland between the village Laxay and the Stornaway substation (Sheets e & f).

Likelihood Scores

10.3.70 The eight contributory factor layers shown on **Figure 10.3.8 (Annex A)** were combined in GIS software to produce likelihood scores for a peat landslide. These likelihood scores were then converted into descriptive 'likelihood classes' from 'Very Low' to 'Very High' with a corresponding numerical range of 1 to 5 and are described in **Table 10.3.10.**.

Table 10.3.10 Likelihood Classes Derived from the Landslide Susceptibility Methodology			
Summed Contributory Factor Scores	**Typical Site Conditions Associated with Score**	**Qualitative Likelihood**	**Peat Landslide Likelihood Score**
≤6	Unmodified peat with no more than low weightings for peat depth, slope angle, underlying geology and peat morphology	Very Low	1
7-11	Unmodified or modified peat with no more than moderate or some high scores for peat depth, slope angle, underlying geology and peat morphology	Low	2
12-16	Unmodified or modified peat with high scores for peat depth and slope angle and/ or high scores for at least three other contributory factors	Moderate	3
17-21	Modified peat with high scores for peat depth and slope angle and several other contributory factors	High	4

10.3.71 **Table 10.3.10** describes the basis for the likelihood classes. Professional judgement was made that for a facet to have a moderate or higher likelihood of a peat landslide, a likelihood score would be required equivalent to both the worst case peat depth and slope angle scores (3 in each case, i.e., 3 x 2 classes) alongside three intermediate scores (of 2, i.e,. 2 x 3 classes) for other contributory factors. This means that any likelihood score of 12 or greater would be equivalent to at least a moderate likelihood of a peat landslide. Given that the maximum score attainable is 24, this was considered reasonable.

Results

10.3.72 The results of the Peat Slide Likelihood assessment are shown on **Figure 10.3.8 (Annex A)** and indicate that the majority of the Site is considered to be of 'Low' or 'Very Low' likelihood of a peat landslide.

10.3.73 Several pole locations are within an area of "Moderate" likelihood. These include:

- Pole locations 494, 495, 498,499 & 500 (Sheet e); and
- Pole locations 576, 579 & 641 (Sheet f).

10.3.74 However, the FoS results shown on **Figure 10.3.6 (Annex A)**, suggest that all of the areas identified for "Moderate" likelihood areas, are "stable". Further required remedial actions are described within **Section 10.4**.

10.3.75 In order for there to be a "High" or "Medium" risk associated with Proposed Development, combined peat landslide likelihood must be "Moderate" or higher at an infrastructure location, as defined by Scottish Government Guidance[19].

10.3.76 Where combined peat landslide likelihoods are assessed as "Low" or "Very Low", post-consent site investigations and application of good practice construction mitigation methods should be employed prior to and during construction as detailed in **Section 10.4**.

Peat Slide Risk Assessment and Mitigation

10.3.77 **Table 10.3.11** defines the stability risk assessment based on the peat slide likelihood and the required mitigation actions for each Risk Level.

Table 10.3.11 Risk Assessment

Peat Slide Likelihood	Potential Stability Risk (Pre-Mitigation)	Mitigation Action
Very Low	Very Low	No peat present>0.5 m and therefore no mitigation action required
Low	Unlikely/Low	Development of a site-specific construction and management plan for peat areas
Moderate	Likely/Medium	As for Low condition plus may require mitigation to improve site conditions.
High	Probable High	Unacceptable level of risk, the area should be avoided. If unavoidable, detailed investigation and quantitative assessment required to determine stability with long term monitoring.
Very high	Almost Certain/Very high	Unacceptable level of risk, the area should be avoided

10.3.78 **Table 10.3.12** shows the risk level and required mitigation measures for the Proposed Poles.

Table 10.3.12 Risk Level and Mitigation

Pole Location	Peat Depth m (Max)	Slope Angle (Average)	Risk Level	Comment /Mitigation
Harris GSP	As per Pole 1			
1	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
2	0.0	9	Very Low	No peat recorded>0.5m. No mitigation required.
3	0.0	13	Very Low	No peat recorded>0.5m. No mitigation required.
4	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
5	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
6	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
7	0.4	18	Very Low	No peat recorded>0.5m. No mitigation required.
8	0.4	15	Very Low	No peat recorded>0.5m. No mitigation required.
9	0.4	13	Very Low	No peat recorded>0.5m. No mitigation required.

[19] Scottish Government. (2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
10	0.7	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
11	1.3	9	Very Low	Deep peat recorded but no risk identified due to no attributing likelihood factors. No mitigation required.
12	1.3	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
13	0.6	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
14	0.0	13	Very Low	No peat recorded>0.5m. No mitigation required.
15	0.0	10	Very Low	No peat recorded>0.5m. No mitigation required.
16	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
17	0.0	8	Very Low	No peat recorded>0.5m. No mitigation required.
18	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
19	0.0	12	Very Low	No peat recorded>0.5m. No mitigation required.
20	0.0	17	Very Low	No peat recorded>0.5m. No mitigation required.
21	0.0	9	Very Low	No peat recorded>0.5m. No mitigation required.
22	0.0	10	Very Low	No peat recorded>0.5m. No mitigation required.
23	0.0	17	Very Low	No peat recorded>0.5m. No mitigation required.
24	0.0	13	Very Low	No peat recorded>0.5m. No mitigation required.
25	0.0	12	Very Low	No peat recorded>0.5m. No mitigation required.
26	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
27	0.0	16	Very Low	No peat recorded>0.5m. No mitigation required.
28	0.0	16	Very Low	No peat recorded>0.5m. No mitigation required.
29	0.0	22	Very Low	No peat recorded>0.5m. No mitigation required.
30	0.4	16	Very Low	No peat recorded>0.5m. No mitigation required.
31	0.5	8	Very Low	Deep peat recorded to west of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
32	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.
33	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
34	0.5	9	Very Low	Deep peat recorded to east and west of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
35	0.9	6	Very Low	Deep peat recorded to east and west of pole location, but no risk identified due to no

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
				attributing likelihood factors. No mitigation required.
36	0.3	6	Very Low	No peat recorded>0.5m. No mitigation required.
37	0.3	9	Very Low	No peat recorded>0.5m. No mitigation required.
38	0.3	10	Very Low	No peat recorded>0.5m. No mitigation required.
39	0.2	7	Very Low	No peat recorded>0.5m. No mitigation required.
40	0.6	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
41	1.7	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
42	2.0	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
43	1.3	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
44	2.0	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
45	0.6	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
46	1.0	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
47	1.0	14	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
48	0.4	12	Very Low	No peat recorded>0.5m. No mitigation required.
49	0.0	12	Very Low	No peat recorded>0.5m. No mitigation required.
50	0.0	19	Very Low	No peat recorded>0.5m. No mitigation required.
51	0.0	19	Very Low	No peat recorded>0.5m. No mitigation required.
52	0.0	19	Very Low	No peat recorded>0.5m. No mitigation required.
53	1.7	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
54	1.8	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
55	1.6	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
56	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.
57	1.4	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
58	3.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
59	1.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
60	1.5	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
61	2.1	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
62	1.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
63	0.4	13	Very Low	No peat recorded>0.5m. No mitigation required.
64	0.0	15	Very Low	No peat recorded>0.5m. No mitigation required.
65	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
66	0.0	9	Very Low	No peat recorded>0.5m. No mitigation required.
67	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
68	0.0	12	Very Low	No peat recorded>0.5m. No mitigation required.
69	0.0	13	Very Low	No peat recorded>0.5m. No mitigation required.
70	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
71	0.0	10	Very Low	No peat recorded>0.5m. No mitigation required.
72	0.0	8	Very Low	No peat recorded>0.5m. No mitigation required.
73	0.0	19	Very Low	No peat recorded>0.5m. No mitigation required.
74	0.1	9	Very Low	No peat recorded>0.5m. No mitigation required.
75	0.1	6	Very Low	No peat recorded>0.5m. No mitigation required.
76	0.0	6	Very Low	No peat recorded>0.5m. No mitigation required.
77	0.0	7	Very Low	No peat recorded>0.5m. No mitigation required.
78	0.0	9	Very Low	No peat recorded>0.5m. No mitigation required.
79	0.1	10	Very Low	No peat recorded>0.5m. No mitigation required.
80	0.2	9	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
81	0.2	11	Very Low	No peat recorded>0.5m. No mitigation required.
82	0.4	15	Very Low	No peat recorded>0.5m. No mitigation required.
83	0.3	16	Very Low	No peat recorded>0.5m. No mitigation required.
84	0.3	15	Very Low	No peat recorded>0.5m. No mitigation required.
85	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
86	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
87	0.0	13	Very Low	No peat recorded>0.5m. No mitigation required.
88	0.2	20	Very Low	No peat recorded>0.5m. No mitigation required.
89	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
90	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
91	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
92	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
93	0.2	20	Very Low	No peat recorded>0.5m. No mitigation required.
94	0.1	20	Very Low	No peat recorded>0.5m. No mitigation required.
95	0.0	21	Very Low	No peat recorded>0.5m. No mitigation required.
96	0.0	22	Very Low	No peat recorded>0.5m. No mitigation required.
97	0.3	15	Very Low	No peat recorded>0.5m. No mitigation required.
98	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
99	0.0	18	Very Low	No peat recorded>0.5m. No mitigation required.
100	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
101	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
102	0.3	13	Very Low	No peat recorded>0.5m. No mitigation required.
103	0.2	11	Very Low	No peat recorded>0.5m. No mitigation required.
104	0.3	11	Very Low	No peat recorded>0.5m. No mitigation required.
105	0.3	14	Very Low	No peat recorded>0.5m. No mitigation required.
106	0.1	15	Very Low	No peat recorded>0.5m. No mitigation required.
107	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
108	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
109	0.1	13	Very Low	No peat recorded>0.5m. No mitigation required.
110	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
111	0.3	16	Very Low	No peat recorded>0.5m. No mitigation required.
112	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
113	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
114	0.0	24	Very Low	No peat recorded>0.5m. No mitigation required.
115	0.0	23	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
116	0.0	21	Very Low	No peat recorded>0.5m. No mitigation required.
117	0.0	23	Very Low	No peat recorded>0.5m. No mitigation required.
118	0.0	13	Very Low	No peat recorded>0.5m. No mitigation required.
119	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
120	Unknown	14	No Access for Survey	
121	Unknown	17		
122	Unknown	15		
123	Unknown	13		
124	Unknown	15		
125	Unknown	18		
126	Unknown	18		
127	0.1	19	Very Low	No peat recorded>0.5m. No mitigation required.
128	0.1	20	Very Low	No peat recorded>0.5m. No mitigation required.
129	0.1	23	Very Low	No peat recorded>0.5m. No mitigation required.
130	0.1	23	Very Low	No peat recorded>0.5m. No mitigation required.
131	0.0	19	Very Low	No peat recorded>0.5m. No mitigation required.
132	0.1	22	Very Low	No peat recorded>0.5m. No mitigation required.
133	0.1	17	Very Low	No peat recorded>0.5m. No mitigation required.
134	0.1	10	Very Low	No peat recorded>0.5m. No mitigation required.
135	0.1	10	Very Low	No peat recorded>0.5m. No mitigation required.
136	0.2	11	Very Low	No peat recorded>0.5m. No mitigation required.
137	0.2	11	Very Low	No peat recorded>0.5m. No mitigation required.
138	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
139	0.2	17	Very Low	No peat recorded>0.5m. No mitigation required.
140	0.1	12	Very Low	No peat recorded>0.5m. No mitigation required.
141	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
142	0.2	16	Very Low	No peat recorded>0.5m. No mitigation required.
143	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
144	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
145	0.1	17	Very Low	No peat recorded>0.5m. No mitigation required.
146	0.1	7	Very Low	No peat recorded>0.5m. No mitigation required.
147	0.2	7	Very Low	No peat recorded>0.5m. No mitigation required.
148	0.2	12	Very Low	No peat recorded>0.5m. No mitigation required.
149	0.3	12	Very Low	No peat recorded>0.5m. No mitigation required.
150	0.3	12	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
151	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
152	0.2	22	Very Low	No peat recorded>0.5m. No mitigation required.
153	0.2	21	Very Low	No peat recorded>0.5m. No mitigation required.
154	0.1	19	Very Low	No peat recorded>0.5m. No mitigation required.
155	0.3	19	Very Low	No peat recorded>0.5m. No mitigation required.
156	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
157	0.0	18	Very Low	No peat recorded>0.5m. No mitigation required.
158	0.4	18	Very Low	No peat recorded>0.5m. No mitigation required.
159	0.2	25	Very Low	No peat recorded>0.5m. No mitigation required.
160	0.2	23	Very Low	No peat recorded>0.5m. No mitigation required.
161	0.2	24	Very Low	No peat recorded>0.5m. No mitigation required.
162	0.2	24	Very Low	No peat recorded>0.5m. No mitigation required.
163	0.2	21	Very Low	No peat recorded>0.5m. No mitigation required.
164	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
165	0.2	19	Very Low	No peat recorded>0.5m. No mitigation required.
166	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
167	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
168	0.2	20	Very Low	No peat recorded>0.5m. No mitigation required.
169	0.2	19	Very Low	No peat recorded>0.5m. No mitigation required.
170	0.2	16	Very Low	No peat recorded>0.5m. No mitigation required.
171	0.2	17	Very Low	No peat recorded>0.5m. No mitigation required.
172	0.2	17	Very Low	No peat recorded>0.5m. No mitigation required.
173	0.2	9	Very Low	No peat recorded>0.5m. No mitigation required.
174	0.3	10	Very Low	No peat recorded>0.5m. No mitigation required.
175	0.3	13	Very Low	No peat recorded>0.5m. No mitigation required.
176	0.3	12	Very Low	No peat recorded>0.5m. No mitigation required.
177	0.3	10	Very Low	No peat recorded>0.5m. No mitigation required.
178	0.3	11	Very Low	No peat recorded>0.5m. No mitigation required.
179	0.3	10	Very Low	No peat recorded>0.5m. No mitigation required.
180	0.3	9	Very Low	No peat recorded>0.5m. No mitigation required.
181	0.5	9	Very Low	Deep peat recorded to north of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
182	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
183	0.8	10	Very Low	Deep peat recorded to west of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
184	1.7	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
185	3.3	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
186	1.9	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
187	2.9	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
188	1.8	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
189	1.9	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
190	2.2	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
191	2.0	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
192	0.8	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
193	1.3	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
194	0.6	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
195	1.5	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
196	0.8	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
197	0.4	8	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
198	1.0	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
199	2.5	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
200	1.7	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
201	0.9	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
202	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
203	0.2	10	Very Low	No peat recorded>0.5m. No mitigation required.
204	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
205	0.3	11	Very Low	No peat recorded>0.5m. No mitigation required.
206	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
207	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.
208	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
209	0.2	16	Very Low	No peat recorded>0.5m. No mitigation required.
210	0.2	17	Very Low	No peat recorded>0.5m. No mitigation required.
211	0.2	17	Very Low	No peat recorded>0.5m. No mitigation required.
212	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
213	0.2	16	Very Low	No peat recorded>0.5m. No mitigation required.
214	0.0	11	Very Low	No peat recorded>0.5m. No mitigation required.
215	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
216	0.2	14	Very Low	No peat recorded>0.5m. No mitigation required.
217	0.2	12	Very Low	No peat recorded>0.5m. No mitigation required.
218	0.2	12	Very Low	No peat recorded>0.5m. No mitigation required.
219	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
220	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
221	0.2	16	Very Low	No peat recorded>0.5m. No mitigation required.
222	0.2	11	Very Low	No peat recorded>0.5m. No mitigation required.
223	0.4	14	Very Low	No peat recorded>0.5m. No mitigation required.
224	0.3	12	Very Low	No peat recorded>0.5m. No mitigation required.
225	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
226	0.3	3	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
227	0.7	4	Very Low	Deep peat recorded to north of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
228	0.5	5	Very Low	Deep peat recorded to north of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
229	0.9	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
230	0.8	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
231	0.7	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
232	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
233	0.0	21	Very Low	No peat recorded>0.5m. No mitigation required.
234	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
235	0.2	21	Very Low	No peat recorded>0.5m. No mitigation required.
236	0.2	25	Very Low	No peat recorded>0.5m. No mitigation required.
237	0.2	23	Very Low	No peat recorded>0.5m. No mitigation required.
238	0.2	19	Very Low	No peat recorded>0.5m. No mitigation required.
239	0.2	25	Very Low	No peat recorded>0.5m. No mitigation required.
240	0.2	24	Very Low	No peat recorded>0.5m. No mitigation required.
241	0.2	18	Very Low	No peat recorded>0.5m. No mitigation required.
242	0.1	17	Very Low	No peat recorded>0.5m. No mitigation required.
243	0.1	15	Very Low	No peat recorded>0.5m. No mitigation required.
244	0.2	9	Very Low	No peat recorded>0.5m. No mitigation required.
245	0.2	11	Very Low	No peat recorded>0.5m. No mitigation required.
246	0.2	7	Very Low	No peat recorded>0.5m. No mitigation required.
247	0.2	15	Very Low	No peat recorded>0.5m. No mitigation required.
248	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
249	0.0	15	Very Low	No peat recorded>0.5m. No mitigation required.
250	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
251	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
252	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
253	0.0	18	Very Low	No peat recorded>0.5m. No mitigation required.
254	0.3	13	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
255	0.4	13	Very Low	No peat recorded>0.5m. No mitigation required.
256	0.2	13	Very Low	No peat recorded>0.5m. No mitigation required.
257	0.3	10	Very Low	No peat recorded>0.5m. No mitigation required.
258	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
259	0.4	7	Very Low	No peat recorded>0.5m. No mitigation required.
260	0.6	6	Very Low	Deep peat recorded to west of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
261	0.2	8	Very Low	No peat recorded>0.5m. No mitigation required.
262	0.7	12	Very Low	Deep peat recorded to east of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
263	0.6	6	Very Low	Deep peat recorded to east of pole location, but no risk identified due to no attributing likelihood factors. No mitigation required.
264	0.4	7	Very Low	No peat recorded>0.5m. No mitigation required.
265	1.0	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
266	1.0	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
267	1.9	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
268	1.4	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
269	0.8	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
270	1.0	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
271	1.6	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
272	1.9	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
273	1.4	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
274	1.8	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
275	1.5	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
276	0.8	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
277	1.0	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
278	0.8	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
279	0.4	13	Very Low	No peat recorded>0.5m. No mitigation required.
280	0.5	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
281	0.6	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
282	0.7	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
283	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.
284	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.
285	0.5	10	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
286	0.3	11	Very Low	No peat recorded>0.5m. No mitigation required.
287	0.4	9	Very Low	No peat recorded>0.5m. No mitigation required.
288	0.4	10	Very Low	No peat recorded>0.5m. No mitigation required.
289	0.6	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
290	0.5	19	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
291	0.5	18	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
292	0.4	16	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
293	0.5	16	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
294	0.3	16	Very Low	No peat recorded>0.5m. No mitigation required.
295	0.4	17	Very Low	No peat recorded>0.5m. No mitigation required.
296	0.6	18	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
297	0.4	19	Very Low	No peat recorded>0.5m. No mitigation required.
298	0.8	20	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
299	0.8	15	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
300	0.7	17	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
301	0.5	17	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
302	0.4	14	Very Low	No peat recorded>0.5m. No mitigation required.
303	0.4	9	Very Low	No peat recorded>0.5m. No mitigation required.
304	0.4	12	Very Low	No peat recorded>0.5m. No mitigation required.
305	0.6	11	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
306	0.6	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
307	0.5	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
308	0.3	16	Very Low	No peat recorded>0.5m. No mitigation required.
309	0.4	15	Very Low	No peat recorded>0.5m. No mitigation required.
310	0.4	16	Very Low	No peat recorded>0.5m. No mitigation required.
311	0.3	16	Very Low	No peat recorded>0.5m. No mitigation required.
312	0.6	12	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
313	1.6	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
314	2.4	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
315	1.7	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
316	0.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
317	1.4	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
318	2.2	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
319	1.9	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
320	1.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
321	2.3	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
322	3.5	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
323	2.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
324	2.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
325	0.4	9	Very Low	No peat recorded>0.5m. No mitigation required.
326	1.0	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
327	0.4	7	Very Low	No peat recorded>0.5m. No mitigation required.
328	1.7	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
329	2.5	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
330	2.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
331	3.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
332	3.4	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
333	0.5	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
334	0.3	9	Very Low	No peat recorded>0.5m. No mitigation required.
335	2.1	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
336	0.5	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
337	0.6	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
338	1.3	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
339	1.3	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
340	1.2	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
341	1.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
342	1.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
343	2.4	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
344	4.1	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
345	1.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
346	2.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
347	3.5	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
348	4.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
349	2.7	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
350	2.5	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
351	1.1	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
352	1.3	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
353	3.0	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
354	1.9	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
355	0.8	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
356	2.4	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
357	4.1	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
358	2.0	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
359	0.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
360	2.2	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
361	2.7	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
362	3.5	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
363	2.7	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
364	1.0	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
365	1.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
366	1.8	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
367	3.3	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
368	3.6	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
369	2.2	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
370	2.2	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
371	2.9	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
372	2.1	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
373	0.6	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
374	1.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
375	0.5	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
376	0.2	6	Very Low	No peat recorded>0.5m. No mitigation required.
377	0.4	5	Very Low	No peat recorded>0.5m. No mitigation required.
378	0.4	4	Very Low	No peat recorded>0.5m. No mitigation required.
379	0.0	6	Very Low	No peat recorded>0.5m. No mitigation required.
380	0.2	5	Very Low	No peat recorded>0.5m. No mitigation required.
381	0.4	6	Very Low	No peat recorded>0.5m. No mitigation required.
382	1.1	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
383	0.6	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
384	2.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
385	0.8	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
386	1.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
387	1.3	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
388	1.4	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
389	1.0	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
390	2.5	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
391	1.7	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
392	1.9	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
393	1.3	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
394	1.5	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
395	2.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
396	1.7	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
397	2.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
398	2.1	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
399	1.5	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
400	1.1	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
401	0.6	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
402	1.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
403	1.0	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
404	0.7	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
405	1.0	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
406	2.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
407	0.4	8	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
408	0.8	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
409	2.0	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
410	1.3	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
411	1.8	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
412	1.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
413	2.3	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
414	0.2	10	Very Low	No peat recorded>0.5m. No mitigation required.
415	0.5	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
416	2.1	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
417	3.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
418	2.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
419	1.0	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
420	0.6	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
421	0.6	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
422	0.5	4	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
423	0.5	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
424	2.4	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
425	0.2	6	Very Low	No peat recorded>0.5m. No mitigation required.
426	0.4	11	Very Low	No peat recorded>0.5m. No mitigation required.
427	1.4	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
428	0.2	6	Very Low	No peat recorded>0.5m. No mitigation required.
429	2.6	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
430	1.5	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
431	2.6	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
432	1.8	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
433	0.7	13	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
434	0.0	14	Very Low	No peat recorded>0.5m. No mitigation required.
435	0.1	18	Very Low	No peat recorded>0.5m. No mitigation required.
436	0.1	21	Very Low	No peat recorded>0.5m. No mitigation required.
437	0.0	18	Very Low	No peat recorded>0.5m. No mitigation required.
438	0.0	17	Very Low	No peat recorded>0.5m. No mitigation required.
439	0.1	12	Very Low	No peat recorded>0.5m. No mitigation required.
440	0.0	9	Very Low	No peat recorded>0.5m. No mitigation required.
441	0.1	7	Very Low	No peat recorded>0.5m. No mitigation required.
442	0.2	5	Very Low	No peat recorded>0.5m. No mitigation required.
443	0.1	4	Very Low	No peat recorded>0.5m. No mitigation required.
444	0.2	10	Very Low	No peat recorded>0.5m. No mitigation required.
445	0.1	7	Very Low	No peat recorded>0.5m. No mitigation required.
446	0.0	7	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
447	0.5	8	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
448	0.2	5	Very Low	No peat recorded>0.5m. No mitigation required.
449	0.1	4	Very Low	No peat recorded>0.5m. No mitigation required.
450	0.4	5	Very Low	No peat recorded>0.5m. No mitigation required.
451	0.7	4	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
452	0.5	5	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
453	1.6	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
454	3.2	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
455	3.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
456	0.5	7	Very Low	Deep peat recorded, but no risk identified due to no attributing likelihood factors. No mitigation required.
457	0.2	7	Very Low	No peat recorded>0.5m. No mitigation required.
458	0.8	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
459	0.4	5	Very Low	No peat recorded>0.5m. No mitigation required.
460	0.6	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
461	0.3	6	Very Low	No peat recorded>0.5m. No mitigation required.
462	0.3	7	Very Low	No peat recorded>0.5m. No mitigation required.
463	0.4	7	Very Low	No peat recorded>0.5m. No mitigation required.
464	1.0	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
465	0.6	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
466	0.2	5	Very Low	No peat recorded>0.5m. No mitigation required.
467	0.4	7	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
468	0.3	6	Very Low	No peat recorded>0.5m. No mitigation required.
469	0.4	12	Very Low	No peat recorded>0.5m. No mitigation required.
470	0.0	15	Very Low	No peat recorded>0.5m. No mitigation required.
471	0.7	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
472	0.7	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
473	1.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
474	0.7	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
475	0.0	12	Very Low	No peat recorded>0.5m. No mitigation required.
476	0.0	10	Very Low	No peat recorded>0.5m. No mitigation required.
477	0.4	5	Very Low	No peat recorded>0.5m. No mitigation required.
478	0.2	10	Very Low	No peat recorded>0.5m. No mitigation required.
479	0.1	11	Very Low	No peat recorded>0.5m. No mitigation required.
480	0.0	8	Very Low	No peat recorded>0.5m. No mitigation required.
481	1.3	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
482	1.0	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
483	0.8	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
484	0.6	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
485	1.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
486	1.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
487	1.6	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
488	1.1	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
489	0.8	14	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
491	0.9	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
492	0.8	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
493	1.8	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
494	1.8	6	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
495	1.6	11	Medium	Track located on deep peat with moderately steep slope angle (10.1-15°). (Refer Section 4 for mitigation).
496	0.6	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
497	0.9	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
498	0.9	6	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
499	1.0	6	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
500	0.9	6	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
501	2.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
502	1.6	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
503	0.9	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
504	0.9	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
505	0.9	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
506	1.6	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
507	0.6	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
508	0.4	2	Very Low	No peat recorded>0.5m. No mitigation required.
509	0.5	5	Very Low	No peat recorded>0.5m. No mitigation required.
510	0.3	13	Very Low	No peat recorded>0.5m. No mitigation required.
511	0.7	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
512	0.9	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
513	0.9	11	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
514	2.8	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
515	0.7	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
516	0.9	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
517	1.6	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
519	3.6	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
520	0.9	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
521	1.3	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
522	1.7	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
523	3.7	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
524	2.3	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
525	2.8	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
526	1.1	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
528	0.7	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
529	1.6	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
530	1.1	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
531	2.6	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
532	0.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
533	1.3	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
534	2.1	13	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
535	1.0	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
536	0.7	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
537	0.7	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
538	0.4	7	Very Low	No peat recorded>0.5m. No mitigation required.

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
539	0.8	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
540	0.9	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
541	1.4	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
542	1.0	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
543	0.9	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
544	0.7	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
545	0.7	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
546	0.9	14	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
547	1.6	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
548	2.1	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
549	3.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
550	3.6	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
551	1.9	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
552	2.3	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
553	2.2	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
554	1.1	15	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
555	0.9	16	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
556	0.7	14	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
557	1.0	13	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
558	0.8	16	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
559	0.9	14	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
560	1.6	13	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
561	0.8	12	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
562	1.0	15	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
563	2.5	13	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
564	1.3	15	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
565	2.6	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
566	1.9	10	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
567	1.0	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
568	2.6	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
569	0.9	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
570	0.8	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
571	1.1	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
572	2.2	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
573	1.6	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
574	5.2	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
575	4.4	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
576	1.2	6	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
577	1.8	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
578	0.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
579	0.9	5	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
581	0.9	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
582	2.2	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
583	2.3	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
585	3.2	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
586	4.0	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
587	4.9	0	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
589	3.7	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
590	3.4	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
591	2.6	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
592	1.3	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
593	2.8	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
595	3.0	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
596	4.3	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
597	2.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
598	2.7	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
599	3.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
600	2.5	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
601	1.5	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
602	3.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
603	3.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
604	3.5	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
605	1.9	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
606	2.6	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
607	2.1	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
608	2.6	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
609	1.9	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
610	2.6	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
611	3.4	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
612	1.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
613	1.4	8	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
614	1.9	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
615	3.5	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
616	3.6	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
617	3.6	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
618	3.4	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
619	4.0	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
620	3.6	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
621	3.0	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
622	2.5	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
623	3.9	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
624	5.1	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
625	5.3	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
627	5.0	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
628	4.4	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
629	4.7	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
630	2.7	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
631	3.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
632	2.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
633	1.3	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
634	2.7	7	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
635	3.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
636	3.5	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
637	2.6	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
638	2.6	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
639	1.4	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
640	1.4	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
641	1.9	5	Medium	Pole located on deep peat with moderate slope angle (5-10°). (Refer Section 4 for mitigation).
642	2.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
643	2.9	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
644	3.7	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
645	3.8	1	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
646	3.4	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
647	2.4	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
648	1.8	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
649	2.7	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
650	2.4	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
651	3.6	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
652	2.9	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
653	3.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
654	1.8	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
655	3.5	9	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
656	2.3	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
657	3.1	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
658	3.3	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
659	3.5	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
660	3.4	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
661	2.4	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
662	2.7	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
663	2.8	2	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).

Table 10.3.12 Risk Level and Mitigation				
Pole Location	**Peat Depth m (Max)**	**Slope Angle (Average)**	**Risk Level**	**Comment /Mitigation**
664	2.9	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
665	2.1	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
666	3.1	3	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
667	3.6	5	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
668	2.4	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
669	1.4	6	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
670	2.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
671	4.0	4	Low	Deep peat recorded but Low risk due to low likelihood. Pole Construction methodology review (Refer to Section 4).
SS Gantry	As per Pole 671			

10.3.79 When Medium risk areas are compared with FoS values the overall likelihood is considered to be low. Details within the mitigation section of this report provide additional measures in order to confirm the evaluation of likelihood and mitigations measures to control potential peat slide risk.

Consequence Evaluation

10.3.80 Based on the assessment of consequence of risk methodology, as defined by best practice guidance[20], three receptors have been identified at the Site, and are assessed for consequence in **Table 10.3.13**

- watercourses;
- non-riverine habitats; and
- Proposed Development infrastructure.

Table 10.3.13 Assessment of Consequence and Risk				
Receptor	**Consequence**	**Score**	**Justification for Score**	**Consequence Scale**
Watercourses	Increased turbidity and acidification, fish kill, blockage of drainage,	3	Water Quality, Flood risk and Private water supplies have been assessed within **Chapter 10:**	High

[20] Scottish Government. (2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments

	effects on private water supplies		**Hydrology, Hydrogeology, Geology and Soils (EIAR Volume 2).**	
Non-riverine Habitats	Medium term loss of vegetation cover, disruption of peat hydrology, carbon release	3	Effects on peatland habitats, though the effects of peat landslides are generally short in duration	High
Proposed Development Infrastructure	Damage to infrastructure, possible injury, loss of life	5	Loss of life, though unlikely, is a severe consequence; financial implications of damage and repair to infrastructure are less significant	Extremely high

10.3.81 Areas of moderate likelihood of peat slide, as described in the previous section, would be mitigated through design and micrositing of infrastructure. **Table 10.3.14** shows how the risk level is defined for each of the consequences when applied to Low or Very Low likelihood classification which is considered applicable for the Site.

Table 10.3.14 Risk levels derived from Likelihood vs Consequence

Receptor	**Qualitative Likelihood worst case (See Table 10.3.12)**	**Consequence Scale/ Score (See Table 10.3.13)**	**Risk Level**	**Minimum Distance to Receptor**
Watercourses	Low (2)	High (3)	Low	50 m
Non-riverine Habitats	Low (2)	High (3)	Low	50 m
Proposed Development Infrastructure	Low (2)	Extremely High (5)	Low	Approx.100 m Various properties Within Tarbert & Laxay areas.

10.3.82 Based on the combined Qualitative Likelihood vs Consequence and the findings within the FoS assessment previously outlined, it is considered that the combined risk level of peat landslide in association with the construction of the Proposed Development is assessed as being Low risk. This assessment of Risk level is based on low likelihood vs high or very high consequence as outlined in Table 5.3 of SEPA best practice guidance[1] and illustrated in the Image 1 extract below:

Image 1 - Table 5.3: Extract from Scottish Government (2017). Peat Landslide Hazard and Risk Assessments, Best Practice Guide for Proposed Electricity Generation Developments

Table 5.3 Indicative risk levels

Peat landslide probability or likelihood	Adverse consequence: Extremely High	High	Moderate	Low	Very Low
Almost certain	High	High	Moderate	Moderate	Low
Probable	High	Moderate	Moderate	Low	Negligible
Likely	Moderate	Moderate	Low	Low	Negligible
Unlikely	Low	Low	Low	Negligible	Negligible
Negligible	Low	Negligible	Negligible	Negligible	Negligible

10.4 Mitigation Measures and Recommendations

10.4.1 The proposed construction methodology for the proposed pole locations, as detailed within **Chapter 2: Description of Proposed Development (EIAR Volume 2)**, comprises limited excavation (approximately 3m²) to 2.5m below ground level at each proposed pole location using conventional plant vehicles.

10.4.2 Access for construction plant is proposed to be via temporary access track panels or existing tracks. No new permanent access tracks are required.

10.4.3 Where deep peat has been identified then the use of “bog shoes” is proposed to be used to provide additional support for the proposed pole structures.

10.4.4 It is envisaged that employing safe working practices, such as excavation supports, and limiting the duration of open excavations during construction will further reduce the potential for peat instability.

10.4.5 A number of mitigation measures could be used to further reduce the risk levels identified above. These range from infrastructure-specific measures (which could act to reduce peat landslide likelihood, and, in turn, risk) to general good practice that should be applied across the Site to engender awareness of peat instability and enable early identification of potential displacements and opportunities for mitigation.

10.4.6 Typically, risks could be mitigated by:

- micrositing, use of the 100 m Limit of Deviation (LOD) for pole locations to refine layout and reduce further the overlap between locations and peat soils;
- obtaining further Site information post-consent and pre-construction, in doing so demonstrating that input parameters to the likelihood assessment are overly conservative; and
- precautionary construction measures – use of monitoring, good practice and a geotechnical risk register in all locations.

10.4.7 These mitigation measures would further reduce the already minimal risks present at the Site and are detailed below for the construction and post-construction phases.

10.4.8 A comprehensive intrusive geotechnical assessment should be undertaken post-consent based on the combined ground investigation, previously undertaken, to support the engineering design of pole locations for the Proposed Development.

10.4.9 Appropriate field and laboratory testing would also be undertaken as part of the comprehensive ground investigation to confirm the peat stability baseline across the Site to cover the areas affected by the tracks and

ancillary infrastructure, and further design mitigation used as appropriate to reduce the likelihood of peat instability (where required).

10.4.10 A geotechnical risk register would be prepared detailing any ground risks identified during the ground investigation and providing mitigation measures as appropriate. The risk register should be considered a live document and updated throughout the phases of the Proposed Development. The monitoring requirements discussed in the following paragraphs would be undertaken by the Appointed Contractor.

10.4.11 During construction of the Proposed Development the following mitigation would be undertaken for excavations:

- a geotechnical risk register would be prepared for the Proposed Development following intrusive investigations post consent and location specific stability analyses;
- site inspections and audits would be undertaken at scheduled intervals to identify any unusual or unexpected changes to ground conditions (which may be associated with construction, or which may occur independently of construction);
- all construction activities and operational decisions that involve disturbance to peat deposits would be overseen by an appropriately qualified geotechnical engineer with experience of construction on peat sites;
- awareness of peat instability and pre-failure indicators would be incorporated in site induction, tool box talks, and training to enable all site personnel to recognise ground disturbances and features indicative of incipient instability;
- use of appropriate supporting structures around peat excavations, where required, (e.g., for plant vehicles) to prevent collapse and the development of tension cracks;
- avoid cutting trenches or aligning excavations across slopes (which may act as incipient back scars for peat failures) unless appropriate mitigation has been put in place;
- implement methods of working that minimise the cutting of the toes of slope, e.g., working up-to-downslope during excavation works;
- monitor the ground upslope of excavation works for creep, heave, displacement, tension cracks, subsidence or changes in surface water content;
- monitor cut faces for changes in water discharge, particularly at the peat-substrate contact; and
- minimise the effects of construction on natural drainage by ensuring natural drainage pathways are maintained or diverted such that there is no significant alteration of the hydrological regime of the Site; drainage plans should avoid creating drainage/infiltration areas or settlement ponds towards the tops of slopes (where they may act to both load the slope and elevate pore pressures).

10.4.12 During construction of the Proposed Development the following mitigation would be undertaken for temporary storage of peat and restoration activities:

- where practicable, ensure temporary stores of peat are located on non-peat soils to minimise potential for instability of the underlying soils;
- avoid storing peat on slope gradients >3° and preferably store on ground with neutral slopes and natural downslope barriers to peat movement;
- monitor effects of wetting/re-wetting stored peat on surrounding peat areas, and prevent water build up on the upslope side of peat mounds; and
- maximise the interval between material deliveries over newly constructed tracks that are still observed to be within the primary consolidation phase.

10.4.13 During the operational phase of the Proposed Development monitoring of key infrastructure locations would continue through Site walkovers and inspections by the Applicant's maintenance representative to look for signs of unexpected ground disturbance, including:

- ponding on the upslope side of infrastructure sites;

- changes in the character of natural or artificial peat drainage within a 50 m buffer of pole locations (e.g., development of quaking bog, waterlogging of previously dry drains);
- slippage or creep of stored peat deposits (including in restored peat cuttings); and
- development of tension cracks, compression features, bulging or quaking bog anywhere in a 50 m corridor surrounding the site of any construction activities or site works.

10.4.14 Monitoring would be undertaken during construction and as part of the commissioning phase the need for on-going monitoring would be reviewed and any ongoing monitoring requirements identified.

10.5 Conclusion

10.5.1 The majority of the Site is considered to be low or very low risk with regards to peat slide risk.

10.5.2 Where areas of medium risk have been identified then micrositing of pole locations away from these areas is considered best practice. Where this is unachievable employing safe excavation practices, limiting the time excavations are left open and employing the use of “bog shoes” during construction to support pole foundations will reduce the risk of peat instability and reduce the need for additional peat excavation.

ANNEX A – FIGURES