Moanmore Lower Green Energy Limited

Moanmore Lower Wind Farm

Site Investigation and Peat Stability Risk Assessment

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RSK

RSK GENERAL NOTES

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1 INTRODUCTION

1.1 Background

RSK Ireland was commissioned by Jennings O'Donovan & Partners (JOD) on behalf of Moanmore Lower Green Energy Limited (the Developer) to assess the geological site characteristics in relation to the planning application for the Moanmore Lower Wind Farm (the Development) in Co. Clare.

1.2 Purpose

The purpose of the Site Investigations was to assess ground conditions at EIA design phase of a proposed wind farm development, Moanmore Lower Wind Farm in Co. Clare. The assessment covers subsoil and geological characterisation and classification as well as peat and slope stability risk.

1.3 Scope of works

The scope of works includes the following works;

- Peat probing
- Site Investigation and Peat Stability Risk Assessment report and maps

This work has been carried out to address potential constraints and inform the site layout as part of the EIAR for the Development. Therefore, this report will be appended to **Chapter 8: Soils & Geology** as part of the planning application for the Development.

1.4 Statement of Authority

RSK (Ireland) Ltd, part of RSK Group, is a consultancy providing environmental services in the hydrological, hydrogeological and other environmental disciplines. The company and group provide consultancy to clients in both the public & private sectors. More information can be found at www.rskgroup.com. The principal members of the RSK EIA team involved in this assessment include the following persons;

- Project Manager: Sven Klinkenbergh – B.Sc. (Environmental Science), P.G.Dip. (Environmental Protection). Current Role: Principal Environmental Consultant. Experience c. 10 years
- Project Scientist: Deirdre Walsh – B.Sc. (Geology), M.Sc. (Geoscience), PhD (Geomodelling). Current Role: Environmental Consultant
- Project Scientist: Conor Campbell – B.Sc. Environmental Science (hons). Current Role: Environmental Consultant

2 SITE INVESTIGATION WORKS & METHODS

2.1 Site Investigation Methods

Site investigations were conducted in June 2022, August 2023, March and December 2024.

2.1.1 Peat Depth Probing and Topography Assessments

Peat depth probing was conducted at 335 no. sampling locations including at the proposed turbine locations, substation, temporary compound, spoil storage area, blade transfer area and along the proposed access tracks.

Depth probing was conducted using fibreglass probes. The depth and locations of the probe points are recorded using QField (**Appendix A**).

At each survey point the depth of peat, local incline (incline within a c. 5 m radius of the survey point) and grid reference (Irish Grid) were recorded and are presented in **Appendix B**.

2.1.2 Peat Gouge Coring

Gouge coring was carried out at 3 no. locations close to each turbine location whereby a peat profile was extracted (**Appendix A**). From these peat cores a peat quality assessment was caried out and log recorded (see **Appendix D**). Peat profiles were also observed in cut areas/ exposed banks.

2.1.3 Shear Vane Testing

Shear vane testing was conducted at 11 no. sampling locations. The locations of the shear vane tests were recorded using QField (**Appendix A**). At each test location, three readings were taken to give an average reading.

Field-based shear vane readings give an indication of the undrained shear strength of peat soil. There are some inaccuracies with these in-situ results related to fibre/vane interactions during testing. While there are still some inaccuracies the test can show the variability of shear strength at different locations and depths.

2.2 Peat and slope stability risk assessment methods

2.2.1 Peat Stability Numerical Assessment

This stability assessment has been undertaken using a relatively simple infinite slope stability approach (Boylan and Long, 2012[1]) (derived from Bromhead's formula (Scottish Gov., 2017[2])), as follows:

[1] Boylan, N. and Long, M. (2012) Evaluation of peat strength for stability assessments. Geotechnical Engineering Volume 167 Issue GE5, Institution of Civil Engineers (ICE)

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

$$FoS = \frac{c_u}{yz \sin \alpha \cos \alpha}$$

Where:

FoS = Factor of Safety

c_u = Effective cohesion or undrained shear strength

y = Bulk unit weight of peat

z = Depth to failure plane

α = Slope angle

The Factor of Safety (FoS) is the ratio of the shear strength (resisting force) to the shear stress (driving force) and the values will range from 0 to infinity and are classified into the ranges in **Table 1**. As per the guidance (Scottish Gov., 2017), FoS values of 1.0 or greater are considered acceptable in terms of peat stability.

Table 1: Factor of Safety (FoS) Classifications (Scottish Gov., 2017)

Description	FoS Value Range	Classification
Stable	>1.3	Acceptable
Marginally Stable	1.0 > < 1.3	Acceptable
Unstable	<1.0	Unacceptable

Undrained shear strength (c_u) has been investigated on site by consideration of moisture content which has a correlation with shear strength (effective cohesion). **Figure 1** presents conceptual shear strength values for peat (Boylan et. al, 2008) and **Table 2** presents the typical minimum, average and maximum moisture content and corresponding indicative shear strength values.

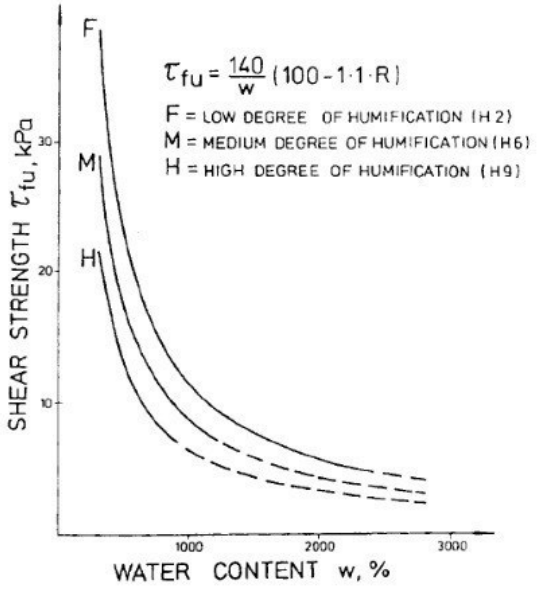

Figure 1: Correlation between moisture content and shear strength of peat (Boylan et al., 2008[3])

Table 2: Peat moisture content range and indicative shear strength

Category	Moisture Content (%)	Indicative Shear Strength (kPa)
Minimum	200	>20
Average	750	10-20
Maximum	1500	<10

In situ bulk density (kg/m^3), or bulk unit weight (kN/m^3) of peat (y) is typically within the range of 900-1100kg/m^3 (Munro, 2004[4]), or 8.8-10.8kN/m^3.

The depth to failure plane (z) is presumed to be the thickness or depth of peat at any given sampling point being assessed. However, it should be noted that the failure plane can potentially be within peat (peat on peat movement), or at the interface with the substrate i.e., weathered rock or underlying soils.

The slope angle (α) relates to the failure plane angle, which is presumed to be the peat and substrate interface, and which is presumed to be parallel to the surface when using FoS Formula (Infinite Slope Formula). In reality, the underlying substrate is unlikely to be parallel to the surface topology.

[3] Boylan N., Jennings P. and Long M. (2008) Peat slope failure in Ireland. Quarterly Journal of Engineering Geology and Hydrogeology.

[4] Munro R. (2004) Dealing with bearing capacity problems on low volume roads constructed on peat. Roadex, Northern Periphery.

The FoS Formula does not account for forces related to the toe and head of an area or mass of soil with the potential for mass movement, which is in reality the Infinite Slope formula and will likely exaggerate stability conditions negatively.

2.2.2 Risk Matrices and Ranking

In assessing the risk in relation to peat stability on site, it is important to rate the risk in terms of the hazard, the likelihood and the consequences if any such issue should arise. Therefore, the slope stability risk assessment considers the following parameters (**Table 3**), which are assessed by means of a series of risk matrices (Scottish Gov., 2017). The risk matrices used in this assessment are shown in **Figure 2**.

Table 3: Parameters included in risk matrices and assessed

Category	Description
Landslide History	Considers the likelihood of landslide events occurring based on the history of the site, including the current site use.
Factor of Safety	As described above, includes the following; • Peat depth • Peat quality / condition • Moisture content • Incline (surface topography) • Shear strength Bulk unit weight of peat
Substrate Topology	Identifying and qualifying variance in substrate topology and qualifying variance from theory underlining the stability formula used i.e., Infinite Slope (Parallel and no foot and head forces)
Significance of Receptor	Qualifying potential receptors in terms of significance.
Distance to Receptor	Qualifying localised proposed development areas in terms of distance to nearest receptor.

Stability Risk Matrices and Ratings

A

Accounting for Landslide History and Substrate Topology with a view to adjusting calculated FoS (FoS Adjustment = μ_{STop} * μ_{His})		Landslide History (μ_{His})		
		No History of Landslides in the vicinity of site.	Some instances of landslides in the vicinity of site	Recorded landslides occerences within the site
Substrate Topology Characteristics (μ_{Topo})	μ	1	2	4
Substrate is parallel to surface topology.	4	FoS -0.25	FoS - 0.5	FoS - 0.75
Substrate varies from surface topology to a minor extent.	2	FoS + 0.0	FoS -0.25	FoS - 0.5
Substrate varies from surface topology to a significant extent.	1	FoS + 0.25	FoS + 0.0	FoS -0.25

FoS Adjustment Coefficient (μ)			
4	8	16	
2	4	8	
1	2	4	

B

Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors (RR_{SF} = μ_{FoS} * μ_{SF})		FoS re Slope Stability (μ_{FoS})		
		Acceptable (FoS = >1.3)	Marginally Stable (Acceptable) (FoS = 1-1.3)	Unstable (FoS = <1)
Significant Feature (μ_{SF})	μ	1	2	4
Non-critical infrastructure.	1	Very Low	Very Low	Low
Sensitive receptors e.g. surface water feature	2	Very Low	Low	Mod.
Community, dwellings and buildings.	4	Low	Mod.	High

RR_{SF} Coefficient (μ)		
1	2	4
2	4	8
4	8	16

C

Acounting for distance to Sensitive Receptors (RR_D = μ_{RRSF} * $\mu_{Dist.}$)		Distance to Sig. Feature ($\mu_{Dist.}$)		
		>150m (EPA) >50m (drain)	50-150m (EPA) 15-50m (drain)	<50m (EPA) <15m (drain)
Risk Ranking re Significant Feature (μ_{RRSF})	μ	1	2	4
Very Low (RR_{SF} = 1-2)	1	Very Low	Low	Mod.
Low (RR_{SF} = 4)	2	Low	Mod.	High
Mod. (RR_{SF} = 8)	4	Mod.	High	Very High
High (RR_{SF} = 16)	8	High	Very High	Extremely High

RR_D Coefficient (μ)		
1	2	4
2	4	8
4	8	16
8	16	32

Figure 2: Typical Format of Risk Matrices

2.2.3 Peat Stability Assessment Steps

Considering the above parameters, the stability assessment follows the following steps:

1. FoS_{RAW} - Assess the site in terms of soil stability using the FoS Formula and calculate a Factor of Safety (FoS) using the *raw* data. This step is considered as preparation of the data obtained for the site i.e., translating the data to a value related to stability, and is not considered as being the final output of the stability assessment.
2. $FoS_{ADJUSTED}$ - Assess the FoS_{RAW} values in terms of suitability of the application of FoS Formula by considering the history of landslides in relation to the proposed site, and the topology of the substrate compared to the surface topology of the site. This is done by means of a risk matrix (**Figure 2**) which qualifies the point and also applies a coefficient for the next risk assessment step.
3. Risk Ranking RR_{SF} - The $FoS_{ADJUSTED}$ data is assessed in terms of significance of the associated receptor. This is done by means of a risk matrix (**Figure 2**) which qualifies the point and also applies a coefficient for the next risk assessment step.
4. Risk Ranking RR_D – The RR_{SF} data is assessed in terms of distance to the associated receptor. This is done by means of a risk matrix which qualifies the point (**Figure 2**).

Results and conclusions made by means of the above risk assessment are viewed as two tiered, that is:

1. The likelihood of a stability issue or landslide while considering the significance of the receptor (RR_{SF}).
2. The consequence of a stability issue or landslide while considering the distance to the receptor (RR_D).

2.2.4 Interpretation of Results

Results of the numerical stability risk assessment are mapped and interrogated in the context of site topography, site conditions, the proposed development and receptor sensitivity and susceptibility and are presented in Section 4.

Interpretation of results includes considering groups of data points, site specific observations and topology.

For example, data might indicate a single point of unacceptable FoS / stability, however this needs to be considered in context of neighbouring data and actual site conditions, such as the presence of deep peat within a localised basin confined by shallow bedrock at the surface at neighbouring points, that is; deep, “unstable” peat (by numerical model) observed to be confined by shallow bedrock does not equate to an elevated risk of a catastrophic landslide event occurring, but does equate to potential localised stability issues arising if excavating at that particular location with deep peat.

In turn, any potential stability hazard must be considered in risk assessments in terms of potential consequences to receptors, and not simply likelihood of a stability issue arising. For example in an area with low risk in terms of stability or Factor of Safety (FoS), but immediately and directly upgradient of a sensitive receptor such as a surface water body, in the unlikely event (low risk = acceptable FoS) that a significant stability issue should arise, (due to the proximity to the receiving receptor), the consequences of such an event have the potential to be significant.

The need for further investigation or specification of mitigation and or monitoring is related to the risk level present following the assessment (**Table 4**). Should the risk level for a particular area be high, mitigation by avoidance will be required. In areas with a medium risk level only if mitigation can reduce the risk ranking should development proceed in this area.

Table 4 Risk ranking and suggested actions from (Scottish Gov., 2017).

Risk Level	Action suggested for each zone
High	Avoid project development at these locations
Medium / Moderate	Project should not proceed unless risk can be avoided or mitigated at these locations without significant environmental impact, in order to reduce risk ranking to low or negligible.
Low	Project may proceed pending further investigation to refine assessment and mitigate hazard through relocation or re-design at these locations
Negligible / Very low	Project should proceed with monitoring and mitigation of peat landslide hazards at these locations as appropriate.

2.2.5 Site Specific Values

Table 5 lists the parameter values, including inferred conservative parameter values used in numerical assessments.

A conservative undrained shear strength (effective cohesion) value will be used in numerical assessments. While the measure of on site shear strength varied from 0 – 65kPA, conservative values are used. In areas identified as saturated, the value is set low at 2.5kPa, i.e. the area close to T2 (**Figure 3**). Across the rest of the site, the peat is well drained and identified as unsaturated and the undrained shear strength in these areas is set higher at 11kPa.

A conservative bulk unit weight value will be used in numerical assessments of 11kN/m^3.

Specific depth and slope values for each point are presented in **Appendix A**.

Table 5: Formula parameters, symbols and inferred conservative values

Symbol	Description	Value	Unit
c_u	Effective cohesion	2.5 and 11	kPa
y	Bulk unit weight of peat	11	kN/m^3
z	Depth to failure plane	Depth of peat	m
α	Slope angle	Surface topography	degrees

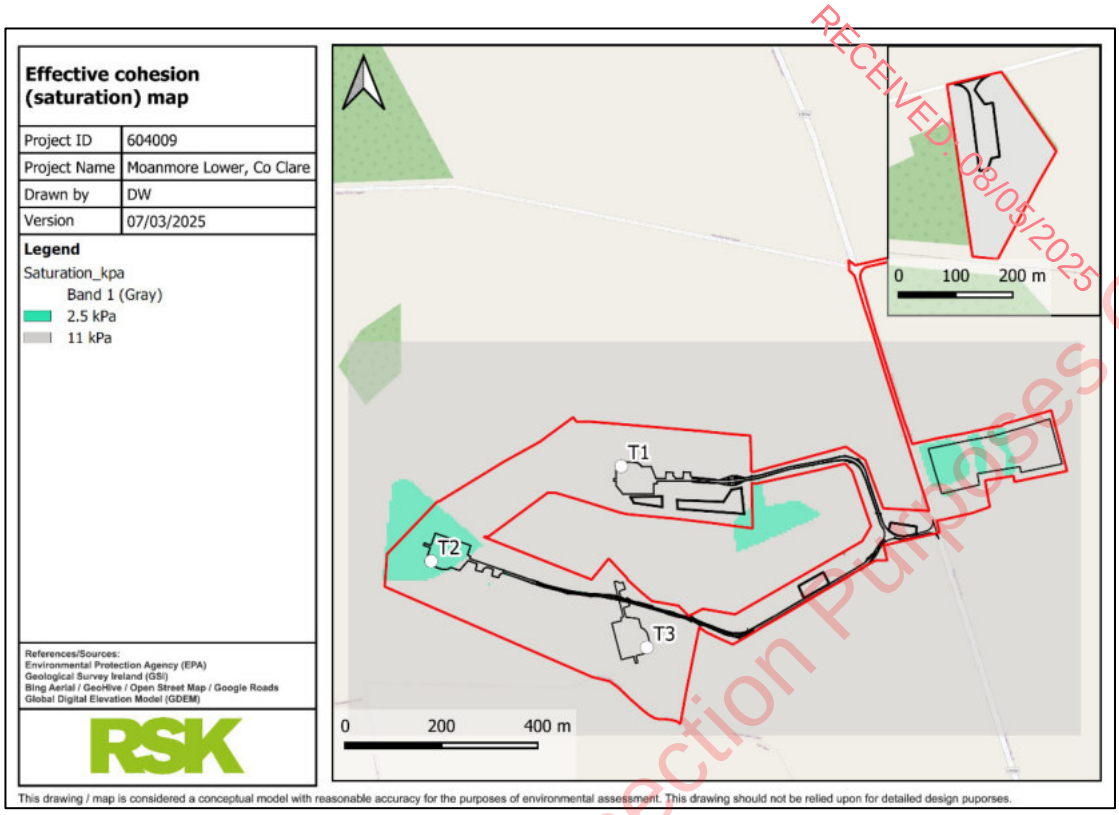

Figure 3: Estimated peat saturation from field observations.

The Peat Stability Assessment has been completed on the basis of two load scenarios (**Figure 4**)

1. Scenario A – No surcharge loading, peat stability calculated using the depth of peat observed and recorded during the site survey.
2. Scenario B – Surcharge of 3.5m for depth to the failure plane for the areas within the development footprint and 1m for areas outside of the development footprint. The difference takes into account areas where heavy plant machinery will be in operation. This is considered a worst-case scenario. **Figure 5** highlights the different surcharges applied to the peat data points.

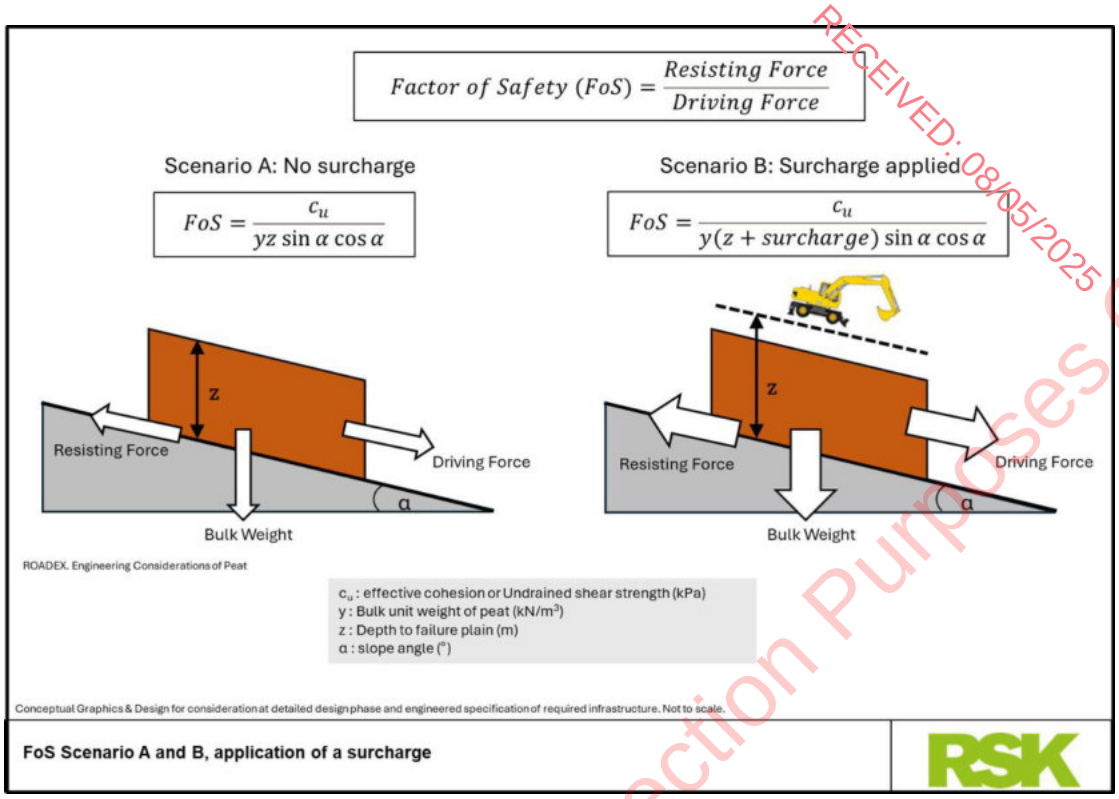

Figure 4: Load / Surcharge Scenarios

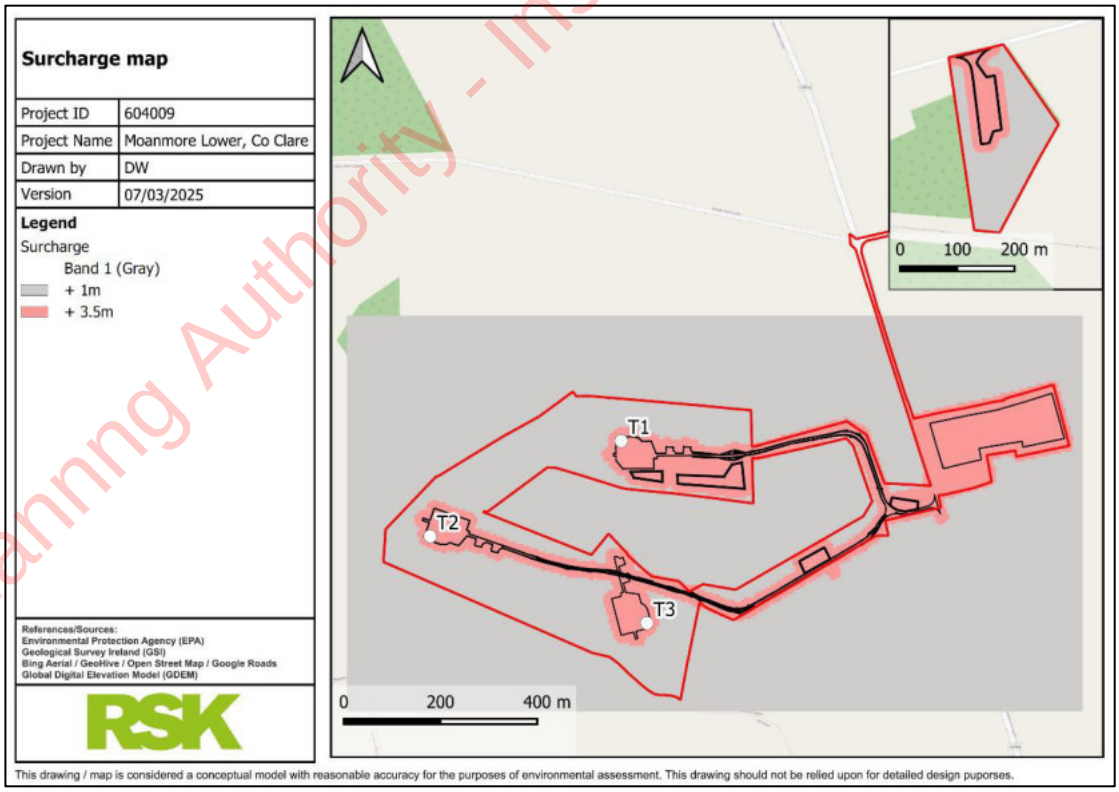

Figure 5: Surcharge Map for Factor of Safety Scenario B calculations

3 BASELINE CONDITIONS

3.1 Site Description and History

The wind farm site is relatively flat and low lying. There is a history of peat cutting with some areas of intact raised bog.

There are no recorded landslide events within the redline boundary of the Site (GSI, accessed July 2024).

There was no indications of stability issues or mass movement of peat observed on the site during site surveys. To the west, outside of the redline boundary, there was evidence of excavation of peat associated with peat cutting, resulting in localised cracking of peat close to the cut face.

Reference to the Geological Survey of Ireland (GSI) Landslide Susceptibility map[5] shows that the site has a 'Low Risk' in terms of landslide susceptibility.

3.2 Site Geology

Consultation with Geological Survey Ireland Spatial Resources (GSI, accessed July 2024) indicates that the underlying bedrock at 1:1,000,000 scale is entirely Gull Island Formation which is a grey siltstone with up to 20% sandstone towards the base decreasing upwards. No bedrock was encountered during site surveys and there are no mapped outcrops in the area. No karst is mapped in this area or was encountered during site surveys.

3.3 Site soils and Subsoils

Consultation with available maps (GSI, EPA accessed July 2024) indicate the dominant soil type at the site location and blade transfer area is cut peat (Cut) will some surface water gleys, groundwater gleys (AminPD) and acid brown earths, brown podzolics (AminDW) to the east, peaty gleys (AminPDPT) to the south and lithosols, regosols (AminSW) to the east of T1. Blanket peat (BktPt) is mapped at the spoil area.

The main subsoil type at the site and blade transfer area is cut over raised peat (Cut). The spoil area is underlain by blanket peat (BktPt) There is glacial till derived from Namurian sandstones and shales (TNSSs) to the east and south and eskers comprised of gravels of acidic reaction (AcEsk) to the east of T1. The location of the eskers matches with the area mapped as having High (H) groundwater vulnerability. The remainder of the site is mapped as having Moderate (M) groundwater vulnerability.

Peat depths observed on the Site are generally 'very shallow' to 'moderately deep' with areas of 'deep' peat found south of T2 and at the blade transfer area. The peat database is presented in **Appendix A** and the peat depth map in **Appendix B**.

[5] Geological Survey of Ireland (GSI) (ND) Geological Survey Ireland Spatial Resources [Online] - Available at: http://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228 [Accessed: October 2023]

3.4 Topography and Substrate Topology

The topography at and in the immediate area surrounding the site, is variable. There is modest elevation and slope variability. The elevation ranges from 8 to 15 mAOD with slopes between approximately 1 and 12°.

The elevation increases to the northwest and west of the site. The proposed turbines are located in relatively flat areas. The spoil blade transfer areas are also relatively flat.

The substrate topology is observed to be moderately variable i.e. variable peat depth. Areas with generally shallower peat have less variance from the substrate however such areas are indicatively low risk in terms of stability given the peat is shallow.

3.5 Hydrology

A mapped river (Moyasta_010) runs along the northern edge of the redline boundary, and south of the blade transfer area. Extensive constructed and historic drainage channels associated with agriculture and peat cutting activities exist at the site and flow directly to the receiving river, the Moyasta.

3.6 Receptors

Receptors associated with the Proposed Development footprint including streams, rivers, lakes and groundwater, are considered highly sensitive receptors.

- Water Framework Directive (WFD) status (2016-2021) for the Moyasta_010 is Moderate and Good for the Kilrush groundwater body. The principal objective of the WFD is to achieve good status or higher in all waters and to ensure that status does not deteriorate in any waters.
- The down-stream designations (sensitive protected areas e.g., SAC, SPA) associated with the catchment include the Lower River Shannon SAC (EU Site Code: IE0002165), River Shannon and River Fergus Estuaries SPA (EU Site Code: IE0004077).
- There are no Freshwater Pearl Mussel catchments in the vicinity of the Site. However, the down-stream Doonbeg_010 subcatchment (EU Site Code: IE_SH_28D020650) from the TDR works, contains Freshwater Pearl Mussel (FPM).
- There are no designated Salmonid Rivers or Nutrient Sensitive Rivers in the vicinity of the wind farm or grid connection.
- Designated Shellfish areas exist in the West Shannon Poulnasherry Bay (Code:IE_SH_060_0000), downstream of the site.
- The site is underlain by a groundwater body viz. Kilrush GWB [IE_SH_G_123].

Ultimately, all surface water and groundwater associated with the Site are considered sensitive and must be protected (sensitive receptor as per **Figure 2**).

Risk to receptors must consider both the hazard and likelihood of adversely impacting on any given sensitive receptor. Therefore, parameters such as distance from potential

source of hazard to receptor, pathway directness and/or connectivity, and assimilative capacity of the receiving water body should also be considered.

The distance to sensitive receptors (EPA mapped rivers and mapped drainage) are shown in **Figure 6** below as per the risk matrix shown in **Figure 2c** whereby the EPA mapped river has a greater buffer than the mapped drains.

As part of the biodiversity enhancement measures for the Site (EIAR - Appendix 6.6) t is proposed to block existing drains within the enhancement areas west of T1 and east of T3. There will not be a substantial volume of water associated with the drain blocking and no infrastructure is proposed is these enhancement areas, therefore these areas are not considered an issue in terms of peat stability.

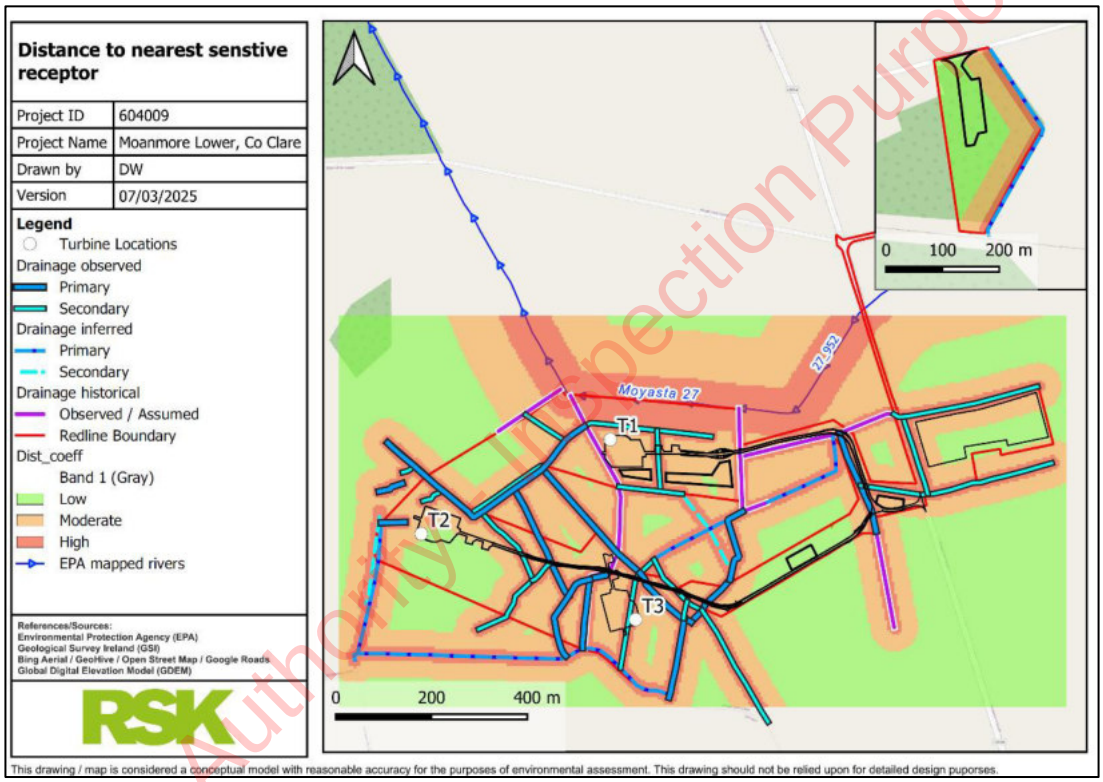

Figure 6: Distance to Receptors for Ranking Risk Considering Distance (RRD) Calculations

4 SITE INVESTIGATION DATA & RESULTS

4.1 Peat Depth Data

A total of 335 no. peat depth probe locations were assessed at the Site, Spoil Storage Area and Blade Transfer Area (**Appendix A and B**). Site photos are presented in **Appendix E**. The number of probe locations by depth category are presented in **Table 6**.

Table 6: Peat depth probe points per depth category

Peat depth category	Number of probes	Percentage of probes
Rock /no peat depth (0.00-0.01m)	23	7%
Very shallow (0.01-0.5m)	117	35%
Shallow (0.5-2.0m)	126	38%
Moderately deep (2.0-3.5m)	49	15%
Deep (3.5-5.0 m)	19	6%
Very deep (>5.0 m)	1	<1%
TOTAL	335	100%

Along with the peat probe locations, peat depths are interpolated between the points to generate an approximate peat contour map which is included in **Appendix A**. This contour map is divided into the same peat depth categories as outlined in **Table 6**.

4.2 Peat Stability Risk Assessment Results

The Factor of Safety results are presented in **Table 7**. The Scenario B results which includes the added surcharge for worst case scenario are presented as a map in **Appendix B** showing the factor of safety at each of the data points along with an interpolated contour map highlighting the areas which are moderately stable to unstable.

Table 7: Factor of Safety (FoS) (adjusted) at peat probe locations

FoS (Adj.)	Acceptable	Marginally Stable	Unstable
Scenario A	328	2	5
Scenario B	322	0	13

The Risk ranking distance across the site is generally very low to low (**Table 9** and **Appendix B**). There are areas which are moderate where the peat probe locations are closer to sensitive surface water receptors, including Moyasta_010 north of T1.

Table 8: Risk Ranking (RR) (distance) at peat probe locations

RR (Dist.)	Very Low	Low	Moderate	High
Scenario A	78	153	100	1
Scenario B	77	149	99	10

These results indicate that the factor of safety is generally acceptable with the exception of an isolated area to the west of T2 where the peat is saturated, moderately deep and cut activities have taken place. Note this area west of T2 has been avoided by design. The risk ranking across the site varies from very low to moderate depending on the proximity to the mapped drainage features and the mapped river to the north of the redline boundary.

4.3 Peat Stability Risk Assessment Interpretation

For the purpose of the risk assessment interpretation the site has been divided into 10 zones (see **Figure 7**):

1. T1 proposed turbine location and hardstand - there is superficial peat, and the topography is relatively flat. There are some mapped drains close to the turbine and hardstand.
2. T2 proposed turbine location and hardstand - the peat is deeper in this area. To the south is a raised bog and to the west is an area where peat cutting has taken place. The peat is more saturated and moderately deep. The topography is relative flat.
3. T3 proposed turbine location and hardstand - the peat is moderately deep. The area is relatively flat. There are some primary and secondary drains in the area.
4. Substation location, the peat is superficial and is in close proximity of existing infrastructure.
5. Temporary compound location - the peat is superficial and is in close proximity to existing infrastructure and the site entrance.
6. Spoil storage area - this area is across the road from the wind farm location and is relatively flat. The area can be waterlogged following heavy rainfall but has drains at the edges of the field. The peat is shallow in this area.
7. Track portion 1, site entrance to T1, superficial / absent peat.
8. Track portion 2, site entrance to substation, superficial / absent peat along existing track.
9. Track portion 3, substation to T3 superficial / absent peat largely along existing track.
10. Track portion 4 T3 to T2, shallow to moderately deep peat.
11. Blade Transfer Area has moderately deep to deep peat with relatively flat topography.

Table 9 presents the interpretation of stability risk assessment data in the context of stability, or factor of safety (FoS) (Adjusted, Scenario B) and distance to receptor (RR_D) for each of the zones outlined above.

Areas of elevated stability risk, even at a localised scale, are considered geo hazards requiring mitigation.

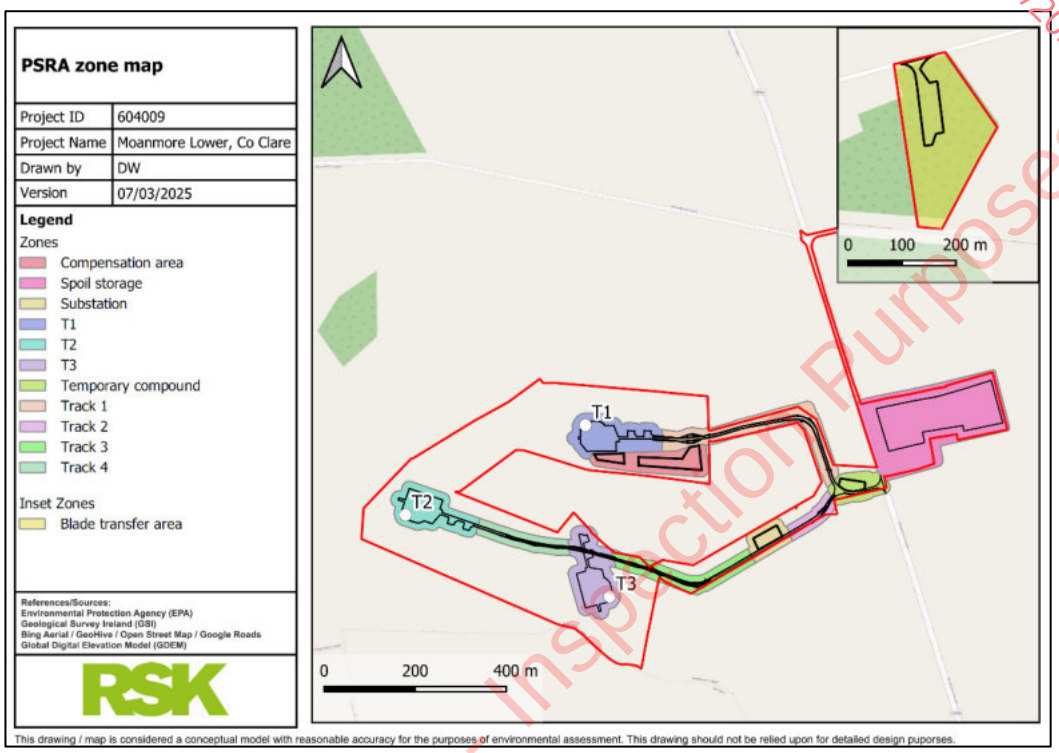

Figure 7: Risk assessment zones

Table 9: Peat stability risk assessment – factor of safety (adjusted) and ranked risk considering distance

Zone	Peat depth (m)	Avg Peat depth (m)	Slope (avg)	FoS_{ADJ} (Factor of Safety (adjusted)		RR_D (Ranked Risk Distance)		Geo-Hazard / Comment
				Scenario A	Scenario B	Scenario A	Scenario B	
T1	0.2 - 1	0.6	0.7	Acceptable	Acceptable	Low to moderate	Low to moderate	Some mapped drains close to T1.
T2	0.1 - 4	1.7	1.4	Acceptable	Acceptable to potentially localised unstable	Very low to moderate	Very low to high	The area to the west of T2 is saturated with areas of moderately deep peat. This area is associated with peat cutting and has localised potentially unstable points associated with cut drainage. Note this area has been avoided by design.
T3	0 - 3.3	1.0	2.0	Acceptable	Acceptable	Very low to moderate	Very low to moderate	There are primary and secondary drains in close proximity to T3.
Substation	0.1	0.1	2.4	Acceptable	Acceptable	Very low	Very low to low	Close proximity to a primary drain
Temporary Compound	0.1-0.2	0.15	2.8	Acceptable	Acceptable	Low to moderate	Low to moderate	Close proximity to primary and secondary drains
Compensation areas	0.1-0.7	0.4	1.0	Acceptable	Acceptable	Very low to low	Very low to low	Close proximity to primary and secondary drains

Zone	Peat depth (m)	Avg Peat depth (m)	Slope (avg)	FoS_{ADJ} (Factor of Safety (adjusted)		RR_D (Ranked Risk Distance)		Geo-Hazard / Comment
				Scenario A	Scenario B	Scenario A	Scenario B	
Permanent spoil storage area	0.1-0.8	0.2	1.6	Acceptable	Acceptable	Very low to moderate	Very low to moderate	Area very waterlogged. Drains around the edge of spoil storage area flow west towards Moyasta.
Track 1	0.1 – 0.5	0.2	2.5	Acceptable	Acceptable	Low to moderate	Low to moderate	A number of drains and close to the Moyasta River
Track 2	0.1 – 0.2	0.1	4.4	Acceptable	Acceptable	Generally, very low	Generally, very low	Existing infrastructure
Track 3	0.1 – 0.5	0.1	2.5	Acceptable	Acceptable	Low to moderate	Low to moderate	A number of drains in the area, existing infrastructure
Track 4	0.1 – 2.4	1.0	1.3	Acceptable	Acceptable	Low to moderate	Low to moderate	A number of drains in the area, some moderately deep peat
Blade Transfer Area	3.6-5.0	4.0	0.5	Acceptable	Acceptable	Very low	Very low	While to peat is deep in this area the topography is relatively flat and therefore the risk is low.

5 DATA GAP ANALYSIS

The site survey covered the area within the Redline Boundary as well as areas directly around it.

No peat probing was conducted along the grid connection route, as it is primarily along existing infrastructure.

Confirmatory boreholes, trial pits, subsoil sampling and analysis, should be undertaken prior to construction.

The Scenario B with a 3.5m / 1m surcharge used in this risk assessment has been undertaken in accordance with best practice. A Geotechnical Clerk of Works shall be employed during the construction phase in order to monitor works in areas >2m peat. Ongoing physical stability checks and calculations will be undertaken as part of the works design in order to verify that safety standards are being met.

6 CAVEATS & MITIGATION MEASURES

The risk of landslides occurring on the proposed site under worst case scenario conditions (conservative values and Scenario B (+3.5m)) has been determined to be generally stable with very low to low risk however, the following points should be noted;

- The assessment/s reported here are limited to peat probe point locations, and therefore additional recommendations and mitigation measures are outlined below.
- The purpose of this report is to assess the proposed infrastructure units associated with the proposed development. The proposed site contains some existing infrastructure including roads and constructed drainage.

6.1 Mitigation Measures

- Mitigation measures include limiting all works to the development footprint as far as practical (vehicle movements, personnel movements, temporary storage, etc) and otherwise avoiding areas of elevated risk or close to sensitive receptors. This includes avoiding the area to the west and south of T2.
- Earthworks will not occur during sustained or intense rainfall events.
- All works are to be supervised and monitored by a competent person (e.g. Geotechnical Engineer) throughout the construction phase.
- No temporary stockpiles will be positioned or placed on areas of peat which have not been assessed or are indicated as being geo-hazards, particularly in areas of unacceptable factor of safety / stability, including to the west and south of T2.
- No temporary stockpiles will exceed 1m.
- No permanent stockpiles will remain on site following reinstatement work. Any material not reused on site will be removed to the designated permanent storage location.
- Floating tracks will be used in areas where there is deeper peat (>1m).
- Stockpiles at the permanent storage location will not exceed 2m for peat and 3.5m for soil.
- Currently most of the western side of the permanent spoil storage area is waterlogged. Drainage will be constructed in the permanent spoil area.
- Retention berms will be used at the edge of the permanent storage location to prevent any movement of material from the storage location and mitigate against high organic material entering the surrounding surface water network. A Settlement pond and drainage will surround the berms [6778-JOD-MM-XX-DR-1401].
- The stone retention berm will be brought down to firm ground, with peat and soft waterlogged soil removed.
- The wind farm site is to be monitored at a reasonable frequency during the operational phase of the proposed development. The frequency of monitoring during the operational phase will be conducted at a high frequency (e.g. monthly)

during the initial months and will reduce gradually (e.g. quarterly) over the following year minimum, or until site conditions are observed to be stable.

- The spoil material at the permanent storage will need to dry out over a number of years to increase the shear strength. Therefore, the permanent spoil deposition area will require additional monitoring, including restricted access following the construction phase until the storage area is deemed to be stable.

7 CONCLUSIONS

Peat depth across the Site and the Spoil Storage area is generally very shallow to moderately deep. There are a few areas of deeper peat located to the west and south of T2 and at the Blade Transfer Area.

The Factor of Safety (Adjusted) (Scenario B i.e., 1 & 3.5m surcharge) at peat probe locations is generally Acceptable with the exception of a few pockets of marginally stable / unstable point locations associated with deeper peat to the west and south of T2 (**Appendix C**). All proposed works are located in areas where The Factor of Safety is Acceptable, no construction works will take place in areas deemed to be unstable

The Risk Ranking (Distance) Scenario B i.e., 3.5m surcharge) at peat probe locations is generally Low to Moderate, there are areas of potentially localised High risk associated with areas close to onsite drainage features (**Appendix C**).

The areas which have moderate to high risk associated with them include:

- The area to the west of T2 is saturated with moderately deep peat which has been modified by peat cutting activities. This area has been avoided by design and T2 turbine location is in an area of acceptable stability.
- There are a number of drains across the site which increase the risk ranking to moderate and require additional mitigation measures see sections 9.7.1.4, 9.7.2.1, 9.7.2.3 and 9.7.2.9, **Chapter 9: Hydrology and Hydrogeology**.

Overall, peat stability is 'good' however, some locations indicated potentially elevated risk which corresponds with proximity to localised receptors (onsite drainage, mapped rivers), and the potential for localised stability issues, particularly in areas of deeper peat. The risk of a stability issue is generally low provided all appropriate mitigation measures, monitoring and best practices are followed.

APPENDIX A

Peat thickness

Legend

Peat thickness
- A – No Peat / Rock (0.00-0.01 m)
- B – Very Shallow (0.01-0.5 m)
- C – Shallow (0.5-2.0 m)
- D – Moderately Deep (2.0-3.5m)
- E – Deep (3.5-5.0 m)
- F – Very Deep (>5.0 m)

Project Data
- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
- Access tracks
- Hardstands
- Blade Area

Topography
- DEM_2m_Contour

Base Layers

Google Satellite

Project ID	604009
Project Name	Moanmore Lower Wind Farm, Co. Clare
Projection	ITM
Drawn by	DW
Reviewed by	JS
Version	07/03/2025

References/Sources:
Environmental Protection Agency (EPA)
Geological Survey Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)

RSK

498001E

658001N

N

0 300 600 m

0 100 200 m

T1 T2 T3

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Peat thickness surface

Legend

Peat thickness
- A – No Peat / Rock (0.00-0.01 m)
- B – Very Shallow (0.01-0.5 m)
- C – Shallow (0.5-2.0 m)
- D – Moderately Deep (2.0-3.5m)
- E – Deep (3.5-5.0 m)
- F – Very Deep (>5.0 m)
- Peat_thickness_contours_0.5m

Peat thickness
- Band 1 (Gray)
- 5.099957
- 0

Project Data
- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
- Access tracks
- Hardstands
- Blade Area

Base Layers

Google Satellite

Project ID	604009
Project Name	Moanmore Lower Wind Farm, Co. Clare
Projection	ITM
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Global Digital Elevation Model (GDEM)

RSK

498001E

658001N

N

0 300 600 m

0 100 200 m

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Shear vane and gauge core

Legend

- Shear vane (kPa)
- Gauge core

Project Data

- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
- Access tracks
- Hardstands
- Blade Area

Topography

- DEM_2m_Contour

Base Layers

Google Satellite

Undrained shear strength (kPa)

id	x	y	Depth (cm)	(kPa)
1	497550.55	657886.60	20	7.0
2	498404.37	658164.58	10	0.0
3	498610.36	658184.58	30	27.0
4	498411.10	658141.99	10	12.5
5	498486.66	658156.04	30	50.0
6	497777.35	657774.04	30	39.5
7	497740.97	657905.58	30	55.0
8	497635.46	657887.02	30	26.0
9	497793.80	657774.08	10	60.0
10	497793.94	657774.22	40	30.0
11	497817.42	658152.36	10	65.0

Project ID	604009
Project Name	Moanmore Lower Wind Farm, Co. Clare
Projection	ITM
Drawn by	DW
Reviewed by	JS
Version	07/03/2025

References/Sources:
Environmental Protection Agency (EPA)
Geological Survey Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)

RSK

498001E

658001N

N

0 300 600 m

0 100 200 m

T1 GC003 65

T2 GC001 7 26

55

39.5 GC002 60 T3

0 50 27 12.5

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

APPENDIX B

Peat Database

Moanmore Lower WF, Co. Clare

Prepared by: DW
File Ref.: 604009-R02-App8.1 - App B-Peat Database

RSK

Sample / Test Date	Associated Infrastructure	Sample ID	ITM Easting	ITM Northing	Thickness / Depth of peat	Classification of Thickness / Depth of peat	Parameter Values: Slope Angle	Slope Angle (For Excel Formula)	Undrained Shear Strength (Conservative Value)	Bulk Unit weight of Peat (Conservative Value)	Scenario A: Depth to failure plane i.e. Peat Depth	Scenario B: Surcharge	Surcharge Equivalent Placed Fill Depth	Scenario A: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	FoS Adjustment Coefficient	FoS Adjustment Value	Scenario A: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Significant Feature Ranking Coefficient	Scenario A: RR_{SF} Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Scenario B: RR_{SF} Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Distance to Sensitive Receptor Coefficient	Scenario A: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors	Scenario B: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors
							α	α	c'	y	z		z	$FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$						$FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$ + Adjustment Value				μ_{SF}					$\mu_{Dist.}$		
dd/mm/yy					m		Degrees	Radians	kPa	kN/m3	m	m	m	FoS	μ	FoS	μ	μ	#	FoS	μ	FoS	μ	μ	RR-SF	μ	RR-SF	μ	μ	RR-D	RR-D
29/06/2022	T3	DP001	497721.3	657908.6	1.80	C - Shallow (0.5-2.0m)	0.544	0.009	11	11	1.80	3.50	5.30	58.52	1.0	19.87	1.0	2.0	-0.3	58.27	1.0	19.62	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022	Track 4	DP002	497636.4	657875.7	2.40	D - Moderately Deep (2.0-3.5m)	2.003	0.035	11	11	2.40	3.50	5.90	11.93	1.0	4.85	1.0	2.0	-0.3	11.68	1.0	4.60	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP003	497603.8	657943.3	1.00	C - Shallow (0.5-2.0m)	1.364	0.024	11	11	1.00	1.00	2.00	42.02	1.0	21.01	1.0	2.0	-0.3	41.77	1.0	20.76	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP004	497574.1	658017.0	0.60	C - Shallow (0.5-2.0m)	0.725	0.013	11	11	0.60	1.00	1.60	131.73	1.0	49.40	1.0	2.0	-0.3	131.48	1.0	49.15	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP005	497553.4	658041.2	1.50	C - Shallow (0.5-2.0m)	6.828	0.119	11	11	1.50	1.00	2.50	5.65	1.0	3.39	1.0	2.0	-0.3	5.40	1.0	3.14	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP006	497588.5	658049.6	1.00	C - Shallow (0.5-2.0m)	1.395	0.024	11	11	1.00	1.00	2.00	41.09	1.0	20.54	1.0	2.0	-0.3	40.84	1.0	20.29	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP007	497624.0	658017.0	2.00	C - Shallow (0.5-2.0m)	0.460	0.008	11	11	2.00	1.00	3.00	62.28	1.0	41.52	1.0	2.0	-0.3	62.03	1.0	41.27	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP008	497632.5	658014.1	1.50	C - Shallow (0.5-2.0m)	0.963	0.017	11	11	1.50	1.00	2.50	39.67	1.0	23.80	1.0	2.0	-0.3	39.42	1.0	23.55	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP009	497677.1	657965.7	1.20	C - Shallow (0.5-2.0m)	0.486	0.008	11	11	1.20	1.00	2.20	98.25	1.0	53.59	1.0	2.0	-0.3	98.00	1.0	53.34	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022	Track 3	DP010	497850.5	657827.4	0.10	B - Very Shallow (0.01-0.5m)	0.916	0.016	11	11	0.10	3.50	3.60	625.61	1.0	17.38	1.0	2.0	-0.3	625.36	1.0	17.13	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP011	497878.3	657792.6	0.40	B - Very Shallow (0.01-0.5m)	2.631	0.046	11	11	0.40	1.00	1.40	54.52	1.0	15.58	1.0	2.0	-0.3	54.27	1.0	15.33	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP012	497892.2	657772.8	0.50	B - Very Shallow (0.01-0.5m)	3.878	0.068	11	11	0.50	1.00	1.50	29.64	1.0	9.88	1.0	2.0	-0.3	29.39	1.0	9.63	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
29/06/2022		DP013	497861.0	657754.3	3.00	D - Moderately Deep (2.0-3.5m)	1.780	0.031	11	11	3.00	1.00	4.00	10.74	1.0	8.05	1.0	2.0	-0.3	10.49	1.0	7.80	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP014	497818.4	657685.7	4.00	E - Deep (3.5-5.0m)	1.830	0.032	11	11	4.00	1.00	5.00	7.83	1.0	6.27	1.0	2.0	-0.3	7.58	1.0	6.02	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
29/06/2022	T3	DP015	497766.0	657830.3	1.10	C - Shallow (0.5-2.0m)	0.942	0.016	11	11	1.10	3.50	4.60	55.30	1.0	13.22	1.0	2.0	-0.3	55.05	1.0	12.97	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022	T3	DP016	497723.6	657743.5	0.90	C - Shallow (0.5-2.0m)	1.768	0.031	11	11	0.90	1.00	1.90	36.03	1.0	17.07	1.0	2.0	-0.3	35.78	1.0	16.82	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP017	497618.3	657726.9	2.40	D - Moderately Deep (2.0-3.5m)	0.565	0.010	11	11	2.40	1.00	3.40	42.26	1.0	29.83	1.0	2.0	-0.3	42.01	1.0	29.58	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP018	497517.5	657733.8	2.00	C - Shallow (0.5-2.0m)	1.506	0.026	11	11	2.00	1.00	3.00	19.03	1.0	12.69	1.0	2.0	-0.3	18.78	1.0	12.44	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP019	497472.2	657728.1	0.50	B - Very Shallow (0.01-0.5m)	0.932	0.016	11	11	0.50	1.00	1.50	122.97	1.0	40.99	1.0	2.0	-0.3	122.72	1.0	40.74	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP020	497455.0	657815.1	4.10	E - Deep (3.5-5.0m)	1.246	0.022	11	11	4.10	1.00	5.10	11.22	1.0	9.02	1.0	2.0	-0.3	10.97	1.0	8.77	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
29/06/2022		DP021	497424.3	657857.0	4.50	E - Deep (3.5-5.0m)	1.047	0.018	11	11	4.50	1.00	5.50	12.16	1.0	9.95	1.0	2.0	-0.3	11.91	1.0	9.70	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
29/06/2022		DP022	497347.7	657898.5	2.80	D - Moderately Deep (2.0-3.5m)	4.013	0.070	11	11	2.80	1.00	3.80	5.12	1.0	3.77	1.0	2.0	-0.3	4.87	1.0	3.52	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
29/06/2022		DP023	497360.6	657908.6	2.50	D - Moderately Deep (2.0-3.5m)	1.126	0.020	11	11	2.50	1.00	3.50	20.36	1.0	14.54	1.0	2.0	-0.3	20.11	1.0	14.29	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
29/06/2022		DP024	497313.3	657974.7	3.50	D - Moderately Deep (2.0-3.5m)	3.774	0.066	2.5	11	3.50	1.00	4.50	0.99	4.0	0.77	4.0	2.0	-0.3	0.74	4.0	0.52	4.0	2.0	8.0	4.0	8.0	4.0	4.0	16.0	16.0
29/06/2022		DP025	497276.5	658064.5	2.50	D - Moderately Deep (2.0-3.5m)	1.144	0.020	2.5	11	2.50	1.00	3.50	4.55	1.0	3.25	1.0	2.0	-0.3	4.30	1.0	3.00	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP026	497274.2	658121.7	2.20	D - Moderately Deep (2.0-3.5m)	2.931	0.051	11	11	2.20	1.00	3.20	8.90	1.0	6.12	1.0	2.0	-0.3	8.65	1.0	5.87	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP027	497235.1	657992.6	3.10	D - Moderately Deep (2.0-3.5m)	2.416	0.042	11	11	3.10	1.00	4.10	7.66	1.0	5.79	1.0	2.0	-0.3	7.41	1.0	5.54	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP028	497347.3	657853.0	3.00	D - Moderately Deep (2.0-3.5m)	5.786	0.101	11	11	3.00	1.00	4.00	3.32	1.0	2.49	1.0	2.0	-0.3	3.07	1.0	2.24	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
29/06/2022		DP029	497849.2	657929.8	0.10	B - Very Shallow (0.01-0.5m)	2.424	0.042	11	11	0.10	1.00	1.10	236.65	1.0	21.51	1.0	2.0	-0.3	236.40	1.0	21.26	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022		DP030	497875.5	657964.7	0.10	B - Very Shallow (0.01-0.5m)	1.654	0.029	11	11	0.10	1.00	1.10	346.60	1.0	31.51	1.0	2.0	-0.3	346.35	1.0	31.26	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
29/06/2022	T1	DP031	497772.5	658087.9	1.00	C - Shallow (0.5-2.0m)	0.365	0.006	11	11	1.00	3.50	4.50	156.98	1.0	34.88	1.0	2.0	-0.3	156.73	1.0	34.63	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T2	DP032	497480.8	657932.2	0.50	B - Very Shallow (0.01-0.5m)	0.855	0.015	11	11	0.50	3.50	4.00	134.05	1.0	16.76	1.0	2.0	-0.3	133.80	1.0	16.51	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Track 4	DP033	497502.2	657918.5	1.30	C - Shallow (0.5-2.0m)	0.959	0.017	11	11	1.30	3.50	4.80	45.97	1.0	12.45	1.0	2.0	-0.3	45.72	1.0	12.20	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP034	497501.4	657890.0	1.60	C - Shallow (0.5-2.0m)	1.025	0.018	11	11	1.60	1.00	2.60	34.94	1.0	21.50	1.0	2.0	-0.3	34.69	1.0	21.25	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP035	497504.1	657864.8	0.90	C - Shallow (0.5-2.0m)	1.922	0.034	11	11	0.90	1.00	1.90	33.15	1.0	15.70	1.0	2.0	-0.3	32.90	1.0	15.45	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP036	497478.7	657829.0	3.70	E - Deep (3.5-5.0m)	1.475	0.026	11	11	3.70	1.00	4.70	10.50	1.0	8.27	1.0	2.0	-0.3	10.25	1.0	8.02	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP037	497482.7	657788.6	0.10	B - Very Shallow (0.01-0.5m)	2.026	0.035	11	11	0.10	1.00	1.10	283.04	1.0	25.73	1.0	2.0	-0.3	282.79	1.0	25.48	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP038	497433.6	657838.9	3.30	D - Moderately Deep (2.0-3.5m)	0.555	0.010	11	11	3.30	1.00	4.30	31.29	1.0	24.01	1.0	2.0	-0.3	31.04	1.0	23.76	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP039	497398.9	657896.1	3.70	E - Deep (3.5-5.0m)	7.895	0.138	11	11	3.70	1.00	4.70	1.99	1.0	1.56	1.0	2.0	-0.3	1.74	1.0	1.31	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T2	DP040	497399.6	657930.9	2.80	D - Moderately Deep (2.0-3.5m)	1.582	0.028	11	11	2.80	3.50	6.30	12.94	1.0	5.75	1.0	2.0	-0.3	12.69	1.0	5.50	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T2	DP041	497397.2	657973.5	0.90	C - Shallow (0.5-2.0m)	1.192	0.021	2.5	11	0.90	3.50	4.40	12.14	1.0	2.48	1.0	2.0	-0.3	11.89	1.0	2.23	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T2	DP042	497385.7	657999.1	2.30	D - Moderately Deep (2.0-3.5m)	0.473	0.008	2.5	11	2.30	3.50	5.80	11.97	1.0	4.75	1.0	2.0	-0.3	11.72	1.0	4.50	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP043	497401.7	658017.8	0.10	B - Very Shallow (0.01-0.5m)	2.974	0.052	2.5	11	0.10	1.00	1.10	43.86	1.0	3.99	1.0	2.0	-0.3	43.61	1.0	3.74	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T2	DP044	497370.6	657973.3	1.20	C - Shallow (0.5-2.0m)	1.202	0.021	2.5	11	1.20	3.50	4.70	9.03	1.0	2.31	1.0	2.0	-0.3	8.78	1.0	2.06	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP045	497336.5	657980.4	1.50	C - Shallow (0.5-2.0m)	5.862	0.102	2.5	11	1.50	3.50	5.00	1.49	1.0	0.45	4.0	2.0	-0.3	1.24	2.0	0.20	4.0	2.0	4.0	2.0	8.0	4.0	2.0	4.0	8.0
25/08/2023		DP046	497325.0	658005.4	1.90	C - Shallow (0.5-2.0m)	7.276	0.127	2.5	11	1.90	1.00	2.90	0.95	4.0	0.62	4.0	2.0	-0.3	0.70	4.0	0.37	4.0	2.0	8.0	4.0	8.0	4.0	2.0	8.0	8.0
25/08/2023		DP047	497304.6	657961.0	1.40	C - Shallow (0.5-2.0m)	5.000	0.087	2.5	11	1.40	1.00	2.40	1.87	1.0	1.09	2.0	2.0	-0.3	1.62	1.0	0.84	4.0	2.0	2.0	1.0	8.0	4.0	4.0	4.0	16.0
25/08/2023		DP048	497296.9	657938.5	1.20	C - Shallow (0.5-2.0m)	2.206	0.039	2.5	11	1.20	1.00	2.20	4.92	1.0	2.69	1.0	2.0	-0.3	4.67	1.0	2.44	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T2	DP049	497357.5	657941.1	2.30	D - Moderately Deep (2.0-3.5m)	3.068	0.054	2.5	11	2.30	3.50	5.80	1.85	1.0	0.73	4.0	2.0	-0.3	1.60	1.0	0.48	4.0	2.0	2.0	1.0	8.0	4.0	1.0	1.0	4.0
25/08/2023		DP050	497394.6	657890.7	3.70	E - Deep (3.5-5.0m)	4.889	0.085	11	11	3.70	1.00	4.70	3.18	1.0	2.51	1.0	2.0	-0.3	2.93	1.0	2.26	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP051	497391.0	657858.0	3.20	D - Moderately Deep (2.0-3.5m)	1.216	0.021	11	11	3.20	1.00	4.20	14.73	1.0	11.22	1.0	2.0	-0.3	14.48	1.0	10.97	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	Track 4	DP052	497552.2	657902.7	0.60	C - Shallow (0.5-2.0m)	0.582	0.010	11	11	0.60	3.50	4.10	164.09	1.0	24.01	1.0	2.0	-0.3	163.84	1.0	23.76	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Track 4	DP053	497587.8	657895.1	0.90	C - Shallow (0.5-2.0m)	0.398	0.007	11	11	0.90	3.50	4.40	159.96	1.0	32.72	1.0	2.0	-0.3	159.71	1.0	32.47	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Track 4	DP054	497614.8	657890.4	0.20	B - Very Shallow (0.01-0.5m)	2.280	0.040	11	11	0.20	3.50	3.70	125.78	1.0	6.80	1.0	2.0	-0.3	125.53	1.0	6.55	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Track 4	DP055	497653.4	657899.2	0.90	C - Shallow (0.5-2.0m)	0.377	0.007	11	11	0.90	3.50	4.40	168.87	1.0	34.54	1.0	2.0	-0.3	168.62	1.0	34.29	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Track 4	DP056	497694.0	657897.7	1.80	C - Shallow (0.5-2.0m)	0.702	0.012	11	11	1.80	1.00	2.80	45.35	1.0	29.15	1.0	2.0	-0.3	45.10	1.0	28.90	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP057	497727.9	657896.6	1.00	C - Shallow (0.5-2.0m)	1.232	0.022	11	11	1.00	3.50	4.50	46.52	1.0	10.34	1.0	2.0	-0.3	46.27	1.0	10.09	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP058	497738.2	657890.4	0.00	A - Rock (0.0m)	4.368	0.076	11	11	0.00	3.50	3.50	13168.13	1.0	3.76	1.0	2.0	-0.3	13167.88	1.0	3.51	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Track 4	DP059	497697.3	657870.7	0.00	A - Rock (0.0m)	0.646	0.011	11	11	0.00	3.50	3.50	88700.67	1.0	25.34	1.0	2.0	-0.3	88700.42	1.0	25.09	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP060	497673.1	657857.6	0.90	C - Shallow (0.5-2.0m)	2.578	0.045	11	11	0.90	1.00	1.90	24.73	1.0	11.71	1.0	2.0	-0.3	24.48	1.0	11.46	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Track 3	DP061	497809.7	657860.6	0.00	A - Rock (0.0m)	0.897	0.016	11	11	0.00	3.50	3.50	63885.33	1.0	18.25	1.0	2.0	-0.3	63885.08	1.0	18.00	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP062	497799.3	657843.9	0.20	B - Very Shallow (0.01-0.5m)	2.285	0.040	11	11	0.20	3.50	3.70	125.51	1.0	6.78	1.0	2.0	-0.3	125.26	1.0	6.53	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP063	497796.5	657810.2	1.20	C - Shallow (0.5-2.0m)	2.827	0.049	11	11	1.20	3.50	4.70	16.92	1.0	4.32	1.0	2.0	-0.3	16.67	1.0	4.07	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP064	497789.1	657766.6	1.30	C - Shallow (0.5-2.0m)	6.951	0.121	11	11	1.30	3.50	4.80	6.40	1.0	1.73	1.0	2.0	-0.3	6.15	1.0	1.48	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP065	497787.0	657747.4	0.20	B - Very Shallow (0.01-0.5m)	5.707	0.100	11	11	0.20	3.50	3.70	50.53	1.0	2.73	1.0	2.0	-0.3	50.28	1.0	2.48	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP066	497780.0	657727.0	0.90	C - Shallow (0.5-2.0m)	2.846	0.050	11	11	0.90	3.50	4.40	22.41	1.0	4.58	1.0	2.0	-0.3	22.16	1.0	4.33	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP067	497775.3	657710.4	1.20	C - Shallow (0.5-2.0m)	1.572	0.027	11	11	1.20	1.00	2.20	30.39	1.0	16.58	1.0	2.0	-0.3	30.14	1.0	16.33	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP068	497799.2	657703.2	0.20	B - Very Shallow (0.01-0.5m)	1.727	0.030	11	11	0.20	1.00	1.20	165.98	1.0	27.66	1.0	2.0	-0.3	165.73	1.0	27.41	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP069	497826.7	657702.4	3.20	D - Moderately Deep (2.0-3.5m)	1.664	0.029	11	11	3.20	1.00	4.20	10.77	1.0	8.20	1.0	2.0	-0.3	10.52	1.0	7.95	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T3	DP070	497826.5	657719.5	3.30	D - Moderately Deep (2.0-3.5m)	1.015	0.018	11	11	3.30	1.00	4.30	17.11	1.0	13.13	1.0	2.0	-0.3	16.86	1.0	12.88	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T3	DP071	497828.8	657737.9	3.30	D - Moderately Deep (2.0-3.5m)	0.859	0.015	11	11	3.30	1.00	4.30	20.22	1.0	15.51	1.0	2.0	-0.3	19.97	1.0	15.26	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T3	DP072	497810.1	657752.1	2.90	D - Moderately Deep (2.0-3.5m)	2.719	0.047	11	11	2.90	3.50	6.40	7.28	1.0	3.30	1.0	2.0	-0.3	7.03	1.0	3.05	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP073	497742.5	657843.0	0.20	B - Very Shallow (0.01-0.5m)	0.552	0.010	11	11	0.20	3.50	3.70	519.02	1.0	28.05	1.0	2.0	-0.3	518.77	1.0	27.80	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP074	497748.6	657862.5	0.10	B - Very Shallow (0.01-0.5m)	1.143	0.020	11	11	0.10	3.50	3.60	501.41	1.0	13.93	1.0	2.0	-0.3	501.16	1.0	13.68	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0

Peat Database

Moanmore Lower WF, Co. Clare

Prepared by: DW
File Ref.: 604009-R02-App8.1 - App B-Peat Database

Scenario A / Scenario B: $FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$; Adjusted: $FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$ + Adjustment Value

Sample / Test Date	Associated Infrastructure	Sample ID	ITM Easting	ITM Northing	Thickness / Depth of peat	Classification of Thickness / Depth of peat	Slope Angle α	Slope Angle (For Excel Formula) α	Undrained Shear Strength (Conservative Value) c'	Bulk Unit weight of Peat (Conservative Value) y	Scenario A: Depth to failure plane i.e. Peat Depth z	Scenario B: Surcharge	Surcharge Equivalent Placed Fill Depth z	Scenario A: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	FoS Adjustment Coefficient	FoS Adjustment Value	Scenario A: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Significant Feature Ranking Coefficient μ_{SF}	Scenario A: RR_{SF} Ranking Risk e Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Scenario B: RR_{SF} Ranking Risk re Potential for Adverse Consequence s on Sensitive Receptors	COEFFICIENT	Distance to Sensitive Receptor Coefficient $\mu_{Dist.}$	Scenario A: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors	Scenario B: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors
dd/mm/yy					m		Degrees	Radians	kPa	kN/m3	m	m	m	FoS	μ	FoS	μ	μ	#	FoS	μ	FoS	μ	μ	RR-SF	μ	RR-SF	μ	μ	RR-D	RR-D
25/08/2023	T3	DP075	497754.8	657884.2	0.00	A - Rock (0.0m)	1.214	0.021	11	11	0.00	3.50	3.50	47209.99	1.0	13.48	1.0	2.0	-0.3	47209.74	1.0	13.23	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP076	497776.7	657877.5	0.00	A - Rock (0.0m)	0.476	0.008	11	11	0.00	3.50	3.50	120374.82	1.0	34.38	1.0	2.0	-0.3	120374.57	1.0	34.13	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Track 3	DP077	497766.2	657866.0	0.10	B - Very Shallow (0.01-0.5m)	1.379	0.024	11	11	0.10	3.50	3.60	415.65	1.0	11.55	1.0	2.0	-0.3	415.40	1.0	11.30	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP078	497783.3	657846.8	0.00	A - Rock (0.0m)	0.784	0.014	11	11	0.00	3.50	3.50	73090.47	1.0	20.88	1.0	2.0	-0.3	73090.22	1.0	20.63	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T3	DP079	497778.9	657824.0	1.10	C - Shallow (0.5-2.0m)	1.098	0.019	11	11	1.10	3.50	4.60	47.45	1.0	11.35	1.0	2.0	-0.3	47.20	1.0	11.10	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP080	497875.8	657864.0	0.00	A - Rock (0.0m)	0.807	0.014	11	11	0.00	1.00	1.00	71007.88	1.0	70.94	1.0	2.0	-0.3	71007.63	1.0	70.69	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP081	497894.0	657879.2	0.00	A - Rock (0.0m)	1.637	0.029	11	11	0.00	1.00	1.00	35019.53	1.0	34.98	1.0	2.0	-0.3	35019.28	1.0	34.73	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP082	497913.7	657879.9	0.00	A - Rock (0.0m)	1.888	0.033	11	11	0.00	1.00	1.00	30369.32	1.0	30.34	1.0	2.0	-0.3	30369.07	1.0	30.09	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP083	497904.7	657864.0	0.00	A - Rock (0.0m)	0.919	0.016	11	11	0.00	1.00	1.00	62356.48	1.0	62.29	1.0	2.0	-0.3	62356.23	1.0	62.04	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP084	497911.0	657842.2	0.00	A - Rock (0.0m)	1.599	0.028	11	11	0.00	1.00	1.00	35850.87	1.0	35.82	1.0	2.0	-0.3	35850.62	1.0	35.57	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP085	497772.6	658089.5	0.90	C - Shallow (0.5-2.0m)	0.365	0.006	11	11	0.90	3.50	4.40	174.42	1.0	35.68	1.0	2.0	-0.3	174.17	1.0	35.43	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP086	497768.5	658109.4	1.00	C - Shallow (0.5-2.0m)	0.233	0.004	11	11	1.00	3.50	4.50	245.91	1.0	54.65	1.0	2.0	-0.3	245.66	1.0	54.40	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP087	497773.6	658143.8	0.30	B - Very Shallow (0.01-0.5m)	0.324	0.006	11	11	0.30	3.50	3.80	589.48	1.0	46.54	1.0	2.0	-0.3	589.23	1.0	46.29	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP088	497773.1	658169.3	0.90	C - Shallow (0.5-2.0m)	2.507	0.044	11	11	0.90	3.50	4.40	25.43	1.0	5.20	1.0	2.0	-0.3	25.18	1.0	4.95	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T1	DP089	497816.9	658167.3	0.90	C - Shallow (0.5-2.0m)	0.957	0.017	11	11	0.90	1.00	1.90	66.53	1.0	31.52	1.0	2.0	-0.3	66.28	1.0	31.27	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Compensation	DP090	497850.9	658054.2	0.30	B - Very Shallow (0.01-0.5m)	4.314	0.075	11	11	0.30	1.00	1.30	44.44	1.0	10.26	1.0	2.0	-0.3	44.19	1.0	10.01	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T1	DP091	497855.5	658090.0	0.70	C - Shallow (0.5-2.0m)	0.111	0.002	11	11	0.70	1.00	1.70	737.40	1.0	303.63	1.0	2.0	-0.3	737.15	1.0	303.38	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T1	DP092	497852.4	658114.9	0.80	C - Shallow (0.5-2.0m)	0.224	0.004	11	11	0.80	3.50	4.30	319.73	1.0	59.49	1.0	2.0	-0.3	319.48	1.0	59.24	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T1	DP093	497853.9	658145.1	0.90	C - Shallow (0.5-2.0m)	0.138	0.002	11	11	0.90	3.50	4.40	461.32	1.0	94.36	1.0	2.0	-0.3	461.07	1.0	94.11	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP094	497457.0	657885.6	3.70	E - Deep (3.5-5.0m)	3.109	0.054	11	11	3.70	1.00	4.70	4.99	1.0	3.93	1.0	2.0	-0.3	4.74	1.0	3.68	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP095	497471.7	657865.2	5.10	F - Extremely Deep (>5m)	3.691	0.064	11	11	5.10	1.00	6.10	3.05	1.0	2.55	1.0	2.0	-0.3	2.80	1.0	2.30	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP096	497476.6	657807.4	2.70	D - Moderately Deep (2.0-3.5m)	4.609	0.080	11	11	2.70	1.00	3.70	4.62	1.0	3.37	1.0	2.0	-0.3	4.37	1.0	3.12	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP097	497451.5	657817.8	3.80	E - Deep (3.5-5.0m)	0.824	0.014	11	11	3.80	1.00	4.80	18.30	1.0	14.49	1.0	2.0	-0.3	18.05	1.0	14.24	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP098	497419.4	657876.7	4.00	E - Deep (3.5-5.0m)	2.483	0.043	11	11	4.00	1.00	5.00	5.78	1.0	4.62	1.0	2.0	-0.3	5.53	1.0	4.37	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP099	497375.7	657920.3	2.30	D - Moderately Deep (2.0-3.5m)	0.794	0.014	11	11	2.30	3.50	5.80	31.38	1.0	12.44	1.0	2.0	-0.3	31.13	1.0	12.19	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP100	497361.9	657929.1	1.50	C - Shallow (0.5-2.0m)	1.539	0.027	2.5	11	1.50	3.50	5.00	5.64	1.0	1.69	1.0	2.0	-0.3	5.39	1.0	1.44	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T2	DP101	497358.8	657941.6	1.10	C - Shallow (0.5-2.0m)	1.055	0.018	2.5	11	1.10	3.50	4.60	11.22	1.0	2.68	1.0	2.0	-0.3	10.97	1.0	2.43	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T2	DP102	497375.9	657945.5	1.10	C - Shallow (0.5-2.0m)	1.746	0.030	2.5	11	1.10	3.50	4.60	6.78	1.0	1.62	1.0	2.0	-0.3	6.53	1.0	1.37	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023	T2	DP103	497373.3	657957.3	0.90	C - Shallow (0.5-2.0m)	0.916	0.016	2.5	11	0.90	3.50	4.40	15.80	1.0	3.23	1.0	2.0	-0.3	15.55	1.0	2.98	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP104	497345.4	657939.3	2.70	D - Moderately Deep (2.0-3.5m)	3.149	0.055	2.5	11	2.70	3.50	6.20	1.53	1.0	0.67	4.0	2.0	-0.3	1.28	2.0	0.42	4.0	2.0	4.0	2.0	8.0	4.0	1.0	2.0	4.0
25/08/2023		DP105	497328.1	657932.1	0.90	C - Shallow (0.5-2.0m)	1.486	0.026	2.5	11	0.90	1.00	1.90	9.74	1.0	4.61	1.0	2.0	-0.3	9.49	1.0	4.36	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP106	497324.1	657952.9	3.30	D - Moderately Deep (2.0-3.5m)	8.546	0.149	2.5	11	3.30	3.50	6.80	0.47	4.0	0.23	4.0	2.0	-0.3	0.22	4.0	-0.02	4.0	2.0	8.0	4.0	8.0	4.0	2.0	8.0	8.0
25/08/2023		DP107	497331.4	657965.6	1.20	C - Shallow (0.5-2.0m)	5.754	0.100	2.5	11	1.20	3.50	4.70	1.90	1.0	0.48	4.0	2.0	-0.3	1.65	1.0	0.23	4.0	2.0	2.0	1.0	8.0	4.0	2.0	2.0	8.0
25/08/2023		DP108	497335.3	657913.2	2.70	D - Moderately Deep (2.0-3.5m)	4.295	0.075	2.5	11	2.70	1.00	3.70	1.13	2.0	0.82	4.0	2.0	-0.3	0.88	4.0	0.57	4.0	2.0	8.0	4.0	8.0	4.0	1.0	4.0	4.0
25/08/2023		DP109	497341.8	657878.2	3.90	E - Deep (3.5-5.0m)	2.350	0.041	11	11	3.90	1.00	4.90	6.26	1.0	4.98	1.0	2.0	-0.3	6.01	1.0	4.73	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP110	497346.8	657829.7	2.80	D - Moderately Deep (2.0-3.5m)	7.166	0.125	11	11	2.80	1.00	3.80	2.89	1.0	2.13	1.0	2.0	-0.3	2.64	1.0	1.88	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP111	497360.7	657801.4	2.30	D - Moderately Deep (2.0-3.5m)	3.164	0.055	11	11	2.30	1.00	3.30	7.89	1.0	5.50	1.0	2.0	-0.3	7.64	1.0	5.25	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP112	497388.8	657802.2	2.80	D - Moderately Deep (2.0-3.5m)	1.158	0.020	11	11	2.80	1.00	3.80	17.68	1.0	13.02	1.0	2.0	-0.3	17.43	1.0	12.77	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP113	497504.7	657882.5	0.80	C - Shallow (0.5-2.0m)	0.743	0.013	11	11	0.80	1.00	1.80	96.40	1.0	42.85	1.0	2.0	-0.3	96.15	1.0	42.60	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
25/08/2023		DP114	497530.5	657866.4	3.40	D - Moderately Deep (2.0-3.5m)	0.637	0.011	11	11	3.40	1.00	4.40	26.46	1.0	20.44	1.0	2.0	-0.3	26.21	1.0	20.19	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP115	497575.4	657842.1	3.30	D - Moderately Deep (2.0-3.5m)	1.285	0.022	11	11	3.30	1.00	4.30	13.52	1.0	10.37	1.0	2.0	-0.3	13.27	1.0	10.12	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP116	497601.5	657855.5	1.20	C - Shallow (0.5-2.0m)	0.929	0.016	11	11	1.20	1.00	2.20	51.40	1.0	28.04	1.0	2.0	-0.3	51.15	1.0	27.79	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP117	497623.8	657863.3	1.90	C - Shallow (0.5-2.0m)	2.454	0.043	11	11	1.90	1.00	2.90	12.30	1.0	8.06	1.0	2.0	-0.3	12.05	1.0	7.81	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Track 4	DP118	497661.2	657872.0	2.10	D - Moderately Deep (2.0-3.5m)	1.423	0.025	11	11	2.10	3.50	5.60	19.18	1.0	7.19	1.0	2.0	-0.3	18.93	1.0	6.94	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP119	497530.2	657890.0	0.70	C - Shallow (0.5-2.0m)	1.528	0.027	11	11	0.70	1.00	1.70	53.59	1.0	22.07	1.0	2.0	-0.3	53.34	1.0	21.82	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP120	497547.1	657883.5	2.90	D - Moderately Deep (2.0-3.5m)	0.555	0.010	11	11	2.90	1.00	3.90	35.60	1.0	26.47	1.0	2.0	-0.3	35.35	1.0	26.22	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Track 4	DP121	497541.8	657894.4	2.00	C - Shallow (0.5-2.0m)	0.594	0.010	11	11	2.00	3.50	5.50	48.23	1.0	17.54	1.0	2.0	-0.3	47.98	1.0	17.29	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP122	497556.4	657888.3	0.40	B - Very Shallow (0.01-0.5m)	0.556	0.010	11	11	0.40	1.00	1.40	257.64	1.0	73.61	1.0	2.0	-0.3	257.39	1.0	73.36	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP123	497567.6	657873.8	0.80	C - Shallow (0.5-2.0m)	2.525	0.044	11	11	0.80	1.00	1.80	28.40	1.0	12.62	1.0	2.0	-0.3	28.15	1.0	12.37	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP124	497571.6	657857.6	1.50	C - Shallow (0.5-2.0m)	2.504	0.044	11	11	1.50	1.00	2.50	15.27	1.0	9.16	1.0	2.0	-0.3	15.02	1.0	8.91	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP125	497553.6	657864.3	0.90	C - Shallow (0.5-2.0m)	1.688	0.029	11	11	0.90	1.00	1.90	37.74	1.0	17.88	1.0	2.0	-0.3	37.49	1.0	17.63	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP126	497538.6	657873.1	1.00	C - Shallow (0.5-2.0m)	2.055	0.036	11	11	1.00	1.00	2.00	27.91	1.0	13.95	1.0	2.0	-0.3	27.66	1.0	13.70	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Track 3	DP127	497834.6	657830.7	0.00	A - Rock (0.0m)	1.901	0.033	11	11	0.00	3.50	3.50	30161.94	1.0	8.62	1.0	2.0	-0.3	30161.69	1.0	8.37	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP128	497836.3	657818.8	0.60	C - Shallow (0.5-2.0m)	0.775	0.014	11	11	0.60	1.00	1.60	123.23	1.0	46.21	1.0	2.0	-0.3	122.98	1.0	45.96	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP129	497848.7	657803.2	0.80	C - Shallow (0.5-2.0m)	1.086	0.019	11	11	0.80	1.00	1.80	65.96	1.0	29.32	1.0	2.0	-0.3	65.71	1.0	29.07	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP130	497876.7	657778.3	1.60	C - Shallow (0.5-2.0m)	2.810	0.049	11	11	1.60	1.00	2.60	12.76	1.0	7.85	1.0	2.0	-0.3	12.51	1.0	7.60	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023		DP131	497858.2	657752.3	1.90	C - Shallow (0.5-2.0m)	1.555	0.027	11	11	1.90	1.00	2.90	19.40	1.0	12.71	1.0	2.0	-0.3	19.15	1.0	12.46	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP132	497846.4	657735.9	3.50	D - Moderately Deep (2.0-3.5m)	0.527	0.009	11	11	3.50	1.00	4.50	31.06	1.0	24.16	1.0	2.0	-0.3	30.81	1.0	23.91	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP133	497836.9	657757.8	2.30	D - Moderately Deep (2.0-3.5m)	1.950	0.034	11	11	2.30	1.00	3.30	12.78	1.0	8.91	1.0	2.0	-0.3	12.53	1.0	8.66	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP134	497832.5	657786.4	0.40	B - Very Shallow (0.01-0.5m)	1.212	0.021	11	11	0.40	1.00	1.40	118.22	1.0	33.78	1.0	2.0	-0.3	117.97	1.0	33.53	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP135	497826.9	657770.4	2.50	D - Moderately Deep (2.0-3.5m)	2.516	0.044	11	11	2.50	1.00	3.50	9.12	1.0	6.51	1.0	2.0	-0.3	8.87	1.0	6.26	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T3	DP136	497809.6	657777.3	2.10	D - Moderately Deep (2.0-3.5m)	1.311	0.023	11	11	2.10	3.50	5.60	20.82	1.0	7.81	1.0	2.0	-0.3	20.57	1.0	7.56	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023		DP137	497844.1	657771.4	2.20	D - Moderately Deep (2.0-3.5m)	2.522	0.044	11	11	2.20	1.00	3.20	10.34	1.0	7.11	1.0	2.0	-0.3	10.09	1.0	6.86	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Track 3	DP138	497868.8	657833.7	0.00	A - Rock (0.0m)	1.903	0.033	11	11	0.00	3.50	3.50	30130.29	1.0	8.61	1.0	2.0	-0.3	30130.04	1.0	8.36	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Compensation	DP139	497807.2	658075.1	0.60	C - Shallow (0.5-2.0m)	0.438	0.008	11	11	0.60	3.50	4.10	218.03	1.0	31.91	1.0	2.0	-0.3	217.78	1.0	31.66	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Compensation	DP140	497807.2	658075.1	0.10	B - Very Shallow (0.01-0.5m)	0.438	0.008	11	11	0.10	3.50	3.60	1308.17	1.0	36.34	1.0	2.0	-0.3	1307.92	1.0	36.09	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP141	497808.4	658092.8	0.20	B - Very Shallow (0.01-0.5m)	0.070	0.001	11	11	0.20	3.50	3.70	4092.56	1.0	221.22	1.0	2.0	-0.3	4092.31	1.0	220.97	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP142	497828.1	658144.0	0.40	B - Very Shallow (0.01-0.5m)	0.389	0.007	11	11	0.40	3.50	3.90	368.24	1.0	37.77	1.0	2.0	-0.3	367.99	1.0	37.52	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T1	DP143	497838.5	658157.1	0.40	B - Very Shallow (0.01-0.5m)	3.278	0.057	11	11	0.40	1.00	1.40	43.79	1.0	12.51	1.0	2.0	-0.3	43.54	1.0	12.26	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	T1	DP144	497815.7	658123.6	0.40	B - Very Shallow (0.01-0.5m)	0.075	0.001	11	11	0.40	3.50	3.90	1909.86	1.0	195.88	1.0	2.0	-0.3	1909.61	1.0	195.63	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	T1	DP145	497817.1	658095.8	0.50	B - Very Shallow (0.01-0.5m)	0.406	0.007	11	11	0.50	3.50	4.00	282.25	1.0	35.28	1.0	2.0	-0.3	282.00	1.0	35.03	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Compensation	DP146	497832.9	658074.5	0.00	A - Rock (0.0m)	0.906	0.016	11	11	0.00	1.00	1.00	63250.92	1.0	63.19	1.0	2.0	-0.3	63250.67	1.0	62.94	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
25/08/2023	Compensation	DP147	497869.2	658065.6	0.60	C - Shallow (0.5-2.0m)	1.531	0.027	11	11	0.60	1.00	1.60	62.40	1.0	23.40	1.0	2.0	-0.3	62.15	1.0	23.15	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
25/08/2023	Compensation	DP148	497873.7	658081.8	0.70	C - Shallow (0.5-2.0m)	0.319	0.006	11	11	0.70	1.00	1.70	256.59	1.0	105.66	1.0	2.0	-0.3	256.34	1.0	105.41	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0

Peat Database

Moanmore Lower WF, Co. Clare

Prepared by: DW
File Ref.: 604009-R02-App8.1 - App B-Peat Database

Sample / Test Date	Associated Infrastructure	Sample ID	ITM Easting	ITM Northing	Thickness / Depth of peat	Classification of Thickness / Depth of peat	Parameter Values: Slope Angle	Parameter Values: Slope Angle (For Excel Formula)	Parameter Values: Undrained Shear Strength (Conservative Value)	Parameter Values: Bulk Unit weight of Peat (Conservative Value)	Scenario A: Depth to failure plane i.e. Peat Depth	Scenario B: Surcharge	Scenario B: Surcharge Equivalent Placed Fill Depth	Scenario A: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	FoS Adjustment Coefficient	FoS Adjustment Value	Scenario A: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Significant Feature Ranking Coefficient	Scenario A: RR_{SF} Ranking Risk Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Scenario B: RR_{SF} Ranking Risk Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Distance to Sensitive Receptor Coefficient	Scenario A: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors	Scenario B: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors
							α	α	c'	γ	z		z	$FoS = \frac{c_u}{\gamma z \sin\alpha \cos\alpha}$						$FoS = \frac{c_u}{\gamma z \sin\alpha \cos\alpha}$ + Adjustment Value				μ_{SF}					$\mu_{Dist.}$		
dd/mm/yy					m		Degrees	Radians	kPa	kN/m3	m	m	m	FoS	μ	FoS	μ	μ	#	FoS	μ	FoS	μ	μ	RR-SF	μ	RR-SF	μ	μ	RR-D	RR-D
25/08/2023	T1	DP149	497888.0	658100.8	0.20	B - Very Shallow (0.01-0.5m)	0.809	0.014	11	11	0.20	1.00	1.20	354.16	1.0	59.03	1.0	2.0	-0.3	353.91	1.0	58.78	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 2	DP150	498196.5	657934.4	0.10	B - Very Shallow (0.01-0.5m)	4.214	0.074	11	11	0.10	1.00	1.10	136.46	1.0	12.41	1.0	2.0	-0.3	136.21	1.0	12.16	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	Substation	DP151	498143.8	657908.9	0.10	B - Very Shallow (0.01-0.5m)	4.133	0.072	11	11	0.10	1.00	1.10	139.11	1.0	12.65	1.0	2.0	-0.3	138.86	1.0	12.40	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	Substation	DP152	498100.7	657885.1	0.10	B - Very Shallow (0.01-0.5m)	4.621	0.081	11	11	0.10	1.00	1.10	124.53	1.0	11.32	1.0	2.0	-0.3	124.28	1.0	11.07	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	Track 3	DP153	498075.0	657872.1	0.10	B - Very Shallow (0.01-0.5m)	4.240	0.074	11	11	0.10	1.00	1.10	135.63	1.0	12.33	1.0	2.0	-0.3	135.38	1.0	12.08	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	Track 3	DP154	498038.8	657855.5	0.10	B - Very Shallow (0.01-0.5m)	1.801	0.031	11	11	0.10	3.50	3.60	318.34	1.0	8.84	1.0	2.0	-0.3	318.09	1.0	8.59	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 3	DP155	498000.2	657817.2	0.00	A - Rock (0.0m)	1.363	0.024	11	11	0.00	3.50	3.50	42052.39	1.0	12.01	1.0	2.0	-0.3	42052.14	1.0	11.76	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 3	DP156	497968.6	657812.8	0.10	B - Very Shallow (0.01-0.5m)	1.012	0.018	11	11	0.10	3.50	3.60	566.28	1.0	15.73	1.0	2.0	-0.3	566.03	1.0	15.48	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP157	497734.5	657857.2	0.40	B - Very Shallow (0.01-0.5m)	6.143	0.107	11	11	0.40	3.50	3.90	23.50	1.0	2.41	1.0	2.0	-0.3	23.25	1.0	2.16	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP158	497722.7	657854.2	0.50	B - Very Shallow (0.01-0.5m)	1.299	0.023	11	11	0.50	3.50	4.00	88.25	1.0	11.03	1.0	2.0	-0.3	88.00	1.0	10.78	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP159	497725.8	657844.0	1.00	C - Shallow (0.5-2.0m)	1.175	0.021	11	11	1.00	3.50	4.50	48.78	1.0	10.84	1.0	2.0	-0.3	48.53	1.0	10.59	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP160	497710.5	657827.1	1.10	C - Shallow (0.5-2.0m)	1.407	0.025	11	11	1.10	3.50	4.60	37.03	1.0	8.86	1.0	2.0	-0.3	36.78	1.0	8.61	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP161	497707.0	657812.8	1.20	C - Shallow (0.5-2.0m)	0.884	0.015	11	11	1.20	3.50	4.70	54.02	1.0	13.79	1.0	2.0	-0.3	53.77	1.0	13.54	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP162	497709.9	657799.7	1.20	C - Shallow (0.5-2.0m)	0.895	0.016	11	11	1.20	3.50	4.70	53.36	1.0	13.62	1.0	2.0	-0.3	53.11	1.0	13.37	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP163	497713.3	657779.8	0.50	B - Very Shallow (0.01-0.5m)	1.367	0.024	11	11	0.50	1.00	1.50	83.86	1.0	27.95	1.0	2.0	-0.3	83.61	1.0	27.70	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP164	497708.0	657763.9	0.50	B - Very Shallow (0.01-0.5m)	2.180	0.038	11	11	0.50	1.00	1.50	52.62	1.0	17.54	1.0	2.0	-0.3	52.37	1.0	17.29	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP165	497707.9	657749.9	0.50	B - Very Shallow (0.01-0.5m)	1.261	0.022	11	11	0.50	1.00	1.50	90.90	1.0	30.30	1.0	2.0	-0.3	90.65	1.0	30.05	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP166	497707.7	657731.3	0.50	B - Very Shallow (0.01-0.5m)	1.941	0.034	11	11	0.50	1.00	1.50	59.08	1.0	19.69	1.0	2.0	-0.3	58.83	1.0	19.44	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP167	497726.1	657723.4	0.60	C - Shallow (0.5-2.0m)	1.412	0.025	11	11	0.60	1.00	1.60	67.66	1.0	25.37	1.0	2.0	-0.3	67.41	1.0	25.12	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP168	497735.9	657741.9	1.20	C - Shallow (0.5-2.0m)	1.580	0.028	11	11	1.20	3.50	4.70	30.23	1.0	7.72	1.0	2.0	-0.3	29.98	1.0	7.47	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP169	497743.5	657761.2	1.20	C - Shallow (0.5-2.0m)	0.677	0.012	11	11	1.20	3.50	4.70	70.53	1.0	18.01	1.0	2.0	-0.3	70.28	1.0	17.76	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP170	497749.9	657778.6	0.50	B - Very Shallow (0.01-0.5m)	0.719	0.013	11	11	0.50	3.50	4.00	159.39	1.0	19.92	1.0	2.0	-0.3	159.14	1.0	19.67	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP171	497752.8	657796.0	1.60	C - Shallow (0.5-2.0m)	0.255	0.004	11	11	1.60	3.50	5.10	140.43	1.0	44.06	1.0	2.0	-0.3	140.18	1.0	43.81	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP172	497762.3	657806.4	1.70	C - Shallow (0.5-2.0m)	0.903	0.016	11	11	1.70	3.50	5.20	37.33	1.0	12.20	1.0	2.0	-0.3	37.08	1.0	11.95	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP173	497762.7	657823.0	1.50	C - Shallow (0.5-2.0m)	0.816	0.014	11	11	1.50	3.50	5.00	46.82	1.0	14.04	1.0	2.0	-0.3	46.57	1.0	13.79	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP174	497760.9	657838.8	1.00	C - Shallow (0.5-2.0m)	1.302	0.023	11	11	1.00	3.50	4.50	44.02	1.0	9.78	1.0	2.0	-0.3	43.77	1.0	9.53	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP175	497768.4	657856.4	1.00	C - Shallow (0.5-2.0m)	0.130	0.002	11	11	1.00	3.50	4.50	440.74	1.0	97.94	1.0	2.0	-0.3	440.49	1.0	97.69	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP176	497559.4	657972.0	0.90	C - Shallow (0.5-2.0m)	2.803	0.049	11	11	0.90	1.00	1.90	22.75	1.0	10.78	1.0	2.0	-0.3	22.50	1.0	10.53	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP177	497528.4	657984.7	0.60	C - Shallow (0.5-2.0m)	0.133	0.002	11	11	0.60	1.00	1.60	717.99	1.0	269.25	1.0	2.0	-0.3	717.74	1.0	269.00	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP178	497509.2	657980.2	1.00	C - Shallow (0.5-2.0m)	0.527	0.009	11	11	1.00	1.00	2.00	108.73	1.0	54.36	1.0	2.0	-0.3	108.48	1.0	54.11	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP179	497491.0	657967.4	1.80	C - Shallow (0.5-2.0m)	3.428	0.060	11	11	1.80	1.00	2.80	9.31	1.0	5.98	1.0	2.0	-0.3	9.06	1.0	5.73	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T2	DP180	497478.8	657951.8	0.60	C - Shallow (0.5-2.0m)	0.774	0.014	11	11	0.60	3.50	4.10	123.39	1.0	18.06	1.0	2.0	-0.3	123.14	1.0	17.81	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP181	497456.0	657938.7	0.70	C - Shallow (0.5-2.0m)	0.055	0.001	11	11	0.70	3.50	4.20	1488.20	1.0	248.03	1.0	2.0	-0.3	1487.95	1.0	247.78	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP182	497452.1	657959.2	0.70	C - Shallow (0.5-2.0m)	0.981	0.017	11	11	0.70	3.50	4.20	83.45	1.0	13.91	1.0	2.0	-0.3	83.20	1.0	13.66	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP183	497426.5	657984.2	0.50	B - Very Shallow (0.01-0.5m)	0.441	0.008	2.5	11	0.50	3.50	4.00	59.06	1.0	7.38	1.0	2.0	-0.3	58.81	1.0	7.13	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP184	497425.4	657957.0	0.50	B - Very Shallow (0.01-0.5m)	0.719	0.013	11	11	0.50	3.50	4.00	159.39	1.0	19.92	1.0	2.0	-0.3	159.14	1.0	19.67	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP185	497409.0	657957.2	1.00	C - Shallow (0.5-2.0m)	0.818	0.014	2.5	11	1.00	3.50	4.50	15.92	1.0	3.54	1.0	2.0	-0.3	15.67	1.0	3.29	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP186	497442.3	657876.8	5.00	E - Deep (3.5-5.0m)	3.162	0.055	11	11	5.00	1.00	6.00	3.63	1.0	3.03	1.0	2.0	-0.3	3.38	1.0	2.78	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP187	497299.9	658001.6	1.80	C - Shallow (0.5-2.0m)	4.234	0.074	2.5	11	1.80	1.00	2.80	1.71	1.0	1.10	2.0	2.0	-0.3	1.46	1.0	0.85	4.0	2.0	2.0	1.0	8.0	4.0	2.0	2.0	8.0
14/03/2024		DP188	497281.2	657983.2	3.40	D - Moderately Deep (2.0-3.5m)	1.517	0.026	2.5	11	3.40	1.00	4.40	2.53	1.0	1.95	1.0	2.0	-0.3	2.28	1.0	1.70	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP189	497269.9	658019.9	3.00	D - Moderately Deep (2.0-3.5m)	1.173	0.020	2.5	11	3.00	1.00	4.00	3.70	1.0	2.78	1.0	2.0	-0.3	3.45	1.0	2.53	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP190	497303.7	658051.7	1.00	C - Shallow (0.5-2.0m)	1.349	0.024	2.5	11	1.00	1.00	2.00	9.66	1.0	4.83	1.0	2.0	-0.3	9.41	1.0	4.58	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP191	497303.4	658083.1	1.00	C - Shallow (0.5-2.0m)	1.214	0.021	2.5	11	1.00	1.00	2.00	10.73	1.0	5.36	1.0	2.0	-0.3	10.48	1.0	5.11	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP192	497365.0	658048.0	1.00	C - Shallow (0.5-2.0m)	1.780	0.031	2.5	11	1.00	1.00	2.00	7.32	1.0	3.66	1.0	2.0	-0.3	7.07	1.0	3.41	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP193	497341.2	658025.4	1.00	C - Shallow (0.5-2.0m)	0.510	0.009	2.5	11	1.00	1.00	2.00	25.53	1.0	12.77	1.0	2.0	-0.3	25.28	1.0	12.52	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP194	497362.3	658015.1	0.50	B - Very Shallow (0.01-0.5m)	0.230	0.004	2.5	11	0.50	3.50	4.00	113.23	1.0	14.15	1.0	2.0	-0.3	112.98	1.0	13.90	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T2	DP195	497404.7	657992.9	0.50	B - Very Shallow (0.01-0.5m)	1.395	0.024	2.5	11	0.50	3.50	4.00	18.68	1.0	2.33	1.0	2.0	-0.3	18.43	1.0	2.08	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP196	497381.6	657991.2	0.30	B - Very Shallow (0.01-0.5m)	1.043	0.018	2.5	11	0.30	3.50	3.80	41.63	1.0	3.29	1.0	2.0	-0.3	41.38	1.0	3.04	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP197	497375.6	657984.5	3.00	D - Moderately Deep (2.0-3.5m)	1.841	0.032	2.5	11	3.00	3.50	6.50	2.36	1.0	1.09	2.0	2.0	-0.3	2.11	1.0	0.84	4.0	2.0	2.0	1.0	8.0	4.0	2.0	2.0	8.0
14/03/2024	T2	DP198	497386.6	657978.6	1.60	C - Shallow (0.5-2.0m)	0.986	0.017	2.5	11	1.60	3.50	5.10	8.26	1.0	2.59	1.0	2.0	-0.3	8.01	1.0	2.34	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP199	497364.5	657992.8	1.50	C - Shallow (0.5-2.0m)	0.411	0.007	2.5	11	1.50	3.50	5.00	21.12	1.0	6.34	1.0	2.0	-0.3	20.87	1.0	6.09	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP200	497389.8	657944.2	2.20	D - Moderately Deep (2.0-3.5m)	1.305	0.023	2.5	11	2.20	3.50	5.70	4.54	1.0	1.75	1.0	2.0	-0.3	4.29	1.0	1.50	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP201	497417.0	657922.8	1.10	C - Shallow (0.5-2.0m)	0.371	0.006	11	11	1.10	3.50	4.60	140.40	1.0	33.57	1.0	2.0	-0.3	140.15	1.0	33.32	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP202	497439.0	657912.1	1.20	C - Shallow (0.5-2.0m)	1.791	0.031	11	11	1.20	1.00	2.20	26.68	1.0	14.55	1.0	2.0	-0.3	26.43	1.0	14.30	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP203	497462.7	657904.9	3.00	D - Moderately Deep (2.0-3.5m)	3.335	0.058	11	11	3.00	1.00	4.00	5.74	1.0	4.30	1.0	2.0	-0.3	5.49	1.0	4.05	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP204	497484.8	657895.5	3.00	D - Moderately Deep (2.0-3.5m)	0.999	0.017	11	11	3.00	1.00	4.00	19.12	1.0	14.34	1.0	2.0	-0.3	18.87	1.0	14.09	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024		DP205	497517.1	657876.5	1.20	C - Shallow (0.5-2.0m)	0.652	0.011	11	11	1.20	1.00	2.20	73.24	1.0	39.95	1.0	2.0	-0.3	72.99	1.0	39.70	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP206	497543.0	657845.8	1.00	C - Shallow (0.5-2.0m)	1.250	0.022	11	11	1.00	1.00	2.00	45.85	1.0	22.93	1.0	2.0	-0.3	45.60	1.0	22.68	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP207	497603.9	657836.9	2.20	D - Moderately Deep (2.0-3.5m)	0.879	0.015	11	11	2.20	1.00	3.20	29.63	1.0	20.37	1.0	2.0	-0.3	29.38	1.0	20.12	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP208	498288.0	658011.3	0.10	B - Very Shallow (0.01-0.5m)	0.409	0.007	11	11	0.10	3.50	3.60	1400.92	1.0	38.91	1.0	2.0	-0.3	1400.67	1.0	38.66	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 1	DP209	498281.9	658034.9	0.10	B - Very Shallow (0.01-0.5m)	0.793	0.014	11	11	0.10	3.50	3.60	722.61	1.0	20.07	1.0	2.0	-0.3	722.36	1.0	19.82	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 1	DP210	498272.7	658064.5	0.10	B - Very Shallow (0.01-0.5m)	0.568	0.010	11	11	0.10	3.50	3.60	1008.79	1.0	28.02	1.0	2.0	-0.3	1008.54	1.0	27.77	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 1	DP211	498263.4	658091.9	0.10	B - Very Shallow (0.01-0.5m)	0.717	0.013	11	11	0.10	3.50	3.60	799.19	1.0	22.20	1.0	2.0	-0.3	798.94	1.0	21.95	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 1	DP212	498251.4	658132.7	0.10	B - Very Shallow (0.01-0.5m)	1.117	0.019	11	11	0.10	3.50	3.60	513.07	1.0	14.25	1.0	2.0	-0.3	512.82	1.0	14.00	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 1	DP213	498229.5	658163.1	0.10	B - Very Shallow (0.01-0.5m)	3.872	0.068	11	11	0.10	3.50	3.60	148.43	1.0	4.12	1.0	2.0	-0.3	148.18	1.0	3.87	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP214	497781.9	657883.4	0.10	B - Very Shallow (0.01-0.5m)	2.340	0.041	11	11	0.10	1.00	1.10	245.13	1.0	22.28	1.0	2.0	-0.3	244.88	1.0	22.03	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 3	DP215	497780.2	657867.2	0.40	B - Very Shallow (0.01-0.5m)	0.697	0.012	11	11	0.40	3.50	3.90	205.53	1.0	21.08	1.0	2.0	-0.3	205.28	1.0	20.83	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP216	497763.0	657852.0	1.00	C - Shallow (0.5-2.0m)	0.692	0.012	11	11	1.00	3.50	4.50	82.81	1.0	18.40	1.0	2.0	-0.3	82.56	1.0	18.15	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP217	497750.2	657835.3	1.40	C - Shallow (0.5-2.0m)	1.092	0.019	11	11	1.40	3.50	4.90	37.49	1.0	10.71	1.0	2.0	-0.3	37.24	1.0	10.46	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP218	497744.9	657809.0	1.30	C - Shallow (0.5-2.0m)	1.160	0.020	11	11	1.30	3.50	4.80	38.00	1.0	10.29	1.0	2.0	-0.3	37.75	1.0	10.04	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP219	497742.4	657787.3	0.40	B - Very Shallow (0.01-0.5m)	0.691	0.012	11	11	0.40	3.50	3.90	207.31	1.0	21.26	1.0	2.0	-0.3	207.06	1.0	21.01	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP220	497735.9	657765.9	1.20	C - Shallow (0.5-2.0m)	0.987	0.017	11	11	1.20	3.50	4.70	48.38	1.0	12.35	1.0	2.0	-0.3	48.13	1.0	12.10	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP221	497725.1	657746.7	1.20	C - Shallow (0.5-2.0m)	0.616	0.011	11	11	1.20	3.50	4.70	77.52	1.0	19.79	1.0	2.0	-0.3	77.27	1.0	19.54	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP222	497717.8	657720.5	0.70	C - Shallow (0.5-2.0m)	0.245	0.004	11	11	0.70	1.00	1.70	334.09	1.0	137.57	1.0	2.0	-0.3	333.84	1.0	137.32	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0

Peat Database

Moanmore Lower WF, Co. Clare

Prepared by: DW
File Ref.: 604009-R02-App8.1 - App B-Peat Database

Sample / Test Date	Associated Infrastructure	Sample ID	ITM Easting	ITM Northing	Thickness / Depth of peat	Classification of Thickness / Depth of peat	Parameter Values: Slope Angle	Parameter Values: Slope Angle (For Excel Formula)	Parameter Values: Undrained Shear Strength (Conservative Value)	Parameter Values: Bulk Unit weight of Peat (Conservative Value)	Scenario A: Depth to failure plane i.e. Peat Depth	Scenario B: Surcharge	Scenario B: Surcharge Equivalent Placed Fill Depth	Scenario A: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	FoS Adjustment Coefficient	FoS Adjustment Value	Scenario A: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Significant Feature Ranking Coefficient	Scenario A: RR_{SF} Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Scenario B: RR_{SF} Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Distance to Sensitive Receptor Coefficient	Scenario A: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors	Scenario B: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors
							α	α	c'	y	z		z	$FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$						$FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$ + Adjustment Value				μ_{SF}					$\mu_{Dist.}$		
dd/mm/yy					m		Degrees	Radians	kPa	kN/m3	m	m	m	FoS	μ	FoS	μ	μ	#	FoS	μ	FoS	μ	μ	RR-SF	μ	RR-SF	μ	μ	RR-D	RR-D
14/03/2024		DP223	497737.2	657703.3	0.30	B - Very Shallow (0.01-0.5m)	1.352	0.024	11	11	0.30	1.00	1.30	141.31	1.0	32.61	1.0	2.0	-0.3	141.06	1.0	32.36	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP224	497747.0	657721.0	0.70	C - Shallow (0.5-2.0m)	0.305	0.005	11	11	0.70	1.00	1.70	268.37	1.0	110.51	1.0	2.0	-0.3	268.12	1.0	110.26	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP225	497759.6	657742.6	1.30	C - Shallow (0.5-2.0m)	0.710	0.012	11	11	1.30	3.50	4.80	62.08	1.0	16.81	1.0	2.0	-0.3	61.83	1.0	16.56	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP226	497768.4	657756.0	0.50	B - Very Shallow (0.01-0.5m)	0.636	0.011	11	11	0.50	3.50	4.00	180.19	1.0	22.52	1.0	2.0	-0.3	179.94	1.0	22.27	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP227	497776.4	657777.5	1.80	C - Shallow (0.5-2.0m)	0.499	0.009	11	11	1.80	3.50	5.30	63.79	1.0	21.67	1.0	2.0	-0.3	63.54	1.0	21.42	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP228	497782.4	657798.4	0.50	B - Very Shallow (0.01-0.5m)	2.751	0.048	11	11	0.50	3.50	4.00	41.72	1.0	5.21	1.0	2.0	-0.3	41.47	1.0	4.96	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP229	497784.4	657821.2	1.40	C - Shallow (0.5-2.0m)	3.005	0.052	11	11	1.40	3.50	4.90	13.64	1.0	3.90	1.0	2.0	-0.3	13.39	1.0	3.65	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T3	DP230	497791.8	657842.6	0.70	C - Shallow (0.5-2.0m)	1.189	0.021	11	11	0.70	3.50	4.20	68.86	1.0	11.48	1.0	2.0	-0.3	68.61	1.0	11.23	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 4	DP231	497601.8	657920.9	0.40	B - Very Shallow (0.01-0.5m)	3.574	0.062	11	11	0.40	1.00	1.40	40.18	1.0	11.48	1.0	2.0	-0.3	39.93	1.0	11.23	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP232	497589.6	657943.0	1.00	C - Shallow (0.5-2.0m)	1.570	0.027	11	11	1.00	1.00	2.00	36.51	1.0	18.26	1.0	2.0	-0.3	36.26	1.0	18.01	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP233	497572.7	657976.0	2.40	D - Moderately Deep (2.0-3.5m)	3.409	0.059	11	11	2.40	1.00	3.40	7.02	1.0	4.95	1.0	2.0	-0.3	6.77	1.0	4.70	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP234	497568.2	657993.5	0.30	B - Very Shallow (0.01-0.5m)	4.191	0.073	11	11	0.30	1.00	1.30	45.73	1.0	10.55	1.0	2.0	-0.3	45.48	1.0	10.30	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP235	497567.4	657996.6	2.00	C - Shallow (0.5-2.0m)	2.695	0.047	11	11	2.00	1.00	3.00	10.65	1.0	7.10	1.0	2.0	-0.3	10.40	1.0	6.85	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP236	497512.5	657981.4	0.30	B - Very Shallow (0.01-0.5m)	0.527	0.009	11	11	0.30	1.00	1.30	362.42	1.0	83.64	1.0	2.0	-0.3	362.17	1.0	83.39	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 4	DP237	497512.2	657943.3	0.30	B - Very Shallow (0.01-0.5m)	0.867	0.015	11	11	0.30	1.00	1.30	220.32	1.0	50.84	1.0	2.0	-0.3	220.07	1.0	50.59	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	T2	DP238	497482.7	657915.4	0.30	B - Very Shallow (0.01-0.5m)	0.716	0.012	11	11	0.30	3.50	3.80	266.77	1.0	21.06	1.0	2.0	-0.3	266.52	1.0	20.81	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP239	497316.5	657994.3	0.90	C - Shallow (0.5-2.0m)	2.063	0.036	2.5	11	0.90	1.00	1.90	7.02	1.0	3.33	1.0	2.0	-0.3	6.77	1.0	3.08	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP240	497315.7	658026.9	2.80	D - Moderately Deep (2.0-3.5m)	4.496	0.078	2.5	11	2.80	1.00	3.80	1.04	2.0	0.77	4.0	2.0	-0.3	0.79	4.0	0.52	4.0	2.0	8.0	4.0	8.0	4.0	2.0	8.0	8.0
14/03/2024		DP241	497309.2	658063.7	2.70	D - Moderately Deep (2.0-3.5m)	2.066	0.036	2.5	11	2.70	1.00	3.70	2.34	1.0	1.70	1.0	2.0	-0.3	2.09	1.0	1.45	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP242	497300.1	658087.6	1.00	C - Shallow (0.5-2.0m)	1.130	0.020	2.5	11	1.00	1.00	2.00	11.53	1.0	5.76	1.0	2.0	-0.3	11.28	1.0	5.51	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP243	497291.6	658112.2	1.30	C - Shallow (0.5-2.0m)	1.590	0.028	2.5	11	1.30	1.00	2.30	6.30	1.0	3.56	1.0	2.0	-0.3	6.05	1.0	3.31	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP244	497308.5	658103.8	1.00	C - Shallow (0.5-2.0m)	1.918	0.033	2.5	11	1.00	1.00	2.00	6.79	1.0	3.40	1.0	2.0	-0.3	6.54	1.0	3.15	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP245	497326.8	658072.0	0.90	C - Shallow (0.5-2.0m)	1.072	0.019	2.5	11	0.90	1.00	1.90	13.50	1.0	6.39	1.0	2.0	-0.3	13.25	1.0	6.14	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP246	497342.9	658046.9	0.80	C - Shallow (0.5-2.0m)	1.501	0.026	2.5	11	0.80	1.00	1.80	10.85	1.0	4.82	1.0	2.0	-0.3	10.60	1.0	4.57	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP247	497364.9	658030.8	0.30	B - Very Shallow (0.01-0.5m)	2.024	0.035	2.5	11	0.30	1.00	1.30	21.46	1.0	4.95	1.0	2.0	-0.3	21.21	1.0	4.70	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024		DP248	497378.3	658011.6	2.80	D - Moderately Deep (2.0-3.5m)	1.850	0.032	2.5	11	2.80	3.50	6.30	2.52	1.0	1.12	2.0	2.0	-0.3	2.27	1.0	0.87	4.0	2.0	2.0	1.0	8.0	4.0	4.0	4.0	16.0
14/03/2024	T2	DP249	497367.8	657994.0	1.00	C - Shallow (0.5-2.0m)	0.411	0.007	2.5	11	1.00	3.50	4.50	31.68	1.0	7.04	1.0	2.0	-0.3	31.43	1.0	6.79	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP250	497385.5	657958.6	0.20	B - Very Shallow (0.01-0.5m)	0.343	0.006	2.5	11	0.20	3.50	3.70	189.83	1.0	10.26	1.0	2.0	-0.3	189.58	1.0	10.01	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	T2	DP251	497386.0	657958.0	1.40	C - Shallow (0.5-2.0m)	0.343	0.006	2.5	11	1.40	3.50	4.90	27.12	1.0	7.75	1.0	2.0	-0.3	26.87	1.0	7.50	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	T2	DP252	497404.0	657956.5	1.10	C - Shallow (0.5-2.0m)	0.411	0.007	2.5	11	1.10	3.50	4.60	28.80	1.0	6.89	1.0	2.0	-0.3	28.55	1.0	6.64	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
14/03/2024	T2	DP253	497433.6	657951.4	0.70	C - Shallow (0.5-2.0m)	0.893	0.016	11	11	0.70	3.50	4.20	91.67	1.0	15.28	1.0	2.0	-0.3	91.42	1.0	15.03	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP254	497437.1	657962.3	1.00	C - Shallow (0.5-2.0m)	1.269	0.022	11	11	1.00	3.50	4.50	45.17	1.0	10.04	1.0	2.0	-0.3	44.92	1.0	9.79	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T2	DP255	497461.9	657956.9	2.20	D - Moderately Deep (2.0-3.5m)	0.305	0.005	11	11	2.20	3.50	5.70	85.39	1.0	32.96	1.0	2.0	-0.3	85.14	1.0	32.71	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 4	DP256	497508.8	657905.5	1.10	C - Shallow (0.5-2.0m)	0.596	0.010	11	11	1.10	3.50	4.60	87.40	1.0	20.90	1.0	2.0	-0.3	87.15	1.0	20.65	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024		DP257	497541.2	657874.0	1.00	C - Shallow (0.5-2.0m)	2.055	0.036	11	11	1.00	1.00	2.00	27.91	1.0	13.95	1.0	2.0	-0.3	27.66	1.0	13.70	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP258	497730.3	657896.7	0.30	B - Very Shallow (0.01-0.5m)	0.893	0.016	11	11	0.30	3.50	3.80	213.90	1.0	16.89	1.0	2.0	-0.3	213.65	1.0	16.64	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	T3	DP259	497730.3	657896.7	0.00	A - Rock (0.0m)	0.893	0.016	11	11	0.00	3.50	3.50	64171.40	1.0	18.33	1.0	2.0	-0.3	64171.15	1.0	18.08	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 2	DP260	498274.8	657987.2	0.10	B - Very Shallow (0.01-0.5m)	2.255	0.039	11	11	0.10	3.50	3.60	254.35	1.0	7.07	1.0	2.0	-0.3	254.10	1.0	6.82	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Compound	DP261	498297.9	658010.8	0.20	B - Very Shallow (0.01-0.5m)	0.515	0.009	11	11	0.20	3.50	3.70	556.30	1.0	30.07	1.0	2.0	-0.3	556.05	1.0	29.82	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Compound	DP262	498299.5	658033.3	0.10	B - Very Shallow (0.01-0.5m)	0.577	0.010	11	11	0.10	3.50	3.60	993.06	1.0	27.59	1.0	2.0	-0.3	992.81	1.0	27.34	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 1	DP263	498277.5	658060.5	0.20	B - Very Shallow (0.01-0.5m)	0.576	0.010	11	11	0.20	3.50	3.70	497.39	1.0	26.89	1.0	2.0	-0.3	497.14	1.0	26.64	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
14/03/2024	Track 1	DP264	498265.0	658094.7	0.20	B - Very Shallow (0.01-0.5m)	0.823	0.014	11	11	0.20	3.50	3.70	348.14	1.0	18.82	1.0	2.0	-0.3	347.89	1.0	18.57	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 1	DP265	498249.8	658130.2	0.10	B - Very Shallow (0.01-0.5m)	1.205	0.021	11	11	0.10	3.50	3.60	475.62	1.0	13.21	1.0	2.0	-0.3	475.37	1.0	12.96	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
14/03/2024	Track 1	DP266	498237.5	658157.8	0.10	B - Very Shallow (0.01-0.5m)	2.720	0.047	11	11	0.10	3.50	3.60	210.96	1.0	5.86	1.0	2.0	-0.3	210.71	1.0	5.61	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP267	498366.4	658186.3	0.10	B - Very Shallow (0.01-0.5m)	1.126	0.020	2.5	11	0.10	3.50	3.60	115.68	1.0	3.21	1.0	2.0	-0.3	115.43	1.0	2.96	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP268	498402.4	658189.8	0.20	B - Very Shallow (0.01-0.5m)	0.632	0.011	2.5	11	0.20	3.50	3.70	103.03	1.0	5.57	1.0	2.0	-0.3	102.78	1.0	5.32	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP269	498437.0	658193.3	0.20	B - Very Shallow (0.01-0.5m)	1.285	0.022	2.5	11	0.20	3.50	3.70	50.69	1.0	2.74	1.0	2.0	-0.3	50.44	1.0	2.49	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP270	498437.0	658193.3	0.20	B - Very Shallow (0.01-0.5m)	1.285	0.022	2.5	11	0.20	3.50	3.70	50.69	1.0	2.74	1.0	2.0	-0.3	50.44	1.0	2.49	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP271	498472.0	658200.4	0.10	B - Very Shallow (0.01-0.5m)	1.196	0.021	2.5	11	0.10	3.50	3.60	108.91	1.0	3.03	1.0	2.0	-0.3	108.66	1.0	2.78	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP272	498515.0	658208.9	0.10	B - Very Shallow (0.01-0.5m)	0.850	0.015	2.5	11	0.10	3.50	3.60	153.22	1.0	4.26	1.0	2.0	-0.3	152.97	1.0	4.01	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP273	498552.7	658218.9	0.10	B - Very Shallow (0.01-0.5m)	0.849	0.015	11	11	0.10	3.50	3.60	674.96	1.0	18.75	1.0	2.0	-0.3	674.71	1.0	18.50	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP274	498588.6	658229.1	0.10	B - Very Shallow (0.01-0.5m)	0.893	0.016	11	11	0.10	3.50	3.60	641.71	1.0	17.83	1.0	2.0	-0.3	641.46	1.0	17.58	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP275	498627.4	658239.1	0.20	B - Very Shallow (0.01-0.5m)	0.915	0.016	11	11	0.20	3.50	3.70	313.14	1.0	16.93	1.0	2.0	-0.3	312.89	1.0	16.68	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP276	498652.7	658147.2	0.20	B - Very Shallow (0.01-0.5m)	1.515	0.026	11	11	0.20	3.50	3.70	189.18	1.0	10.23	1.0	2.0	-0.3	188.93	1.0	9.98	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP277	498622.2	658145.3	0.20	B - Very Shallow (0.01-0.5m)	1.001	0.017	11	11	0.20	3.50	3.70	286.25	1.0	15.47	1.0	2.0	-0.3	286.00	1.0	15.22	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP278	498586.6	658134.7	0.80	C - Shallow (0.5-2.0m)	0.301	0.005	11	11	0.80	3.50	4.30	237.94	1.0	44.27	1.0	2.0	-0.3	237.69	1.0	44.02	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP279	498590.4	658155.6	0.40	B - Very Shallow (0.01-0.5m)	0.771	0.013	11	11	0.40	3.50	3.90	185.81	1.0	19.06	1.0	2.0	-0.3	185.56	1.0	18.81	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP280	498565.6	658132.7	0.10	B - Very Shallow (0.01-0.5m)	0.610	0.011	11	11	0.10	3.50	3.60	939.35	1.0	26.09	1.0	2.0	-0.3	939.10	1.0	25.84	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP281	498562.8	658152.0	0.20	B - Very Shallow (0.01-0.5m)	0.399	0.007	11	11	0.20	3.50	3.70	718.02	1.0	38.81	1.0	2.0	-0.3	717.77	1.0	38.56	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP282	498535.5	658144.4	0.10	B - Very Shallow (0.01-0.5m)	1.142	0.020	11	11	0.10	3.50	3.60	501.85	1.0	13.94	1.0	2.0	-0.3	501.60	1.0	13.69	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP283	498500.8	658140.6	0.10	B - Very Shallow (0.01-0.5m)	0.905	0.016	2.5	11	0.10	3.50	3.60	143.91	1.0	4.00	1.0	2.0	-0.3	143.66	1.0	3.75	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP284	498470.4	658137.8	0.60	C - Shallow (0.5-2.0m)	0.705	0.012	11	11	0.60	3.50	4.10	135.46	1.0	19.82	1.0	2.0	-0.3	135.21	1.0	19.57	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP285	498441.1	658135.7	0.60	C - Shallow (0.5-2.0m)	0.919	0.016	2.5	11	0.60	3.50	4.10	23.62	1.0	3.46	1.0	2.0	-0.3	23.37	1.0	3.21	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP286	498411.5	658134.5	0.40	B - Very Shallow (0.01-0.5m)	0.247	0.004	2.5	11	0.40	3.50	3.90	131.80	1.0	13.52	1.0	2.0	-0.3	131.55	1.0	13.27	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP287	498389.3	658127.5	0.10	B - Very Shallow (0.01-0.5m)	0.290	0.005	2.5	11	0.10	3.50	3.60	449.03	1.0	12.47	1.0	2.0	-0.3	448.78	1.0	12.22	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP288	498395.5	658100.3	0.10	B - Very Shallow (0.01-0.5m)	1.123	0.020	11	11	0.10	3.50	3.60	510.33	1.0	14.18	1.0	2.0	-0.3	510.08	1.0	13.93	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP289	498423.3	658101.6	0.00	A - Rock (0.0m)	1.170	0.020	11	11	0.00	3.50	3.50	489843.68	1.0	14.00	1.0	2.0	-0.3	489843.43	1.0	13.75	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP290	498450.5	658103.8	0.00	A - Rock (0.0m)	2.166	0.038	11	11	0.00	3.50	3.50	264775.64	1.0	7.56	1.0	2.0	-0.3	264775.39	1.0	7.31	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP291	498475.4	658107.4	0.10	B - Very Shallow (0.01-0.5m)	0.313	0.005	11	11	0.10	3.50	3.60	1830.57	1.0	50.85	1.0	2.0	-0.3	1830.32	1.0	50.60	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP292	498477.1	658084.9	0.00	A - Rock (0.0m)	0.970	0.017	11	11	0.00	3.50	3.50	590791.02	1.0	16.88	1.0	2.0	-0.3	590790.77	1.0	16.63	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP293	498457.4	658087.3	0.10	B - Very Shallow (0.01-0.5m)	1.701	0.030	11	11	0.10	3.50	3.60	337.03	1.0	9.36	1.0	2.0	-0.3	336.78	1.0	9.11	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP294	498420.5	658082.4	0.20	B - Very Shallow (0.01-0.5m)	1.705	0.030	2.5	11	0.20	3.50	3.70	38.21	1.0	2.07	1.0	2.0	-0.3	37.96	1.0	1.82	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP295	498399.9	658075.8	0.10	B - Very Shallow (0.01-0.5m)	0.472	0.008	11	11	0.10	3.50	3.60	1213.95	1.0	33.72	1.0	2.0	-0.3	1213.70	1.0	33.47	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Storage	DP296	498378.7	658158.1	0.10	B - Very Shallow (0.01-0.5m)	0.389	0.007	2.5	11	0.10	3.50	3.60	334.76	1.0	9.30	1.0	2.0	-0.3	334.51	1.0	9.05	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0

Peat Database

Moanmore Lower WF, Co. Clare

Prepared by: DW
File Ref.: 604009-R02-App8.1 - App B-Peat Database

Sample / Test Date	Associated Infrastructure	Sample ID	ITM Easting	ITM Northing	Thickness / Depth of peat	Classification of Thickness / Depth of peat	Parameter Values: Slope Angle (For Excel Formula)	Slope Angle	Undrained Shear Strength (Conservative Value)	Bulk Unit weight of Peat (Conservative Value)	Depth to failure plane i.e. Peat Depth	Surcharge	Surcharge Equivalent Placed Fill Depth	Scenario A: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{RAW} Factor of Safety (FoS) for Peat Stability	COEFFICIENT	FoS Adjustment Coefficient	FoS Adjustment Value	Scenario A: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Scenario B: FoS_{ADJ} Adjusted Factor of Safety (FoS) for Peat Stability	COEFFICIENT	Significant Feature Ranking Coefficient	Scenario A: RR_{SF} Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Scenario B: RR_{SF} Ranking Risk re Potential for Adverse Consequences on Sensitive Receptors	COEFFICIENT	Distance to Sensitive Receptor Coefficient	Scenario A: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors	Scenario B: RR_D Risk Ranking Acounting for Distance to Sensitive Receptors
								α	c'	y	z		z	$FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$						$FoS = \frac{c_u}{yz \sin\alpha \cos\alpha}$ + Adjustment Value				μ_{SF}					$\mu_{Dist.}$		
dd/mm/yy					m		Degrees	Radians	kPa	kN/m3	m	m	m	FoS	μ	FoS	μ	μ	#	FoS	μ	FoS	μ	μ	RR-SF	μ	RR-SF	μ	μ	RR-D	RR-D
12/12/2024	Storage	DP297	498429.6	658170.7	0.20	B - Very Shallow (0.01-0.5m)	0.662	0.012	2.5	11	0.20	3.50	3.70	98.36	1.0	5.32	1.0	2.0	-0.3	98.11	1.0	5.07	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP298	498447.6	658176.8	0.30	B - Very Shallow (0.01-0.5m)	0.847	0.015	2.5	11	0.30	3.50	3.80	51.25	1.0	4.05	1.0	2.0	-0.3	51.00	1.0	3.80	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP299	498471.5	658178.6	0.20	B - Very Shallow (0.01-0.5m)	1.239	0.022	11	11	0.20	3.50	3.70	231.29	1.0	12.50	1.0	2.0	-0.3	231.04	1.0	12.25	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP300	498501.9	658187.0	0.50	B - Very Shallow (0.01-0.5m)	1.710	0.030	11	11	0.50	3.50	4.00	67.05	1.0	8.38	1.0	2.0	-0.3	66.80	1.0	8.13	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP301	498535.0	658194.1	0.30	B - Very Shallow (0.01-0.5m)	1.011	0.018	2.5	11	0.30	3.50	3.80	42.94	1.0	3.39	1.0	2.0	-0.3	42.69	1.0	3.14	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP302	498568.0	658205.1	0.10	B - Very Shallow (0.01-0.5m)	1.018	0.018	11	11	0.10	3.50	3.60	562.95	1.0	15.64	1.0	2.0	-0.3	562.70	1.0	15.39	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP303	498597.1	658211.8	0.20	B - Very Shallow (0.01-0.5m)	1.478	0.026	11	11	0.20	3.50	3.70	193.91	1.0	10.48	1.0	2.0	-0.3	193.66	1.0	10.23	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP304	498632.0	658226.2	0.20	B - Very Shallow (0.01-0.5m)	1.391	0.024	11	11	0.20	3.50	3.70	206.03	1.0	11.14	1.0	2.0	-0.3	205.78	1.0	10.89	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP305	498644.6	658192.2	0.10	B - Very Shallow (0.01-0.5m)	1.697	0.030	11	11	0.10	3.50	3.60	337.83	1.0	9.38	1.0	2.0	-0.3	337.58	1.0	9.13	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP306	498610.4	658184.6	0.30	B - Very Shallow (0.01-0.5m)	1.063	0.019	11	11	0.30	3.50	3.80	179.71	1.0	14.19	1.0	2.0	-0.3	179.46	1.0	13.94	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP307	498585.4	658182.1	0.20	B - Very Shallow (0.01-0.5m)	0.924	0.016	11	11	0.20	3.50	3.70	310.10	1.0	16.76	1.0	2.0	-0.3	309.85	1.0	16.51	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP308	498552.2	658183.6	0.20	B - Very Shallow (0.01-0.5m)	0.464	0.008	11	11	0.20	3.50	3.70	617.44	1.0	33.38	1.0	2.0	-0.3	617.19	1.0	33.13	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP309	498533.5	658174.7	0.10	B - Very Shallow (0.01-0.5m)	0.700	0.012	11	11	0.10	3.50	3.60	818.59	1.0	22.74	1.0	2.0	-0.3	818.34	1.0	22.49	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP310	498503.6	658164.0	0.10	B - Very Shallow (0.01-0.5m)	1.792	0.031	11	11	0.10	3.50	3.60	319.94	1.0	8.89	1.0	2.0	-0.3	319.69	1.0	8.64	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP311	498474.0	658156.6	0.50	B - Very Shallow (0.01-0.5m)	1.521	0.027	11	11	0.50	3.50	4.00	75.38	1.0	9.42	1.0	2.0	-0.3	75.13	1.0	9.17	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP312	498448.3	658154.0	0.70	C - Shallow (0.5-2.0m)	1.996	0.035	2.5	11	0.70	3.50	4.20	9.33	1.0	1.55	1.0	2.0	-0.3	9.08	1.0	1.30	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
12/12/2024	Storage	DP313	498419.9	658140.0	0.60	C - Shallow (0.5-2.0m)	1.007	0.018	2.5	11	0.60	3.50	4.10	21.56	1.0	3.15	1.0	2.0	-0.3	21.31	1.0	2.90	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP314	498407.3	658141.9	0.50	B - Very Shallow (0.01-0.5m)	0.292	0.005	2.5	11	0.50	3.50	4.00	89.19	1.0	11.15	1.0	2.0	-0.3	88.94	1.0	10.90	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP315	498453.2	658076.2	0.10	B - Very Shallow (0.01-0.5m)	2.143	0.037	11	11	0.10	3.50	3.60	267.61	1.0	7.43	1.0	2.0	-0.3	267.36	1.0	7.18	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP316	498431.9	658064.4	0.00	A - Rock (0.0m)	1.910	0.033	11	11	0.00	3.50	3.50	300200.26	1.0	8.58	1.0	2.0	-0.3	300200.01	1.0	8.33	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Storage	DP317	498408.4	658053.9	0.00	A - Rock (0.0m)	0.563	0.010	11	11	0.00	3.50	3.50	1017752.54	1.0	29.08	1.0	2.0	-0.3	1017752.29	1.0	28.83	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Compensation	DP318	497984.1	658055.9	0.00	A - Rock (0.0m)	2.900	0.051	11	11	0.00	3.50	3.50	197909.49	1.0	5.65	1.0	2.0	-0.3	197909.24	1.0	5.40	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024	Track 1	DP319	497968.2	658115.6	0.10	B - Very Shallow (0.01-0.5m)	6.575	0.115	11	11	0.10	3.50	3.60	87.91	1.0	2.44	1.0	2.0	-0.3	87.66	1.0	2.19	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
12/12/2024		DP320	497950.0	658153.7	0.00	A - Rock (0.0m)	3.745	0.065	11	11	0.00	3.50	3.50	153429.36	1.0	4.38	1.0	2.0	-0.3	153429.11	1.0	4.13	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Track 1	DP321	498019.6	658119.2	0.10	B - Very Shallow (0.01-0.5m)	2.039	0.036	11	11	0.10	3.50	3.60	281.24	1.0	7.81	1.0	2.0	-0.3	280.99	1.0	7.56	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Track 1	DP322	498076.9	658129.3	0.10	B - Very Shallow (0.01-0.5m)	2.839	0.050	11	11	0.10	3.50	3.60	202.15	1.0	5.62	1.0	2.0	-0.3	201.90	1.0	5.37	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
12/12/2024	Track 1	DP323	498158.6	658146.5	0.10	B - Very Shallow (0.01-0.5m)	0.775	0.014	11	11	0.10	3.50	3.60	739.39	1.0	20.54	1.0	2.0	-0.3	739.14	1.0	20.29	1.0	2.0	2.0	1.0	2.0	1.0	4.0	4.0	4.0
05/07/2022	Blade Area	DP324	501373.5	658758.5	0.60	C - Shallow (0.5-2.0m)	0.524	0.009	11	11	0.60	1.00	1.60	182.22	1.0	68.33	1.0	2.0	-0.3	181.97	1.0	68.08	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
05/07/2022	Blade Area	DP325	501380.8	658777.6	0.90	C - Shallow (0.5-2.0m)	0.370	0.006	11	11	0.90	1.00	1.90	172.12	1.0	81.53	1.0	2.0	-0.3	171.87	1.0	81.28	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	2.0
05/07/2022	Blade Area	DP326	501377.0	658801.6	1.00	C - Shallow (0.5-2.0m)	0.442	0.008	11	11	1.00	1.00	2.00	129.50	1.0	64.75	1.0	2.0	-0.3	129.25	1.0	64.50	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP327	501366.3	658816.2	3.80	E - Deep (3.5-5.0m)	0.529	0.009	11	11	3.80	1.00	4.80	28.49	1.0	22.55	1.0	2.0	-0.3	28.24	1.0	22.30	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP328	501385.3	658823.7	3.60	E - Deep (3.5-5.0m)	0.408	0.007	11	11	3.60	1.00	4.60	38.99	1.0	30.51	1.0	2.0	-0.3	38.74	1.0	30.26	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP329	501388.8	658855.4	3.90	E - Deep (3.5-5.0m)	0.405	0.007	11	11	3.90	1.00	4.90	36.25	1.0	28.85	1.0	2.0	-0.3	36.00	1.0	28.60	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP330	501403.1	658878.3	3.80	E - Deep (3.5-5.0m)	0.292	0.005	11	11	3.80	1.00	4.80	51.66	1.0	40.90	1.0	2.0	-0.3	51.41	1.0	40.65	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP331	501414.7	658896.9	3.10	D - Moderately Deep (2.0-3.5m)	0.152	0.003	11	11	3.10	1.00	4.10	121.86	1.0	92.14	1.0	2.0	-0.3	121.61	1.0	91.89	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP332	501420.2	658951.4	4.00	E - Deep (3.5-5.0m)	0.225	0.004	11	11	4.00	3.50	7.50	63.60	1.0	33.92	1.0	2.0	-0.3	63.35	1.0	33.67	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP333	501392.7	658980.9	5.00	E - Deep (3.5-5.0m)	0.650	0.011	11	11	5.00	3.50	8.50	17.64	1.0	10.38	1.0	2.0	-0.3	17.39	1.0	10.13	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP334	501373.9	658990.5	4.90	E - Deep (3.5-5.0m)	0.903	0.016	11	11	4.90	3.50	8.40	12.95	1.0	7.55	1.0	2.0	-0.3	12.70	1.0	7.30	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0
05/07/2022	Blade Area	DP335	501357.2	659026.1	3.90	E - Deep (3.5-5.0m)	0.937	0.016	11	11	3.90	3.50	7.40	15.69	1.0	8.27	1.0	2.0	-0.3	15.44	1.0	8.02	1.0	2.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0

APPENDIX C

Factor of Safety (FoS)

Legend

FOS
- FoS >1.3 (Acceptable)
- FoS <1 (Unstable)

Project Data
- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
- Access tracks
- Hardstands
- Blade Area

Topography
- DEM_2m_Contour

Base Layers

Google Satellite

498001E

658001N

N

T1

T2

T3

0 100 200 m

0 300 600 m

Project ID	604009
Project Name	Moanmore Lower Wind Farm, Co. Clare
Projection	ITM
Drawn by	DW
Reviewed by	JS
Version	07/03/2025

References/Sources:
Environmental Protection Agency (EPA)
Geological Survey Ireland (GSI)
Bing Aerial / GeoHive / Open Street Map / Google Roads
Global Digital Elevation Model (GDEM)

RSK

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Factor of Safety (FoS) surface

Legend

FOS
- FoS >1.3 (Acceptable)
- FoS <1 (Unstable)

FoS
- Band 1 (Gray)
- Acceptable
- Marginally Stable (Acceptable)
- Unstable

Project Data
- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
- Access tracks
- Hardstands
- Blade Area

Base Layers

Google Satellite

Project ID	604009
Project Name	Moanmore Lower Wind Farm, Co. Clare
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Global Digital Elevation Model (GDEM)

RSK

498001E

N

T1

T2

T3

0 300 600 m

0 100 200 m

658001N

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Risk Ranking (RRD)

Legend

RRD
- Very Low
- Low
- Moderate
- High

Drainage Survey

Drainage observed
- Primary
- Secondary

Drainage inferred
- Primary
- Secondary

Drainage historical
- Observed / Assumed

Hydrology

- River NetRoutes

Project Data

- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
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- Hardstands
- Blade Area

Topography

- DEM_2m_Contour

Base Layers

Google Satellite

Project ID	604009
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Global Digital Elevation Model (GDEM)

RSK

498001E

659001N

N

T1

T2

T3

Moyasta 27

27.952

0 300 600 m

0 100 200 m

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

Risk Ranking (RRD) surface

Legend

RRD
- Very Low
- Low
- Moderate
- High

RRD
- Band 1 (Gray)
- Very Low
- Low
- Moderately Low
- High

Drainage Survey

Drainage observed
- Primary
- Secondary

Drainage inferred
- Primary
- Secondary

Drainage historical
- Observed / Assumed

Hydrology

- River NetRoutes

Project Data

- Turbine Locations
- Redline Boundary
- Flood Compensation Area
- Temporary Construction Compound
- Spoil Area
- Enhancement Areas
- 38kV Substation
- Access tracks
- Hardstands
- Blade Area

Base Layers

Google Satellite

Project ID	604009
Project Name	Moanmore Lower Wind Farm, Co. Clare
Projection	ITM
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Global Digital Elevation Model (GDEM)

RSK

498001E

N

Moyasta 27

27.952

T1

T2

T3

0 300 600 m

0 100 200 m

658001N

Note: Data points presented are georeferenced using open source data and/or a handheld GPS. This drawing / map is considered a conceptual model with reasonable accuracy for the purposes of environmental assessment. This drawing should not be relied upon for detailed design puporses.

APPENDIX D

Borehole / Trial Pit Design & Completion	Soil (S) / Water (W) / Vapour (V) Sampling			Depth in metres below ground level & [Thickness]	Geology (graphical log)	INVESTIGATION POINT LOG NUMBER	GC001
						Client, Project, Location	JOD, Moanmore Lower, Co. Clare
						Project number	604009
						Page number	1 of 3
						Date & time drilled / formed:	25/08/2023
						Logged by (drawn by) [checked by]:	CC [DW]
						Drilling / Trial pitting co. & equipment	Gouge core
						RSK Doc. Ref.	604009-R02-App8.1 – App D Peat log
						Irish Transverse Mercator (ITM)	497550, 657887.9

Geological description

Sample number & interval (mbGL) (Sample 10 kg minimum)	Shear Vane Testing values (shear strength in kilopascals (kPa))	Groundwater occurrence (See legend for symbols used for dry, damp and wet)	VON POST VALUE	PEAT DESCRIPTION	COLOUR	STIFFNESS
N/A	7KPa	Saturated	H-6/7	Minor fibres	Dark Brown	Soft
			Obstruction / Rock			

Red line = Single channel sample (from field)
Blue line = Composite sample (generated in office or lab)
Green line = Grab sample (acquired on site)

0.5
0.9
1.0
1.5
2.0
2.5
3.0
3.5

General notes / Well Head Protection / Plan & Section Sketches

A
VON POST VALUE
Rank organic soils by degree of humification (decomposition)

H1 (undecomposed) - H10 (decomposed)

B
PEAT DESCRIPTION
Fibrous, minor fibers
Root content (high, moderate, minor)
Sandy peat

C
COLOUR
- Light Brown
- Medium Brown
- Dark Brown
- Black

D
STIFFNESS
VST = V. Soft
ST = Soft
F = Firm
S = Stiff
VS = V. Stiff

RSK

Borehole / Trial Pit Design & Completion	Soil (S) / Water (W) / Vapour (V) Sampling			Depth in metres below ground level & [Thickness]	Geology (graphical log)	INVESTIGATION POINT LOG NUMBER	GC002
						Client, Project, Location	JOD, Moanmore Lower, Co. Clare
						Project number	604009
						Page number	2 of 3
						Date & time drilled / formed:	12/12/2024
						Logged by (drawn by) [checked by]:	JS [DW]
						Drilling / Trial pitting co. & equipment	Gouge core
						RSK Doc. Ref.	604009-R02-App8.1 – App D Peat log
						Irish Transverse Mercator (ITM)	497794, 657773.9

	Sample number & interval (mbGL) *(Sample 10 kg minimum)*	Shear Vane Testing values (shear strength in kilopascals (kPa))	Groundwater occurrence (See legend for symbols used for dry, damp and wet)	Geological description VON POST VALUE	PEAT DESCRIPTION	COLOUR	STIFFNESS
	Red line = Single channel sample (from field) Blue line = Composite sample (generated in office or lab) Green line = Grab sample (acquired on site)						
N/A		60KPa 30KPa	Damp Drain > 5m	H-6	Minor fibres	Dark Brown	Soft
				Obstruction / Till			

0.5
0.8
1.0
1.5
2.0
2.5
3.0
3.5

General notes / Well Head Protection / Plan & Section Sketches

Gouge core taken close to T3. Located close to a drain, the peat is well drained

A
VON POST VALUE
Rank organic soils by degree of humification (decomposition)

H1 (undecomposed) - H10 (decomposed)

B
PEAT DESCRIPTION
Fibrous, minor fibers
Root content (high, moderate, minor)
Sandy peat

C
COLOUR
- Light Brown
- Medium Brown
- Dark Brown
- Black

D
STIFFNESS
VST = V. Soft
ST = Soft
F = Firm
S = Stiff
VS = V. Stiff

RSK

Borehole / Trial Pit Design & Completion	Soil (S) / Water (W) / Vapour (V) Sampling			Depth in metres below ground level & [Thickness]	Geology (graphical log)	INVESTIGATION POINT LOG NUMBER	GC003
						Client, Project, Location	JOD, Moanmore Lower, Co. Clare
						Project number	604009
						Page number	3 of 3
						Date & time drilled / formed:	12/12/2024
						Logged by (drawn by) [checked by]:	JS [DW]
						Drilling / Trial pitting co. & equipment	Gouge core
						RSK Doc. Ref.	604009-R02-App8.1 – App D Peat log
						Irish Transverse Mercator (ITM)	497817.4, 658152.4

Geological description

Sample number & interval (mbGL) (Sample 10 kg minimum)	Shear Vane Testing values (shear strength in kilopascals (kPa))	Groundwater occurrence (See legend for symbols used for dry, damp and wet)	VON POST VALUE	PEAT DESCRIPTION	COLOUR	STIFFNESS
	65KPa	Drain > 5m	H-6	Minor fibres, sandy peat	Dark Brown, some light brown	Firm
N/A			**Obstruction / Till**			

Red line = Single channel sample (from field)
Blue line = Composite sample (generated in office or lab)
Green line = Grab sample (acquired on site)

0.2
0.5
1.0
1.5
2.0
2.5
3.0
3.5

General notes / Well Head Protection / Plan & Section Sketches

A
VON POST VALUE
Rank organic soils by degree of humification (decomposition)

H1 (undecomposed) - H10 (decomposed)

B
PEAT DESCRIPTION
Fibrous, minor fibers
Root content (high, moderate, minor)
Sandy peat

C
COLOUR
- Light Brown
- Medium Brown
- Dark Brown
- Black

D
STIFFNESS
VST = V. Soft
ST = Soft
F = Firm
S = Stiff
VS = V. Stiff

RSK

APPENDIX E

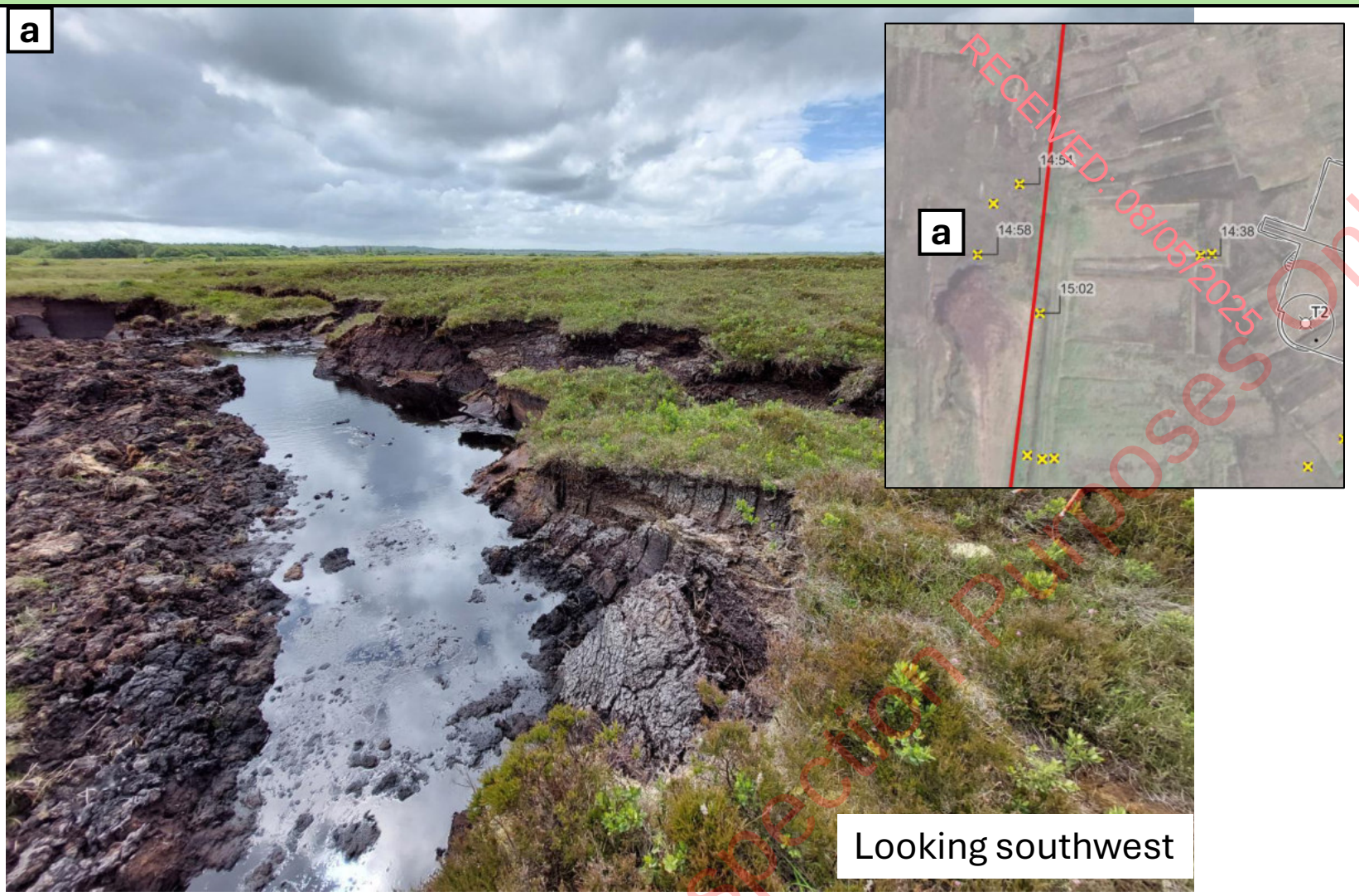
Moanmore Lower WF, Co. Clare

Site Photographs

Appendix 8.2 App E – Site Photographs
Tile 1

29/06/2022, 14.54: Peat crack above cut area

Appendix 8.2 App E – Site Photographs
Tile 2

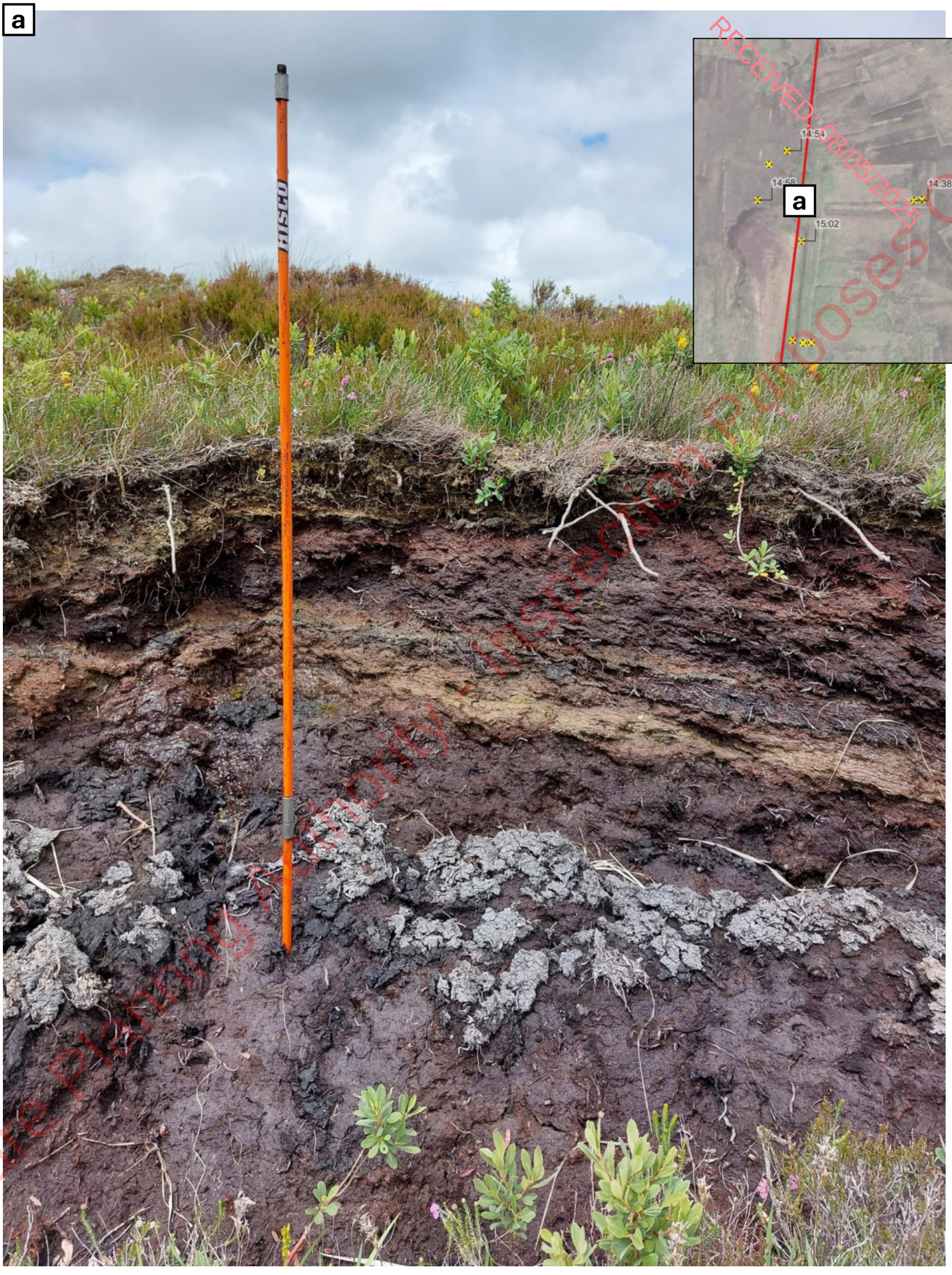


Looking southwest

Looking south

29/06/2022, 14.58: Excavated peat, localised stability issues.

Appendix 8.2 App E – Site Photographs
Tile 3

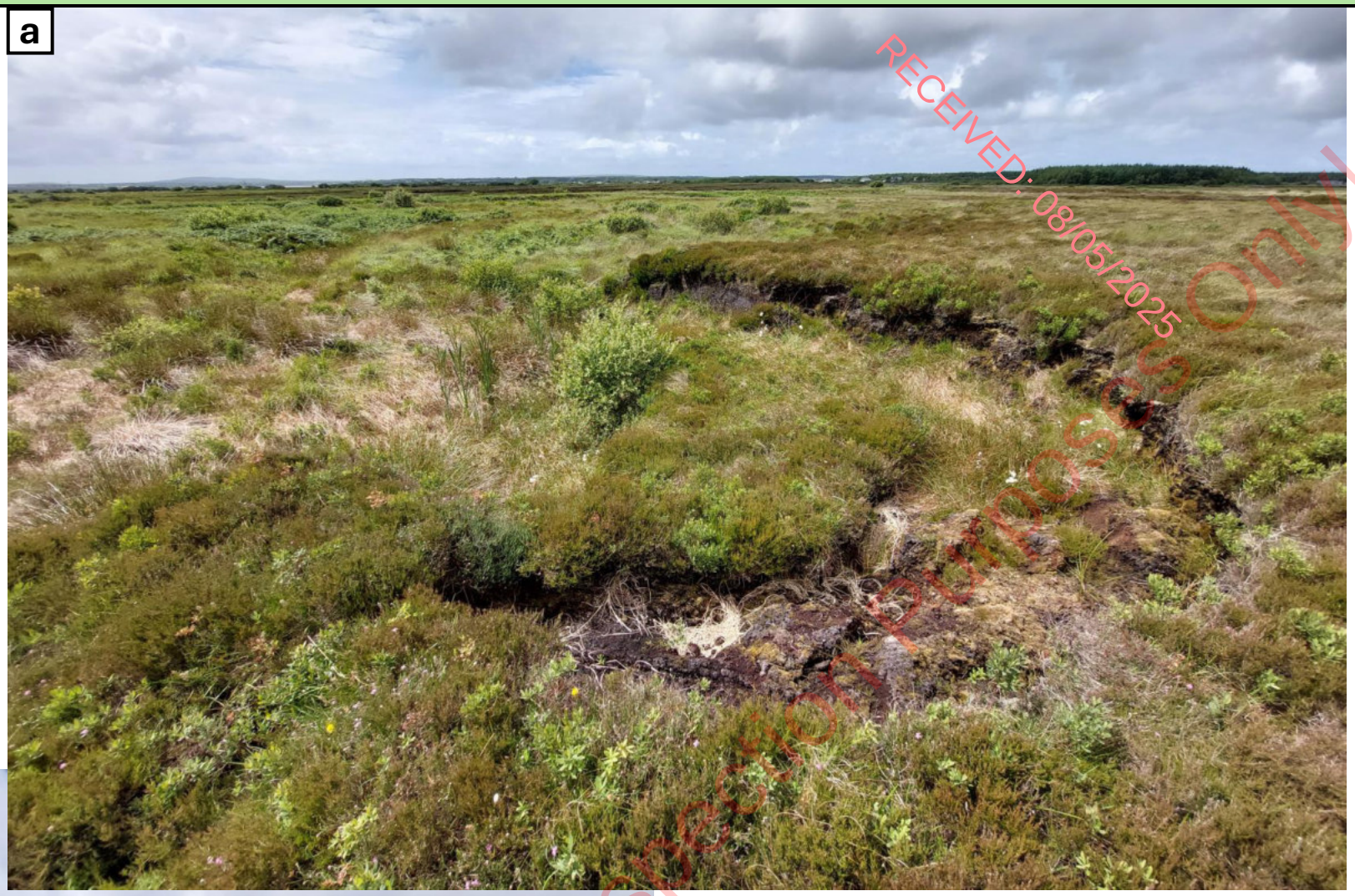


29/06/2022, 14.59: Cut peat beside drain

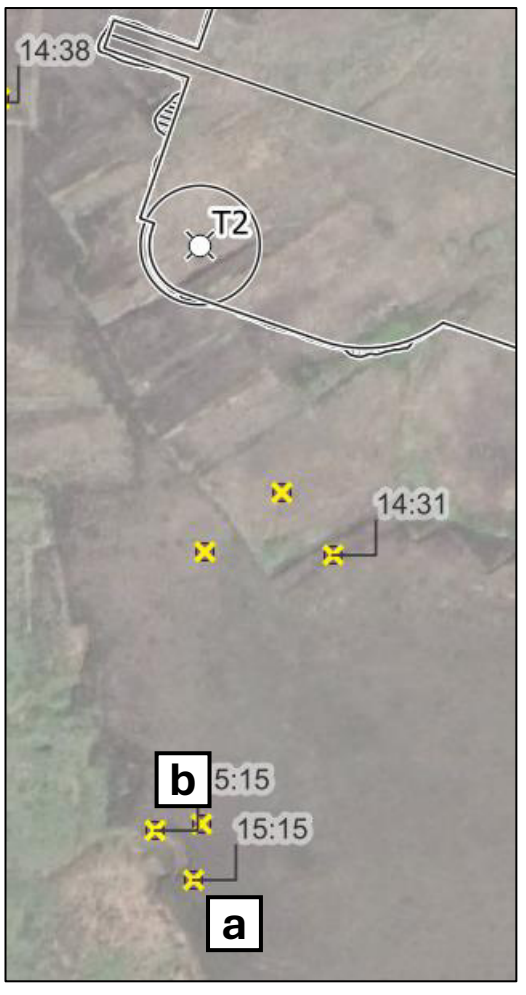
Appendix 8.2 App E – Site Photographs
Tile 4

29/06/2022, 15.15: Localised stability issues. Collapse with drain below. Could be a historical cut area.

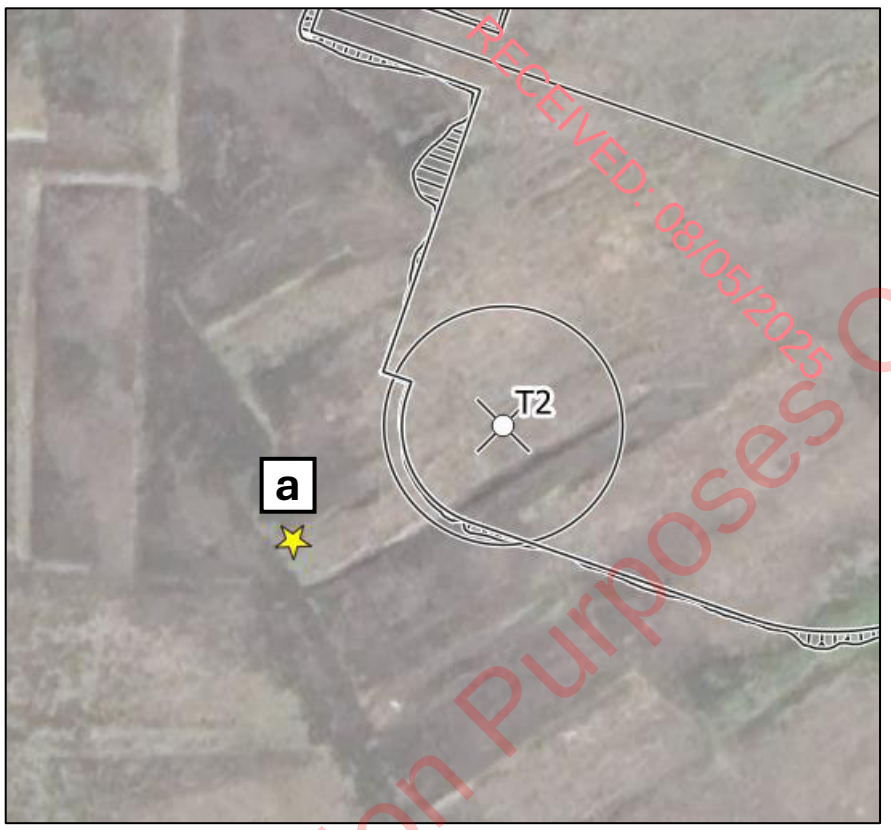
Appendix 8.2 App E – Site Photographs
Tile 5



29/06/2022, 15.16: Crack



Appendix 8.2 App E – Site Photographs
Tile 6



a

14/03/2014, 13.05: Bog Drains, looking east at T2