

SCLENTEUCH WIND FARM

Technical Appendix 9.1.

Peat Landslide Hazard and Risk Assessment
Prepared for: **Renewable Energy Systems Ltd**

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SLR 

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1.0 Introduction

SLR Consulting Ltd (SLR) was commissioned by Renewable Energy Systems Ltd (RES) to undertake a Peat Landslide Hazard and Risk Assessment (PLHRA) at the proposed Scienteuch Wind Farm (the 'Proposed Development').

It is anticipated that the Proposed Development will comprise up to nine wind turbines with associated infrastructure.

The purpose of this preliminary report is to consider the extent of peat and potential risk of peat slides occurring within the Proposed Development Area (see Figure TA 9.1.1) such that suitable controls and appropriate methodologies can be employed during design of the Proposed Development to mitigate against these risks.

The work has been undertaken by a team of geologists, with over 15 years' experience in undertaking peat assessments. The team was led by an Engineering Geologist with 35 years' experience in geology (B.Sc.) and engineering (M.Sc.) and over 15 years in renewable energy. He has managed and undertaken geotechnical risk registers and peat landslide and hazard risk assessments for wind farms, electricity infrastructure including substations, overhead and buried cabling routes. He has successfully completed numerous PLHRA's under the original guidance (2005) and recent guidance (2017).

The assessment has been undertaken in line with best practice guidance^{1,2} issued by the Scottish Government for investigation, assessment and reporting for windfarms in peat areas. Where relevant, reference is also made to guidance published by the Scottish Environment Protection Agency (SEPA) and wind farm construction good practice guidance³.

1.1 Background

The importance of assessing peat stability of peat deposits in relation to wind farm developments came to the fore because of peat slides during construction of the Derrybrien⁴ Wind Farm in Ireland in 2003. Although no fatalities were associated with these failures, there was significant environmental impact. Wind farms tend to be constructed in high moorland areas, which are primarily associated with significant peat deposits (typically blanket bogs). There is potential for peat instability to occur, particularly where deposits are more than 1 m thick. Peat instability is influenced by many factors, including but not limited to, peat thickness, hill slope gradient, underlying geology and subsurface hydrology.

1.2 Objectives of Report

The preliminary PLHRA is primarily concerned with the influence of peat on the Proposed Development. The main objective is to assess the potential peat stability at the Proposed Development Area, identify areas of potential concern and identify mitigation measures to ensure the maintenance of peat stability before, during

¹ Energy Consents Unit Scottish Government., (April 2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments. Second Edition

² Scottish Government, Scottish Natural Heritage, SEPA., (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only.

³ Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science, AEECoW (2019)., Good Practice During Wind Farm Construction., Fourth Edition

⁴ Lindsay, R.A. and Bragg, O., (2004), 'Windfarm and Blanket Peat, The Bog Slide of 16th October 2003 at Derrybrien, Co. Galway, Ireland'. University of East London

and after construction. All aspects of construction should be based on ensuring minimum disruption to the peat areas.

The objectives have been achieved by completion of the following:

- A desk study of available reports including geological, hydrological and topographical information;
- Geomorphological mapping of the Proposed Development Area to identify the prevailing conditions influencing the potential for, or any evidence of active, incipient or relict peat instability, including a photographic record and identification of their location and report on the potential risk of future instability, describing the causes and contributory factors;
- Reporting on evidence of any active, incipient or relict peat instability and the potential risk of future instability, describing the causes and contributory factors; and
- A 'low resolution' peat probing survey undertaken by SLR at the Proposed Development Area in August – September 2021, supplementing probe data gathered by Mott MacDonald as part of the Keirs Hill Wind Farm Environmental Statement in 2013⁵;
- Several phases of peat probing undertaken by SLR at the Proposed Development Area; and
- Provide recommendations for further work or specific construction methodologies to suit the ground conditions at the Proposed Development Area to mitigate any unacceptable risk of potential peat instability

This report summarises the findings of the desk study and peat survey and provides a preliminary assessment of the prevailing ground conditions at the Proposed Development Area and how they relate to peat stability issues.

1.3 Proposed Development Area Location and Development Description

The Proposed Development Area, shown in Figure 1 covers an area of approximately 863 Hectares (Ha) and is located west of Waterside, East Ayrshire. The Proposed Development Area is primarily occupied by commercial forestry with open moorland to the northeast.

The Proposed Development would comprise nine wind turbines along with associated infrastructure arranged as illustrated on Figure 2. The Proposed Development would include the following key components:

- Nine wind turbines (see Table 1.1 below)
- Foundations supporting each wind turbine;
- Associated low to medium voltage transformers and related switchgear at each wind turbine location;
- Associated crane hardstands at each wind turbine location;
- A site entrance from the A713;
- A network of access tracks and associated watercourse crossings;
- A network of underground electrical cables
- An substation compound including communications mast;
- A battery energy storage systems compound;
- Temporary construction compound;
- Borrow pits; and

⁵ RES (2013), *Keirs Hill Wind Farm Environmental Statement, Vol. 3 Technical Appendices*

- Felling to accommodate the above listed infrastructure.

For a full description of the proposed development refer to Chapter 2: Proposed Development.

1.4 Scope of Report

The scope of the report is primarily concerned with the influence of peat on the design, construction and operation of the proposed development and secondly to minimise the disturbance of peat, where present.

The principal objective was to assess the extent of organic peat (greater than 0.5 m) and peaty soils (less than 0.5 m) on-site, with the purpose of identifying stability at the Proposed Development Area, areas of potential concern and any mitigation measures required to ensure the maintenance of peat stability before, during and after construction.

The information provided in this report will be used during the design of the Proposed Development, which should demonstrate that areas of increased peat slide risk have been avoided and there is minimum disruption to peat areas by avoidance of deeper peat.

1.4.1 Peat Landslide Hazard and Risk Assessment

The purpose of a PLHRA is to identify those parts of the Proposed Development Area that are naturally susceptible to a higher risk of instability so that they can be avoided or accommodated. It should be noted that all peat slopes have a risk of instability and most peat slope failures occur naturally.

Construction of a wind farm would only increase the risk of peat slope instability if good geotechnical construction practice is ignored. It is a requirement of all wind farm developments to follow a very carefully worded and designed Construction Environmental Management Plan (CEMP) which uses many of the recommendations of the PLHRA.

Without the guidance contained in a CEMP, the following factors would increase the risk of instability:

- Construction of access tracks;
- Excavation and stockpiling for foundations;
- Construction of hardstand area; and
- Blocking of natural drainage, inappropriate new drainage or drainage discharge.

It is important to note that peat instability and the impacts of any instability are not constrained by artificial Proposed Development Area or ownership boundaries but by topographic and geomorphologic boundaries. It is therefore important to ensure that the breadth of scope of any assessment covers the areal extent of impact.

The risk assessment is based on ground models developed using a Geographical Information System (GIS) specifically for this Proposed Development Area. A numerical analysis was undertaken in which coefficients were allocated for each of the factors influencing peat stability and their impact on receptors. This aspect is described in greater detail in Section 6.0.

The system outlined above was developed in accordance with the guidelines on PLHRA by the Scottish Government^{Error! Bookmark not defined.} for the investigation, assessment, and reporting for wind farms in peat areas. The analysis and interpretation are based upon the results obtained from this process as well as previous experience and the results of case studies elsewhere. Where deviations from this guidance have occurred, this is highlighted and explained in the text.

2.0 Peat Instability

This section reviews the nature of peat and how current and past activities can influence stability. The factors which are likely to influence the potential for peat instability are:

- Significant peat depths over impermeable bedrock or minimal soil;
- The presence of slope gradients greater than 4° (approximately) and general topography;
- Natural drainage paths;
- Evidence of past failures, including soil creep;
- Drainage features at the base of slopes which could lead to undercutting;
- Forestry plantations and artificial drainage; and
- Recent climate patterns.

It should be noted that peat instability is not a recent phenomenon and there is documentary evidence of peat landslides dating back over 500 years⁶. Many landslides that involve peat have no human interference that could be considered as a trigger and this should be borne in mind when considering the susceptibility of a Proposed Development Area to potential instability.

2.1 Background Information Regarding Peat

Peat is found in extensive areas in the upland and lowland regions of the UK and is defined as the partly decomposed plant remains that have accumulated in-situ, rather than being deposited by sedimentation. When peat forming plants die, they do not decay completely as their remains become waterlogged due to regular rainfall. The effect of water logging is to exclude air and hence limit the degree of decomposition. Consequently, instead of decaying to carbon dioxide and water, the partially decomposed material is incorporated into the underlying material and the peat 'grows' in-situ.

Peat is characterised by low density, high moisture content, high compressibility and low undrained shear strength, all of which are related to the degree of decomposition and hence residual plant fabric and structure. To some extent, it is this structure that affects the retention or expulsion of water in the system and differentiates one peat from another.

Lindsay⁷ defined two main types of peat bog, raised bog and blanket bog, which are prevalent on the west coast of Europe along the Atlantic seaboard. In Britain, the dominant peatland is blanket bog which occurs on the gentle slopes of upland plateaux, ridges and benches and is supplied with water and nutrients in the form of precipitation. Blanket peat is usually considered to be hydrologically disconnected from the underlying mineral layer.

There are two distinct layers within a peat bog, the upper acrotelm and the lower catotelm. The acrotelm is the fibrous surface to the peat bog⁸, typically less than 0.5 m thick; which exists between the growing bog surface and the lowest position of the water table in dry summers. Below this are various stages of decomposition of the vegetation as it slowly becomes assimilated into the body of the peat.

⁶ Smith, L.T., (Ed) (1910), *'The literary of John Leland in or about the years 1535-1543.'* Vol.5, Part IX. London: AF Bell and Sons.

⁷ Lindsay, R.A., (1995), *'Bogs: The ecology, classification and conservation of Ombrotrophic Mires.'* Scottish Natural Heritage, Perth

⁸ Ingram, H.A.P., (1978), *'Soil layers in mires: function and terminology'*. Journal of Soil Science, 29, 224-227.

For geotechnical purposes, the degree of decomposition (humification) can be estimated in the field by applying the 'squeezing test' proposed by von Post and Grunland⁹ (1926). The humification value ranges from H1 (no decomposition) to H10 (highly decomposed). The extended system set out by Hobbs¹⁰ provides a means of correlating the types of peat with their physical, chemical and structural properties.

The relative position of the water table within the peat controls the balance between accumulation and decomposition and therefore its stability, hence artificial adjustment of the water table by drainage requires careful consideration.

2.1.1 Peat Undrained Shear Strength

In geotechnical terms, the undrained shear strength of a soil is the physical characteristic that provides stability and coherence to a body of soil. For mineral soils such as clays or sands, such strength is variously given by an inter-particle friction value and cohesion. Depending on whether the mineral soil is cohesive (clay) or non-cohesive (sand) governs which of the components of strength control the behaviour of the soil.

For peat soils, where the major constituent is organic and there is likely to be little or no mineral component, the geotechnical definition of undrained shear strength does not strictly apply. At present there is no alternative method defining the undrained shear strength of peat, therefore the geotechnical definition is adopted, in the knowledge that it should be used with great caution.

As noted before the acrotelm or near surface peat comprises a tangle of fresh and slightly rotted roots and vegetable fibres. These roots and fibres impart a significant tensile shear strength capacity to the material which provides it with a significant load carrying capacity. The acrotelm is, in effect, a fibre reinforced soil.

In the more decomposed catotelm, the tensile shear strength is reduced as the roots and fibres become more rotted. However, the loss in strength due to decomposition is off set to a limited degree, by a gain in strength due to the overburden pressure. In geotechnical engineering there is an established relationship for recently deposited soils, between the undrained shear strength of a sample and the thickness of overburden above it.

Consequently, it is almost impossible to predict an undrained shear strength profile in peat and attempts to measure the undrained shear strength using normal geotechnical methods can be misleading. Typical values of undrained shear strength from hand shear vanes would be in the range 10-60 kilopascal (kPa) although values over 100 kPa have been recorded in peat elsewhere. The higher strengths are certainly the influence of roots or other non-decomposed material. It is believed that the strength of peat should be quoted as a cohesion value as there are few, if any, discrete particles to give the material a significant frictional resistance. It should be noted that any quotation of undrained shear strength for peat should be treated with extreme caution.

2.1.2 Peat Stability – Factors to be Considered

There is considerable observational information relating to debris and peat flows although the actual mechanisms involved in peat instability are not fully understood. The main influences on slope stability are geological, geotechnical, geomorphic, hydrological, topographic, climatic, agricultural and human influences such as drainage and construction activity. Peat is affected to a degree by changes in any of the above list and it is vital to appreciate that changes to the existing equilibrium would affect the level of slope stability during construction and operation of the proposed development.

Some of the contributory factors to peat instability are summarised below:

⁹ von Post, L. and Grunland, E., (1926), '*Sodra Sveriges torvillganger 1*' Sverges Geol. Unders. Avh., C335, 1-127.

¹⁰ Hobbs, N.B., (1986), '*Mire morphology and the properties and behaviour of some British and foreign peats.*' Quarterly Journal of Engineering Geology, London, 19, 7-80.

- The geographical limits which could be affected by potential instability are not confined to the artificial boundaries imposed by land ownership; landslip occurring above a site could affect the site and property down slope or downstream of the site for several kilometres;
- Agriculture and grazing have a substantial effect on peat areas, and this can be compounded in areas that have been managed to improve grazing. Grazing compacts the peat surface reducing the rainwater infiltration and the additional nutrients change the ecological balance of the original peat bog. Agricultural management can include surface drainage and periodic burning, both of which can leave the surface of the peat bare for a period resulting in temporary desiccation of the surface. Subsequent wetting of the peat and resumption of peat accumulation results in the former desiccated and ash covered surface being incorporated into the body of the peat which introduces a weak discontinuity in the profile; this in turn becomes another unknown factor in the stability assessment;
- Forestry has a substantial effect on slope stability particularly in the early stages as the creation of a forest involves disruption of the natural equilibrium and drainage of the slopes and the installation of artificial drains by deep ploughing. The construction of access tracks further disrupts the drainage and concentrates groundwater flow into narrow, fast flowing erosive streams. The work by Winter *et al*¹¹ noted that forest tracks can act to retard or concentrate the down slope flow of water and thus aid its penetration into the slope below. Such a mechanism has been observed at a number of recent landslips that have affected the road network in Scotland;
- Natural Drainage – some of the precipitation falling onto a natural upland peat bog would be absorbed into the low permeability catotelm peat. However, most of the water would run-off as sheet flow through upper, high permeability acrotelm. Thus, the water is transmitted to the lower slopes in a controlled manner through a range of interconnections that operate at different scales and speed. Failure to understand this and to disrupt the transmission process for the groundwater could result in instability; and
- Artificial Drainage - where agricultural drainage has been used to improve the quality of the grazing or to promote forestry it reduces the overall volume of water entering the bog and transfers this water to the edges more rapidly. This can result in ditches and streams becoming enlarged, causing increased erosion and a greater silt burden in the stream water.

2.2 Peat Mass Stability

The principal surface indicator of peat slide potential is cracking of the peat land surface and it is the identification of crack patterns in the field and the attendant causes of the cracking that is fundamental to a peat stability assessment.

Sites that have exhibited natural instability in the past are likely to be more susceptible to future instability during and following construction of a wind farm, therefore it is important to identify such instability as part of the Peat Stability Assessment.

2.2.1 Types of Failure

The result of instability in peat is the down-slope mass movement of the material; there are a number of definitions of peat instability which are used to characterise the type of failure. A brief description is given below:

¹¹ Winter, M.R., Macgregor, F. and Shackman, L. (2005a), 'Scottish tracks networks landslide study' Trunk tracks: network management division, published report series. The Scottish Government.

- Bog Bursts or Bog Flows – the emergence of a fluid form of well humified, amorphous peat from the surface of a bog, followed by the settling of the residual peat, in-situ¹²;
- Peat Slides – the failure of the peat at or below the peat/substratum interface leading to translational sliding of detached blocks of surface vegetation together with the whole underlying peat stratum^{12,12} and
- Bog Slide – an intermediate form of instability where failure occurs on a surface within the peat mass with rafts of surface vegetation being carried by the movement of a mass of liquid peat.

2.2.2 Bog Bursts

Accounts of bog bursts are associated with very wet climates or areas which have received storm rainfall events. Bog bursts can be associated with particularly wet peat landscapes; therefore, it is possible to identify broad regions of a higher susceptibility to these failures. The constraints used to identify the areas of higher susceptibility to bog burst failure are given below:

- Peat thickness more than 1.5 m with no upper limit;
- Shallow gradients, within the range of 2 to 10°, peat thicker than 1.5 m is not observed on slopes steeper than 10°, also moisture content is reduced on steeper slopes due to drainage);
- Ground which is annually waterlogged to within the upper 1 m below ground level, (the groundwater level may rise above this but rarely falls below)¹³
- Greater humification of the lower catotelm within the waterlogged ground; and
- Lower surface tensile strength of the fibrous peat and vegetation.

The humified mass can be considered as analogous to a heavy liquid and the stability of this mass is maintained by the strength of the surface or acrotelm peat. Should the surface become weakened through erosion or desiccation or the construction of a surface drainage ditch for agricultural or forestry reasons or through turbarry (peat cutting), failure is made more likely.

2.2.3 Peat Slides

Peat slides tend to be translational failures with a defined shear surface at or close to the interface with the substrate.

The factors considered to influence susceptibility to peat slide failures are listed below:

- Peat depth up to 2.0 m;
- Slope gradients between 5° and 15°;
- Natural or artificial drainage cut into the surrounding peat landscape;
- Greater humification of the lower catotelm within the waterlogged ground; and
- Lower surface tensile strength of the fibrous peat and vegetation.

It is noted that some of the factors causing instability are common to both bog bursts and peat slides.

¹² Dykes, A.P and Kirk, K.J., (2001), 'Initiation of a multiple peat slide on Cuilcagh Mountain, Northern Ireland.' *Earth Surface Processes and Landforms*, 26, 395-408.

¹³ Crisp, D.T., Dawes, M. & Welch, D. (1964), 'A Pennine Peat Slide', *The Geographical Journal*, Vol 130, No4, pp519-524.

The peat – substrate interface is the primary zone of failure and is enhanced by elevated water content at this boundary and softening or weathering of the lower mineral surface. For this reason, any investigation or probing should try to distinguish the nature of the lower mineral substrate.

2.2.4 Bog Slides

A bog slide is a variation on a peat slide where part of the peat mass is subject to movement, usually on an internal layer of material, which may be more prone to movement, such as an interface between the acrotelmic and catotelmic layer.

2.2.5 Natural Instability

The stability of a peat mass is maintained by a complex interrelationship of many factors, some of which may not be immediately obvious. Key factors include sloping rock head and proximity to a water body. Rainfall often acts as the trigger after the slope has already been conditioned to fail by natural processes.

It should also be remembered that peat bogs are growing environments and that there would come a time, on sloping ground, where the forces causing instability, the weight of the bog, can no longer be resisted by the internal strength of the peat and its interface with the underlying mineral surface. At this point, failure would occur.

The weight of the peat bog or any soils mantling steep hill slopes would be increased during periods of very heavy rain and it is common to see landslips occurring following extreme rain events. This may be a concern for future developments where one of the predicted effects of global warming is a greater frequency of extreme weather, intense storms being one element.

3.0 Desk Based Assessment

A desk-based review of the Proposed Development Area has been conducted by use of the following sources of information:

- Hydrological and geological maps and records;
- Topographical survey maps and Digital Terrain Model (DTM) data;
- Ordnance Survey mapping (including historical maps) and aerial photography;
- Previous reports and investigations undertaken at the Proposed Development Area;
- Environmental records pertaining to the Proposed Development Area including rainfall; and
- Other publicly available data pertaining to the Proposed Development Area.

3.1 Geological Setting

3.1.1 Superficial Geology

The superficial geology present on the Proposed Development Area comprises Glacial Till with large areas of peat south of Keirs Hill. Superficial deposits are absent on many of the hill tops with alluvial deposits mapped in the Proposed Development Area associated with local watercourses (Lochhead Burn, Lambdoughty Burn, Red Burn, Keirs Burn, and River Doon).

The published superficial geology is illustrated in Figure 03.

Soils

The soils on the Proposed Development Area comprise peaty gleys and mineral soils. Of the peat recorded on-site, the majority has been classified as Class 1 and Class 5 by the Carbon and Peatland 2016 map¹⁴. Classes 0, 2 and 4 are also present on the Proposed Development Area with limited coverage, the details of which are shown in Table 3-1.

Table 3-1
Classifications of Peat present on-site

Class of Peat	Class Description	Indicative Soil	Indicative Vegetation
0	Mineral Soil – peatland habitats not typically found on such soils	Mineral soils	No peatland vegetation
1	Nationally important carbon-rich soils, deep peat, and priority peatland habitat. Areas likely to be of high conservation value.	Peat soil	Peatland
2	Nationally important carbon-rich soils, deep peat, and priority peatland habitat. Areas of potentially high conservation value and restoration potential.	Peat soil with occasional peaty soil	Peatland or areas with high potential to

¹⁴ Scottish Natural Heritage (SNH), The James Hutton Institute and Scottish Government., (2016) *Carbon and Peatland 2016 map*. [viewed October 2021] Available from: map.environment.gov.scot/soil_maps/ Scottish Government, 2016, Last accessed October 2021

Class of Peat	Class Description	Indicative Soil	Indicative Vegetation
			be restored to peatland
4	Area unlikely to be associated with peatland habitats or wet and acidic type, area unlikely to include carbon-rich soils.	Mineral soil with some peat soil	Heath with some peatland.
5	Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.	Peat soil	No peatland vegetation

3.1.2 Bedrock Geology

The bedrock geology underlying the Proposed Development Area comprises Devonian to Carboniferous age sedimentary rocks. Sedimentary rock cycles (mudstone, siltstone, limestone, sandstone) of the Inverclyde Group (Kinnesswood Formation and Ballagan Formation) are present in the south and west of the Proposed Development Area. The high points of Keirs Hill and Green Hill are the remnants of a volcanic plug and associated vents (Ayrshire Basanitic and Foiditic Plugs and Vents). To the northeast, displaced by a normal fault are the coal bearing rocks of the Clackmannan Group (Upper Limestone Formation, Limestone Coal Formation, Lower Limestone Formation).

A summary of the published bedrock geology of the Proposed Development Area and surrounding area is described in Table 3-2 and illustrated in Figure 04.

Table 3-2
Bedrock Geology Summary

Age	Stratigraphic Group	Unit	Description
Carboniferous	Scottish Coal Measures Group (Coal Measures Supergroup) Clackmannan Group (Midland Valley of Scotland)	Scottish Lower Coal Measures Formation	Sedimentary rock cycles, coal measure type.
		Index Member (Upper Limestone Formation)	Limestone
		Keirs Limestone (Upper Limestone Formation)	Limestone
		Limestone Coal Formation	Sedimentary rock cycles, Clackmannan type.
		Hurlet Limestone (Lower Limestone Formation)	Limestone
		Lower Limestone Formation	Sedimentary rock cycles, Clackmannan type.
		Doon Limestone (Lower Limestone Formation)	Limestone

Age	Stratigraphic Group	Unit	Description
Devonian – Carboniferous	Inverclyde Group (Midland Valley of Scotland)	Ballagan Formation	Mudstone, siltstone, limestone and sandstone.
		Kinnesswood Formation	Sandstone
Silurian - Devonian	Lanark Group (Old Red Sandstone Supergroup)	Swanshaw Sandstone Formation	Sandstone
Carboniferous – Permian	Scottish Late Carboniferous to Early Permian Plugs and Vents Suite	Ayrshire Basanitic And Foiditic Plugs and Vents	Camptonite, monchiquite, basalt and basinite.
	Midland Valley Carboniferous to Early Permian Alkaline Basic Sill Suite (Midland Valley of Scotland)	Western Midland Valley Westphalian to Early Permian Sills/ Unnamed Dyke	Camptonite, monchiquite, basalt and basinite. Olivine-microgabbro. Picrite. Monchiquite.
Devonian	Lanark Group (Old Red Sandstone Supergroup)	Carrick Volcanic Formation	Basalt and basaltic andesite.
Silurian – Devonian	Midland Valley Siluro-Devonian Felsic Intrusion Suite (Caledonian Supersuite)	Southern Midland Valley Felsite Sills	Felsite.
-	-	Unnamed Igneous Intrusion of Unknown Age	Mafite.

3.1.3 Mining and Quarrying

The northeast of the Proposed Development Area is located with the Ayrshire Coalfields and there are a number of historic mine entries present within the Proposed Development Area and areas classified as Development High Risk by the Coal Authority. Limestone quarrying was also undertaken on Proposed Development Area. A Coal Mining Risk Assessment was undertaken in 2013¹⁵ as part of the investigation for the proposed Keirs Hill Wind Farm. The report concluded that areas in the east of the Proposed Development Area may be undermined at shallow depths and should be avoided by design. An updated Coal Mining Risk Assessment (TA9.3) for the Proposed Development Area has been undertaken by SLR¹⁶.

3.1.4 Hydrogeology

The bedrock geology underlying the Proposed Development Area is classified as a Class 2B moderately productive aquifer, where flow is through fractures and discontinuities.

¹⁵ N.A.Brown Engineering Geologist (April 2013). *Keirs Hill Geotechnical and Mining Desk Study Report*

¹⁶ SLR Consulting Ltd (November 2021). *Scienteuch Wind Farm Coal Mining Risk Assessment*.

3.1.5 Aerial Photo Interpretation

The aerial photography reviewed indicates changes in vegetation on the ground, and it is also possible to identify forestry, stream courses, ditches, and roads/tracks. The aerial photographs were used in conjunction with the Proposed Development Area DTM data to identify the major geomorphological features such as the breaks of slope and landslips. These were inspected where identified during visits to the Proposed Development Area when more detailed assessment of the Proposed Development Area was undertaken.

Interpretation of available aerial photographs was undertaken to assess and identify evidence of historic peat instability. The photographs were examined to highlight features of interest, where present, including:

- possible extension and/or compression features;
- areas of historic failure scars and debris;
- evidence of peat creep;
- areas with poor drainage;
- areas with concentrations of surface drainage networks; and
- steeply incised stream cuttings within peat deposits.

From the aerial photograph and topographic survey interpretation the following was identified:

- Forestry plantation where density of vegetation and areas of felling and new plantation could be identified, rides and wind-blown trees.
- Track networks;
- Surface water features;
- Historic mining features;
- Artificial drainage patterns;
- Peat haggings; and
- Excavations;

Aerial photography was reviewed from 1985, 2004, 2011, 2016 and 2018.

3.1.6 Historic Mapping

Review of freely available historic mapping shows that historic Proposed Development Area use comprises limestone quarrying, coal mining and forestry plantation.

4.0 Site Based Peat Assessment

4.1 Ground Conditions Assessment

4.1.1 Peat Depth Survey

A low resolution (phase one) peat depth survey was undertaken by SLR in August to September 2021, supplementing data gathered by Mott MacDonald in 2013.

4.1.2 Methodology

The surveys carried out followed best practice guidance for developments on peatland^{Error! Bookmark not defined.,Error!}
Bookmark not defined.

Peat Depth Analysis

The thickness of the peat was assessed using a graduated fibre glass peat probe, which can be extended to over 10 m depth. This was pushed vertically into the peat to refusal and the depth recorded, together with a unique location number and the coordinates from a handheld Global Positioning System instrument (GPS). The accuracy of the GPS was quoted as ± 4 m, which was considered sufficiently accurate. All data was uploaded to a PC for incorporation into various figures and analysis assessments. Where the peat probing met refusal on a hard substrate, the 'feel' of the refusal can provide an insight into the nature of the substrate. The following criteria were used to assess material:

- Solid and abrupt refusal – rock;
- Solid but less abrupt refusal with grinding or crunching sound – sand or gravel;
- Rapid and firm refusal – clay;
- Gradual refusal – dense peat or soft clay.

The peat depth data has been uploaded into various figures and analysis assessments included within this report.

5.0 Slope Stability/Ground Conditions

The stability of slopes is dependent upon the undrained shear strength of the soil to resist the disturbing forces due to the weight of the soil, the effects of the groundwater and other disturbing influencing forces.

The level of stability of a slope is normally assessed by reference to the factor of safety, which is expressed numerically, as the degree of confidence that exists, for a given set of conditions, against a particular failure mechanism occurring. It is commonly expressed as the ratio of the load or action which would cause failure against the actual load or actions likely to be applied during service. This is readily determined for some types of analysis (e.g., limit equilibrium slope stability analyses).

5.1 Shear Strength

The strength of the peat in the upper acrotelm is significantly influenced by the root and fibres that are abundant in this layer. There are many influences on the stability of the peat and observing or measuring high undrained shear strength should not be used to assume a high degree of stability.

5.2 Stability Risk Assessment

It is apparent that the stability of peat is complex and the numerous inter-relationships that affect the stability are not fully understood.

The problem with a quantitative assessment is that it requires a numerical input, and the analysis cannot account for the unquantifiable input required for a comprehensive peat stability assessment. For this reason, a purely quantitative assessment should only be considered as a guide and that a qualitative assessment of stability should be used to provide the final recommendations.

A stability risk assessment was undertaken to evaluate the risk of instability occurring associated with the construction of the wind turbine foundations and access tracks.

5.3 Ground Condition Results

The results of the probing exercise are detailed in the following sections and the peat depths identified on-site are illustrated in **Error! Reference source not found.**

5.3.1 Peat Soils/Peat

The peat was found to vary across the Site in terms of thickness and coverage. The slopes on-site are presented in **Error! Reference source not found.** When viewed in conjunction with the peat depth plans (**Error! Reference source not found.** and **Error! Reference source not found.**), it is evident that the peat is generally limited to flat expanses that mimic topographically flat lying areas.

A total of 1,989 probe holes were undertaken across all survey phases, with the results summarised in Table 5-1 below.

5.3.2 Peat/Peaty Soils

**Table 5-1
 Peat Probing Data**

Peat Thickness (m)	No. of Probes	Percentage (of total probes undertaken on-site)
0 (no peat)	24	1.2
0.01 – 0.49 (peaty soil)	1218	61.2
0.5 – 0.99	382	19.2
1.0 – 1.49	85	4.3
1.5 – 1.99	70	3.5
2 – 2.49	38	1.9
2.5 – 2.99	73	3.7
3 – 3.49	29	1.5
3.50 – 3.99	24	1.2
> 4.0	46	2.31

In summary the peat depth probing has shown that:

- The peat was found to vary across the site in terms of thickness, surface slopes and apparent characteristics; and
- Peat thickness varies from 0.5 m to 5.9 m on the site and mimicked the topography, with thick peat identified on the topographically flat lying areas; and

Accumulations of peat up to 0.5 m thick are too thin to be classified as true peat deposits and are often classified as organic soils or peaty soils.

The underlying soil/peat thickness at each location was recorded and the data used to draw the interpreted peat thickness maps, presented in Figure 05.

5.3.3 Substrate

Where possible on-site, an assessment of the substrate was made, as described previously. From the evidence of the probing, the substrate falls into one of two principal categories:

- Granular (sand and / or gravel / weathered rock), of glacial origin and occasionally interbedded with silty sands;
- Rock - no rock samples were recovered from the probe locations although where exposed, the rock was indicated from field observations to be sedimentary rock; and
- No clay horizons were encountered and evidence from site walkovers did not encounter cohesive clay materials on-site.

5.3.4 Description of Ground Conditions at Wind Turbine Locations

Table 4-2 outlines the ground conditions found at each proposed wind turbine location.

Table 4-2
Ground Conditions at Proposed Wind Turbine Locations

Turbine No.	Peat Thickness (m)	Peat Conditions	Slope (°)
T1	0.13	Peaty Soil	2.57
T2	1.02	Thin Peat	0.50
T3	0.07	Peaty Soil	4.99
T4	0.50	Thin Peat	1.60
T5	0.86	Thin Peat	3.95
T6	0.55	Thin Peat	1.58
T7	0.39	Thin Peat	3.50
T8	0.70	Peaty Soil	2.89
T9	0.11	Thin Peat	5.70

Of the nine wind turbines, peaty soils are found at three locations, and thin peat (based on SLR’s Ground Condition Coefficient, described in Section 6.0) at the remaining six locations. The implications of peat depth and slope are analysed further in the next chapter.

6.0 Peat Landslide Hazard and Risk Assessment

A PLHRA has been undertaken for the Site. Following several phases of peat probing, a site visit by an experienced SLR wind farm geotechnical engineer, and appraisal of the data, the potential for a peat slide occurring at the Site was initially assessed as low, this was because:

- Although there are significant thicknesses of peat present on-site, the wind farm infrastructure has avoided the thickest areas of peat;
- There is no evidence of historical or current peat slide activity at the Site (having reviewed historical photographs dating back to 2004, with additional photos in 2010, 2016, 2018, 2020 and 2021);
- Conclusions of a detailed walkover and results from probing identified negligible and low risk across the Site; and
- Lack of high-risk receptors on-site.

Where areas of medium risk are present, further assessment is necessary and is discussed in Section 6.10.

The method of risk and hazard assessment has been developed with reference to the Scottish Guidance ^{Error!} Bookmark not defined. Key factors which may influence the stability of the peat deposits have been identified leading to an assessment of the RISK of instability. The potential impact of any instability, the HAZARD, was then considered for identified potential receptors. Scores were attributed to the key factors that have the greatest

influence on peat stability. Risk scores were determined, which, when combined with an assessment of vulnerability of potential targets, were developed into an assessment of the hazard.

To differentiate between risk and hazard, the following nomenclature has been adopted (**Table 4-3**).

Table 4-3
Risk versus Hazard

Risk	Hazard
Negligible	Insignificant
Low	Significant
Medium	Substantial
High	Serious

This section outlines the approach taken and the scores allocated for various factors relevant to peat stability.

At this stage, the objective is to determine the peat areas that would influence the proposed development and to set out the mitigation that could be adopted and incorporated into the overall site plan to ensure that due cognisance is taken in this regard.

The level of slope is normally assessed by reference to the factor of safety, which is expressed numerically, as the degree of confidence that exists, for a given set of conditions, against a particular failure mechanism occurring. It is commonly expressed as the ratio of the load or action which would cause failure against the actual load or actions likely to be applied during service. This is readily determined for some types of analysis (e.g., limit equilibrium slope stability analysis). The following sections present a brief discussion on some of the issues relating to stability and risk assessment.

The stability of peat is a complex subject and there are numerous inter-relationships that affect the stability.

A quantitative assessment requires a numerical input, and such an analysis cannot account for the unquantifiable input required for a comprehensive peat stability assessment. For this reason, a purely quantitative assessment should only be considered as a guide and a qualitative assessment of stability should be used to inform the final recommendations.

The characteristics of the peat failure phenomena have been incorporated in a stability risk assessment to evaluate the risk of instability occurring within the peat areas. The main factors controlling the stability of the peat mass are the surface gradients, the depth and condition of the peat at each location and the type of substrate.

The natural moisture content and undrained shear strength of the peat are important; however, it is accepted that where present, the peat would be saturated and have a very low strength. It is believed to be unrealistic to rely on specific values of undrained shear strength to maintain stability when back analysis of failed slopes indicates that there is often a significant discrepancy between measured strength in peat and stability. Undrained shear strength has been assumed to be constant and worst case, throughout this assessment. It has also been assumed, as a worst case, that the groundwater level is coincident with the ground surface.

The key factors identified as being critical to stability and the development of a risk rating system are:

- A – Slope gradient;
- B – Peat thickness;
- C – Substrate type or condition; and
- D – Historic instability.

The risk scores are multiplied together to generate a rating which is a measure of the likelihood of peat instability.

6.1 Slope Gradients

The slope gradients were assessed by reference to the mapping and particularly the DTM which was used to generate a gradient map (Figure 7) from which the gradient at each probe location could be determined and input into the risk rating spread sheet (**Error! Reference source not found.**). The gradient quoted at each location was based on the average gradient over a 5 m grid. Significant effort has gone into reducing slopes along routes and at wind turbine foundation and positioning infrastructure on flat areas, it is evident from the slope plan that most of the tracks close to turbines and at turbines are on areas with gentle gradients ranging from 2 - 7°).

Table 4-4
Coefficients for Slope Gradients

Slope Angle (°)	Slope Angle Coefficients
Slope <2°	1
2° ≤ Slope <4°	2
4° ≤ Slope <8°	4
8° ≤ Slope <12°	6
>12° Slope	8

Coefficients for slope gradient have been assigned to ensure the potential for both peat slides (gradients of 4-15°) and bog slides (gradients of 2-10°) are addressed.

By simple inspection steeper slopes pose a greater risk of instability than shallow gradients. Therefore, a graduated gradient scale from 0° to >12° (the practical maximum gradient on which peat is commonly observed) has been applied.

6.2 Peat Thickness and Ground Conditions

The ground conditions were assessed by using peat depths recorded during peat probing. Thin peat was classed as being 0.5 m to 1.49 m thick, with deposits more than this being classed as thick. The thickness ranges used are intended to reflect the risk of instability associated with both peat slides (in thin peat) and bog slides. Where the probing recorded peat less than 0.5 m thick, this has been an organic soil rather than peat. **Table 4-5** gives the coefficients applied to the various ground conditions.

In addition to peat thickness, the presence of existing landslip debris or indicators of meta-stable conditions such as tension cracks or slumping in the peat suggest the material is likely to become even less stable should the existing ground conditions change. Where evidence of historical slips, collapses, creep or flows is seen, a separate coefficient has been applied.

Table 4-5
Coefficients for Peat Thickness and Ground Conditions

Ground Conditions	Ground Condition Coefficients
Peaty or organic soil (<0.5 m)	1
Thin Peat (0.5 – 1.49 m)	2

Ground Conditions	Ground Condition Coefficients
Thick Peat (1.5 m +)	3*
Slips /collapses / creep / flows	8

*Note that thicker peat generally occurs in areas of shallow gradients and records indicate that thick peat does not generally occur on steeper gradients.

6.3 Substrate

As noted above, most failures in thin peat layers occur at the interface with the underlying substrate; the nature of the substrate has a very large influence on the probable level of stability.

Where sand and/or gravel (derived from Glacial Till) form the substrate, the effective strength of the interface can be good with comparatively high friction values. Under these conditions, failure is likely to occur in a zone within the peat, just above the interface. Further factors are necessary to cause a failure of this nature (increased pore pressures within the peat) and occurrence of such events is rare.

Where clay forms the interface, there is likely to be a significant zone of softening in the clay (due to saturation at low normal stresses, poor or non-existent vertical drainage and the effect of organic acids), resulting in either very low undrained shear strength or low effective shear strength parameters. The result is that potential shearing could occur either in the peat, on the interface or in the clay; all three possibilities have been documented in the past.

A rock substrate provides a high strength stratum, however, the rock surface can be smooth, and, depending on the dip orientation of the strata, it can provide a very weak interface. For these reasons, at this stage, a rock interface has been given the same risk rating as clay.

Table 4-6
Coefficients for Substrate

Substrate Conditions	Substrate Coefficients
Sand/gravel (granular)	1
Clay	2
Rock	2
Not proven	3
Slip material (Existing materials)	5

If the overall thickness of the peat had not been proven, the risk associated with the significant thickness and the unknown substrate would have been given a high rating to accommodate the unknown factors.

6.4 Probability Rating

The probability of a peat landslide rating coefficient (score) was derived by multiplying the coefficients for the four key factors (with historic instability as 1) identified in the above sections together to produce a risk rating which is a measure of the likelihood of peat instability, and this enables potential areas of concern to be highlighted.

For the stability risk assessment, the following Probability of a Peat Landslide classes were applied as shown in **Table 4-7**.

Table 4-7
Probability of Peat Landslide

Risk Rating Coefficient	Potential Stability Risk (Pre-Mitigation)	Action
<5	Negligible	No mitigation action required.
5 - <15	Low	As for negligible condition plus development of a site-specific construction and management plan for peat areas.
15 - <31	Medium	As for Low condition plus may require mitigation to improve site conditions.
31-50	High	Unacceptable level of risk, the area should be avoided. If unavoidable, detailed investigation and quantitative assessment required to determine stability and sensitivity to minor changes in strength and groundwater regime combined with long term monitoring.
>51	Very High	Unacceptable level of risk, the area should be avoided.

The rating system outlined above differs slightly from that proposed in the Scottish Government Guidance^{Error! Bookmark not defined.} as the system adopted here incorporates three inputs compared to two in the guidance, with the potential impact of substrate added in this section.

The table of results; included in **Error! Reference source not found.** shows that 1,989 probe locations were identified within the extent of the Digital Terrain Model, peat/peaty soil was present at 1,242 probe locations. The stability risk rating identified the following:

- Negligible risk at 1,591 (~80 %) probe locations;
- Low risk at 369 (~18%) locations;
- Medium risk at 5 (~1%) locations;
- No High risk locations; and
- No peat was recorded at 24 locations (~1%), hence no risk.

Error! Reference source not found. presents the interpreted risk of peat instability based on the multiplication of the risk coefficients discussed above in **Table 4-4** to **Table 4-6** and using the detailed mitigation in **Table 4-7**. The peat stability risk rating for each proposed wind turbine is summarised in **Table 4-8**, showing that most turbine locations are in areas of negligible or low risk, with two locations falling within a medium risk area.

Table 4-8
Stability Risk Rating at Each Wind Turbine

Turbine No.	Stability Risk Rating	Peat Depth (m)	Slope (°)	Acceptable Location
T1	Negligible	0.13	2.57	Yes
T2	Negligible	1.02	0.50	Yes
T3	Negligible	0.07	4.99	Yes
T4	Negligible	0.50	1.60	Yes
T5	Negligible	0.86	3.95	Yes
T6	Negligible	0.55	1.58	Yes
T7	Negligible	0.55	1.58	Yes
T8	Negligible	0.39	3.50	Yes
T9	Negligible	0.70	2.89	Yes

6.5 Proposed Development -Turbine Locations

The table of results shows that the following potential stability risks exist at the proposed development:

- NEGLIGIBLE risk at 9 locations;
- No LOW risk locations were identified.;
- No MEDIUM risk locations were identified.; and
- No HIGH risk locations were identified.

6.6 Hazard Score Development

A further assessment of the medium to high risk locations has been undertaken for the Site. It should be noted that the impact assessment (adverse consequence) is primarily concerned with impacts that affect the environment, ecology, public or infrastructure associated with the proposed development, both on-site and potentially off-site. These assessments do not consider the detailed ecological impact of construction induced peat instability; however, most of the sensitive on-site receptors are the watercourses and thus the inferred ecological and environmental issues are addressed. The proposed mitigation measures in Section 7.0 would limit the potential for any slope failures into watercourses or drainage features, hence limiting such impacts.

The effect a slope failure may have on the construction site and infrastructure can be easily identified. However, the effect of an instability event on features impacted by an event not associated with the proposed development is harder to predict.

To address this effect, it is not considered appropriate to assess the effect at every potential receptor location close to a site; but to assess the effect a particular infrastructure feature (track, wind turbine, substation, etc.) would have on the structures or features surrounding it. By adopting such an approach, the assessment of infrastructure features where a risk ranking of 'negligible' or 'low' (assessed in the stability risk assessments described above) is discounted from further assessment.

6.7 Receptor Ranking

Now the infrastructure features with a 'medium' risk rating for instability have been identified it is necessary to identify potential impact receptors. These are nearby structures or features that may be affected by peat

movements caused during or following construction. Only receptors immediately down gradient of the infrastructure feature could be affected by peat instability therefore the first phase of feature ranking requires topographic ridges and valleys to be identified across the Site and surrounding area. From this, receptors at risk from infrastructure features can be identified. However, should instability occur on a steep slope, there is the risk of the back scarp of the instability migrating up-slope, there-by affecting areas previously considered not to be at risk.

Following identification of receptors at risk, these are ranked according to their size and sensitivity. **Table 4-9** presents the coefficients placed on receptor types.

At the Site, local receptors include the Clachan Burn and its tributaries. Communities have been discounted due to distance from infrastructure, the impact therefore, should a slide occur is directly to watercourses.

Table 4-9
Coefficients for Impact Receptor Ranking

Nature of Feature	Feature Coefficient
Non-critical infrastructure (minor/private roads, tracks)	1
Watercourses and critical infrastructure (pipelines, motorways, dwellings and business properties etc.)	3
Sub-Community (settlement 1-10 residents)	6
Community (settlement of >10 residents)	8

6.8 Receptor Proximity

The proximity of an impact receptor is also critical in assessing the level of disruption it may suffer following an instability event. Based on this, two further coefficients – distance from proposed development and relative elevation differences between the proposed development and impact receptor - are applied in deriving an impact ranking. Table 4-10 and Table 4-11 present the coefficients derived for distance and elevation of impact receptors.

Table 4-10
Coefficient for Impact Feature Distance

Distance from Coefficient Feature	Distance Coefficient
> 1 km	1
100 m – 1 km	2
10 – 100 m	3
0 – 10 m	4

Table 4-11
Coefficient for Impact Feature Elevation

Relative Elevation of Feature	Elevation Coefficient
0-10 m	1
10 – 50 m	2

Relative Elevation of Feature	Elevation Coefficient
50 – 100 m	3
> 100 m	4

6.8.1 Adverse Consequence

The adverse consequence rating coefficient (score) is derived by multiplying the receptor ranking coefficient (score) by the distance coefficient (score) and the elevation coefficient (score) for each impact receptor associated with a particular infrastructure feature.

Based on distance to impact receptors, in this instance SLR has identified watercourses (which are the most sensitive receptor near the Site). The other receptors have been discounted, either they are not present or distance to receptor mitigates risk. Watercourses are the principal receptor as they are at risk of not only direct impact from a peat slide but potentially the water course creates a pathway to impact other receptors indirectly, either ecological or potential water users downstream. Based on Table 6-7 the watercourses would have an impact receptor coefficient (score) of 3 and then, considering the distance to the receptor and the relative elevation differences on-site of receptors, a potential impact can be derived.

6.9 Hazard Ranking

The Scottish Government ^{Error! Bookmark not defined.} guidance recommends that the hazard ranking is assessed using the following formula:

- Hazard Ranking = Hazard × Exposure**

This guidance provides the basis applied to the assessment carried out so far in the following approach:

- Hazard Ranking = Probability of a Peat Landslide × Adverse Consequences**

To achieve a meaningful and manageable result from the hazard ranking, the results of the Probability (Peat landslide) and Adverse Consequences (impact) have been normalised to a standard numerical scale (below).

Table 4-12
Rating Normalisation

Probability of a Peat Landslide		Adverse Consequence (Impact Rating)	
Current Scale	Normalised Scale	Current Scale	Normalised Scale
Negligible <5	1	Very Low <10	1
Low 5 - <15	2	Low 11 - 20	2
Medium <15 - 30	3	High 21 - 30	3
High 31 - 50	4	Very High 31-50	4
Very High >51	5	Extremely High >51	5

The method of assessing probability of landslide, adverse consequence and hazard developed by SLR Consulting incorporates additional critical elements such as the substrate interface and coefficients for the receptor position, distance and elevation and as such is considered to be more rigorous than the assessment scheme

proposed by the Scottish Government^{Error! Bookmark not defined.}. The ultimate Hazard Ranking scale does equate to the SE scale, with hazard rankings divided over four zones.

A simple multiplication of these coefficients would result in potentially large and unwieldy risk and impact rating numbers. SLR has therefore opted to normalise these values to bring them in line with the values used in the Scottish Government Guidance, as illustrated in Table 4-12 above.

Table 4-13
Hazard Ranking

Hazard Ranking	Hazard Level	Ranking	Action
1-4	Insignificant/Negligible		No mitigation action required although slide management and monitoring shall be employed. Slide management shall include the development of a site-specific construction plan for peat areas.
5 - 10	Significant/Low		As for Insignificant condition plus further investigation to refine the assessment combined with detailed quantitative risk assessment to determine appropriate mitigation through relocation or re-design.
11 - 16	Substantial/Medium		Consideration of avoiding project development in these areas should be made unless hazard mitigation can be put in place without significant environmental effect.
17-25	Serious/High		Unacceptable level of hazard; development within the area should be avoided.

6.10 Results

The stability risk assessment has demonstrated that most of the Site lies within an area of negligible to low risk with regards to stability based on **Error! Reference source not found.**. Those areas that have been identified as being at medium risk of instability but do not impact the site layout have not been considered in a hazard impact assessment.

There are seven areas at a medium risk of peat instability (identified on Figure 08), and no areas at a high risk of instability that have been identified across the Site. Following review, one of these locations (area2) is not considered to have either a potential impact on the wind farm infrastructure, due to locality, either well away from influencing wind farm infrastructure. Therefore, six medium risk sites have been identified and are discussed in the following section. Of these, two (areas 3 and 4) are in the borrow pit search areas and are isolated points which are identified as thicker peat on steep slopes, but as the area is likely to be excavated, they are not considered to pose a risk, particularly as they are in areas of very limited peat.

A further three locations (areas 1, 5 and 7) are located along tracks and associated with very localised deeper peat, associated with moderate gradients, however there is very little peat present and will not pose a risk. The final area 6 is a moderate slope with slightly deeper peat, this is also limited in extent and will be excavated as part of the turbine hardstand at Turbine 6.

There are no medium or high-risk locations within 1 km of any property and so no risk is posed to the community. Area 1 is on existing track close to the River Doon, but this is not anticipated to pose a risk, the others are all significant distances from water courses and the impact rating is all deemed to be very low to low.

The stability risk assessment results presented in Table 4-14 shows the calculated hazard ranking associated with every location where there is a stability risk of medium or above, at or close to wind farm infrastructure. The mitigation measures to reduce the risk of instability occurring are dependent upon location and the type of

proposed structure. Proposed mitigation measures and actions already undertaken to reduce the risk of peat instability occurring are also identified in Table 6-12, together with the associated, revised hazard ranking. A more detailed discussion of the possible mitigation measures is presented in Section 7.0.

6.11 Hazard Rated Locations

As noted in **Error! Reference source not found.** and, where the risk assessment has identified a negligible or low risk of peat instability, no specific mitigation measures are necessary. However, to ensure best practise is employed, there would be a need for careful monitoring and the construction management must include careful design of both the permanent and temporary works appropriate for peat soils; these are discussed further in Section 7.0.

The areas of the infrastructure that were rated as medium risk, or above, were subjected to a hazard assessment; a number of areas were discounted as they were located off the proposed access track and do not fall within influencing distance of any of the Proposed Development.

The procedure adopted was to review **Error! Reference source not found.** and identify those areas with a medium risk or greater, that were in proximity or influencing distance of any of the proposed infrastructure or watercourses. Those risk areas where there is no development would not affect the natural stability of the peat.

The assessment carried out in Table 6-12 was completed as described in the sections above. For example, Location 1 has a risk rating of 3 (derived from Table 6-5 and Table 6-10) with an impact rating of 2 (derived from the process described in Section 6.8.1 and normalised in Table 6-10). These ratings are multiplied (3x2) to give a hazard ranking of 6 (significant), as detailed in Table 4-13 and the localities shown on Figure 08.

Although the potential hazards identified in Table 6-12 can be mitigated to ‘insignificant’ it is believed that hazards should be subject to further post-consent investigation and ongoing monitoring during construction. Further details of mitigation during construction are described in Section 7.0.

Table 4-14
Stability Hazard Ranking Assessment

Location	Coordinates	Risk Rating	Impact Rating	Hazard Ranking	Mitigation	Revised Hazard Ranking
1	243394, 608687	Medium (3)	Low (2)	Significant (6)	Risk area influenced by steep slope along access track – limited peat thickness present. Risk can be mitigated by micro-siting or by following good construction practices with ongoing monitoring via a geotechnical risk register. The location is close to the River Doon but it is unlikely that this poses a risk on an existing track which will be upgraded.	Insignificant

Location	Coordinates	Risk Rating	Impact Rating	Hazard Ranking	Mitigation	Revised Hazard Ranking
2	241858, 608536	Medium (3)	Low (2)	Significant (6)	Risk area influenced by steep slope – limited peat thickness present. Risk can be mitigated by micro-siting or by following good construction practices with ongoing monitoring via a geotechnical risk register. The locality is well away from infrastructure and therefore poses no risk.	Insignificant
3	241686, 608027	Medium (3)	Low (2)	Significant (6)	Risk area influenced by steep slope – limited peat thickness present. This is in a borrow pit and will be removed as part of excavation.	Insignificant
4	241674, 607425	Medium (3)	Low (2)	Significant (6)	Risk area influenced by steep slope – limited peat thickness present. This is in a borrow pit and will be removed as part of excavation.	Insignificant
5	240847, 606878	Medium (3)	Very Low (1)	Insignificant (3)	Risk area influenced by deeper peat thickness present along proposed track. Risk can be mitigated by micro-siting or by following good construction practices with ongoing monitoring via a geotechnical risk register	Insignificant
6	240946, 607212	Medium (3)	Very Low (1)	Insignificant (3)	Risk area influenced by moderate slope – thick peat thickness present. Risk can be mitigated by micro-siting or by following good construction practices with ongoing monitoring via a geotechnical risk register	Insignificant
7	240852, 606877	Medium (3)	Very Low (1)	Insignificant (3)	Risk area influenced by deeper peat thickness present along track. Risk can be mitigated by micro-siting or by following good construction practices with ongoing monitoring via a geotechnical risk register	Insignificant

7.0 Construction Issues and Mitigation Measures

It has been shown that excavation, drainage and general construction activities can have a destabilising influence on peat and that design should allow for the delicate and susceptible condition of the peat. There is no extensive evidence for past peat instability on-site, however appropriate good practice measures and mitigation should be employed to minimise the risk of adverse effects on peat and hydrological receptors. The following sections highlight the construction issues that should be considered for each general area of construction. Many of the issues raised should be incorporated into the CEMP for the Site.

For full details of the mitigation measures proposed, please refer to Technical Appendix 2.1: Outline CEMP.

The following is a list of controls that should be considered for incorporation into the development of construction methodologies for the works in all areas of peat during detailed design stage:

- An appropriately experienced and qualified engineering geologist/geotechnical engineer should be appointed during the construction phase, to provide advice during the setting out, micrositing and construction phases of the works;
- A Geotechnical Risk Register is developed and maintained by the appointed geotechnical engineer;
- A minimisation of “undercutting” of peat slopes, but where this cannot be avoided, a more detailed assessment of the area of concern by the geotechnical engineer would be required;
- Careful micrositing of wind turbine foundations, crane hardstands and access track alignments to minimise effects on the prevailing hydrology;
- Although the risk of a peat slide is low for most of the Site, it is recommended that methodologies should be developed as a contingency to minimise the effects to watercourses in the unlikely event of peat instability; and
- Use of floating track across areas of deep peat (>1.0 m).

Notwithstanding any of the above comments, detailed design and construction practices would need to consider the ground conditions and the specific works at each location throughout the construction period.

The following list of mitigation measures is provided to minimise the risk of potentially inducing peat landslides during construction of the proposed development.

7.1 General

- Raise Health and Safety awareness of the peat environment at the proposed development for construction staff by incorporating the issue into the site induction. Include peat slide risk assessment information (e.g., peat instability indicators, best practice and emergency procedures) in toolbox talks with relevant operatives e.g., plant drivers;
- Introduce a ‘Peat Hazard Emergency Plan’ to provide instructions for site staff in the event of a peat slide or discovery of peat instability indicators;
- For sections of track that require track side cuttings into peat, suitable support measures would need to be designed to maintain the stability of the adjacent peat terrain;
- Refine/optimize the design through the pre-construction phase following completion of a detailed ground investigation; and

- Develop methodologies to ensure that accelerated degradation and erosion of exposed peat deposits does not occur as the break-up of the peat top mat has significant implications for the morphology, and thus hydrology, of the peat (e.g., minimise off-track plant movements within areas of peat).

7.2 Drainage Measures

Drainage design for the proposed development is a critical mitigation measure in maintaining the hydrological conditions. To maintain hydrological conditions, the following requirements of the drainage measures should be met:

- Development of drainage systems that would not create areas of concentrated flow or cause over-, or under-saturation of peat habitats;
- Development of robust drainage systems that would require minimal maintenance;
- A robust design of drainage systems and associated measures (i.e., silt traps, etc.) to minimise sedimentation into natural watercourses. These should be maintained and silt build up should be removed regularly.
- Method statements should be prepared in advance to mitigate against a slide occurring and should include, but not be limited to, the use of check dams/water bars and scour/erosion protection to limit flows and prevent contamination of watercourses; and
- Measures should be put in place to ensure drainage systems are well maintained, to include the identification and demarcation of zones of sensitive drainage or hydrology in areas of construction, e.g., inclusion of maintenance regimes for drainage systems into the CEMP.

7.3 Construction Recommendations

A summary of recommendations for site-specific infrastructure is provided in the following sections.

The complexity of peat stability has been discussed in this report and by Lindsay and Bragg⁴, amongst others. Following a review of published work and the observation and analysis undertaken for the proposed development, there would be a negligible hazard from peat instability if the recommendations contained in this report are adopted.

Suitable guidance and documentation in the form of a CEMP would be established before work commences to ensure good construction practices. Due to the complex inter-reactions affecting peat stability it is proposed that the recommendations given below are used as a set of guidelines to generate a detailed design concept. The concept should include the range of potential risks discussed in this report and the design should be sufficiently flexible to allow for continual modification and up-dating as construction progresses.

7.4 Wind Turbine Locations and Crane Hardstandss

It is proposed that construction of the wind turbine foundations would require excavation of peat and subsoil to create a suitable area for the foundation of the base, though subject to ground investigation, piled foundations may be considered

It is the objective of this assessment to consider the potential risk from peat instability and to recommend solutions and mitigation measures to eliminate, or at least reduce the risk to a manageable level. Risk reduction would best be achieved by minimising the effect of any construction works and an appropriate CEMP is an integral element in ensuring that all parties understand and acknowledge the potential consequences of a peat slide.

In general, the bearing stresses imposed by a wind turbine are low and the main requirement of the base is to resist the overturning moments generated by the wind acting on the turbine. Gravity base foundations are

designed to control bearing pressures to a level appropriate to the local ground conditions and provide stability against turbine loading.

The excavations for wind turbine foundation and crane hardstands should be kept to a minimum where possible but it is likely that the required hard stratum would be typically several metres deep, beneath soft materials (peat), unless directly on rock. The very soft nature of peat means that unsupported cut or excavated slopes could be unstable unless shallow gradients are used. The overall width of such an excavation would be up to 25 m diameter at the original ground surface, depending on the thickness of the peaty soil/peat and Glacial Till and appropriate methods of stabilising the temporary slopes should be considered. Foundation excavation would produce large volumes of peat, and this should be reused across the Site in an environmentally acceptable manner for restoration. Peat would not be used to back fill the excavation void within the footprint of the foundation as it would have a very low strength. Peat could be used as backfill outside the foundation footprint and to dress verges to tracks and around wind turbine foundation, in line with current Waste Management guidance¹⁷. For further details on reuse of peat, refer to Technical Appendix 10.2: Peat Management Plan. Management of the water in the peat, by maintaining existing drainage during excavation is essential to avoid creating conditions likely to increase the risk of a peat slide. A 'permit to pump' procedure would be in place prior to water being pumped from an excavation to prevent standing water within the base of an excavation.

7.5 Access Tracks

The general principles regarding the construction of the access tracks in peat which minimise the risk of instability and environmental effects are discussed below.

To maintain the current level or improve the stability of the peat mass on the slopes around the access track, it is necessary to ensure that the construction methods do not seriously disrupt the established drainage and that no areas are surcharged, either by water discharge or spoil.

Wherever possible, the following principles should be adopted:

- Maintenance of existing drainage is critical therefore all existing drainage tracks should be maintained and where necessary, channelled below the proposed track construction. Upslope side drainage ditches to the track would be required on side-long ground; the ditches should be constructed with small dams and cross drains where necessary so that:
- Water can pass below the track at regular intervals;
- Scour and erosion are avoided in the side ditches due the limited volume and velocity, concentrated discharges to the peat on the down slope side of the track are avoided;
- The camber of the track should encourage surface water to drain to the up-slope side drainage ditch;
- Track gradients to be maintained at the recommended gradients from the wind turbine supplier, typically shallower than 1 v: 8 h to facilitate access by the large specialist vehicles for both construction and transport of the wind turbine components. The maximum acceptable gradients are usually defined by the appointed wind turbine manufacturer;
- Identify and mark all existing drainage features within the access track corridors; these drainage features should be maintained where possible (not enhanced) during the construction and operational phases of the proposed development;
- Install cross drains at regular intervals to maintain interstitial groundwater flow through the peat mass below the tracks where track settlement could reduce the natural permeability. Where the roadside

¹⁷ SEPA (May 2017)., *SEPA Regulatory Position Statement – Developments on Peat and Off-site Uses of Waste Peat* (SEPA Guidance., WST-G-052. Version 1.

ditches are on the up-slope side of the road, regular cross drains will be used to take the flow towards the down-slope side and out to silt control devices and back onto the hillside;

- Install additional drainage in areas up-slope to any track to prevent ponding and instability;
- Install small check dams at regular intervals along the track side drains to prevent high water velocities in the side drains causing deep erosion in the peat;
- Where track construction is required over peat areas more than 1.0 m thick, this would be undertaken with a floating track construction, where the integrity of the peat allows and cross gradients are appropriate to allow floating roads;
- Cut and fill should be avoided in peat greater than 1.0 m thick if possible; if not, the following requirements on side long ground (across contours) should be adopted;
 - Excavate to a sound stratum;
 - Most construction surfaces to be horizontal with a slight fall to aid drainage;
 - Where the depth of cut is deemed unstable, employ a stepped or benched surface with the intention of minimising the exposed surface of the up-slope cut face;
 - Protect all exposed peat surfaces from erosion and desiccation, by ensuring the integrity and moisture content of the peat is maintained; and
 - The track drainage shall be on the up-slope side of the road, with the cross-fall towards that side. The track drainage ditches will be sized to accommodate the runoff -anticipated – to be located on one side of the track, but on both if there is a short section with no cross slope;
 - The top of cut slopes should be provided with a small bund to retain the peat to prevent desiccation and maintain the local stability of the peat.

7.6 Cable Routes

The general principles regarding the construction of the cable trenches in peat that minimises the risk of instability and environmental effects are discussed below.

To maintain the current level or improve the stability of the peat mass on the slopes around the cable route, it is necessary to ensure that the construction methods do not seriously disrupt the established drainage and that no areas are surcharged, either by water discharge or spoil.

The construction of the cable route would minimise disturbance to drainage by taking cable route alongside existing track and around the wind turbines adjacent to new tracks. Cable trenches would be reinstated as soon as possible to minimise the time they are left open and to avoid trenches acting as conduits for surface water, causing erosion and potential silt run off.

Mitigation may be required within the trench to maintain local hydrological conditions and hydraulic connection in sensitive habitats. This may include clay plugs/ peat bunds to prevent the trenches from becoming a preferential flow path for water flows.

7.7 Watercourses Crossing

The access tracks will cross existing watercourses at a number of locations and care would be required to ensure conformity in the settlement characteristics between the crossing structure and the approaches to avoid undue settlement. The preferred option for the stream crossings will be with the use of culverts and bridges. The larger watercourse crossings will not be influenced by peat. Watercourse crossing designs will be subject to the

approval of the Scottish Environmental Protection Agency (SEPA). For further details refer to Technical Appendix 10.4: Schedule of Watercourse Crossings.

7.8 Substation Compound

The position of the substation compound has been in the east of the Site on the eastern edge of the access track. There are no peat issues associated with the substation compound location.

7.9 Battery Energy Storage System Compound

The position of the battery energy storage system compound has been in the east of the Site on the western edge of the access track. There are no peat issues associated with the battery energy storage system compound location.

7.10 Borrow Pits

The proposed borrow pits would be required to comply with appropriate construction and quarrying regulations. They have been deliberately sited to avoid excavating peat and no significant construction mitigation would be required. Should blasting of rock be required during excavation, it is not likely to increase the likelihood of a peat slide as the borrow pits have been proposed in locations with limited peat. For further details on proposed borrow pits, refer to Technical Appendix 2.2: Borrow Pit Appraisal.

7.11 Temporary Construction Compound (adjacent to battery storage)

The construction compound is located on areas of thin peat on flat ground and will require minimal construction management.

7.12 Temporary Enabling Construction Compound near access

The temporary enabling construction compound is located on areas of thin peat on flat ground and will require minimal construction management.

8.0 Conclusion

The Site has been assessed for potential hazards associated with peat instability; the assessment has been based on:

- A walk-over survey by an experienced geologist;
- A thorough inspection of the digital terrain map;
- Review of historical and geological maps and publications and aerial photography; and
- A detailed geotechnical probing exercise at 1,869 locations in areas of identified peaty soil/peat to determine the thickness thereof.

The overall conclusion regarding peat stability is that there is a negligible to low risk of peat instability over most of the Site although some areas of medium risk have been identified. For these areas, a hazard impact assessment was completed which concluded that, subject to the employment of appropriate mitigation measures, all these areas can be considered as an insignificant risk.

Additional mitigation measures have been identified in areas where hazards are already considered insignificant to further reduce the risk of potential hazards occurring.

Most of the Site is covered by peaty soils and thin peat. Where thick peat is identified in the flatter laying areas, the maximum recorded thickness was 8.3 m. The locally thicker areas of peat have been avoided through layout design. The Site is undulating with an average gradient of 6°, meaning that there is limited potential for a peat slide to occur, or to travel significant distances.

The report has highlighted the complicated inter-relationship between all the aspects that influence the stability of peat. Consequently, the discussion has also addressed areas of construction and drainage to avoid a stability problem rather than attempt to put it right after the event.

8.1 Recommendations

A summary of recommendations is provided in the following sections.

8.1.1 Stability

The complexity of peat stability has been discussed in some detail in this Technical Appendix and at great length by Lindsay and Bragg⁴, amongst others. Following a review of published work and the observation and analysis undertaken for this project, it is believed that there will be a negligible hazard from peat instability if the recommendations contained in this report are adopted.

Suitable guidance and documentation in the form of a CEMP will be established before work commences to ensure poor construction practices do not precipitate instability.

Due to the complex inter-reactions affecting peat stability it is proposed that the recommendations given below are used as a set of guidelines to generate a design concept. The concept should include the range of potential risks discussed in this report and the design should be sufficiently flexible to allow for continual modification and up-dating as construction progresses.

8.1.2 Wind Turbines

It is the objective of this assessment to consider the potential risk from, or to initiate, peat instability and to recommend solutions and mitigation measures to eliminate, or at least reduce the risk to a manageable level. Risk reduction can be best achieved by minimising the effect of any construction works and an appropriate CEMP is believed to be an integral element in ensuring that all parties understand and acknowledge the potential consequences of a peat slide.

The preferred foundation solution for areas of thick peat would be a gravity pad foundation bearing on a sound stratum. The side slopes of the excavation in the peat should be maintained in a stable condition throughout the construction process; consideration should be given to constructing a rock retaining bund (rock doughnut) prior to excavation of the peat or alternatively micro-siting to reduce peat thickness.

8.1.3 Access Track

The main recommendations for the design and construction of access tracks over peat are listed below:

- Identify and mark all existing drainage features within track corridors; these drainage features should be maintained (not enhanced) during the construction and operational phases of the wind farm;
- Install cross drains at regular intervals to maintain interstitial groundwater flow through the peat mass below the tracks where track settlement could reduce the natural permeability
- Install additional drainage in areas up-slope to any access track to prevent ponding and instability;
- Install small dams at regular intervals along the track side drains to prevent significant water velocities in the side drains causing deep erosion in the peat;
- Where construction is required over peat areas more than 1 m deep, this should be undertaken with a floating track construction, where the integrity of the peat allows and cross gradients are appropriate to allow floating roads;
- Longitudinal gradients to be consistent with limitations of the heavy lift and large transport vehicles, no steeper than 1 v: 8 h;
- Crossfalls on the track surface to shed water to the up-slope drainage ditches;
- Cut and fill should be avoided in peat greater than 1.0 m deep if possible; if not, the following requirements on side long ground should be adopted;
 - Excavate to a sound stratum;
 - Construction surface to be horizontal with a slight fall to aid drainage;
 - Where the depth of cut is deemed unstable, employ a stepped or benched surface with the intention of minimising the exposed surface of the up-slope cut face;
 - Protect all exposed peat surfaces from erosion and desiccation, by ensuring the integrity and moisture content of the peat is maintained;
 - The top of cut slopes should be provided with a small bund to retain the peat to prevent desiccation and maintain the local stability of the peat.

8.1.4 Temporary Construction Compounds

The proposed locations of construction compounds have all been assessed and the position of the site is, by design, in an area of negligible to low risk, with limited peat thickness.

8.1.5 Borrow Pits

Both locations have been assessed and are in areas with limited peat thickness and negligible to low risk. The northernmost borrow pit option does contain a very localised area of increased risk (medium) however this is impacted by the slope only, there is no significant peat present. The southernmost borrow pit option also contains a very localised area of increased risk (medium) however this is impacted by the slope only, there is no peat present.

8.1.6 Substation

This location has been assessed and is in an area with limited peat thickness and negligible risk.

8.1.7 Battery Storage

This location has been assessed and is in an area with limited peat thickness and negligible risk.

8.1.8 Further Work

This report should be considered as the first stage in the development of a fundamental understanding of the various inter-relationships that govern and control the peatlands at the proposed development.

The commissioned assessment has purposefully kept the extent of physical intrusion into the sensitive peat areas to an absolute minimum. The results are considered appropriate for the planning application.

More detailed ground investigations will be required to facilitate the geotechnical design of the various foundations and access track, particularly the vertical and horizontal alignment and the design of the river/stream crossings. These will be incorporated into the Construction Method Statement which will be submitted to the Planning Authority for approval as part of the condition compliance prior to any site works commencing.

It is not the purpose of this report to provide a detailed scope for the further investigation at the pre commencement stage; however, it is believed that the strength and stiffness parameters are needed for turbine design and regular probes along access tracks to determine bearing capacity for either excavated or floated track design.

FIGURE AND APPENDICES

Figure 01: Site Location



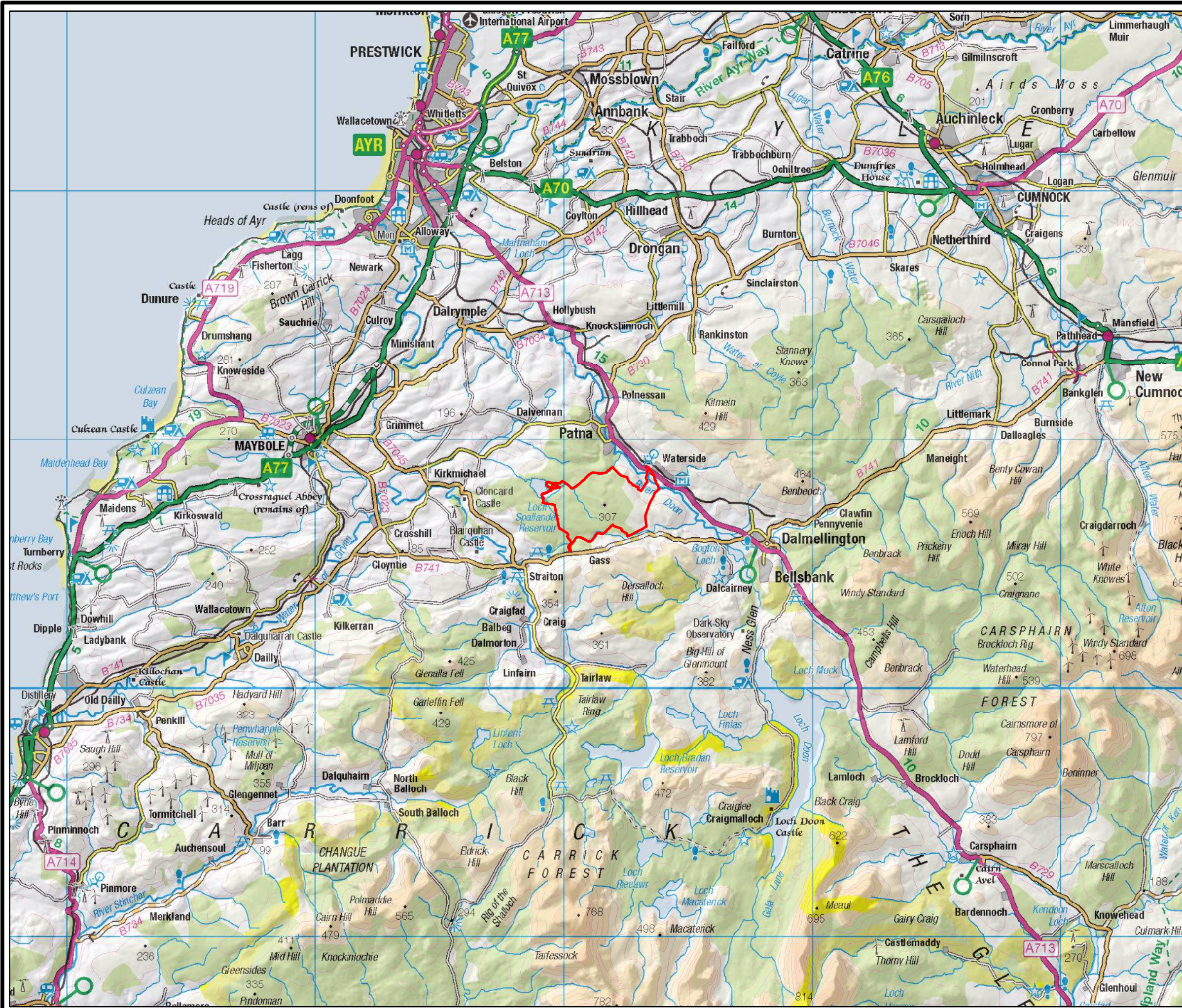
SCLENTEUCH WIND FARM

FIGURE 1

SITE LOCATION

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 Site Boundary



LAYOUT DWG

LAYOUT NO.

DRAWING NUMBER

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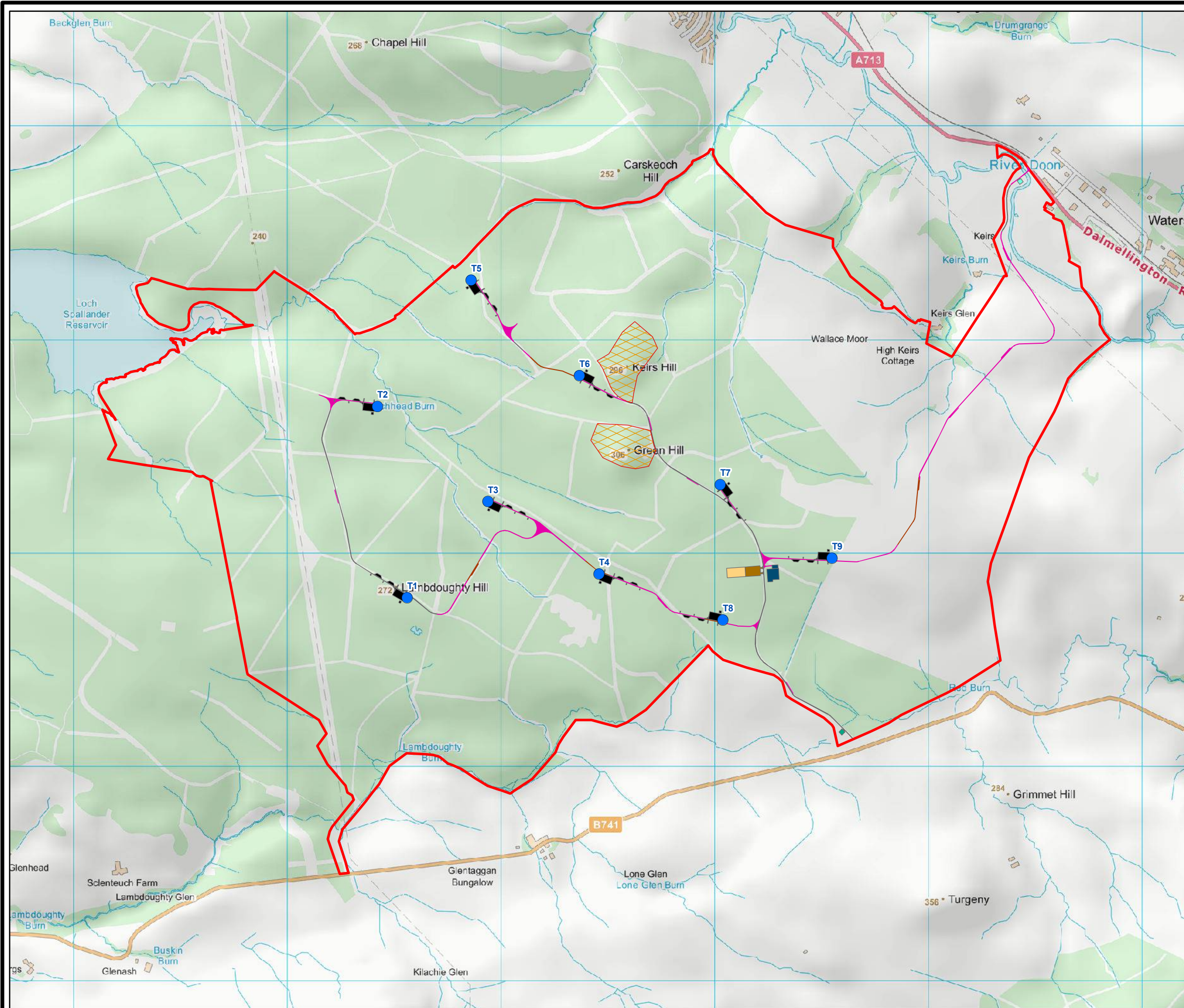
Figure 02: Site Layout



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FIGURE 2 SITE LAYOUT

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- Site Boundary
- Turbine Location
- New Site Track - Excavated
- New Site Track - Floated
- Upgraded Site Track
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search



LAYOUT DWG: T-LAYOUT NO.

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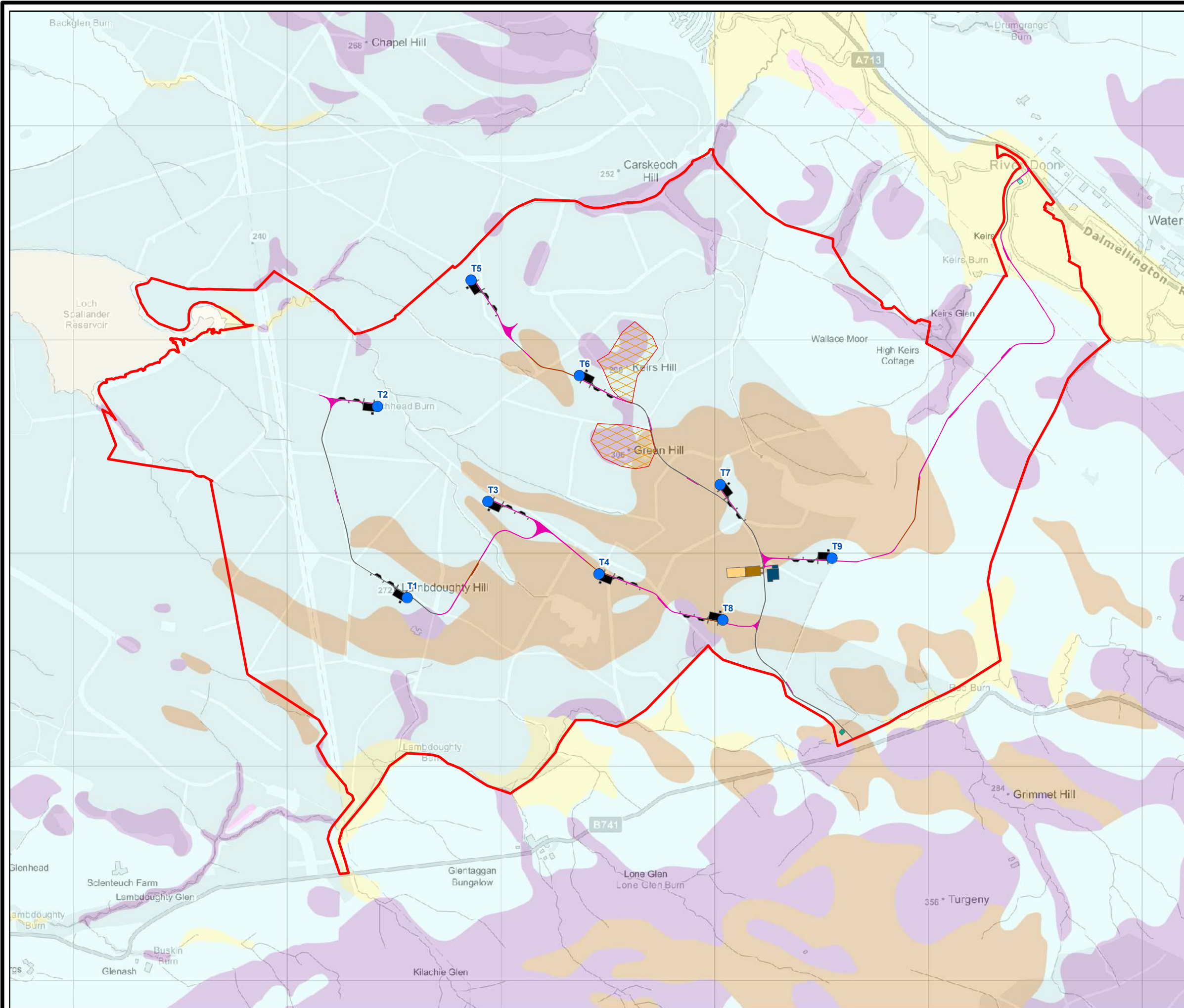
Figure 03: Superficial Geology



SCLENTEUCH WIND FARM

FIGURE 3 SUPERFICIAL GEOLOGY

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- Site Boundary
 - Turbine Location
 - New Site Track - Excavated
 - New Site Track - Floated
 - Upgraded Site Track
 - Crane and Compound Hardstanding
 - Control Building, Substation Compound and Permanent Hardstanding
 - Battery Storage
 - Temporary Construction Compound and Battery Storage
 - Temporary Enabling Works Compound
 - Alternative Temporary Enabling Works Compound
 - Borrow Pit Search Area
- Superficial Geology**
- Peat
 - Alluvium - Clay, Silt, Sand and Gravel
 - Till - Diamicton
 - Till, Devensian - Diamicton
 - Glaciofluvial Deposits - Sand and Gravel
 - Glaciofluvial Deposits - Gravel, Sand and Silt
 - Superficial Theme Not Mapped [For Digital Map Use Only] - Unknown/Unclassified Entry
 - Bedrock At or Near Surface



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Figure 04: Bedrock Geology

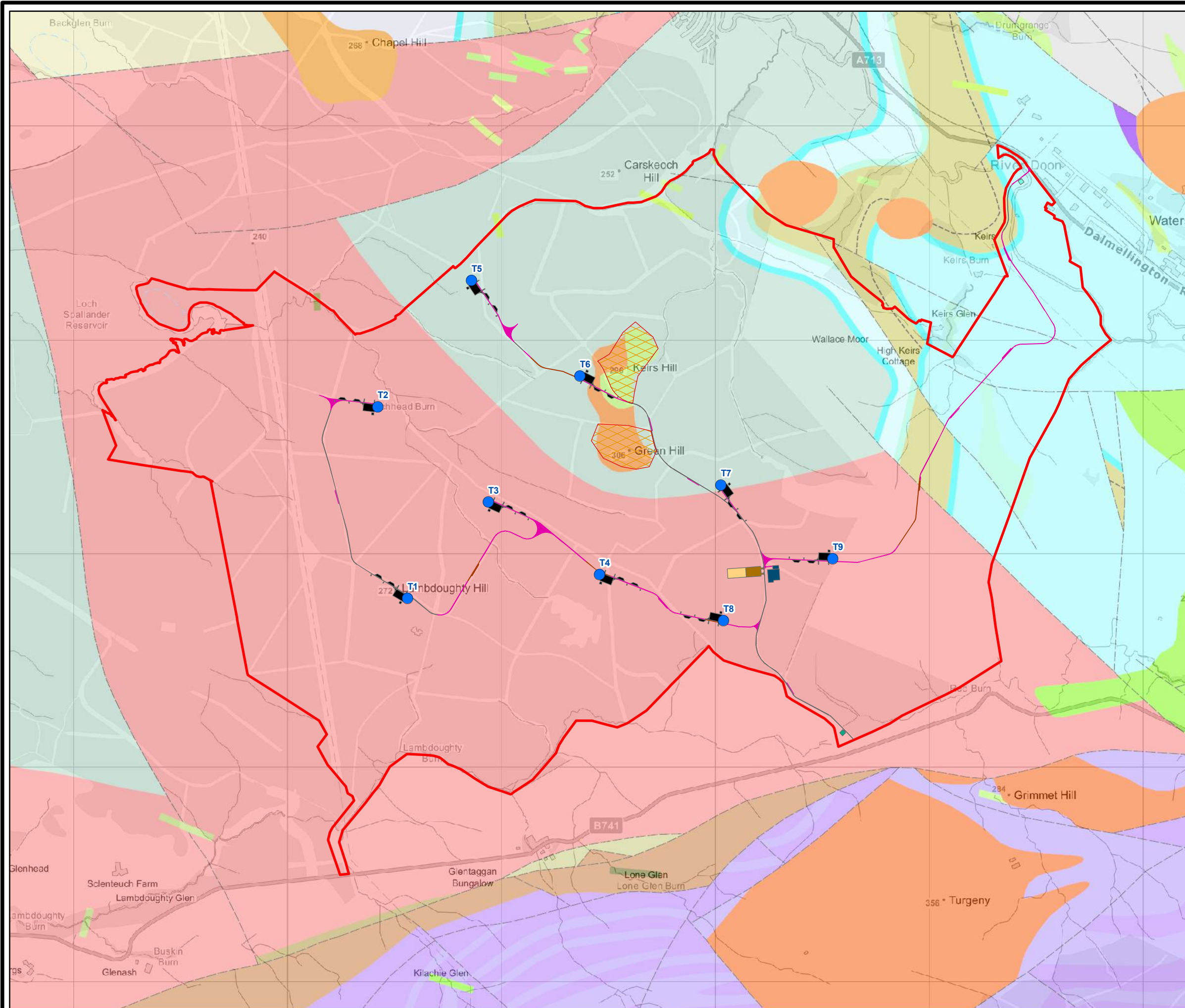


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FIGURE 4.1

BEDROCK GEOLOGY

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- Site Boundary
- Turbine Location
- New Site Track - Excavated
- New Site Track - Floated
- Upgraded Site Track
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Bottom Pit Search Area



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**FIGURE 4.2
BEDROCK GEOLOGY**

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Sedimentary Bedrock

-  Scottish Lower Coal Measures Formation - Sedimentary Rock Cycles, Coal Measure Type
-  Upper Limestone Formation - Sedimentary Rock Cycles, Clackmannan Group Type
-  Index Limestone (Scotland) – Limestone
-  Keirs Limestone – Limestone
-  Limestone Coal Formation - Sedimentary Rock Cycles, Clackmannan Group Type
-  Hurllet Limestone – Limestone
-  Lower Limestone Formation - Sedimentary Rock Cycles, Clackmannan Group Type
-  Doon Limestone – Limestone
-  Ballagan Formation - Mudstone, Siltstone, Limestone and Sandstone
-  Inverclyde Group and Strathclyde Group (Undifferentiated) - Mudstone and Sandstone
-  Kinnesswood Formation – Sandstone
-  Clyde Sandstone Formation - Breccia, Conglomerate, Sandstone and Cornstone
-  Lanark Group – Sandstone
-  Lanark Group – Conglomerate
-  Swanshaw Sandstone Formation – Sandstone
-  Drummyork Flags Formation - Sandstone, Siltstone and Mudstone









CARBONIFEROUS

SILURIAN - DEVONIAN
DEVONIAN - CARBONIFEROUS

Linear Features

-  Drumlin, form line at base
-  Coal Seam, Inferred
-  Fault, Inferred, Displacement Unknown

Igneous Bedrock

-  Mull Dyke-Swarm - Analcime-Gabbro
-  North Britain Palaeogene Dyke Suite - Quartz-Microgabbro
-  Ayrshire Basanitic and Foiditic Plugs and Vents - Camptonite, Monchiquite, Basalt and Basanite
-  Ayrshire Basanitic and Foiditic Plugs and Vents - Pyroclastic-Rock
-  Western Midland Valley Westphalian to Early Permian Sills - Camptonite, Monchiquite, Basalt and Basanite
-  Western Midland Valley Westphalian to Early Permian Sills - Olivine-Microgabbro
-  Western Midland Valley Westphalian to Early Permian Sills – Picrite
-  Unnamed Dyke, Late Carboniferous to Early Permian – Monchiquite
-  Scottish Late Carboniferous to Early Permian Plugs and Vents Suite - Volcaniclastic-Breccia
-  Carrick Volcanic Formation - Basalt and Basaltic Andesite
-  Southern Midland Valley Felsite Sills – Felsite
-  Maybole-Straiton-Dalmellington Mafic Intrusions – Kersantite
-  Unnamed Igneous Intrusion of Unknown Age – Mafite

PALAEOGENE

PERMIAN
CARBONIFEROUS

DEVONIAN
DEVONIAN - CARBONIFEROUS
SILURIAN - DEVONIAN

Figure 05: Peat Depth

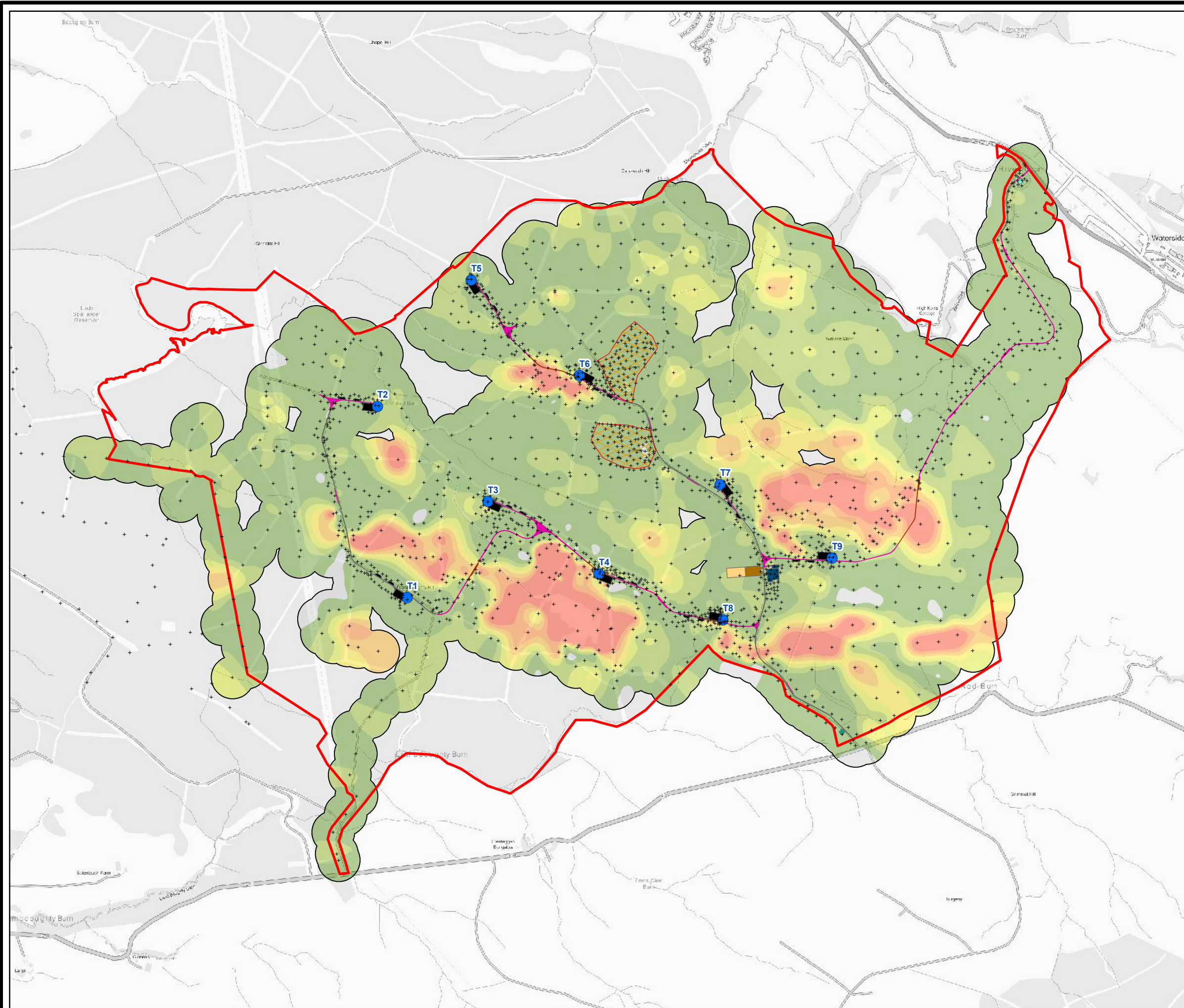


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FIGURE 5

PEAT DEPTHS

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- Site Boundary
- Turbine Location
- New Site Track - Excavated
- New Site Track - Floated
- Upgraded Site Track
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search
- Peat Probe Location

Peat Depth (m)

- 0
- 0 - 0.5
- 0.5 - 1
- 1 - 1.5
- 1.5 - 2
- 2 - 2.5
- 2.5 - 3
- >3



LAYOUT DWG

T-LAYOUT NO.

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Figure 06: Peat Depth >0.5m

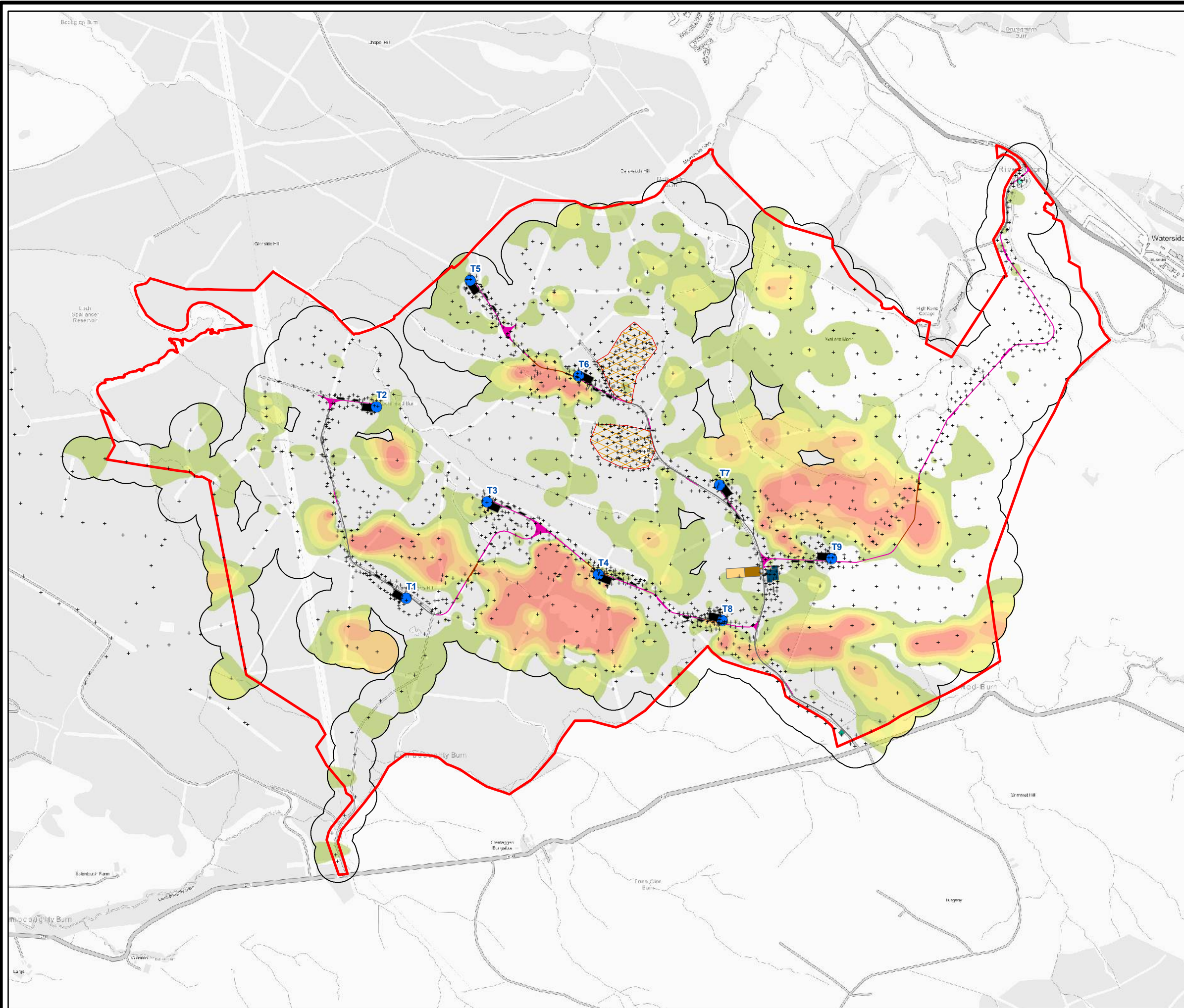


SCLENTEUCH WIND FARM

FIGURE 6

PEAT DEPTHS > 0.5M

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- Site Boundary
- Turbine Location
- New Site Track -
- New Site Track -
- Upgraded Site Track
- Crane and Compound
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search
- Peat Probe Location

Peat Depth (m)

0.5 - 1
1.0 - 1.5
1.5 - 2
2.0 - 2.5
2.5 - 3
>3



LAYOUT DWG: T-LAYOUT NO.

DRAWING NUMBER

SCALE - 1:17,500 @ A3

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Figure 07: Slope

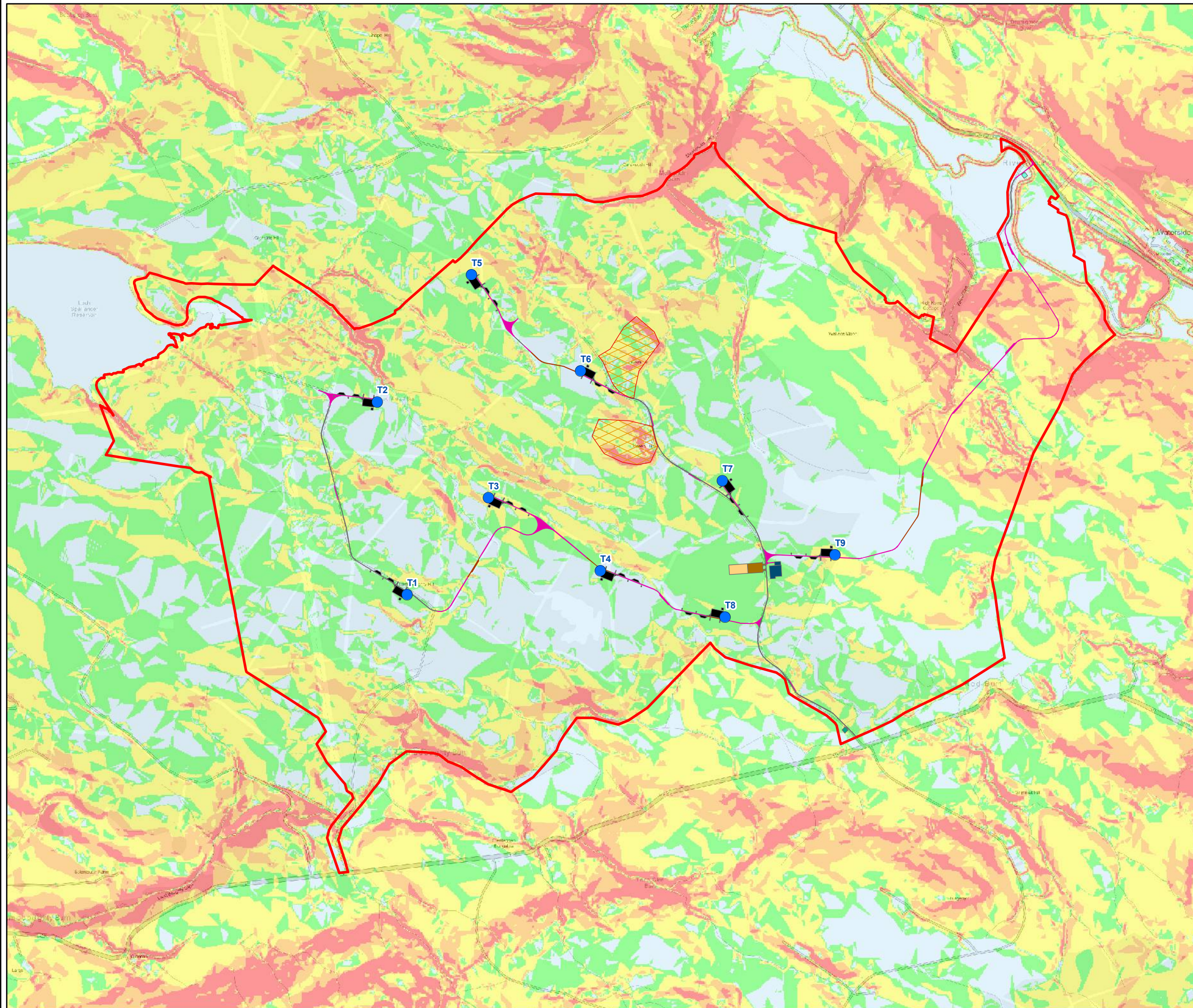


SCLENTEUCH WIND FARM

FIGURE 7

SLOPE

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0100031673 OS OpenData.



- Site Boundary
- Turbine Location
- New Site Track - Excavated
- New Site Track - Floated
- Upgraded Site Track
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search Area

Slope (Degrees °) - Generated with OS Terrain5

- 0 - 2
- 2 - 4
- 4 - 8
- 8 - 12
- >12



LAYOUT DWG: _____ T-LAYOUT NO.: _____
DRAWING NUMBER: _____

SCALE - 1:17,500 @ A3

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Figure 08: Peat Slide Risk

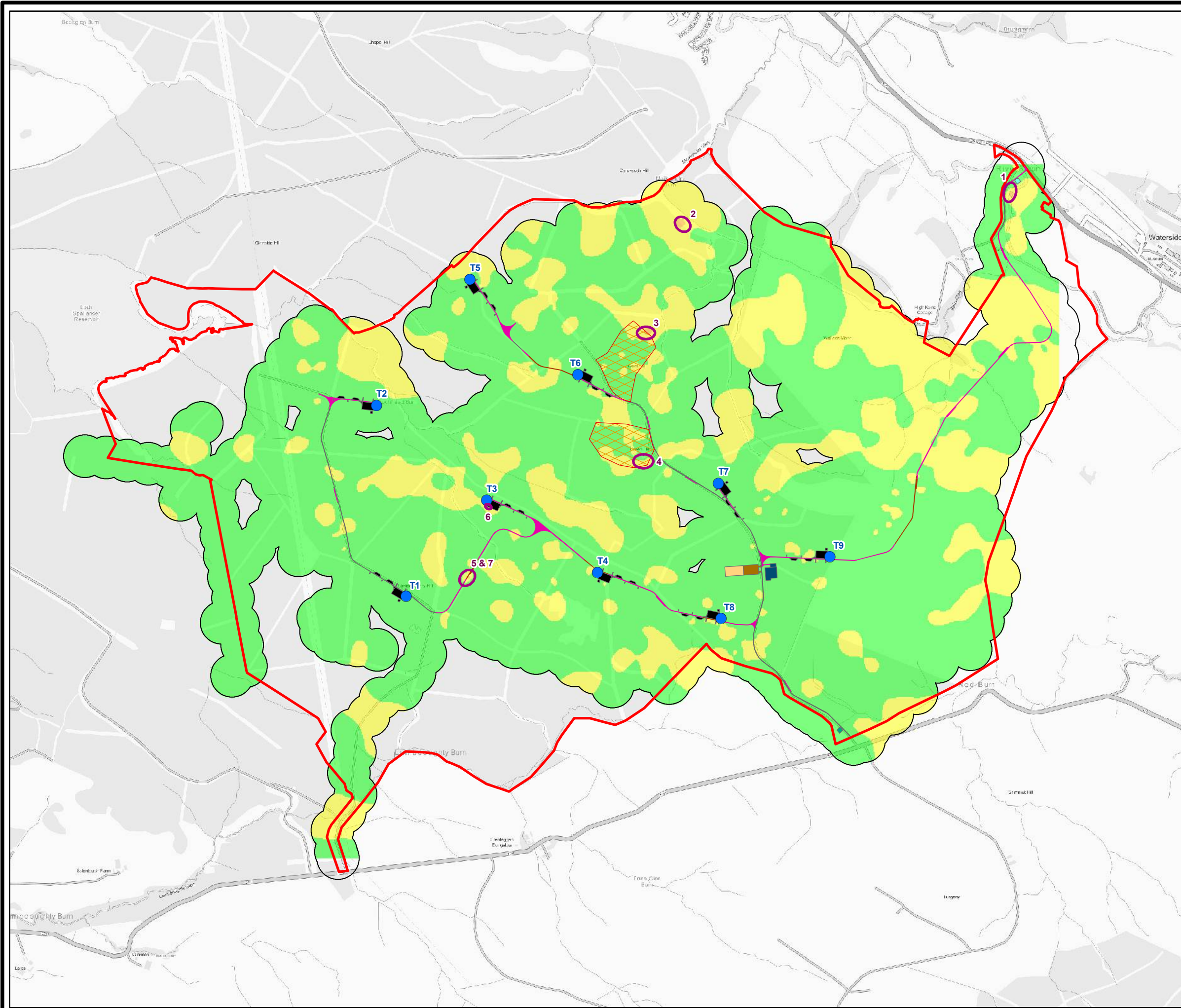


SCLENTEUCH WIND FARM

FIGURE 8

PEAT SLIDE RISK

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- Site Boundary
 - Turbine Location
 - New Site Track - Excavated
 - New Site Track - Floated
 - Upgraded Site Track
 - Crane and Compound Hardstanding
 - Control Building, Substation Compound and Permanent Hardstanding
 - Battery Storage
 - Temporary Construction Compound and Battery Storage
 - Temporary Enabling Works Compound
 - Alternative Temporary Enabling Works Compound
 - Borrow Pit Search Area
 - Peat Slide Risk Area
- Peat Slide Risk**
- Negligible
 - Low
 - Medium
 - High



LAYOUT DWG T-LAYOUT NO.

DRAWING NUMBER

SCALE - 1:17,500 @ A3

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Figure 09: Aerial Photography with Geomorphological Mapping

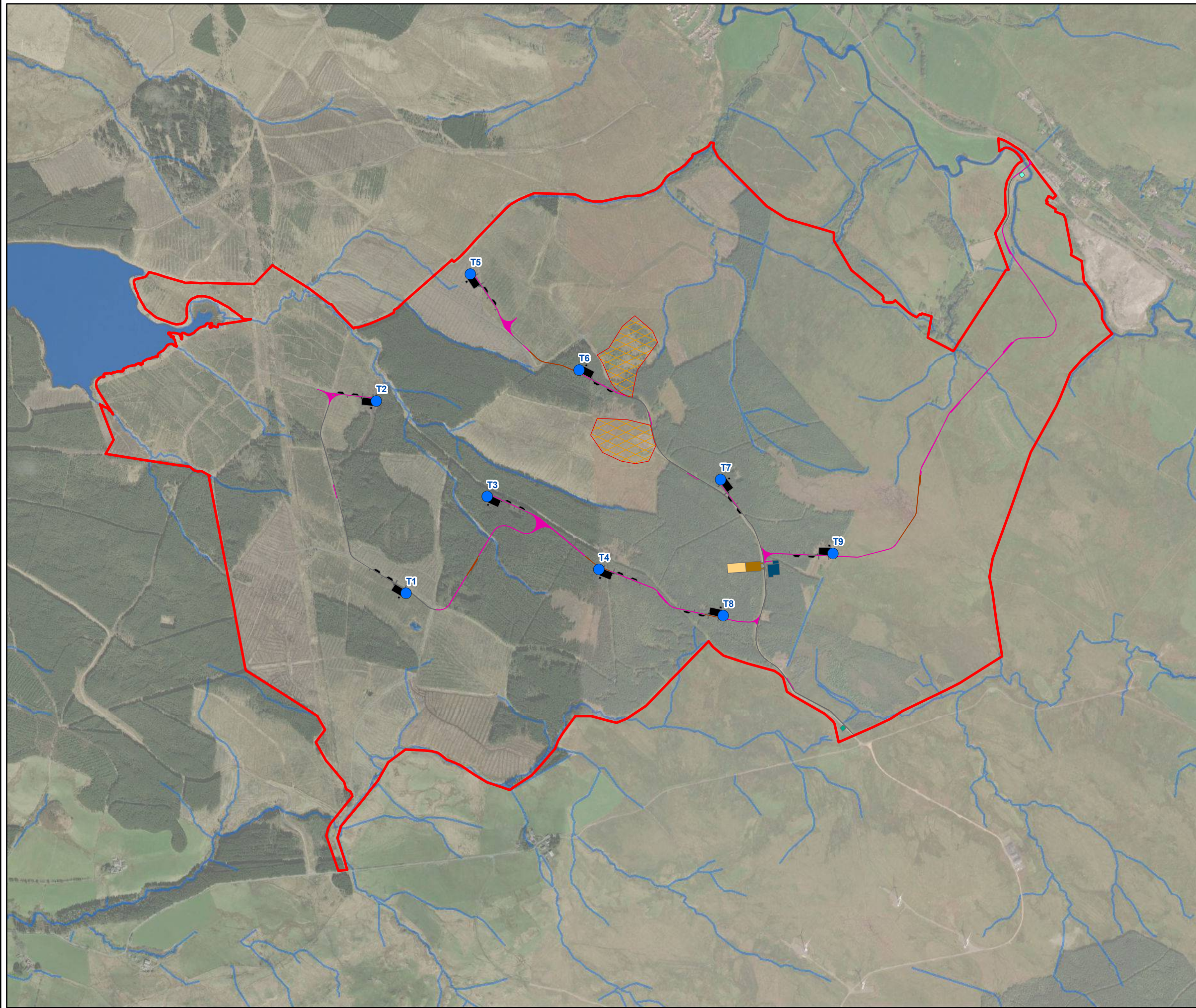


SCLENTEUCH WIND FARM

FIGURE 9

AERIAL PHOTOGRAPHY WITH GEOMORPHOLOGICAL MAPPING

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0100031673 OS OpenData.
Aerial Image: Source: Esri, Maxar, Earthstar Geographics,
and the GIS User Community



- Site Boundary
- Turbine Location
- New Site Track - Excavated
- New Site Track - Floated
- Upgraded Site Track
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search Area
- Watercourse (OS OpenMap Local)
- Waterbody (OS OpenMap Local)



LAYOUT DWG: T-LAYOUT NO.

DRAWING NUMBER

SCALE - 1:17,500 @ A3

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APPENDICES

APPENDIX 01: PEAT RISK DATA

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
1	Point	243428.55	608775.78	0.20	SOIL	GRANULAR	1.40	Peaty Soil	1	1	1	1	Negligible
2	Point	243443.44	608766.34	0.10	SOIL	GRANULAR	1.49	Peaty Soil	1	1	1	1	Negligible
3	Point	243410.72	608768.43	0.30	SOIL	GRANULAR	0.62	Peaty Soil	1	1	1	1	Negligible
4	Point	243430.36	608791.13	0.10	SOIL	GRANULAR	11.75	Peaty Soil	1	6	1	6	Low
5	Point	243455.50	608811.03	0.10	SOIL	GRANULAR	1.26	Peaty Soil	1	1	1	1	Negligible
6	Point	243421.64	608761.44	0.10	SOIL	GRANULAR	0.88	Peaty Soil	1	1	1	1	Negligible
7	Point	243462.04	608741.96	0.10	SOIL	GRANULAR	13.97	Peaty Soil	1	8	1	8	Low
8	Point	243452.67	608751.34	0.10	SOIL	GRANULAR	0.82	Peaty Soil	1	1	1	1	Negligible
9	Point	243439.68	608743.41	0.10	SOIL	GRANULAR	1.18	Peaty Soil	1	1	1	1	Negligible
10	Point	243418.76	608741.96	0.10	SOIL	GRANULAR	0.42	Peaty Soil	1	1	1	1	Negligible
11	Point	243438.24	608719.60	0.10	SOIL	GRANULAR	12.65	Peaty Soil	1	8	1	8	Low
12	Point	243420.92	608723.21	0.10	SOIL	GRANULAR	5.00	Peaty Soil	1	4	1	4	Negligible
13	Point	243401.08	608732.95	0.10	SOIL	GRANULAR	0.75	Peaty Soil	1	1	1	1	Negligible
14	Point	243394.28	608686.59	0.80	SUPERFICIAL	GRANULAR	13.95	Thin Peat	2	8	1	16	Medium
15	Point	243377.36	608692.95	0.30	SOIL	GRANULAR	0.56	Peaty Soil	1	1	1	1	Negligible
16	Point	243393.53	608731.17	0.50	SUPERFICIAL	GRANULAR	0.74	Peaty Soil	1	1	1	1	Negligible
17	Point	243379.85	608620.08	0.10	SOIL	GRANULAR	0.75	Peaty Soil	1	1	1	1	Negligible
18	Point	243385.00	608648.68	0.80	SUPERFICIAL	GRANULAR	6.07	Thin Peat	2	4	1	8	Low
19	Point	243373.51	608639.85	0.30	SOIL	GRANULAR	0.75	Peaty Soil	1	1	1	1	Negligible
20	Point	243381.51	608547.43	0.20	SUPERFICIAL	GRANULAR	17.66	Peaty Soil	1	8	1	8	Low
21	Point	243370.84	608550.78	0.30	SUPERFICIAL	GRANULAR	1.15	Peaty Soil	1	1	1	1	Negligible
22	Point	243371.83	608596.79	0.20	SOIL	GRANULAR	0.88	Peaty Soil	1	1	1	1	Negligible
23	Point	243373.82	608456.00	0.30	SUPERFICIAL	GRANULAR	5.49	Peaty Soil	1	4	1	4	Negligible
24	Point	243366.23	608468.70	0.20	SOIL	GRANULAR	1.94	Peaty Soil	1	1	1	1	Negligible
25	Point	243325.83	608463.27	0.30	SUPERFICIAL	GRANULAR	0.73	Peaty Soil	1	1	1	1	Negligible
26	Point	243344.81	608500.28	0.50	SUPERFICIAL	GRANULAR	0.73	Peaty Soil	1	1	1	1	Negligible
27	Point	243369.19	608513.53	0.90	SUPERFICIAL	GRANULAR	1.04	Thin Peat	2	1	1	2	Negligible
28	Point	242279.53	608521.19	0.80	PEAT	GRANULAR	1.89	Thin Peat	2	1	1	2	Negligible
29	Point	242460.26	608446.62	0.30	SOIL	GRANULAR	6.12	Peaty Soil	1	4	1	4	Negligible
30	Point	241195.10	608450.64	0.20	SOIL	GRANULAR	4.52	Peaty Soil	1	4	1	4	Negligible
31	Point	241153.83	608458.44	0.40	PEAT	GRANULAR	8.28	Peaty Soil	1	6	1	6	Low
32	Point	241362.49	608537.50	1.10	PEAT	GRANULAR	3.29	Thin Peat	2	2	1	4	Negligible
33	Point	241458.75	608537.50	0.30	PEAT	ROCK	5.02	Peaty Soil	1	4	2	8	Low
34	Point	241562.37	608446.33	0.20	PEAT	GRANULAR	6.17	Peaty Soil	1	4	1	4	Negligible
35	Point	241562.37	608544.86	0.80	PEAT	GRANULAR	3.60	Thin Peat	2	2	1	4	Negligible
36	Point	241666.71	608539.33	0.30	PEAT	GRANULAR	5.46	Peaty Soil	1	4	1	4	Negligible
37	Point	241758.37	608448.56	0.20	PEAT	GRANULAR	4.91	Peaty Soil	1	4	1	4	Negligible
38	Point	241758.69	608538.33	0.80	PEAT	GRANULAR	5.15	Thin Peat	2	4	1	8	Low
39	Point	241762.86	608642.67	0.30	PEAT	GRANULAR	24.77	Peaty Soil	1	8	1	8	Low
40	Point	241859.15	608639.17	0.30	PEAT	GRANULAR	16.64	Peaty Soil	1	8	1	8	Low
41	Point	241963.69	608541.84	0.40	PEAT	GRANULAR	24.84	Peaty Soil	1	8	1	8	Low
42	Point	241858.25	608536.19	0.50	PEAT	GRANULAR	13.60	Peaty Soil	1	8	1	8	Low
43	Point	241914.92	608492.98	0.40	PEAT	GRANULAR	3.99	Peaty Soil	1	2	1	2	Negligible
44	Point	241976.09	608476.57	0.20	PEAT	GRANULAR	6.70	Peaty Soil	1	4	1	4	Negligible
45	Point	242357.50	608448.05	0.20	PEAT	GRANULAR	0.92	Peaty Soil	1	1	1	1	Negligible
46	Point	241626.19	608466.15	0.30		GRANULAR	4.33	Peaty Soil	1	4	1	4	Negligible
47	Point	243505.43	608592.52	0.15		GRANULAR	0.36	Peaty Soil	1	1	1	1	Negligible
48	Point	243448.96	608820.60	0.20		GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
49	Point	243401.65	608716.93	0.40		GRANULAR	0.76	Peaty Soil	1	1	1	1	Negligible
50	Point	243371.41	608514.93	0.15		GRANULAR	13.84	Peaty Soil	1	8	1	8	Low
51	Point	243408.75	608382.17	0.20	SOIL	GRANULAR	6.15	Peaty Soil	1	4	1	4	Negligible
52	Point	243391.01	608418.63	0.20	SOIL	GRANULAR	15.88	Peaty Soil	1	8	1	8	Low
53	Point	243346.33	608438.78	0.80	SUPERFICIAL	GRANULAR	0.82	Thin Peat	2	1	1	2	Negligible
54	Point	243346.99	608412.64	0.20	SOIL	GRANULAR	1.16	Peaty Soil	1	1	1	1	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
55	Point	243368.03	608397.35	0.30	SOIL	GRANULAR	1.16	Peaty Soil	1	1	1	1	Negligible
56	Point	240889.19	608296.51	0.40	PEAT	GRANULAR	5.63	Peaty Soil	1	4	1	4	Negligible
57	Point	240862.50	608301.74	0.20	SOIL	GRANULAR	5.65	Peaty Soil	1	4	1	4	Negligible
58	Point	240855.42	608307.75	0.50	PEAT	GRANULAR	5.70	Peaty Soil	1	4	1	4	Negligible
59	Point	243416.52	608314.87	0.80	PEAT	GRANULAR	1.92	Thin Peat	2	1	1	2	Negligible
60	Point	243391.68	608330.42	0.50	SUPERFICIAL	GRANULAR	1.99	Peaty Soil	1	1	1	1	Negligible
61	Point	243399.00	608354.67	0.20	SOIL	GRANULAR	2.01	Peaty Soil	1	2	1	2	Negligible
62	Point	243399.41	608354.47	0.90	SUPERFICIAL	GRANULAR	2.01	Thin Peat	2	2	1	4	Negligible
63	Point	243365.61	608364.76	0.10	SOIL	GRANULAR	1.34	Peaty Soil	1	1	1	1	Negligible
64	Point	243471.66	608291.56	0.10	SOIL	GRANULAR	1.69	Peaty Soil	1	1	1	1	Negligible
65	Point	243453.03	608324.16	0.20	SOIL	GRANULAR	1.34	Peaty Soil	1	1	1	1	Negligible
66	Point	240916.32	608233.33	0.30	SOIL	GRANULAR	2.17	Peaty Soil	1	2	1	2	Negligible
67	Point	240945.78	608221.38	0.20	SOIL	GRANULAR	2.41	Peaty Soil	1	2	1	2	Negligible
68	Point	240913.72	608249.02	0.60	PEAT	GRANULAR	7.85	Thin Peat	2	4	1	8	Low
69	Point	240891.28	608263.57	0.30	SOIL	GRANULAR	3.95	Peaty Soil	1	2	1	2	Negligible
70	Point	240861.07	608282.67	0.90	PEAT	GRANULAR	3.95	Thin Peat	2	2	1	4	Negligible
71	Point	240845.51	608281.30	0.60	PEAT	GRANULAR	3.76	Thin Peat	2	2	1	4	Negligible
72	Point	240841.72	608259.85	0.40	PEAT	GRANULAR	3.58	Peaty Soil	1	2	1	2	Negligible
73	Point	240839.35	608231.84	0.20	SOIL	GRANULAR	3.80	Peaty Soil	1	2	1	2	Negligible
74	Point	240831.63	608242.20	0.20	SOIL	GRANULAR	3.76	Peaty Soil	1	2	1	2	Negligible
75	Point	240853.28	608219.08	0.10	SOIL	GRANULAR	3.76	Peaty Soil	1	2	1	2	Negligible
76	Point	240865.65	608242.40	0.20	SOIL	GRANULAR	3.81	Peaty Soil	1	2	1	2	Negligible
77	Point	240873.82	608219.46	0.20	SOIL	GRANULAR	3.28	Peaty Soil	1	2	1	2	Negligible
78	Point	240899.11	608240.30	0.40	PEAT	GRANULAR	7.06	Peaty Soil	1	4	1	4	Negligible
79	Point	243470.26	608237.22	0.10	SOIL	GRANULAR	9.04	Peaty Soil	1	6	1	6	Low
80	Point	243431.79	608244.15	0.10	SOIL	GRANULAR	16.14	Peaty Soil	1	8	1	8	Low
81	Point	243440.52	608272.62	0.20	SOIL	GRANULAR	10.47	Peaty Soil	1	6	1	6	Low
82	Point	243411.70	608283.30	0.10	SOIL	GRANULAR	16.16	Peaty Soil	1	8	1	8	Low
83	Point	243497.00	608248.15	0.10	SOIL	GRANULAR	10.61	Peaty Soil	1	6	1	6	Low
84	Point	240956.89	608144.75	0.20	SOIL	GRANULAR	3.05	Peaty Soil	1	2	1	2	Negligible
85	Point	240935.01	608142.40	0.10	SOIL	GRANULAR	6.08	Peaty Soil	1	4	1	4	Negligible
86	Point	241003.80	608139.40	0.20	SOIL	GRANULAR	1.61	Peaty Soil	1	1	1	1	Negligible
87	Point	240979.57	608132.66	0.20	SOIL	GRANULAR	4.73	Peaty Soil	1	4	1	4	Negligible
88	Point	240959.99	608144.32	0.20	SOIL	GRANULAR	3.05	Peaty Soil	1	2	1	2	Negligible
89	Point	240959.66	608193.63	0.20	SOIL	GRANULAR	2.46	Peaty Soil	1	2	1	2	Negligible
90	Point	240979.84	608164.62	0.40	PEAT	GRANULAR	1.74	Peaty Soil	1	1	1	1	Negligible
91	Point	240871.36	608197.42	0.20	SOIL	GRANULAR	3.37	Peaty Soil	1	2	1	2	Negligible
92	Point	240886.60	608201.17	0.60	PEAT	GRANULAR	3.47	Thin Peat	2	2	1	4	Negligible
93	Point	240902.78	608186.48	0.30	SOIL	GRANULAR	1.74	Peaty Soil	1	1	1	1	Negligible
94	Point	240915.60	608198.64	0.30	SOIL	GRANULAR	1.50	Peaty Soil	1	1	1	1	Negligible
95	Point	240925.37	608155.59	0.30	SOIL	GRANULAR	5.29	Peaty Soil	1	4	1	4	Negligible
96	Point	240943.46	608185.35	0.20	SOIL	GRANULAR	7.04	Peaty Soil	1	4	1	4	Negligible
97	Point	240951.50	608161.33	0.20	SOIL	GRANULAR	2.84	Peaty Soil	1	2	1	2	Negligible
98	Point	240976.11	608139.65	0.20	SOIL	GRANULAR	2.97	Peaty Soil	1	2	1	2	Negligible
99	Point	243524.83	608153.04	0.10	SOIL	GRANULAR	11.62	Peaty Soil	1	6	1	6	Low
100	Point	243493.96	608165.46	0.20	SOIL	GRANULAR	11.48	Peaty Soil	1	6	1	6	Low
101	Point	243497.81	608196.51	0.10	SOIL	GRANULAR	12.41	Peaty Soil	1	8	1	8	Low
102	Point	243466.35	608201.53	0.10	SOIL	GRANULAR	9.61	Peaty Soil	1	6	1	6	Low
103	Point	243533.00	608204.18	0.10	SOIL	GRANULAR	10.48	Peaty Soil	1	6	1	6	Low
104	Point	243559.27	608160.36	0.30	SOIL	GRANULAR	11.71	Peaty Soil	1	6	1	6	Low
105	Point	240981.23	608061.49	0.80	PEAT	GRANULAR	2.66	Thin Peat	2	2	1	4	Negligible
106	Point	240984.86	608100.53	0.50	SUPERFICIAL	GRANULAR	2.20	Peaty Soil	1	2	1	2	Negligible
107	Point	240964.91	608104.59	0.20	SOIL	GRANULAR	1.32	Peaty Soil	1	1	1	1	Negligible
108	Point	240958.31	608121.36	0.10	SOIL	GRANULAR	3.03	Peaty Soil	1	2	1	2	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
109	Point	241609.82	608046.02	0.10	SOIL	GRANULAR	11.50	Peaty Soil	1	6	1	6	Low
110	Point	241630.45	608070.09	0.10	SOIL	GRANULAR	20.23	Peaty Soil	1	8	1	8	Low
111	Point	241103.45	608064.98	0.30	SOIL	GRANULAR	4.77	Peaty Soil	1	4	1	4	Negligible
112	Point	241071.39	608058.61	0.60	PEAT	GRANULAR	2.22	Thin Peat	2	2	1	4	Negligible
113	Point	241076.96	608095.25	0.50	PEAT	GRANULAR	5.84	Peaty Soil	1	4	1	4	Negligible
114	Point	241054.61	608071.66	0.10	SOIL	GRANULAR	1.86	Peaty Soil	1	1	1	1	Negligible
115	Point	241037.21	608076.37	0.20	SOIL	GRANULAR	3.56	Peaty Soil	1	2	1	2	Negligible
116	Point	241016.24	608078.61	0.70	PEAT	GRANULAR	1.12	Thin Peat	2	1	1	2	Negligible
117	Point	240993.32	608097.44	0.10	SOIL	GRANULAR	1.73	Peaty Soil	1	1	1	1	Negligible
118	Point	240993.20	608123.44	0.20	SOIL	GRANULAR	5.42	Peaty Soil	1	4	1	4	Negligible
119	Point	240988.22	608114.34	0.10	SOIL	GRANULAR	3.47	Peaty Soil	1	2	1	2	Negligible
120	Point	241001.92	608078.31	0.20	SOIL	GRANULAR	1.69	Peaty Soil	1	1	1	1	Negligible
121	Point	241014.14	608058.45	0.20	SOIL	GRANULAR	1.61	Peaty Soil	1	1	1	1	Negligible
122	Point	243570.40	608068.62	0.20	SOIL	GRANULAR	8.76	Peaty Soil	1	6	1	6	Low
123	Point	243550.53	608086.97	0.10	SOIL	GRANULAR	8.96	Peaty Soil	1	6	1	6	Low
124	Point	243547.04	608116.79	0.20	SOIL	GRANULAR	11.87	Peaty Soil	1	6	1	6	Low
125	Point	243518.01	608124.69	0.10	SOIL	GRANULAR	12.50	Peaty Soil	1	8	1	8	Low
126	Point	243584.62	608105.44	0.20	SOIL	GRANULAR	8.97	Peaty Soil	1	6	1	6	Low
127	Point	243617.57	608070.40	0.20	SOIL	GRANULAR	13.75	Peaty Soil	1	8	1	8	Low
128	Point	241035.45	607974.51	0.20	SOIL	GRANULAR	4.26	Peaty Soil	1	4	1	4	Negligible
129	Point	241002.41	608009.12	0.40	SOIL	GRANULAR	3.41	Peaty Soil	1	2	1	2	Negligible
130	Point	241587.62	607969.87	0.10	SOIL	GRANULAR	4.06	Peaty Soil	1	4	1	4	Negligible
131	Point	241547.97	607985.71	0.20	SOIL	GRANULAR	6.03	Peaty Soil	1	4	1	4	Negligible
132	Point	241638.55	607995.45	0.10	SOIL	GRANULAR	4.89	Peaty Soil	1	4	1	4	Negligible
133	Point	241595.87	608007.09	0.10	SOIL	GRANULAR	4.15	Peaty Soil	1	4	1	4	Negligible
134	Point	241581.51	607979.37	0.10	SOIL	GRANULAR	2.44	Peaty Soil	1	2	1	2	Negligible
135	Point	241577.17	608016.80	0.10	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
136	Point	241626.96	608019.33	0.10	SOIL	GRANULAR	21.47	Peaty Soil	1	8	1	8	Low
137	Point	241653.43	608031.56	0.10	SOIL	GRANULAR	28.82	Peaty Soil	1	8	1	8	Low
138	Point	241676.86	608006.49	0.10	SOIL	GRANULAR	26.94	Peaty Soil	1	8	1	8	Low
139	Point	241700.92	607987.58	0.10	SOIL	GRANULAR	26.32	Peaty Soil	1	8	1	8	Low
140	Point	241666.55	607985.86	0.10	SOIL	GRANULAR	7.49	Peaty Soil	1	4	1	4	Negligible
141	Point	241684.26	607982.55	0.00	ROCK	ROCK	2.78	No Peat	0	2	2	0	None
142	Point	241101.78	607980.10	0.20	SOIL	GRANULAR	1.24	Peaty Soil	1	1	1	1	Negligible
143	Point	241067.64	608016.42	0.20	SOIL	GRANULAR	1.82	Peaty Soil	1	1	1	1	Negligible
144	Point	241049.21	608038.49	0.30	SOIL	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
145	Point	241035.29	608028.72	0.40	PEAT	GRANULAR	1.79	Peaty Soil	1	1	1	1	Negligible
146	Point	241033.93	608011.69	0.20	SOIL	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
147	Point	241061.63	607993.43	0.40	PEAT	GRANULAR	1.33	Peaty Soil	1	1	1	1	Negligible
148	Point	241086.62	607970.44	0.30	SOIL	GRANULAR	0.77	Peaty Soil	1	1	1	1	Negligible
149	Point	243330.96	607976.13	0.10	SOIL	GRANULAR	10.48	Peaty Soil	1	6	1	6	Low
150	Point	243379.58	607998.54	0.10	SOIL	GRANULAR	11.32	Peaty Soil	1	6	1	6	Low
151	Point	243405.42	607978.13	0.10	SOIL	GRANULAR	9.40	Peaty Soil	1	6	1	6	Low
152	Point	243434.48	607998.07	0.10	SOIL	GRANULAR	6.00	Peaty Soil	1	4	1	4	Negligible
153	Point	243462.40	607967.93	0.20	SOIL	GRANULAR	5.99	Peaty Soil	1	4	1	4	Negligible
154	Point	243484.93	607997.58	0.10	SOIL	GRANULAR	8.16	Peaty Soil	1	6	1	6	Low
155	Point	243510.85	607976.61	0.10	SOIL	GRANULAR	10.58	Peaty Soil	1	6	1	6	Low
156	Point	243559.55	607980.45	0.20	SOIL	GRANULAR	8.72	Peaty Soil	1	6	1	6	Low
157	Point	243535.27	608006.62	0.10	SOIL	GRANULAR	7.03	Peaty Soil	1	4	1	4	Negligible
158	Point	243587.63	608011.39	0.10	SOIL	GRANULAR	6.70	Peaty Soil	1	4	1	4	Negligible
159	Point	243566.22	608031.27	0.10	SOIL	GRANULAR	7.50	Peaty Soil	1	4	1	4	Negligible
160	Point	243601.93	608035.58	0.40	SOIL	GRANULAR	6.66	Peaty Soil	1	4	1	4	Negligible
161	Point	243603.55	607994.68	0.10	SOIL	GRANULAR	7.16	Peaty Soil	1	4	1	4	Negligible
162	Point	241109.00	607907.79	0.90	PEAT	GRANULAR	3.34	Thin Peat	2	2	1	4	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
163	Point	241064.15	607928.36	0.10	SOIL	GRANULAR	5.22	Peaty Soil	1	4	1	4	Negligible
164	Point	241071.60	607944.06	0.20	SOIL	GRANULAR	2.67	Peaty Soil	1	2	1	2	Negligible
165	Point	241511.23	607887.58	0.10	SOIL	GRANULAR	2.46	Peaty Soil	1	2	1	2	Negligible
166	Point	241529.93	607895.64	0.10	SOIL	GRANULAR	3.91	Peaty Soil	1	2	1	2	Negligible
167	Point	241492.84	607907.68	0.10	SOIL	GRANULAR	5.07	Peaty Soil	1	4	1	4	Negligible
168	Point	241551.65	607913.98	0.20	SOIL	GRANULAR	6.10	Peaty Soil	1	4	1	4	Negligible
169	Point	241571.15	607923.68	0.20	SOIL	GRANULAR	9.20	Peaty Soil	1	6	1	6	Low
170	Point	241591.82	607942.24	0.20	SOIL	GRANULAR	5.64	Peaty Soil	1	4	1	4	Negligible
171	Point	241541.88	607946.35	0.10	SOIL	GRANULAR	5.94	Peaty Soil	1	4	1	4	Negligible
172	Point	241613.54	607963.74	0.10	SOIL	GRANULAR	3.86	Peaty Soil	1	2	1	2	Negligible
173	Point	241640.78	607959.05	0.10	SOIL	GRANULAR	2.14	Peaty Soil	1	2	1	2	Negligible
174	Point	241636.28	607939.90	0.10	SOIL	GRANULAR	3.20	Peaty Soil	1	2	1	2	Negligible
175	Point	241664.47	607920.51	0.10	SOIL	GRANULAR	5.93	Peaty Soil	1	4	1	4	Negligible
176	Point	241683.63	607932.45	0.10	SOIL	GRANULAR	7.54	Peaty Soil	1	4	1	4	Negligible
177	Point	241669.92	607961.32	0.10	SOIL	GRANULAR	3.62	Peaty Soil	1	2	1	2	Negligible
178	Point	241723.15	607936.97	0.10	SOIL	GRANULAR	18.65	Peaty Soil	1	8	1	8	Low
179	Point	241673.07	607885.86	0.10	SOIL	GRANULAR	7.74	Peaty Soil	1	4	1	4	Negligible
180	Point	241629.98	607899.59	0.10	SOIL	GRANULAR	7.31	Peaty Soil	1	4	1	4	Negligible
181	Point	241586.50	607898.50	0.10	SOIL	GRANULAR	7.38	Peaty Soil	1	4	1	4	Negligible
182	Point	241613.13	607922.96	0.10	SOIL	GRANULAR	6.30	Peaty Soil	1	4	1	4	Negligible
183	Point	241561.31	607887.11	0.10	SOIL	GRANULAR	5.46	Peaty Soil	1	4	1	4	Negligible
184	Point	241520.10	607916.41	0.10	SOIL	GRANULAR	4.86	Peaty Soil	1	4	1	4	Negligible
185	Point	241536.33	607932.35	0.10	SOIL	GRANULAR	5.83	Peaty Soil	1	4	1	4	Negligible
186	Point	241558.14	607953.29	0.10	SOIL	GRANULAR	5.69	Peaty Soil	1	4	1	4	Negligible
187	Point	241700.92	607956.64	0.10	SOIL	GRANULAR	1.07	Peaty Soil	1	1	1	1	Negligible
188	Point	241256.54	607893.40	1.50	PEAT	GRANULAR	5.76	Thin Peat	2	4	1	8	Low
189	Point	241214.19	607898.64	1.80	PEAT	GRANULAR	1.96	Thick Peat	3	1	1	3	Negligible
190	Point	241170.28	607919.34	1.40	PEAT	GRANULAR	0.57	Thin Peat	2	1	1	2	Negligible
191	Point	241128.13	607950.56	0.70	PEAT	GRANULAR	1.28	Thin Peat	2	1	1	2	Negligible
192	Point	241108.81	607949.03	0.30	SOIL	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
193	Point	241132.53	607923.11	0.60	PEAT	GRANULAR	1.53	Thin Peat	2	1	1	2	Negligible
194	Point	241159.76	607900.60	2.60	PEAT	GRANULAR	1.26	Thick Peat	3	1	1	3	Negligible
195	Point	243285.13	607892.36	0.10	SOIL	GRANULAR	1.26	Peaty Soil	1	1	1	1	Negligible
196	Point	243264.74	607907.93	0.20	SOIL	GRANULAR	0.73	Peaty Soil	1	1	1	1	Negligible
197	Point	243301.78	607937.99	0.10	SOIL	GRANULAR	1.79	Peaty Soil	1	1	1	1	Negligible
198	Point	243322.81	607922.39	0.20	SOIL	GRANULAR	0.22	Peaty Soil	1	1	1	1	Negligible
199	Point	243356.96	607951.44	0.10	SOIL	GRANULAR	9.74	Peaty Soil	1	6	1	6	Low
200	Point	243589.25	607955.45	0.10	SOIL	GRANULAR	9.34	Peaty Soil	1	6	1	6	Low
201	Point	243546.44	607953.63	0.30	SOIL	GRANULAR	7.60	Peaty Soil	1	4	1	4	Negligible
202	Point	243497.26	607954.26	0.10	SOIL	GRANULAR	5.40	Peaty Soil	1	4	1	4	Negligible
203	Point	243440.83	607947.54	0.10	SOIL	GRANULAR	5.58	Peaty Soil	1	4	1	4	Negligible
204	Point	243390.88	607953.02	0.10	SOIL	GRANULAR	8.64	Peaty Soil	1	6	1	6	Low
205	Point	243359.99	607932.58	0.10	SOIL	GRANULAR	5.32	Peaty Soil	1	4	1	4	Negligible
206	Point	243341.12	607895.75	0.10	SOIL	GRANULAR	0.39	Peaty Soil	1	1	1	1	Negligible
207	Point	241456.97	607893.99	0.20	SOIL	GRANULAR	4.70	Peaty Soil	1	4	1	4	Negligible
208	Point	241439.97	607896.99	0.10	SOIL	GRANULAR	6.42	Peaty Soil	1	4	1	4	Negligible
209	Point	241187.44	607843.53	5.60	PEAT	GRANULAR	1.94	Thick Peat	3	1	1	3	Negligible
210	Point	241155.34	607880.70	3.00	PEAT	GRANULAR	2.10	Thick Peat	3	2	1	6	Low
211	Point	241227.07	607830.22	5.30	PEAT	GRANULAR	2.62	Thick Peat	3	2	1	6	Low
212	Point	241276.87	607820.45	2.00	PEAT	GRANULAR	1.41	Thick Peat	3	1	1	3	Negligible
213	Point	241322.76	607837.18	1.80	PEAT	GRANULAR	1.63	Thick Peat	3	1	1	3	Negligible
214	Point	241328.97	607818.39	1.00	PEAT	GRANULAR	1.67	Thin Peat	2	1	1	2	Negligible
215	Point	241350.99	607821.68	0.90	PEAT	GRANULAR	1.68	Thin Peat	2	1	1	2	Negligible
216	Point	241376.48	607810.36	1.00	PEAT	GRANULAR	1.62	Thin Peat	2	1	1	2	Negligible

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217	Point	241480.37	607875.71	0.10	SOIL	GRANULAR	8.16	Peaty Soil	1	6	1	6	Low
218	Point	241630.74	607865.29	0.10	SOIL	GRANULAR	19.44	Peaty Soil	1	8	1	8	Low
219	Point	241602.14	607861.30	0.10	SOIL	GRANULAR	4.32	Peaty Soil	1	4	1	4	Negligible
220	Point	241551.28	607861.65	0.10	SOIL	GRANULAR	6.37	Peaty Soil	1	4	1	4	Negligible
221	Point	241510.39	607840.82	0.10	SOIL	GRANULAR	1.33	Peaty Soil	1	1	1	1	Negligible
222	Point	241575.19	607837.74	0.10	SOIL	GRANULAR	12.22	Peaty Soil	1	8	1	8	Low
223	Point	241581.54	607859.44	0.10	SOIL	GRANULAR	9.21	Peaty Soil	1	6	1	6	Low
224	Point	241521.96	607858.57	0.10	SOIL	GRANULAR	1.47	Peaty Soil	1	1	1	1	Negligible
225	Point	241625.20	607837.64	0.10	SOIL	GRANULAR	6.14	Peaty Soil	1	4	1	4	Negligible
226	Point	241594.52	607822.96	0.10	SOIL	GRANULAR	4.59	Peaty Soil	1	4	1	4	Negligible
227	Point	241552.05	607826.94	0.10	SOIL	GRANULAR	3.08	Peaty Soil	1	2	1	2	Negligible
228	Point	241521.19	607817.68	0.30	SOIL	GRANULAR	3.18	Peaty Soil	1	2	1	2	Negligible
229	Point	241575.56	607809.86	0.30	SOIL	GRANULAR	6.10	Peaty Soil	1	4	1	4	Negligible
230	Point	241618.01	607813.95	0.20	SOIL	GRANULAR	6.14	Peaty Soil	1	4	1	4	Negligible
231	Point	241743.11	607873.88	0.10	SOIL	GRANULAR	5.04	Peaty Soil	1	4	1	4	Negligible
232	Point	241717.41	607841.94	0.10	SOIL	GRANULAR	6.20	Peaty Soil	1	4	1	4	Negligible
233	Point	241689.37	607829.95	0.50	PEAT	GRANULAR	5.52	Peaty Soil	1	4	1	4	Negligible
234	Point	241660.94	607816.12	0.10	SOIL	GRANULAR	2.09	Peaty Soil	1	2	1	2	Negligible
235	Point	241159.25	607877.59	3.70	PEAT	GRANULAR	1.00	Thick Peat	3	1	1	3	Negligible
236	Point	241173.96	607848.29	5.40	PEAT	GRANULAR	2.59	Thick Peat	3	2	1	6	Low
237	Point	241162.93	607830.05	5.60	PEAT	GRANULAR	2.07	Thick Peat	3	2	1	6	Low
238	Point	243202.06	607815.60	0.10	SOIL	GRANULAR	5.16	Peaty Soil	1	4	1	4	Negligible
239	Point	243216.91	607836.49	0.20	SOIL	GRANULAR	22.91	Peaty Soil	1	8	1	8	Low
240	Point	243223.79	607851.28	0.20	SOIL	GRANULAR	7.85	Peaty Soil	1	4	1	4	Negligible
241	Point	243238.71	607866.34	0.20	SOIL	GRANULAR	12.76	Peaty Soil	1	8	1	8	Low
242	Point	243257.95	607853.96	0.10	SOIL	GRANULAR	21.16	Peaty Soil	1	8	1	8	Low
243	Point	243309.44	607873.67	0.10	SOIL	GRANULAR	0.73	Peaty Soil	1	1	1	1	Negligible
244	Point	243284.64	607839.83	0.10	SOIL	GRANULAR	4.88	Peaty Soil	1	4	1	4	Negligible
245	Point	243258.98	607826.27	0.10	SOIL	GRANULAR	9.52	Peaty Soil	1	6	1	6	Low
246	Point	243258.88	607826.45	0.20	SOIL	GRANULAR	9.52	Peaty Soil	1	6	1	6	Low
247	Point	241219.59	607866.51	2.90	PEAT	GRANULAR	1.78	Thick Peat	3	1	1	3	Negligible
248	Point	241257.38	607858.09	2.80	PEAT	GRANULAR	4.17	Thick Peat	3	4	1	12	Low
249	Point	241310.85	607841.32	1.20	PEAT	GRANULAR	1.63	Thin Peat	2	1	1	2	Negligible
250	Point	241322.78	607872.82	0.10	SOIL	GRANULAR	3.30	Peaty Soil	1	2	1	2	Negligible
251	Point	241307.40	607872.60	0.20	SOIL	GRANULAR	3.72	Peaty Soil	1	2	1	2	Negligible
252	Point	241353.08	607879.72	0.10	SOIL	GRANULAR	1.94	Peaty Soil	1	1	1	1	Negligible
253	Point	241323.31	607852.38	0.90	PEAT	GRANULAR	1.59	Thin Peat	2	1	1	2	Negligible
254	Point	241345.73	607858.30	0.60	PEAT	GRANULAR	1.62	Thin Peat	2	1	1	2	Negligible
255	Point	241342.77	607834.42	1.10	PEAT	GRANULAR	1.64	Thin Peat	2	1	1	2	Negligible
256	Point	241364.37	607822.87	0.80	PEAT	GRANULAR	1.68	Thin Peat	2	1	1	2	Negligible
257	Point	241381.49	607843.05	0.50	PEAT	GRANULAR	1.35	Peaty Soil	1	1	1	1	Negligible
258	Point	241361.75	607842.28	0.50	PEAT	GRANULAR	1.62	Peaty Soil	1	1	1	1	Negligible
259	Point	241383.80	607866.17	0.30	SOIL	GRANULAR	3.75	Peaty Soil	1	2	1	2	Negligible
260	Point	241366.33	607861.73	0.20	SOIL	GRANULAR	1.62	Peaty Soil	1	1	1	1	Negligible
261	Point	241346.88	607880.04	0.10	SOIL	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
262	Point	241397.58	607881.46	0.10	SOIL	GRANULAR	4.32	Peaty Soil	1	4	1	4	Negligible
263	Point	241414.99	607868.21	0.20	SOIL	GRANULAR	5.14	Peaty Soil	1	4	1	4	Negligible
264	Point	241402.56	607855.10	0.10	SOIL	GRANULAR	5.28	Peaty Soil	1	4	1	4	Negligible
265	Point	241406.20	607823.97	0.40	PEAT	GRANULAR	0.65	Peaty Soil	1	1	1	1	Negligible
266	Point	241422.40	607841.13	0.20	SOIL	GRANULAR	5.10	Peaty Soil	1	4	1	4	Negligible
267	Point	241384.24	607813.43	1.20	PEAT	GRANULAR	1.26	Thin Peat	2	1	1	2	Negligible
268	Point	241401.81	607831.98	0.40	PEAT	GRANULAR	1.05	Peaty Soil	1	1	1	1	Negligible
269	Point	241444.72	607807.37	0.30	SOIL	GRANULAR	4.34	Peaty Soil	1	4	1	4	Negligible
270	Point	241462.46	607806.80	0.20	SOIL	GRANULAR	4.51	Peaty Soil	1	4	1	4	Negligible

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271	Point	241430.99	607816.53	0.60	PEAT	GRANULAR	3.98	Thin Peat	2	2	1	4	Negligible
272	Point	241493.48	607808.76	0.10	SOIL	GRANULAR	2.37	Peaty Soil	1	2	1	2	Negligible
273	Point	241479.04	607822.53	0.10	SOIL	GRANULAR	4.03	Peaty Soil	1	4	1	4	Negligible
274	Point	241500.42	607820.32	0.20	SOIL	GRANULAR	5.39	Peaty Soil	1	4	1	4	Negligible
275	Point	241478.30	607842.44	0.20	SOIL	GRANULAR	1.98	Peaty Soil	1	1	1	1	Negligible
276	Point	241483.70	607851.63	0.20	SOIL	GRANULAR	10.52	Peaty Soil	1	6	1	6	Low
277	Point	241459.50	607859.76	0.10	SOIL	GRANULAR	2.50	Peaty Soil	1	2	1	2	Negligible
278	Point	241474.22	607873.32	0.10	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
279	Point	241454.34	607876.72	0.10	SOIL	GRANULAR	3.36	Peaty Soil	1	2	1	2	Negligible
280	Point	241443.65	607882.99	0.20	SOIL	GRANULAR	3.36	Peaty Soil	1	2	1	2	Negligible
281	Point	241378.04	607881.51	0.10	SOIL	GRANULAR	4.28	Peaty Soil	1	4	1	4	Negligible
282	Point	241305.71	607810.31	3.60	NOTES ONLY	GRANULAR	1.73	Thick Peat	3	1	1	3	Negligible
283	Point	241373.46	607993.53	0.10	SOIL	GRANULAR	4.68	Peaty Soil	1	4	1	4	Negligible
284	Point	241283.06	607918.81	0.50	PEAT	GRANULAR	1.10	Peaty Soil	1	1	1	1	Negligible
285	Point	241216.48	607929.93	0.90	PEAT	GRANULAR	1.52	Thin Peat	2	1	1	2	Negligible
286	Point	241180.35	607937.54	0.50	PEAT	GRANULAR	1.61	Peaty Soil	1	1	1	1	Negligible
287	Point	241109.54	607945.85	0.40	PEAT	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
288	Point	241067.45	607981.52	0.80	PEAT	GRANULAR	0.88	Thin Peat	2	1	1	2	Negligible
289	Point	241028.68	608018.57	0.40	PEAT	GRANULAR	1.48	Peaty Soil	1	1	1	1	Negligible
290	Point	240992.98	608073.32	0.30	SOIL	GRANULAR	1.84	Peaty Soil	1	1	1	1	Negligible
291	Point	241014.49	608103.36	0.40	PEAT	GRANULAR	1.97	Peaty Soil	1	1	1	1	Negligible
292	Point	241114.87	608076.91	0.50	PEAT	GRANULAR	8.67	Peaty Soil	1	6	1	6	Low
293	Point	241041.82	608124.84	0.20	SOIL	GRANULAR	2.58	Peaty Soil	1	2	1	2	Negligible
294	Point	241069.47	608160.98	0.30	SOIL	GRANULAR	6.77	Peaty Soil	1	4	1	4	Negligible
295	Point	241110.65	608167.48	0.30	SOIL	GRANULAR	8.04	Peaty Soil	1	6	1	6	Low
296	Point	241154.38	608174.26	0.70	PEAT	GRANULAR	5.29	Thin Peat	2	4	1	8	Low
297	Point	241201.47	608117.05	0.50	PEAT	GRANULAR	3.28	Peaty Soil	1	2	1	2	Negligible
298	Point	241192.55	608167.69	0.30	SOIL	GRANULAR	8.28	Peaty Soil	1	6	1	6	Low
299	Point	241072.62	608068.46	0.40	PEAT	GRANULAR	1.81	Peaty Soil	1	1	1	1	Negligible
300	Point	241262.48	608126.37	0.10	SOIL	GRANULAR	3.34	Peaty Soil	1	2	1	2	Negligible
301	Point	241609.78	608233.26	0.30	SOIL	GRANULAR	1.56	Peaty Soil	1	1	1	1	Negligible
302	Point	241653.64	608228.90	0.40	PEAT	GRANULAR	3.45	Peaty Soil	1	2	1	2	Negligible
303	Point	241691.45	608188.74	0.20	SOIL	GRANULAR	8.36	Peaty Soil	1	6	1	6	Low
304	Point	241693.65	608152.83	0.50	PEAT	GRANULAR	6.50	Peaty Soil	1	4	1	4	Negligible
305	Point	241760.16	608145.62	0.20	SOIL	GRANULAR	7.24	Peaty Soil	1	4	1	4	Negligible
306	Point	241814.73	608142.44	0.40	PEAT	GRANULAR	9.22	Peaty Soil	1	6	1	6	Low
307	Point	241820.12	608072.45	0.60	PEAT	GRANULAR	5.10	Thin Peat	2	4	1	8	Low
308	Point	241764.22	608093.68	0.20	SOIL	GRANULAR	11.52	Peaty Soil	1	6	1	6	Low
309	Point	241777.18	608039.00	0.20	SOIL	GRANULAR	8.54	Peaty Soil	1	6	1	6	Low
310	Point	241762.90	607991.99	0.20	SOIL	GRANULAR	1.88	Peaty Soil	1	1	1	1	Negligible
311	Point	241804.76	607965.26	0.20	SOIL	GRANULAR	1.34	Peaty Soil	1	1	1	1	Negligible
312	Point	241734.67	607980.75	0.10	SOIL	GRANULAR	4.36	Peaty Soil	1	4	1	4	Negligible
313	Point	241713.94	607954.57	0.10	SOIL	GRANULAR	2.18	Peaty Soil	1	2	1	2	Negligible
314	Point	241706.63	607977.85	0.10	SOIL	GRANULAR	25.23	Peaty Soil	1	8	1	8	Low
315	Point	241685.55	608026.74	0.50	PEAT	GRANULAR	16.00	Peaty Soil	1	8	1	8	Low
316	Point	241677.28	607962.01	0.10	SOIL	GRANULAR	1.08	Peaty Soil	1	1	1	1	Negligible
317	Point	241633.77	607981.95	0.10	SOIL	GRANULAR	4.85	Peaty Soil	1	4	1	4	Negligible
318	Point	241602.85	607996.06	0.30	SOIL	GRANULAR	4.20	Peaty Soil	1	4	1	4	Negligible
319	Point	241611.52	607945.18	0.10	SOIL	GRANULAR	3.85	Peaty Soil	1	2	1	2	Negligible
320	Point	241674.26	607905.02	0.20	SOIL	GRANULAR	7.39	Peaty Soil	1	4	1	4	Negligible
321	Point	241611.52	608060.62	0.20	SOIL	GRANULAR	24.00	Peaty Soil	1	8	1	8	Low
322	Point	241564.28	607994.47	0.40	PEAT	GRANULAR	3.77	Peaty Soil	1	2	1	2	Negligible
323	Point	241525.56	607991.96	0.10	SOIL	GRANULAR	4.92	Peaty Soil	1	4	1	4	Negligible
324	Point	241470.25	607986.90	0.30	SOIL	GRANULAR	5.39	Peaty Soil	1	4	1	4	Negligible

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325	Point	241459.68	608039.29	0.20	SOIL	GRANULAR	5.47	Peaty Soil	1	4	1	4	Negligible
326	Point	241441.08	607931.88	0.10	SOIL	GRANULAR	1.09	Peaty Soil	1	1	1	1	Negligible
327	Point	241481.88	607871.74	0.10	SOIL	GRANULAR	11.31	Peaty Soil	1	6	1	6	Low
328	Point	241511.75	607875.50	0.40	PEAT	GRANULAR	4.48	Peaty Soil	1	4	1	4	Negligible
329	Point	241570.92	607866.26	0.30	SOIL	GRANULAR	3.68	Peaty Soil	1	2	1	2	Negligible
330	Point	241550.07	607911.16	0.20	SOIL	GRANULAR	6.10	Peaty Soil	1	4	1	4	Negligible
331	Point	241383.29	608025.48	0.10	SOIL	GRANULAR	6.30	Peaty Soil	1	4	1	4	Negligible
332	Point	241422.77	608072.89	0.10	SOIL	GRANULAR	5.66	Peaty Soil	1	4	1	4	Negligible
333	Point	241445.20	608102.35	0.10	SOIL	GRANULAR	2.32	Peaty Soil	1	2	1	2	Negligible
334	Point	241476.74	608146.70	0.40	PEAT	GRANULAR	5.02	Peaty Soil	1	4	1	4	Negligible
335	Point	241503.35	608177.67	0.40	PEAT	GRANULAR	9.42	Peaty Soil	1	6	1	6	Low
336	Point	240248.10	607805.41	0.20	SOIL	GRANULAR	2.93	Peaty Soil	1	2	1	2	Negligible
337	Point	240264.40	607869.80	0.50	PEAT	GRANULAR	4.97	Peaty Soil	1	4	1	4	Negligible
338	Point	240229.12	607900.59	0.70	PEAT	GRANULAR	3.81	Thin Peat	2	2	1	4	Negligible
339	Point	240180.10	607932.07	0.40	PEAT	GRANULAR	4.61	Peaty Soil	1	4	1	4	Negligible
340	Point	240128.22	607975.17	0.20	SOIL	GRANULAR	7.35	Peaty Soil	1	4	1	4	Negligible
341	Point	240064.96	608003.71	0.40	PEAT	GRANULAR	11.51	Peaty Soil	1	6	1	6	Low
342	Point	240132.44	608015.49	0.10	SOIL	GRANULAR	12.31	Peaty Soil	1	8	1	8	Low
343	Point	240135.16	608058.46	0.20	SOIL	GRANULAR	4.80	Peaty Soil	1	4	1	4	Negligible
344	Point	240161.97	608042.08	0.10	SOIL	GRANULAR	2.72	Peaty Soil	1	2	1	2	Negligible
345	Point	240231.00	607990.57	0.30	SOIL	GRANULAR	5.11	Peaty Soil	1	4	1	4	Negligible
346	Point	240272.15	607952.32	0.10	SOIL	GRANULAR	8.71	Peaty Soil	1	6	1	6	Low
347	Point	240309.64	608002.76	0.10	SOIL	GRANULAR	9.01	Peaty Soil	1	6	1	6	Low
348	Point	240437.41	607936.87	0.40	PEAT	GRANULAR	21.62	Peaty Soil	1	8	1	8	Low
349	Point	242272.78	607879.05	0.80	PEAT	GRANULAR	2.64	Thin Peat	2	2	1	4	Negligible
350	Point	242191.00	607957.55	0.70	PEAT	GRANULAR	4.17	Thin Peat	2	4	1	8	Low
351	Point	242263.58	607932.29	0.90	PEAT	GRANULAR	3.18	Thin Peat	2	2	1	4	Negligible
352	Point	242259.47	608027.49	0.40	PEAT	GRANULAR	4.73	Peaty Soil	1	4	1	4	Negligible
353	Point	242173.37	608051.04	0.60	PEAT	GRANULAR	6.05	Thin Peat	2	4	1	8	Low
354	Point	242259.95	608129.76	0.50	PEAT	GRANULAR	4.29	Peaty Soil	1	4	1	4	Negligible
355	Point	242182.22	608150.89	0.50	PEAT	GRANULAR	4.80	Peaty Soil	1	4	1	4	Negligible
356	Point	242257.54	608242.91	2.50	PEAT	GRANULAR	0.77	Thick Peat	3	1	1	3	Negligible
357	Point	242199.91	608236.83	1.10	PEAT	GRANULAR	1.30	Thin Peat	2	1	1	2	Negligible
358	Point	242276.04	608349.00	1.00	PEAT	GRANULAR	3.31	Thin Peat	2	2	1	4	Negligible
359	Point	242278.13	608434.14	1.20	PEAT	GRANULAR	0.57	Thin Peat	2	1	1	2	Negligible
360	Point	242443.29	608342.28	0.90	PEAT	GRANULAR	1.40	Thin Peat	2	1	1	2	Negligible
361	Point	242454.45	608246.09	0.50	PEAT	GRANULAR	3.01	Peaty Soil	1	2	1	2	Negligible
362	Point	242460.49	608145.62	0.60	PEAT	GRANULAR	2.28	Thin Peat	2	2	1	4	Negligible
363	Point	242456.72	608040.12	0.40	PEAT	GRANULAR	5.67	Peaty Soil	1	4	1	4	Negligible
364	Point	242445.77	607952.70	1.10	PEAT	GRANULAR	3.38	Thin Peat	2	2	1	4	Negligible
365	Point	242444.42	607852.68	0.50	PEAT	GRANULAR	3.37	Peaty Soil	1	2	1	2	Negligible
366	Point	242661.66	607825.99	0.40	PEAT	GRANULAR	3.36	Peaty Soil	1	2	1	2	Negligible
367	Point	242670.37	607933.91	0.30	SOIL	GRANULAR	3.59	Peaty Soil	1	2	1	2	Negligible
368	Point	242654.93	608028.96	0.60	PEAT	GRANULAR	7.77	Thin Peat	2	4	1	8	Low
369	Point	242656.07	608126.20	0.40	PEAT	GRANULAR	9.59	Peaty Soil	1	6	1	6	Low
370	Point	242657.42	608234.30	0.50	PEAT	GRANULAR	5.48	Peaty Soil	1	4	1	4	Negligible
371	Point	242720.96	608139.11	0.10	SOIL	GRANULAR	11.56	Peaty Soil	1	6	1	6	Low
372	Point	242790.61	608098.20	0.10	SOIL	GRANULAR	12.11	Peaty Soil	1	8	1	8	Low
373	Point	242859.70	608017.95	0.10	SOIL	GRANULAR	11.94	Peaty Soil	1	6	1	6	Low
374	Point	243060.25	607906.29	0.10	SOIL	GRANULAR	13.37	Peaty Soil	1	8	1	8	Low
375	Point	243119.26	607875.42	0.10	SOIL	GRANULAR	25.06	Peaty Soil	1	8	1	8	Low
376	Point	243154.33	607873.98	0.10	SOIL	GRANULAR	10.04	Peaty Soil	1	6	1	6	Low
377	Point	243217.54	607859.10	0.10	SOIL	GRANULAR	8.65	Peaty Soil	1	6	1	6	Low
378	Point	241050.63	607931.82	0.30	SOIL	GRANULAR	7.27	Peaty Soil	1	4	1	4	Negligible

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379	Point	240995.63	607923.77	0.10	SOIL	GRANULAR	3.40	Peaty Soil	1	2	1	2	Negligible
380	Point	240927.40	607956.49	0.10	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
381	Point	240923.70	607994.69	0.30	SOIL	GRANULAR	5.29	Peaty Soil	1	4	1	4	Negligible
382	Point	240873.02	608036.06	0.30	SOIL	GRANULAR	4.24	Peaty Soil	1	4	1	4	Negligible
383	Point	240847.40	608079.68	0.70	PEAT	GRANULAR	3.41	Thin Peat	2	2	1	4	Negligible
384	Point	240766.55	608118.84	0.60	PEAT	GRANULAR	3.09	Thin Peat	2	2	1	4	Negligible
385	Point	240777.36	608178.26	0.70	PEAT	GRANULAR	2.95	Thin Peat	2	2	1	4	Negligible
386	Point	240855.68	608216.07	0.50	PEAT	GRANULAR	3.72	Peaty Soil	1	2	1	2	Negligible
387	Point	240817.15	608153.18	0.90	PEAT	GRANULAR	5.04	Thin Peat	2	4	1	8	Low
388	Point	240801.66	608081.03	0.60	PEAT	GRANULAR	3.09	Thin Peat	2	2	1	4	Negligible
389	Point	240803.01	608247.13	0.70	PEAT	GRANULAR	3.80	Thin Peat	2	2	1	4	Negligible
390	Point	240862.11	608129.65	0.40	PEAT	GRANULAR	3.95	Peaty Soil	1	2	1	2	Negligible
391	Point	240896.85	608106.86	0.90	PEAT	GRANULAR	2.80	Thin Peat	2	2	1	4	Negligible
392	Point	240961.01	608056.72	0.70	PEAT	GRANULAR	1.49	Thin Peat	2	1	1	2	Negligible
393	Point	241248.32	608141.49	0.00	SUPERFICIAL	GRANULAR	6.94	No Peat	0	4	1	0	None
394	Point	241252.25	608227.86	0.60	PEAT	GRANULAR	3.72	Thin Peat	2	2	1	4	Negligible
395	Point	241230.60	608328.17	0.20	PEAT	GRANULAR	12.26	Peaty Soil	1	8	1	8	Low
396	Point	241252.28	608430.43	0.60	PEAT	GRANULAR	1.87	Thin Peat	2	1	1	2	Negligible
397	Point	241121.59	608421.32	0.50	PEAT	GRANULAR	1.13	Peaty Soil	1	1	1	1	Negligible
398	Point	241104.68	608400.47	0.30	PEAT	GRANULAR	15.64	Peaty Soil	1	8	1	8	Low
399	Point	241117.93	608355.97	0.20	PEAT	GRANULAR	8.23	Peaty Soil	1	6	1	6	Low
400	Point	241141.87	608328.15	0.00	SOIL	GRANULAR	6.91	No Peat	0	4	1	0	None
401	Point	241161.62	608287.80	0.20	PEAT	GRANULAR	26.83	Peaty Soil	1	8	1	8	Low
402	Point	241153.24	608238.68	0.30	PEAT	GRANULAR	11.03	Peaty Soil	1	6	1	6	Low
403	Point	241154.31	608218.87	0.30	PEAT	GRANULAR	3.84	Peaty Soil	1	2	1	2	Negligible
404	Point	241221.99	608184.99	0.90	PEAT	GRANULAR	4.50	Thin Peat	2	4	1	8	Low
405	Point	241375.90	608328.77	0.10	PEAT	GRANULAR	4.72	Peaty Soil	1	4	1	4	Negligible
406	Point	241361.35	608443.50	0.20	PEAT	GRANULAR	5.18	Peaty Soil	1	4	1	4	Negligible
407	Point	241454.42	608436.30	1.00	PEAT	GRANULAR	5.19	Thin Peat	2	4	1	8	Low
408	Point	241457.61	608338.18	0.50	PEAT	GRANULAR	1.94	Peaty Soil	1	1	1	1	Negligible
409	Point	241560.97	608334.34	0.00	SOIL	GRANULAR	3.06	No Peat	0	2	1	0	None
410	Point	242064.63	608438.20	0.30	PEAT	GRANULAR	2.86	Peaty Soil	1	2	1	2	Negligible
411	Point	241991.04	608384.23	0.20	PEAT	GRANULAR	11.67	Peaty Soil	1	6	1	6	Low
412	Point	241949.74	608340.98	0.80	PEAT	GRANULAR	4.51	Thin Peat	2	4	1	8	Low
413	Point	241868.04	608344.52	0.80	PEAT	GRANULAR	1.64	Thin Peat	2	1	1	2	Negligible
414	Point	241856.51	608426.79	0.80	PEAT	GRANULAR	4.16	Thin Peat	2	4	1	8	Low
415	Point	241760.03	608240.72	0.30	PEAT	GRANULAR	6.61	Peaty Soil	1	4	1	4	Negligible
416	Point	241692.05	608221.94	0.80	PEAT	GRANULAR	4.38	Thin Peat	2	4	1	8	Low
417	Point	241614.92	608173.46	1.00	PEAT	GRANULAR	3.15	Thin Peat	2	2	1	4	Negligible
418	Point	240223.48	607823.42	0.10	PEAT	GRANULAR	3.80	Peaty Soil	1	2	1	2	Negligible
419	Point	240163.09	607871.79	0.10	PEAT	GRANULAR	9.53	Peaty Soil	1	6	1	6	Low
420	Point	240074.31	607881.62	0.20	PEAT	GRANULAR	10.27	Peaty Soil	1	6	1	6	Low
421	Point	239997.66	607907.81	0.00	SOIL	GRANULAR	8.97	No Peat	0	6	1	0	None
422	Point	240122.25	607893.14	0.20	PEAT	GRANULAR	6.71	Peaty Soil	1	4	1	4	Negligible
423	Point	240269.59	607955.33	0.20	PEAT	GRANULAR	12.44	Peaty Soil	1	8	1	8	Low
424	Point	240296.58	607982.18	0.10	SOIL	GRANULAR	12.29	Peaty Soil	1	8	1	8	Low
425	Point	240342.81	607994.63	0.10	SOIL	GRANULAR	26.00	Peaty Soil	1	8	1	8	Low
426	Point	240417.45	607962.97	0.30	PEAT	GRANULAR	19.98	Peaty Soil	1	8	1	8	Low
427	Point	240441.09	607928.27	0.10	SOIL	GRANULAR	22.22	Peaty Soil	1	8	1	8	Low
428	Point	240431.40	607863.49	0.10	PEAT	GRANULAR	11.93	Peaty Soil	1	6	1	6	Low
429	Point	240430.49	607850.25	0.10	PEAT	GRANULAR	13.33	Peaty Soil	1	8	1	8	Low
430	Point	242362.17	607934.76	0.80	PEAT	GRANULAR	3.36	Thin Peat	2	2	1	4	Negligible
431	Point	242359.53	608035.16	0.80	PEAT	ROCK	3.90	Thin Peat	2	2	2	8	Low
432	Point	242358.02	608140.46	0.80	PEAT	GRANULAR	4.22	Thin Peat	2	4	1	8	Low

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433	Point	242358.37	608193.84	1.70	PEAT	GRANULAR	2.05	Thick Peat	3	2	1	6	Low
434	Point	242359.90	608238.81	1.70	PEAT	GRANULAR	2.04	Thick Peat	3	2	1	6	Low
435	Point	242359.95	608292.44	2.00	PEAT	GRANULAR	2.02	Thick Peat	3	2	1	6	Low
436	Point	242355.86	608341.82	0.90	PEAT	GRANULAR	1.65	Thin Peat	2	1	1	2	Negligible
437	Point	242353.28	608400.01	0.90	PEAT	GRANULAR	0.91	Thin Peat	2	1	1	2	Negligible
438	Point	242551.15	608341.42	0.30	PEAT	GRANULAR	6.16	Peaty Soil	1	4	1	4	Negligible
439	Point	242555.92	608240.20	0.20	PEAT	GRANULAR	2.65	Peaty Soil	1	2	1	2	Negligible
440	Point	242555.80	608143.83	0.20	PEAT	GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible
441	Point	242558.93	608042.93	0.70	PEAT	GRANULAR	3.95	Thin Peat	2	2	1	4	Negligible
442	Point	242558.54	607939.83	0.70	PEAT	GRANULAR	5.22	Thin Peat	2	4	1	8	Low
443	Point	242554.63	607834.45	0.90	PEAT	GRANULAR	3.49	Thin Peat	2	2	1	4	Negligible
444	Point	242749.60	607841.55	0.20	PEAT	GRANULAR	5.08	Peaty Soil	1	4	1	4	Negligible
445	Point	242755.15	607939.99	0.90	PEAT	GRANULAR	7.58	Thin Peat	2	4	1	8	Low
446	Point	242763.37	608043.70	0.60	PEAT	GRANULAR	8.49	Thin Peat	2	6	1	12	Low
447	Point	242856.59	607944.12	0.40	PEAT	GRANULAR	10.19	Peaty Soil	1	6	1	6	Low
448	Point	242947.41	607917.14	0.20	PEAT	GRANULAR	11.86	Peaty Soil	1	6	1	6	Low
449	Point	242869.70	607813.93	0.20	PEAT	GRANULAR	5.77	Peaty Soil	1	4	1	4	Negligible
450	Point	242952.94	607836.13	0.30	PEAT	GRANULAR	12.17	Peaty Soil	1	8	1	8	Low
451	Point	243060.85	607848.76	0.10	PEAT	GRANULAR	16.29	Peaty Soil	1	8	1	8	Low
452	Point	241358.84	607827.97	0.60	PEAT	GRANULAR	1.65	Thin Peat	2	1	1	2	Negligible
453	Point	241317.11	607865.90	0.40	PEAT	GRANULAR	3.07	Peaty Soil	1	2	1	2	Negligible
454	Point	241264.16	607820.39	4.00	PEAT	GRANULAR	4.54	Thick Peat	3	4	1	12	Low
463	Point	241461.12	607860.59	1.00		GRANULAR	2.91	Thin Peat	2	2	1	4	Negligible
464	Point	241422.03	607951.66	0.40		GRANULAR	4.82	Peaty Soil	1	4	1	4	Negligible
465	Point	241370.25	607979.35	0.05		GRANULAR	4.63	Peaty Soil	1	4	1	4	Negligible
470	Point	241316.63	608064.26	0.30		GRANULAR	8.34	Peaty Soil	1	6	1	6	Low
471	Point	241252.87	608141.30	0.60		GRANULAR	7.02	Thin Peat	2	4	1	8	Low
472	Point	241253.08	608221.33	2.50		GRANULAR	3.01	Thick Peat	3	2	1	6	Low
473	Point	241352.38	608227.16	0.20		GRANULAR	5.28	Peaty Soil	1	4	1	4	Negligible
474	Point	241452.31	608227.41	0.30		GRANULAR	9.01	Peaty Soil	1	6	1	6	Low
475	Point	241551.81	608232.13	0.30		GRANULAR	2.36	Peaty Soil	1	2	1	2	Negligible
476	Point	241638.37	608273.82	1.30		GRANULAR	0.77	Thin Peat	2	1	1	2	Negligible
477	Point	241716.87	608335.62	1.50		GRANULAR	0.94	Thin Peat	2	1	1	2	Negligible
478	Point	241798.90	608392.82	0.60		GRANULAR	3.56	Thin Peat	2	2	1	4	Negligible
479	Point	241887.50	608407.56	1.50		GRANULAR	4.01	Thin Peat	2	4	1	8	Low
480	Point	241974.32	608357.94	0.40		GRANULAR	6.80	Peaty Soil	1	4	1	4	Negligible
481	Point	241996.23	608271.22	0.70		GRANULAR	1.09	Thin Peat	2	1	1	2	Negligible
482	Point	241906.30	608232.00	1.50		GRANULAR	1.81	Thin Peat	2	1	1	2	Negligible
483	Point	241812.06	608204.68	1.30		GRANULAR	6.64	Thin Peat	2	4	1	8	Low
484	Point	241761.36	608124.91	0.20		GRANULAR	16.75	Peaty Soil	1	8	1	8	Low
485	Point	241782.87	608028.82	0.20		GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
486	Point	241772.40	607936.04	0.40		GRANULAR	4.27	Peaty Soil	1	4	1	4	Negligible
487	Point	241808.86	607842.93	1.70		GRANULAR	2.14	Thick Peat	3	2	1	6	Low
488	Point	241889.30	607869.75	0.50		GRANULAR	1.61	Peaty Soil	1	1	1	1	Negligible
489	Point	241977.20	607917.41	0.60		GRANULAR	1.76	Thin Peat	2	1	1	2	Negligible
490	Point	242065.11	607965.09	0.50		GRANULAR	3.67	Peaty Soil	1	2	1	2	Negligible
491	Point	242086.61	607900.64	0.50		GRANULAR	3.82	Peaty Soil	1	2	1	2	Negligible
492	Point	241689.34	608316.84	0.40		GRANULAR	4.72	Peaty Soil	1	4	1	4	Negligible
493	Point	241648.14	608407.64	1.00		GRANULAR	5.34	Thin Peat	2	4	1	8	Low
494	Point	241173.69	607839.00	4.00		GRANULAR	2.21	Thick Peat	3	2	1	6	Low
495	Point	241254.67	607897.67	2.00		GRANULAR	2.23	Thick Peat	3	2	1	6	Low
496	Point	241336.09	607955.73	0.50		GRANULAR	3.54	Peaty Soil	1	2	1	2	Negligible
497	Point	240905.89	608257.00	0.40		GRANULAR	5.40	Peaty Soil	1	4	1	4	Negligible
498	Point	240919.16	608157.89	0.25		GRANULAR	3.91	Peaty Soil	1	2	1	2	Negligible

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499	Point	240963.60	608075.41	1.20		GRANULAR	3.80	Thin Peat	2	2	1	4	Negligible
500	Point	241038.59	608009.26	0.45		GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
501	Point	241111.04	607940.46	0.90		GRANULAR	0.49	Thin Peat	2	1	1	2	Negligible
502	Point	241164.17	607856.87	4.00		GRANULAR	1.20	Thick Peat	3	1	1	3	Negligible
503	Point	240647.00	608049.47	0.35		GRANULAR	6.60	Peaty Soil	1	4	1	4	Negligible
504	Point	240729.79	607994.58	0.20		GRANULAR	11.27	Peaty Soil	1	6	1	6	Low
505	Point	240820.78	607953.11	0.40		GRANULAR	3.69	Peaty Soil	1	2	1	2	Negligible
506	Point	240916.46	607929.09	0.40		GRANULAR	3.83	Peaty Soil	1	2	1	2	Negligible
507	Point	241009.13	607891.97	0.90		GRANULAR	2.66	Thin Peat	2	2	1	4	Negligible
508	Point	241099.01	607848.33	4.00		GRANULAR	2.11	Thick Peat	3	2	1	6	Low
509	Point	241147.72	607821.16	2.50		GRANULAR	5.46	Thick Peat	3	4	1	12	Low
510	Point	243476.98	607859.00	0.40		GRANULAR	5.45	Peaty Soil	1	4	1	4	Negligible
511	Point	243521.40	607946.61	0.50		GRANULAR	10.32	Peaty Soil	1	6	1	6	Low
512	Point	243523.72	608046.05	0.40		GRANULAR	7.19	Peaty Soil	1	4	1	4	Negligible
513	Point	243481.26	608135.14	0.30		GRANULAR	13.06	Peaty Soil	1	8	1	8	Low
514	Point	243426.21	608218.49	0.35		GRANULAR	12.29	Peaty Soil	1	8	1	8	Low
515	Point	243358.67	608292.10	0.30		GRANULAR	7.34	Peaty Soil	1	4	1	4	Negligible
516	Point	243279.08	608229.38	0.10		GRANULAR	16.73	Peaty Soil	1	8	1	8	Low
517	Point	243358.85	608141.98	0.30		GRANULAR	14.28	Peaty Soil	1	8	1	8	Low
518	Point	243400.81	608074.84	0.40		GRANULAR	10.14	Peaty Soil	1	6	1	6	Low
519	Point	243423.97	608036.20	0.30		GRANULAR	9.70	Peaty Soil	1	6	1	6	Low
520	Point	243425.81	607976.11	0.40		GRANULAR	5.98	Peaty Soil	1	4	1	4	Negligible
521	Point	243398.71	607922.64	0.30		GRANULAR	9.66	Peaty Soil	1	6	1	6	Low
522	Point	243344.21	607871.27	0.40		GRANULAR	0.93	Peaty Soil	1	1	1	1	Negligible
523	Point	243616.04	607913.56	0.20		GRANULAR	8.15	Peaty Soil	1	6	1	6	Low
524	Point	243621.18	608052.98	0.20		GRANULAR	14.60	Peaty Soil	1	8	1	8	Low
525	Point	243567.13	608192.06	0.15		GRANULAR	8.58	Peaty Soil	1	6	1	6	Low
527	Point	241192.63	607799.34	2.70	PEAT	GRANULAR	2.46	Thick Peat	3	2	1	6	Low
528	Point	241163.98	607756.00	1.50	PEAT	GRANULAR	2.41	Thin Peat	2	2	1	4	Negligible
529	Point	241147.09	607745.47	0.90	PEAT	GRANULAR	2.33	Thin Peat	2	2	1	4	Negligible
530	Point	241131.99	607728.75	0.40	SOIL	GRANULAR	2.35	Peaty Soil	1	2	1	2	Negligible
531	Point	241216.57	607732.58	0.80	PEAT	GRANULAR	3.84	Thin Peat	2	2	1	4	Negligible
532	Point	241276.09	607766.27	2.00	PEAT	GRANULAR	1.78	Thick Peat	3	1	1	3	Negligible
533	Point	241299.57	607780.64	4.20	PEAT	GRANULAR	1.77	Thick Peat	3	1	1	3	Negligible
534	Point	241367.42	607799.00	1.80	PEAT	GRANULAR	1.40	Thick Peat	3	1	1	3	Negligible
535	Point	241369.24	607787.79	4.10	PEAT	GRANULAR	1.32	Thick Peat	3	1	1	3	Negligible
536	Point	241368.09	607749.78	1.80	PEAT	GRANULAR	1.98	Thick Peat	3	1	1	3	Negligible
537	Point	241428.31	607764.88	1.00	PEAT	GRANULAR	4.29	Thin Peat	2	4	1	8	Low
538	Point	241409.57	607788.01	1.00	PEAT	GRANULAR	1.46	Thin Peat	2	1	1	2	Negligible
539	Point	241419.84	607789.79	0.90	PEAT	GRANULAR	1.56	Thin Peat	2	1	1	2	Negligible
540	Point	241434.83	607769.65	0.20	SOIL	GRANULAR	4.51	Peaty Soil	1	4	1	4	Negligible
541	Point	241438.69	607782.44	0.40	SOIL	GRANULAR	4.54	Peaty Soil	1	4	1	4	Negligible
542	Point	241451.87	607766.81	0.10	SOIL	GRANULAR	4.68	Peaty Soil	1	4	1	4	Negligible
543	Point	241467.89	607750.48	0.80	PEAT	GRANULAR	5.29	Thin Peat	2	4	1	8	Low
544	Point	241478.69	607762.66	0.10	SOIL	GRANULAR	4.80	Peaty Soil	1	4	1	4	Negligible
545	Point	241489.27	607759.45	0.20	SOIL	GRANULAR	3.79	Peaty Soil	1	2	1	2	Negligible
546	Point	241481.47	607739.57	0.10	SOIL	GRANULAR	5.00	Peaty Soil	1	4	1	4	Negligible
547	Point	241499.64	607738.55	0.10	SOIL	GRANULAR	7.20	Peaty Soil	1	4	1	4	Negligible
548	Point	241515.71	607727.95	0.30	SOIL	GRANULAR	8.69	Peaty Soil	1	6	1	6	Low
549	Point	241509.45	607740.61	0.10	SOIL	GRANULAR	3.41	Peaty Soil	1	2	1	2	Negligible
550	Point	241521.03	607742.39	0.10	SOIL	GRANULAR	5.10	Peaty Soil	1	4	1	4	Negligible
551	Point	241577.66	607786.80	1.00	PEAT	GRANULAR	1.69	Thin Peat	2	1	1	2	Negligible
552	Point	241581.58	607774.97	0.90	PEAT	GRANULAR	1.68	Thin Peat	2	1	1	2	Negligible
553	Point	241601.96	607782.77	0.50	SOIL	GRANULAR	2.75	Peaty Soil	1	2	1	2	Negligible

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554	Point	241566.94	607762.12	0.30	SOIL	GRANULAR	1.86	Peaty Soil	1	1	1	1	Negligible
555	Point	241554.98	607776.85	0.10	SOIL	GRANULAR	3.20	Peaty Soil	1	2	1	2	Negligible
556	Point	241548.21	607802.11	0.10	SOIL	GRANULAR	3.01	Peaty Soil	1	2	1	2	Negligible
557	Point	241533.11	607783.58	0.10	SOIL	GRANULAR	2.93	Peaty Soil	1	2	1	2	Negligible
558	Point	241512.08	607802.15	0.20	SOIL	GRANULAR	3.21	Peaty Soil	1	2	1	2	Negligible
559	Point	241631.73	607795.44	0.20	SOIL	GRANULAR	4.43	Peaty Soil	1	4	1	4	Negligible
560	Point	241584.88	607754.98	0.60	PEAT	GRANULAR	1.76	Thin Peat	2	1	1	2	Negligible
561	Point	241611.54	607743.51	0.40	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
562	Point	241582.53	607739.66	0.10	SOIL	GRANULAR	2.48	Peaty Soil	1	2	1	2	Negligible
563	Point	243137.21	607755.40	0.30	SOIL	GRANULAR	6.81	Peaty Soil	1	4	1	4	Negligible
564	Point	243153.20	607729.03	0.10	SOIL	GRANULAR	7.24	Peaty Soil	1	4	1	4	Negligible
565	Point	243177.28	607760.48	0.10	SOIL	GRANULAR	4.60	Peaty Soil	1	4	1	4	Negligible
566	Point	243176.36	607795.04	0.30	SOIL	GRANULAR	3.12	Peaty Soil	1	2	1	2	Negligible
567	Point	243199.70	607795.70	0.10	SOIL	GRANULAR	4.80	Peaty Soil	1	4	1	4	Negligible
568	Point	243246.81	607804.95	0.10	SOIL	GRANULAR	4.06	Peaty Soil	1	4	1	4	Negligible
569	Point	243208.11	607764.58	0.10	SOIL	GRANULAR	2.48	Peaty Soil	1	2	1	2	Negligible
570	Point	243180.84	607738.44	0.20	SOIL	GRANULAR	5.96	Peaty Soil	1	4	1	4	Negligible
571	Point	241400.21	607798.56	1.10	PEAT	GRANULAR	1.61	Thin Peat	2	1	1	2	Negligible
572	Point	241424.47	607793.61	0.50	PEAT	GRANULAR	1.88	Peaty Soil	1	1	1	1	Negligible
573	Point	241446.98	607792.61	0.10	SOIL	GRANULAR	4.38	Peaty Soil	1	4	1	4	Negligible
574	Point	241472.14	607783.17	0.10	SOIL	GRANULAR	4.94	Peaty Soil	1	4	1	4	Negligible
575	Point	241486.27	607755.18	0.10	SOIL	GRANULAR	3.79	Peaty Soil	1	2	1	2	Negligible
576	Point	241531.54	607742.97	0.10	SOIL	GRANULAR	2.69	Peaty Soil	1	2	1	2	Negligible
577	Point	241499.08	607777.05	0.10	SOIL	GRANULAR	2.87	Peaty Soil	1	2	1	2	Negligible
578	Point	241511.66	607759.88	0.10	SOIL	GRANULAR	4.31	Peaty Soil	1	4	1	4	Negligible
579	Point	241513.21	607733.42	0.10	SOIL	GRANULAR	7.56	Peaty Soil	1	4	1	4	Negligible
580	Point	241514.63	607764.00	0.20	SOIL	GRANULAR	2.68	Peaty Soil	1	2	1	2	Negligible
581	Point	241490.83	607795.26	0.20	SOIL	GRANULAR	0.22	Peaty Soil	1	1	1	1	Negligible
582	Point	241511.48	607793.04	0.10	SOIL	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
583	Point	241550.11	607735.44	0.10	SOIL	GRANULAR	3.86	Peaty Soil	1	2	1	2	Negligible
584	Point	240126.62	607739.01	0.10	SOIL	GRANULAR	2.90	Peaty Soil	1	2	1	2	Negligible
585	Point	240161.83	607755.97	0.10	SOIL	GRANULAR	3.14	Peaty Soil	1	2	1	2	Negligible
586	Point	240202.25	607742.93	0.10	SOIL	GRANULAR	0.93	Peaty Soil	1	1	1	1	Negligible
587	Point	240170.95	607729.88	0.00	SOIL	GRANULAR	2.34	No Peat	0	2	1	0	None
588	Point	240240.31	607730.50	0.10	SOIL	GRANULAR	1.33	Peaty Soil	1	1	1	1	Negligible
589	Point	240265.24	607726.44	0.40	PEAT	GRANULAR	1.54	Peaty Soil	1	1	1	1	Negligible
590	Point	240294.19	607735.75	0.10	SOIL	GRANULAR	1.49	Peaty Soil	1	1	1	1	Negligible
591	Point	240225.07	607739.66	0.10	SOIL	GRANULAR	0.55	Peaty Soil	1	1	1	1	Negligible
592	Point	240253.76	607742.27	0.10	SOIL	GRANULAR	1.16	Peaty Soil	1	1	1	1	Negligible
593	Point	240313.75	607740.97	0.10	SOIL	GRANULAR	3.40	Peaty Soil	1	2	1	2	Negligible
594	Point	240335.92	607735.75	0.20	SOIL	GRANULAR	4.71	Peaty Soil	1	4	1	4	Negligible
595	Point	240380.74	607727.64	0.30	SOIL	GRANULAR	2.70	Peaty Soil	1	2	1	2	Negligible
596	Point	240405.04	607743.58	0.30	SOIL	GRANULAR	2.51	Peaty Soil	1	2	1	2	Negligible
597	Point	240431.77	607735.10	0.80	PEAT	GRANULAR	1.69	Thin Peat	2	1	1	2	Negligible
598	Point	241174.91	607768.61	2.70	NOTES ONLY	GRANULAR	3.69	Thick Peat	3	2	1	6	Low
599	Point	241187.32	607707.82	0.10	SOIL	GRANULAR	2.17	Peaty Soil	1	2	1	2	Negligible
600	Point	241368.18	607714.13	1.00	PEAT	GRANULAR	3.09	Thin Peat	2	2	1	4	Negligible
601	Point	241362.14	607696.15	0.30	SOIL	GRANULAR	3.18	Peaty Soil	1	2	1	2	Negligible
602	Point	241403.34	607682.42	0.30	SOIL	GRANULAR	3.37	Peaty Soil	1	2	1	2	Negligible
603	Point	241427.52	607689.90	0.40	SOIL	GRANULAR	3.94	Peaty Soil	1	2	1	2	Negligible
604	Point	241427.06	607724.26	1.80	PEAT	GRANULAR	1.25	Thick Peat	3	1	1	3	Negligible
605	Point	241540.11	607723.30	0.10	SOIL	GRANULAR	9.16	Peaty Soil	1	6	1	6	Low
606	Point	241644.29	607660.22	0.10	SOIL	GRANULAR	3.46	Peaty Soil	1	2	1	2	Negligible
607	Point	241602.94	607680.64	0.10	SOIL	GRANULAR	5.53	Peaty Soil	1	4	1	4	Negligible

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608	Point	241552.69	607698.43	0.20	SOIL	GRANULAR	11.12	Peaty Soil	1	6	1	6	Low
609	Point	241590.72	607714.11	0.20	SOIL	GRANULAR	4.02	Peaty Soil	1	4	1	4	Negligible
610	Point	241619.87	607719.71	0.20	SOIL	GRANULAR	3.34	Peaty Soil	1	2	1	2	Negligible
611	Point	241667.40	607710.25	0.10	SOIL	GRANULAR	4.51	Peaty Soil	1	4	1	4	Negligible
612	Point	241706.25	607675.25	0.10	SOIL	GRANULAR	4.24	Peaty Soil	1	4	1	4	Negligible
613	Point	243097.26	607672.95	0.10	SOIL	GRANULAR	19.42	Peaty Soil	1	8	1	8	Low
614	Point	243105.04	607666.14	0.30	SOIL	GRANULAR	16.24	Peaty Soil	1	8	1	8	Low
615	Point	243130.05	607708.69	0.10	SOIL	GRANULAR	7.90	Peaty Soil	1	4	1	4	Negligible
616	Point	243111.00	607723.66	0.20	SOIL	GRANULAR	6.00	Peaty Soil	1	4	1	4	Negligible
617	Point	243156.03	607698.48	0.10	SOIL	GRANULAR	8.09	Peaty Soil	1	6	1	6	Low
618	Point	243125.12	607656.33	0.10	SOIL	GRANULAR	10.20	Peaty Soil	1	6	1	6	Low
619	Point	241529.62	607718.91	0.10	SOIL	GRANULAR	8.80	Peaty Soil	1	6	1	6	Low
620	Point	240172.26	607671.20	0.10	SOIL	GRANULAR	1.96	Peaty Soil	1	1	1	1	Negligible
621	Point	240156.61	607709.02	0.10	SOIL	GRANULAR	8.66	Peaty Soil	1	6	1	6	Low
622	Point	240200.95	607672.50	0.00	SOIL	GRANULAR	1.35	No Peat	0	1	1	0	None
623	Point	240215.72	607703.17	0.00	SOIL	GRANULAR	0.11	No Peat	0	1	1	0	None
624	Point	240190.52	607703.80	0.10	SOIL	GRANULAR	0.38	Peaty Soil	1	1	1	1	Negligible
625	Point	240288.61	607722.99	0.30	SOIL	GRANULAR	1.53	Peaty Soil	1	1	1	1	Negligible
626	Point	240318.35	607717.28	0.30	SOIL	GRANULAR	4.71	Peaty Soil	1	4	1	4	Negligible
627	Point	240341.93	607719.58	0.20	SOIL	GRANULAR	2.13	Peaty Soil	1	2	1	2	Negligible
628	Point	240365.78	607723.73	0.20	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
629	Point	240401.16	607721.71	1.10	PEAT	GRANULAR	1.88	Thin Peat	2	1	1	2	Negligible
630	Point	240420.94	607715.79	1.80	PEAT	GRANULAR	1.49	Thick Peat	3	1	1	3	Negligible
631	Point	240442.20	607714.24	0.70	PEAT	GRANULAR	1.21	Thin Peat	2	1	1	2	Negligible
632	Point	240412.32	607690.85	1.30	PEAT	GRANULAR	0.91	Thin Peat	2	1	1	2	Negligible
633	Point	240429.16	607688.15	0.90	PEAT	GRANULAR	0.73	Thin Peat	2	1	1	2	Negligible
634	Point	240411.63	607660.25	0.30	SOIL	GRANULAR	4.08	Peaty Soil	1	4	1	4	Negligible
635	Point	240379.61	607659.46	0.20	SOIL	GRANULAR	3.38	Peaty Soil	1	2	1	2	Negligible
636	Point	240390.95	607667.68	0.10	SOIL	GRANULAR	4.75	Peaty Soil	1	4	1	4	Negligible
637	Point	240390.04	607697.28	0.10	SOIL	GRANULAR	0.47	Peaty Soil	1	1	1	1	Negligible
638	Point	240355.12	607671.76	0.10	SOIL	GRANULAR	2.55	Peaty Soil	1	2	1	2	Negligible
639	Point	240369.17	607679.03	0.10	SOIL	GRANULAR	3.75	Peaty Soil	1	2	1	2	Negligible
640	Point	240332.35	607682.98	0.30	SOIL	GRANULAR	1.36	Peaty Soil	1	1	1	1	Negligible
641	Point	240352.87	607696.63	0.20	SOIL	GRANULAR	2.13	Peaty Soil	1	2	1	2	Negligible
642	Point	240311.60	607694.31	0.10	SOIL	GRANULAR	2.65	Peaty Soil	1	2	1	2	Negligible
643	Point	240286.42	607688.73	0.10	SOIL	GRANULAR	2.13	Peaty Soil	1	2	1	2	Negligible
644	Point	240271.15	607679.07	0.10	SOIL	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
645	Point	240248.68	607689.72	0.10	SOIL	GRANULAR	1.05	Peaty Soil	1	1	1	1	Negligible
646	Point	240225.95	607699.27	0.10	SOIL	GRANULAR	0.67	Peaty Soil	1	1	1	1	Negligible
647	Point	240218.55	607675.77	0.10	SOIL	GRANULAR	1.46	Peaty Soil	1	1	1	1	Negligible
648	Point	241666.80	607614.68	0.10	SOIL	GRANULAR	1.20	Peaty Soil	1	1	1	1	Negligible
649	Point	241709.84	607628.36	0.10	SOIL	GRANULAR	1.12	Peaty Soil	1	1	1	1	Negligible
650	Point	241724.95	607577.54	0.10	SOIL	GRANULAR	0.66	Peaty Soil	1	1	1	1	Negligible
651	Point	241555.49	607584.86	0.10	SOIL	GRANULAR	6.96	Peaty Soil	1	4	1	4	Negligible
652	Point	241489.36	607580.06	0.20	SOIL	GRANULAR	5.95	Peaty Soil	1	4	1	4	Negligible
653	Point	241518.11	607593.81	0.10	SOIL	GRANULAR	5.64	Peaty Soil	1	4	1	4	Negligible
654	Point	243049.46	607579.19	0.10	SOIL	GRANULAR	9.26	Peaty Soil	1	6	1	6	Low
655	Point	243089.37	607606.36	0.20	SOIL	GRANULAR	5.59	Peaty Soil	1	4	1	4	Negligible
656	Point	243073.56	607623.07	0.10	SOIL	GRANULAR	6.36	Peaty Soil	1	4	1	4	Negligible
657	Point	243115.48	607599.67	0.20	SOIL	GRANULAR	4.93	Peaty Soil	1	4	1	4	Negligible
658	Point	241696.53	607584.26	0.10	SOIL	GRANULAR	10.46	Peaty Soil	1	6	1	6	Low
659	Point	241681.58	607586.47	0.10	SOIL	GRANULAR	1.44	Peaty Soil	1	1	1	1	Negligible
660	Point	241659.09	607584.86	0.10	SOIL	GRANULAR	1.36	Peaty Soil	1	1	1	1	Negligible
661	Point	241637.24	607583.42	0.10	SOIL	GRANULAR	3.64	Peaty Soil	1	2	1	2	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
662	Point	241616.51	607589.73	0.20	SOIL	GRANULAR	9.15	Peaty Soil	1	6	1	6	Low
663	Point	241596.60	607592.11	0.20	SOIL	GRANULAR	10.33	Peaty Soil	1	6	1	6	Low
664	Point	241577.21	607594.30	0.20	SOIL	GRANULAR	11.29	Peaty Soil	1	6	1	6	Low
665	Point	241558.41	607595.34	0.20	SOIL	GRANULAR	8.82	Peaty Soil	1	6	1	6	Low
666	Point	241535.14	607598.59	0.50	PEAT	GRANULAR	5.98	Peaty Soil	1	4	1	4	Negligible
667	Point	241516.82	607601.11	0.50	PEAT	GRANULAR	5.44	Peaty Soil	1	4	1	4	Negligible
668	Point	241498.27	607603.26	0.60	PEAT	GRANULAR	4.24	Thin Peat	2	4	1	8	Low
669	Point	241477.13	607604.02	0.70	PEAT	GRANULAR	0.86	Thin Peat	2	4	1	2	Negligible
670	Point	241460.25	607605.37	0.60	PEAT	GRANULAR	4.09	Thin Peat	2	4	1	8	Low
671	Point	241444.43	607609.83	0.30	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
672	Point	241433.02	607586.67	0.30	SOIL	GRANULAR	3.70	Peaty Soil	1	2	1	2	Negligible
673	Point	241426.00	607568.17	0.20	SOIL	GRANULAR	4.57	Peaty Soil	1	4	1	4	Negligible
674	Point	241569.45	607572.67	0.20	SOIL	GRANULAR	7.02	Peaty Soil	1	4	1	4	Negligible
675	Point	240136.52	607582.02	0.10	SOIL	GRANULAR	0.94	Peaty Soil	1	1	1	1	Negligible
676	Point	240153.44	607616.87	0.10	SOIL	GRANULAR	2.74	Peaty Soil	1	2	1	2	Negligible
677	Point	240187.06	607601.35	0.10	SOIL	GRANULAR	1.49	Peaty Soil	1	1	1	1	Negligible
678	Point	240195.79	607632.04	0.00	SOIL	GRANULAR	0.89	No Peat	0	1	1	0	None
679	Point	240215.81	607626.09	0.10	SOIL	GRANULAR	1.50	Peaty Soil	1	1	1	1	Negligible
680	Point	240201.00	607584.34	0.10	SOIL	GRANULAR	2.19	Peaty Soil	1	2	1	2	Negligible
681	Point	241724.95	607545.95	0.20	SOIL	GRANULAR	2.16	Peaty Soil	1	2	1	2	Negligible
682	Point	241738.00	607524.66	0.30	SOIL	GRANULAR	1.24	Peaty Soil	1	1	1	1	Negligible
683	Point	241556.86	607562.56	0.10	SOIL	GRANULAR	7.27	Peaty Soil	1	4	1	4	Negligible
684	Point	241547.23	607543.39	0.20	SOIL	GRANULAR	6.08	Peaty Soil	1	4	1	4	Negligible
685	Point	241532.01	607520.36	0.30	SOIL	GRANULAR	4.31	Peaty Soil	1	4	1	4	Negligible
686	Point	241544.69	607499.11	0.20	SOIL	GRANULAR	4.00	Peaty Soil	1	4	1	4	Negligible
687	Point	241502.13	607516.42	0.20	SOIL	GRANULAR	5.66	Peaty Soil	1	4	1	4	Negligible
688	Point	241511.15	607543.39	0.10	SOIL	GRANULAR	5.10	Peaty Soil	1	4	1	4	Negligible
689	Point	241525.46	607564.78	0.20	SOIL	GRANULAR	6.14	Peaty Soil	1	4	1	4	Negligible
690	Point	241480.61	607548.81	0.10	SOIL	GRANULAR	4.00	Peaty Soil	1	4	1	4	Negligible
691	Point	242998.15	607490.04	0.30	SOIL	GRANULAR	8.22	Peaty Soil	1	6	1	6	Low
692	Point	243018.61	607529.97	0.10	SOIL	GRANULAR	11.28	Peaty Soil	1	6	1	6	Low
693	Point	243042.44	607518.54	0.10	SOIL	GRANULAR	6.41	Peaty Soil	1	4	1	4	Negligible
694	Point	243068.92	607561.04	0.10	SOIL	GRANULAR	6.53	Peaty Soil	1	4	1	4	Negligible
695	Point	243091.97	607548.37	0.20	SOIL	GRANULAR	7.92	Peaty Soil	1	4	1	4	Negligible
696	Point	243065.41	607524.78	0.10	SOIL	GRANULAR	9.91	Peaty Soil	1	6	1	6	Low
697	Point	241700.10	607492.05	0.10	SOIL	GRANULAR	1.36	Peaty Soil	1	1	1	1	Negligible
698	Point	241703.61	607522.00	0.10	SOIL	GRANULAR	3.45	Peaty Soil	1	2	1	2	Negligible
699	Point	241701.47	607544.91	0.10	SOIL	GRANULAR	9.19	Peaty Soil	1	6	1	6	Low
700	Point	241429.68	607546.87	0.10	SOIL	GRANULAR	3.35	Peaty Soil	1	2	1	2	Negligible
701	Point	241428.96	607517.93	0.10	SOIL	GRANULAR	6.07	Peaty Soil	1	4	1	4	Negligible
702	Point	241438.59	607488.63	0.30	SOIL	GRANULAR	7.87	Peaty Soil	1	4	1	4	Negligible
703	Point	241622.60	607487.96	0.30	SOIL	GRANULAR	8.09	Peaty Soil	1	6	1	6	Low
704	Point	241610.65	607508.81	0.10	SOIL	GRANULAR	14.74	Peaty Soil	1	8	1	8	Low
705	Point	241607.44	607522.66	0.10	SOIL	ROCK	6.23	Peaty Soil	1	4	2	8	Low
706	Point	241629.64	607530.96	0.10	SOIL	GRANULAR	5.44	Peaty Soil	1	4	1	4	Negligible
707	Point	241658.78	607540.68	0.20	SOIL	GRANULAR	20.85	Peaty Soil	1	8	1	8	Low
708	Point	241674.78	607535.47	0.20	SOIL	GRANULAR	22.56	Peaty Soil	1	8	1	8	Low
709	Point	241691.23	607542.68	0.10	SOIL	GRANULAR	7.20	Peaty Soil	1	4	1	4	Negligible
710	Point	241680.30	607518.38	0.00	ROCK	ROCK	3.96	No Peat	0	2	2	0	None
711	Point	241664.30	607505.96	0.00	ROCK	ROCK	5.20	No Peat	0	4	2	0	None
712	Point	241644.97	607504.27	0.00	ROCK	ROCK	29.10	No Peat	0	8	2	0	None
713	Point	241565.73	607548.67	0.40	SOIL	GRANULAR	6.55	Peaty Soil	1	4	1	4	Negligible
714	Point	241598.61	607561.93	0.20	SOIL	GRANULAR	9.61	Peaty Soil	1	6	1	6	Low
715	Point	241565.77	607523.42	0.20	SOIL	GRANULAR	4.07	Peaty Soil	1	4	1	4	Negligible

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716	Point	241567.78	607499.77	0.10	SOIL	GRANULAR	5.10	Peaty Soil	1	4	1	4	Negligible
717	Point	241635.83	607560.83	0.20	SOIL	GRANULAR	15.20	Peaty Soil	1	8	1	8	Low
718	Point	240170.61	607518.22	0.10	SOIL	GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible
719	Point	240142.02	607541.16	0.10	SOIL	GRANULAR	5.45	Peaty Soil	1	4	1	4	Negligible
720	Point	240126.28	607553.61	0.10	SOIL	GRANULAR	6.80	Peaty Soil	1	4	1	4	Negligible
721	Point	240186.19	607534.52	0.10	SOIL	GRANULAR	0.37	Peaty Soil	1	1	1	1	Negligible
722	Point	240192.25	607486.71	0.30	SOIL	GRANULAR	2.94	Peaty Soil	1	2	1	2	Negligible
723	Point	241550.39	607472.17	0.20	SOIL	GRANULAR	5.04	Peaty Soil	1	4	1	4	Negligible
724	Point	241545.70	607444.86	0.10	SOIL	GRANULAR	15.34	Peaty Soil	1	8	1	8	Low
725	Point	241520.48	607440.76	0.10	SOIL	GRANULAR	16.04	Peaty Soil	1	8	1	8	Low
726	Point	241501.21	607455.37	0.10	SOIL	GRANULAR	13.60	Peaty Soil	1	8	1	8	Low
727	Point	241501.55	607482.46	0.10	SOIL	GRANULAR	8.42	Peaty Soil	1	6	1	6	Low
728	Point	242970.53	607442.57	0.20	SOIL	GRANULAR	7.24	Peaty Soil	1	4	1	4	Negligible
729	Point	242989.00	607420.38	0.30	SOIL	GRANULAR	8.32	Peaty Soil	1	6	1	6	Low
730	Point	243019.97	607472.93	0.40	SOIL	GRANULAR	8.38	Peaty Soil	1	6	1	6	Low
731	Point	243062.80	607442.26	0.10	SOIL	GRANULAR	9.04	Peaty Soil	1	6	1	6	Low
732	Point	243034.38	607434.73	0.60	PEAT	GRANULAR	8.59	Thin Peat	2	6	1	12	Low
733	Point	241714.84	607466.45	0.10	SOIL	GRANULAR	2.84	Peaty Soil	1	2	1	2	Negligible
734	Point	241733.70	607446.28	0.10	SOIL	GRANULAR	4.37	Peaty Soil	1	4	1	4	Negligible
735	Point	241832.32	607407.66	0.30	SOIL	GRANULAR	1.24	Peaty Soil	1	1	1	1	Negligible
736	Point	241798.89	607431.69	0.40	PEAT	GRANULAR	2.64	Peaty Soil	1	2	1	2	Negligible
737	Point	241758.98	607471.37	0.50	PEAT	GRANULAR	4.01	Peaty Soil	1	4	1	4	Negligible
738	Point	241456.55	607452.33	0.10	SOIL	GRANULAR	7.16	Peaty Soil	1	4	1	4	Negligible
739	Point	241468.35	607418.49	0.20	SOIL	GRANULAR	6.10	Peaty Soil	1	4	1	4	Negligible
740	Point	241510.98	607411.95	0.10	SOIL	GRANULAR	7.25	Peaty Soil	1	4	1	4	Negligible
741	Point	241515.65	607418.46	0.10	SOIL	GRANULAR	8.69	Peaty Soil	1	6	1	6	Low
742	Point	241541.28	607407.15	0.10	SOIL	GRANULAR	13.22	Peaty Soil	1	8	1	8	Low
743	Point	241715.23	607412.23	0.10	SOIL	GRANULAR	6.35	Peaty Soil	1	4	1	4	Negligible
744	Point	241698.83	607427.11	0.10	SOIL	GRANULAR	20.47	Peaty Soil	1	8	1	8	Low
745	Point	241692.78	607432.53	0.10	SOIL	GRANULAR	22.04	Peaty Soil	1	8	1	8	Low
746	Point	241673.56	607424.68	0.10	SOIL	ROCK	27.51	Peaty Soil	1	8	2	16	Medium
747	Point	241652.10	607443.09	0.10	SOIL	GRANULAR	1.10	Peaty Soil	1	1	1	1	Negligible
748	Point	241636.22	607469.46	0.10	SOIL	ROCK	5.88	Peaty Soil	1	4	2	8	Low
749	Point	241675.17	607475.49	0.00	ROCK	ROCK	1.40	No Peat	0	1	2	0	None
750	Point	241656.67	607479.58	0.00	ROCK	ROCK	32.96	No Peat	0	8	2	0	None
751	Point	241694.17	607459.40	0.00	ROCK	ROCK	13.33	No Peat	0	8	2	0	None
752	Point	241680.71	607447.74	0.00	ROCK	ROCK	12.72	No Peat	0	8	2	0	None
753	Point	241569.24	607472.61	0.10	SOIL	GRANULAR	5.74	Peaty Soil	1	4	1	4	Negligible
754	Point	241558.88	607443.46	0.20	SOIL	GRANULAR	12.17	Peaty Soil	1	8	1	8	Low
755	Point	241588.93	607431.61	0.10	SOIL	GRANULAR	12.28	Peaty Soil	1	8	1	8	Low
756	Point	241605.74	607454.59	0.20	SOIL	GRANULAR	6.89	Peaty Soil	1	4	1	4	Negligible
757	Point	241600.26	607479.30	0.10	SOIL	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
758	Point	241621.26	607435.84	0.10	SOIL	GRANULAR	6.44	Peaty Soil	1	4	1	4	Negligible
759	Point	241640.18	607417.71	0.10	SOIL	GRANULAR	21.20	Peaty Soil	1	8	1	8	Low
760	Point	241609.01	607409.25	0.10	SOIL	GRANULAR	15.45	Peaty Soil	1	8	1	8	Low
761	Point	241724.52	607438.26	0.10	SOIL	GRANULAR	5.91	Peaty Soil	1	4	1	4	Negligible
762	Point	240168.35	607431.25	0.10	SOIL	GRANULAR	2.85	Peaty Soil	1	2	1	2	Negligible
763	Point	240163.13	607461.24	0.10	SOIL	GRANULAR	1.16	Peaty Soil	1	1	1	1	Negligible
764	Point	240217.66	607452.65	0.90	PEAT	GRANULAR	2.53	Thin Peat	2	2	1	4	Negligible
765	Point	240227.06	607422.97	0.70	PEAT	GRANULAR	0.92	Thin Peat	2	1	1	2	Negligible
766	Point	242925.30	607358.04	1.80	PEAT	GRANULAR	3.45	Thick Peat	3	2	1	6	Low
767	Point	242948.09	607338.48	1.80	PEAT	ROCK	2.35	Thick Peat	3	2	2	12	Low
768	Point	242964.83	607386.34	0.30	SOIL	GRANULAR	3.21	Peaty Soil	1	2	1	2	Negligible
769	Point	242945.93	607402.42	0.10	SOIL	GRANULAR	3.53	Peaty Soil	1	2	1	2	Negligible

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770	Point	243022.70	607394.86	0.20	SOIL	GRANULAR	7.66	Peaty Soil	1	4	1	4	Negligible
771	Point	242991.35	607376.48	0.70	PEAT	GRANULAR	3.38	Thin Peat	2	2	1	4	Negligible
772	Point	242961.88	607327.40	1.40	PEAT	GRANULAR	1.60	Thin Peat	2	1	1	2	Negligible
773	Point	241782.80	607384.19	1.20	PEAT	GRANULAR	4.19	Thin Peat	2	4	1	8	Low
774	Point	241804.96	607347.19	0.70	PEAT	GRANULAR	2.35	Thin Peat	2	2	1	4	Negligible
775	Point	241850.10	607333.88	0.30	SOIL	GRANULAR	1.10	Peaty Soil	1	1	1	1	Negligible
776	Point	242085.76	607333.61	0.70	PEAT	GRANULAR	3.50	Thin Peat	2	2	1	4	Negligible
777	Point	242060.82	607343.22	0.70	PEAT	GRANULAR	3.50	Thin Peat	2	2	1	4	Negligible
778	Point	242085.17	607346.61	0.60	PEAT	GRANULAR	3.49	Thin Peat	2	2	1	4	Negligible
779	Point	242045.94	607335.77	0.80	PEAT	GRANULAR	3.50	Thin Peat	2	2	1	4	Negligible
780	Point	242029.09	607355.68	0.80	PEAT	GRANULAR	3.50	Thin Peat	2	2	1	4	Negligible
781	Point	242009.32	607347.29	0.60	PEAT	GRANULAR	2.87	Thin Peat	2	2	1	4	Negligible
782	Point	242015.65	607364.15	0.70	PEAT	GRANULAR	3.59	Thin Peat	2	2	1	4	Negligible
783	Point	242022.61	607325.47	0.30	SOIL	GRANULAR	3.47	Peaty Soil	1	2	1	2	Negligible
784	Point	241993.55	607340.76	0.50	PEAT	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
785	Point	241955.80	607342.16	0.30	SOIL	GRANULAR	4.00	Peaty Soil	1	2	1	2	Negligible
786	Point	241981.86	607339.46	0.20	SOIL	GRANULAR	3.69	Peaty Soil	1	2	1	2	Negligible
787	Point	241918.54	607356.67	0.30	SOIL	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
788	Point	241870.30	607386.81	0.20	SOIL	GRANULAR	2.62	Peaty Soil	1	2	1	2	Negligible
789	Point	241766.78	607398.59	0.60	PEAT	GRANULAR	0.24	Thin Peat	2	1	1	2	Negligible
790	Point	241561.47	607403.64	0.10	SOIL	GRANULAR	14.38	Peaty Soil	1	8	1	8	Low
791	Point	241572.71	607398.22	0.30	SOIL	GRANULAR	14.45	Peaty Soil	1	8	1	8	Low
792	Point	241600.90	607390.53	0.40	SOIL	GRANULAR	12.29	Peaty Soil	1	8	1	8	Low
793	Point	241622.06	607387.54	0.10	SOIL	GRANULAR	8.53	Peaty Soil	1	6	1	6	Low
794	Point	241655.06	607389.88	0.40	SOIL	GRANULAR	5.84	Peaty Soil	1	4	1	4	Negligible
795	Point	241670.86	607390.80	0.30	SOIL	GRANULAR	4.78	Peaty Soil	1	4	1	4	Negligible
796	Point	241694.24	607396.64	0.30	SOIL	GRANULAR	8.99	Peaty Soil	1	6	1	6	Low
797	Point	240753.87	607343.78	0.20	SOIL	GRANULAR	3.67	Peaty Soil	1	2	1	2	Negligible
798	Point	240702.36	607340.23	0.20	SOIL	GRANULAR	0.80	Peaty Soil	1	1	1	1	Negligible
799	Point	240759.49	607379.41	0.20	SOIL	GRANULAR	8.95	Peaty Soil	1	6	1	6	Low
800	Point	240798.75	607352.93	0.20	SOIL	GRANULAR	9.24	Peaty Soil	1	6	1	6	Low
801	Point	240192.91	607327.48	0.10	SOIL	GRANULAR	3.34	Peaty Soil	1	2	1	2	Negligible
802	Point	240182.69	607376.48	0.10	SOIL	GRANULAR	6.81	Peaty Soil	1	4	1	4	Negligible
803	Point	240225.81	607394.24	0.30	SOIL	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
804	Point	240267.40	607376.77	0.20	SOIL	GRANULAR	5.45	Peaty Soil	1	4	1	4	Negligible
805	Point	240289.45	607345.71	0.40	PEAT	GRANULAR	4.48	Peaty Soil	1	4	1	4	Negligible
806	Point	242888.36	607259.66	3.40	PEAT	GRANULAR	0.81	Thick Peat	3	1	1	3	Negligible
807	Point	242866.01	607274.01	2.90	PEAT	GRANULAR	3.08	Thick Peat	3	2	1	6	Low
808	Point	242894.04	607303.46	2.90	PEAT	GRANULAR	0.42	Thick Peat	3	1	1	3	Negligible
809	Point	242938.10	607295.58	2.70	PEAT	GRANULAR	1.99	Thick Peat	3	1	1	3	Negligible
810	Point	242916.88	607305.98	3.30	PEAT	GRANULAR	1.09	Thick Peat	3	1	1	3	Negligible
811	Point	242963.31	607299.13	1.80	PEAT	GRANULAR	2.08	Thick Peat	3	2	1	6	Low
812	Point	242906.85	607247.12	2.70	PEAT	GRANULAR	0.62	Thick Peat	3	1	1	3	Negligible
813	Point	241893.69	607292.40	0.40	PEAT	GRANULAR	0.79	Peaty Soil	1	1	1	1	Negligible
814	Point	241933.11	607293.77	0.20	SOIL	GRANULAR	2.40	Peaty Soil	1	2	1	2	Negligible
815	Point	241975.92	607262.90	0.30	SOIL	GRANULAR	2.66	Peaty Soil	1	2	1	2	Negligible
816	Point	242119.67	607263.70	0.60	PEAT	GRANULAR	3.12	Thin Peat	2	2	1	4	Negligible
817	Point	242103.37	607246.54	0.40	PEAT	GRANULAR	3.67	Peaty Soil	1	2	1	2	Negligible
818	Point	242104.69	607282.80	0.20	SOIL	GRANULAR	3.77	Peaty Soil	1	2	1	2	Negligible
819	Point	242083.87	607258.24	0.20	SOIL	GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible
820	Point	242084.19	607307.48	0.20	SOIL	GRANULAR	3.47	Peaty Soil	1	2	1	2	Negligible
821	Point	242083.87	607281.63	0.20	SOIL	GRANULAR	3.46	Peaty Soil	1	2	1	2	Negligible
822	Point	242072.18	607276.43	0.30	SOIL	GRANULAR	3.46	Peaty Soil	1	2	1	2	Negligible
823	Point	242061.78	607301.12	0.50	PEAT	GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
824	Point	242056.58	607281.63	0.30	SOIL	GRANULAR	3.45	Peaty Soil	1	2	1	2	Negligible
825	Point	242043.59	607302.42	0.50	PEAT	GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible
826	Point	242070.88	607321.92	0.50	PEAT	GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible
827	Point	242017.15	607311.74	0.30	SOIL	GRANULAR	3.32	Peaty Soil	1	2	1	2	Negligible
828	Point	242036.44	607288.78	0.20	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
829	Point	242058.53	607264.08	0.30	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
830	Point	242000.90	607310.28	0.10	SOIL	GRANULAR	3.16	Peaty Soil	1	2	1	2	Negligible
831	Point	241976.01	607321.57	0.40	PEAT	GRANULAR	3.16	Peaty Soil	1	2	1	2	Negligible
832	Point	242251.10	607254.73	2.70	PEAT	GRANULAR	2.05	Thick Peat	3	2	1	6	Low
833	Point	242242.13	607270.09	3.50	PEAT	GRANULAR	1.54	Thick Peat	3	1	1	3	Negligible
834	Point	242217.39	607291.58	2.70	PEAT	GRANULAR	2.29	Thick Peat	3	2	1	6	Low
835	Point	242187.02	607259.06	0.90	PEAT	GRANULAR	3.09	Thin Peat	2	2	1	4	Negligible
836	Point	242191.86	607290.52	1.10	PEAT	GRANULAR	2.26	Thin Peat	2	2	1	4	Negligible
837	Point	240654.04	607252.12	0.10	SOIL	GRANULAR	5.37	Peaty Soil	1	4	1	4	Negligible
838	Point	240703.11	607274.50	0.10	SOIL	GRANULAR	12.86	Peaty Soil	1	8	1	8	Low
839	Point	240733.82	607304.21	0.60	PEAT	GRANULAR	1.79	Thin Peat	2	1	1	2	Negligible
840	Point	240848.10	607303.99	0.10	SOIL	GRANULAR	7.34	Peaty Soil	1	4	1	4	Negligible
841	Point	240892.95	607273.97	0.10	SOIL	GRANULAR	1.38	Peaty Soil	1	1	1	1	Negligible
842	Point	240926.03	607278.72	0.10	SOIL	GRANULAR	1.43	Peaty Soil	1	1	1	1	Negligible
843	Point	240949.59	607268.31	0.10	SOIL	GRANULAR	6.94	Peaty Soil	1	4	1	4	Negligible
844	Point	240918.92	607263.38	0.10	SOIL	GRANULAR	1.44	Peaty Soil	1	1	1	1	Negligible
845	Point	240917.06	607246.92	0.80	PEAT	GRANULAR	7.27	Thin Peat	2	4	1	8	Low
846	Point	240978.71	607254.38	0.10	SOIL	GRANULAR	5.52	Peaty Soil	1	4	1	4	Negligible
847	Point	240205.62	607280.98	0.20	SOIL	GRANULAR	2.95	Peaty Soil	1	2	1	2	Negligible
848	Point	240190.69	607312.90	0.10	SOIL	GRANULAR	3.42	Peaty Soil	1	2	1	2	Negligible
849	Point	240286.83	607314.06	0.30	SOIL	GRANULAR	3.54	Peaty Soil	1	2	1	2	Negligible
850	Point	240316.95	607298.30	0.20	SOIL	GRANULAR	4.11	Peaty Soil	1	4	1	4	Negligible
851	Point	240360.29	607290.98	0.20	SOIL	GRANULAR	11.09	Peaty Soil	1	6	1	6	Low
852	Point	240383.67	607270.27	0.20	SOIL	GRANULAR	2.94	Peaty Soil	1	2	1	2	Negligible
853	Point	240428.99	607265.10	0.20	SOIL	GRANULAR	2.22	Peaty Soil	1	2	1	2	Negligible
854	Point	240440.18	607303.89	0.20	SOIL	GRANULAR	9.16	Peaty Soil	1	6	1	6	Low
855	Point	240475.94	607288.99	0.20	SOIL	GRANULAR	14.09	Peaty Soil	1	8	1	8	Low
856	Point	240214.93	607183.95	3.40	PEAT	GRANULAR	4.95	Thick Peat	3	4	1	12	Low
857	Point	242811.07	607199.29	3.50	PEAT	GRANULAR	3.27	Thick Peat	3	2	1	6	Low
858	Point	242830.38	607173.91	2.80	PEAT	GRANULAR	1.48	Thick Peat	3	1	1	3	Negligible
859	Point	242854.16	607223.56	1.80	PEAT	GRANULAR	1.55	Thick Peat	3	1	1	3	Negligible
860	Point	242847.05	607234.76	2.40	PEAT	GRANULAR	1.38	Thick Peat	3	1	1	3	Negligible
861	Point	242883.32	607213.24	3.60	PEAT	GRANULAR	0.60	Thick Peat	3	1	1	3	Negligible
862	Point	242851.11	607170.76	3.30	PEAT	GRANULAR	4.26	Thick Peat	3	4	1	12	Low
863	Point	242020.16	607239.23	0.20	SOIL	GRANULAR	2.39	Peaty Soil	1	2	1	2	Negligible
864	Point	242056.14	607206.75	0.20	SOIL	GRANULAR	2.83	Peaty Soil	1	2	1	2	Negligible
865	Point	242075.13	607190.29	0.70	PEAT	GRANULAR	3.01	Thin Peat	2	2	1	4	Negligible
866	Point	242104.02	607179.61	0.10	SOIL	GRANULAR	2.65	Peaty Soil	1	2	1	2	Negligible
867	Point	242158.59	607168.37	0.20	SOIL	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
868	Point	242123.71	607202.29	0.20	SOIL	GRANULAR	3.44	Peaty Soil	1	2	1	2	Negligible
869	Point	242133.91	607178.31	0.20	SOIL	GRANULAR	2.47	Peaty Soil	1	2	1	2	Negligible
870	Point	242124.10	607233.65	0.50	PEAT	GRANULAR	3.28	Peaty Soil	1	2	1	2	Negligible
871	Point	242105.97	607219.25	0.30	SOIL	GRANULAR	3.27	Peaty Soil	1	2	1	2	Negligible
872	Point	242081.28	607242.64	0.10	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
873	Point	242079.33	607235.49	0.30	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
874	Point	242472.35	607182.41	2.50	PEAT	GRANULAR	1.85	Thick Peat	3	1	1	3	Negligible
875	Point	242435.00	607197.66	2.50	PEAT	GRANULAR	1.80	Thick Peat	3	1	1	3	Negligible
876	Point	242409.65	607187.06	2.10	PEAT	GRANULAR	1.89	Thick Peat	3	1	1	3	Negligible
877	Point	242381.24	607179.72	1.90	PEAT	GRANULAR	0.64	Thick Peat	3	1	1	3	Negligible

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878	Point	242358.43	607172.18	2.80	PEAT	GRANULAR	0.64	Thick Peat	3	1	1	3	Negligible
879	Point	242335.37	607187.30	2.70	PEAT	GRANULAR	2.03	Thick Peat	3	2	1	6	Low
880	Point	242316.82	607201.33	3.20	PEAT	GRANULAR	2.00	Thick Peat	3	1	1	3	Negligible
881	Point	242296.64	607202.23	3.20	PEAT	GRANULAR	1.99	Thick Peat	3	1	1	3	Negligible
882	Point	242277.10	607230.04	4.20	PEAT	GRANULAR	1.93	Thick Peat	3	1	1	3	Negligible
883	Point	242206.42	607218.64	1.40	PEAT	GRANULAR	2.84	Thin Peat	2	2	1	4	Negligible
884	Point	242212.75	607197.25	1.80	PEAT	GRANULAR	2.31	Thick Peat	3	2	1	6	Low
885	Point	242254.55	607167.72	2.80	PEAT	GRANULAR	1.35	Thick Peat	3	1	1	3	Negligible
886	Point	240669.02	607194.97	0.10	SOIL	GRANULAR	2.81	Peaty Soil	1	2	1	2	Negligible
887	Point	240690.02	607228.56	0.10	SOIL	GRANULAR	4.95	Peaty Soil	1	4	1	4	Negligible
888	Point	240917.33	607222.22	0.90	PEAT	GRANULAR	8.24	Thin Peat	2	6	1	12	Low
889	Point	240926.49	607197.38	1.40	PEAT	GRANULAR	1.39	Thin Peat	2	1	1	2	Negligible
890	Point	240937.17	607170.82	0.30	SOIL	GRANULAR	8.83	Peaty Soil	1	6	1	6	Low
891	Point	240959.15	607187.48	0.50	PEAT	GRANULAR	4.21	Peaty Soil	1	4	1	4	Negligible
892	Point	240945.85	607211.91	2.60	PEAT	GRANULAR	8.49	Thick Peat	3	6	1	18	Medium
893	Point	240938.24	607238.55	0.20	SOIL	GRANULAR	7.90	Peaty Soil	1	4	1	4	Negligible
894	Point	240964.52	607239.64	0.10	SOIL	GRANULAR	4.45	Peaty Soil	1	4	1	4	Negligible
895	Point	241005.30	607241.72	0.10	SOIL	GRANULAR	5.37	Peaty Soil	1	4	1	4	Negligible
896	Point	240994.55	607221.29	0.20	SOIL	GRANULAR	2.71	Peaty Soil	1	2	1	2	Negligible
897	Point	240984.73	607204.20	0.70	PEAT	GRANULAR	6.34	Thin Peat	2	4	1	8	Low
898	Point	240968.58	607217.66	0.60	PEAT	GRANULAR	6.31	Thin Peat	2	4	1	8	Low
899	Point	240910.34	607174.62	0.60	PEAT	GRANULAR	0.80	Thin Peat	2	1	1	2	Negligible
900	Point	240905.28	607213.87	0.50	PEAT	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
901	Point	241009.76	607176.19	0.10	SOIL	GRANULAR	5.39	Peaty Soil	1	4	1	4	Negligible
902	Point	240991.37	607178.42	0.10	SOIL	GRANULAR	5.22	Peaty Soil	1	4	1	4	Negligible
903	Point	241024.42	607192.55	0.20	SOIL	GRANULAR	1.98	Peaty Soil	1	1	1	1	Negligible
904	Point	241039.14	607189.80	0.10	SOIL	GRANULAR	1.34	Peaty Soil	1	1	1	1	Negligible
905	Point	241009.10	607197.41	0.10	SOIL	GRANULAR	5.25	Peaty Soil	1	4	1	4	Negligible
906	Point	241037.58	607234.76	0.20	SOIL	GRANULAR	4.90	Peaty Soil	1	4	1	4	Negligible
907	Point	241064.17	607224.63	0.20	SOIL	GRANULAR	5.36	Peaty Soil	1	4	1	4	Negligible
908	Point	241093.29	607209.43	0.20	SOIL	GRANULAR	3.92	Peaty Soil	1	2	1	2	Negligible
909	Point	241116.41	607181.44	0.10	SOIL	GRANULAR	3.84	Peaty Soil	1	2	1	2	Negligible
910	Point	241144.83	607165.20	0.10	SOIL	GRANULAR	4.31	Peaty Soil	1	4	1	4	Negligible
911	Point	241177.48	607170.82	0.10	SOIL	GRANULAR	3.77	Peaty Soil	1	2	1	2	Negligible
912	Point	240229.34	607187.87	0.30	SOIL	GRANULAR	2.58	Peaty Soil	1	2	1	2	Negligible
913	Point	240221.35	607240.15	0.10	SOIL	GRANULAR	2.88	Peaty Soil	1	2	1	2	Negligible
914	Point	240411.50	607229.34	0.20	SOIL	GRANULAR	1.58	Peaty Soil	1	1	1	1	Negligible
915	Point	240392.34	607194.02	0.20	SOIL	GRANULAR	3.10	Peaty Soil	1	2	1	2	Negligible
916	Point	240378.92	607171.11	0.20	SOIL	GRANULAR	3.34	Peaty Soil	1	2	1	2	Negligible
917	Point	240341.64	607170.60	0.20	SOIL	GRANULAR	2.46	Peaty Soil	1	2	1	2	Negligible
918	Point	240346.33	607213.02	0.20	SOIL	GRANULAR	2.39	Peaty Soil	1	2	1	2	Negligible
919	Point	240378.36	607192.90	0.20	SOIL	GRANULAR	2.84	Peaty Soil	1	2	1	2	Negligible
920	Point	241758.14	607393.05	1.10	PEAT	GRANULAR	0.36	Thin Peat	2	1	1	2	Negligible
921	Point	241731.11	607347.42	0.30	SOIL	GRANULAR	1.24	Peaty Soil	1	1	1	1	Negligible
922	Point	241677.60	607336.90	0.20	SOIL	GRANULAR	5.88	Peaty Soil	1	4	1	4	Negligible
923	Point	241591.27	607343.53	0.40	PEAT	GRANULAR	5.55	Peaty Soil	1	4	1	4	Negligible
924	Point	241513.28	607355.24	0.20	SOIL	GRANULAR	4.63	Peaty Soil	1	4	1	4	Negligible
925	Point	241460.26	607364.02	0.40	PEAT	GRANULAR	3.03	Peaty Soil	1	2	1	2	Negligible
926	Point	241396.51	607365.75	0.80	PEAT	GRANULAR	1.51	Thin Peat	2	1	1	2	Negligible
927	Point	241322.53	607374.54	0.70	PEAT	GRANULAR	3.87	Thin Peat	2	2	1	4	Negligible
928	Point	241271.54	607351.49	0.20	SOIL	GRANULAR	7.58	Peaty Soil	1	4	1	4	Negligible
929	Point	241215.67	607369.28	0.50	PEAT	GRANULAR	7.47	Peaty Soil	1	4	1	4	Negligible
930	Point	241154.54	607358.67	0.20	SOIL	GRANULAR	9.45	Peaty Soil	1	6	1	6	Low
931	Point	241070.43	607345.83	0.10	SOIL	GRANULAR	4.47	Peaty Soil	1	4	1	4	Negligible

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932	Point	241177.33	607315.52	0.30	SOIL	GRANULAR	9.35	Peaty Soil	1	6	1	6	Low
933	Point	241267.06	607277.02	0.80	PEAT	GRANULAR	8.21	Thin Peat	2	6	1	12	Low
934	Point	241333.27	607228.78	0.30	SOIL	GRANULAR	8.81	Peaty Soil	1	6	1	6	Low
935	Point	241418.18	607188.60	0.20	SOIL	GRANULAR	8.38	Peaty Soil	1	6	1	6	Low
936	Point	241494.19	607165.63	0.90	PEAT	GRANULAR	6.43	Thin Peat	2	4	1	8	Low
937	Point	241555.38	607169.19	0.20	SOIL	GRANULAR	3.46	Peaty Soil	1	2	1	2	Negligible
938	Point	241734.45	607195.63	0.50	PEAT	GRANULAR	4.51	Peaty Soil	1	4	1	4	Negligible
939	Point	241730.92	607306.77	0.40	PEAT	GRANULAR	3.59	Peaty Soil	1	2	1	2	Negligible
940	Point	241773.28	607644.07	0.70	PEAT	GRANULAR	3.02	Thin Peat	2	2	1	4	Negligible
941	Point	241858.09	607580.12	0.20	SOIL	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
942	Point	241768.55	607603.77	0.50	PEAT	GRANULAR	2.33	Peaty Soil	1	2	1	2	Negligible
943	Point	240230.10	607740.71	0.30	SOIL	GRANULAR	1.15	Peaty Soil	1	1	1	1	Negligible
944	Point	240559.46	607636.52	0.20	SOIL	GRANULAR	4.98	Peaty Soil	1	4	1	4	Negligible
945	Point	240760.95	607425.77	0.40	PEAT	GRANULAR	3.17	Peaty Soil	1	2	1	2	Negligible
946	Point	240923.31	607294.22	0.10	SOIL	GRANULAR	4.41	Peaty Soil	1	4	1	4	Negligible
947	Point	240972.01	607247.54	0.20	SOIL	GRANULAR	2.01	Peaty Soil	1	2	1	2	Negligible
948	Point	240957.72	607211.01	0.30	SOIL	GRANULAR	7.26	Peaty Soil	1	4	1	4	Negligible
949	Point	241068.19	607217.71	0.30	SOIL	GRANULAR	5.32	Peaty Soil	1	4	1	4	Negligible
950	Point	240032.27	607190.35	0.40	PEAT	GRANULAR	2.87	Peaty Soil	1	2	1	2	Negligible
951	Point	240020.24	607241.10	0.10	SOIL	GRANULAR	2.28	Peaty Soil	1	2	1	2	Negligible
952	Point	240023.93	607302.04	0.20	SOIL	GRANULAR	3.86	Peaty Soil	1	2	1	2	Negligible
953	Point	240030.50	607395.56	0.30	SOIL	GRANULAR	1.82	Peaty Soil	1	1	1	1	Negligible
954	Point	240025.29	607456.27	0.30	SOIL	GRANULAR	4.52	Peaty Soil	1	4	1	4	Negligible
955	Point	239983.56	607478.77	0.30	SOIL	GRANULAR	4.29	Peaty Soil	1	4	1	4	Negligible
956	Point	239950.12	607496.32	0.20	SOIL	GRANULAR	1.55	Peaty Soil	1	1	1	1	Negligible
957	Point	239850.58	607491.57	0.20	SOIL	GRANULAR	2.83	Peaty Soil	1	2	1	2	Negligible
958	Point	239872.38	607529.40	1.10	PEAT	GRANULAR	2.18	Thin Peat	2	2	1	4	Negligible
959	Point	239889.88	607585.95	0.10	SOIL	GRANULAR	1.26	Peaty Soil	1	1	1	1	Negligible
960	Point	239906.78	607640.47	1.40	PEAT	GRANULAR	1.17	Thin Peat	2	1	1	2	Negligible
961	Point	239908.96	607680.31	0.90	PEAT	GRANULAR	2.37	Thin Peat	2	2	1	4	Negligible
962	Point	239901.02	607735.37	1.20	PEAT	GRANULAR	1.50	Thin Peat	2	1	1	2	Negligible
963	Point	239901.56	607756.33	0.30	SOIL	GRANULAR	1.33	Peaty Soil	1	1	1	1	Negligible
964	Point	239910.72	607792.94	0.10	SOIL	GRANULAR	2.41	Peaty Soil	1	2	1	2	Negligible
965	Point	239966.80	607804.28	0.20	SOIL	GRANULAR	2.37	Peaty Soil	1	2	1	2	Negligible
966	Point	240035.30	607782.11	0.20	SOIL	GRANULAR	4.35	Peaty Soil	1	4	1	4	Negligible
967	Point	240101.34	607761.89	0.30	SOIL	GRANULAR	3.09	Peaty Soil	1	2	1	2	Negligible
968	Point	240173.64	607739.04	0.20	SOIL	GRANULAR	2.28	Peaty Soil	1	2	1	2	Negligible
969	Point	240211.94	607674.53	0.20	SOIL	GRANULAR	1.48	Peaty Soil	1	1	1	1	Negligible
970	Point	240189.12	607593.85	0.30	SOIL	GRANULAR	0.68	Peaty Soil	1	1	1	1	Negligible
971	Point	240174.59	607525.68	0.30	SOIL	GRANULAR	1.15	Peaty Soil	1	1	1	1	Negligible
972	Point	240186.98	607455.99	0.10	SOIL	GRANULAR	1.20	Peaty Soil	1	1	1	1	Negligible
973	Point	240206.51	607381.57	0.50	PEAT	GRANULAR	8.21	Peaty Soil	1	6	1	6	Low
974	Point	242247.63	607530.73	2.90	PEAT	GRANULAR	1.26	Thick Peat	3	1	1	3	Negligible
975	Point	242346.67	607562.84	1.60	PEAT	GRANULAR	1.33	Thick Peat	3	1	1	3	Negligible
976	Point	242444.99	607578.08	1.90	PEAT	GRANULAR	0.63	Thick Peat	3	1	1	3	Negligible
977	Point	242501.91	607595.73	0.80	PEAT	GRANULAR	0.67	Thin Peat	2	1	1	2	Negligible
978	Point	242399.95	607730.25	0.60	PEAT	GRANULAR	1.61	Thin Peat	2	1	1	2	Negligible
979	Point	242464.53	607757.83	0.40	PEAT	GRANULAR	2.81	Peaty Soil	1	2	1	2	Negligible
980	Point	242489.39	607683.61	0.50	PEAT	GRANULAR	2.77	Peaty Soil	1	2	1	2	Negligible
981	Point	242563.50	607542.29	2.50	PEAT	GRANULAR	2.27	Thick Peat	3	2	1	6	Low
982	Point	242655.60	607528.42	2.70	PEAT	GRANULAR	2.11	Thick Peat	3	2	1	6	Low
983	Point	242664.68	607628.72	0.30	SOIL	GRANULAR	2.20	Peaty Soil	1	2	1	2	Negligible
984	Point	242681.59	607738.21	0.50	PEAT	GRANULAR	3.58	Peaty Soil	1	2	1	2	Negligible
985	Point	243110.56	607797.38	0.10	SOIL	GRANULAR	8.67	Peaty Soil	1	6	1	6	Low

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986	Point	243041.06	607744.53	0.00	SOIL	GRANULAR	15.73	No Peat	0	8	1	0	None
987	Point	242969.18	607740.59	0.50	PEAT	GRANULAR	6.95	Peaty Soil	1	4	1	4	Negligible
988	Point	242875.50	607742.62	0.20	SOIL	GRANULAR	7.73	Peaty Soil	1	4	1	4	Negligible
989	Point	242848.80	607643.69	0.70	PEAT	GRANULAR	6.04	Thin Peat	2	4	1	8	Low
990	Point	242868.55	607547.38	0.30	SOIL	GRANULAR	9.92	Peaty Soil	1	6	1	6	Low
991	Point	242859.74	607427.76	1.00	PEAT	GRANULAR	5.40	Thin Peat	2	4	1	8	Low
992	Point	242876.01	607349.77	1.70	PEAT	GRANULAR	1.85	Thick Peat	3	1	1	3	Negligible
993	Point	242879.68	607256.63	2.40	PEAT	GRANULAR	1.96	Thick Peat	3	1	1	3	Negligible
994	Point	242654.18	607307.55	3.60	PEAT	GRANULAR	0.48	Thick Peat	3	1	1	3	Negligible
995	Point	242568.17	607329.18	4.00	PEAT	GRANULAR	0.70	Thick Peat	3	1	1	3	Negligible
996	Point	242488.53	607318.47	2.80	PEAT	GRANULAR	1.19	Thick Peat	3	1	1	3	Negligible
997	Point	241674.85	607434.19	0.00	SUPERFICIAL	GRANULAR	7.33	No Peat	0	4	1	0	None
998	Point	241552.70	607448.31	0.00	SOIL	GRANULAR	8.40	No Peat	0	6	1	0	None
999	Point	241458.41	607442.19	0.20	SOIL	GRANULAR	4.89	Peaty Soil	1	4	1	4	Negligible
1000	Point	241375.79	607448.98	0.10	SOIL	GRANULAR	3.73	Peaty Soil	1	2	1	2	Negligible
1001	Point	241263.81	607440.20	0.80	PEAT	GRANULAR	2.19	Thin Peat	2	2	1	4	Negligible
1002	Point	241164.24	607440.90	0.70	PEAT	GRANULAR	1.98	Thin Peat	2	1	1	2	Negligible
1003	Point	241067.24	607441.60	0.30	PEAT	GRANULAR	9.62	Peaty Soil	1	6	1	6	Low
1004	Point	240959.65	607440.10	0.20	PEAT	GRANULAR	8.56	Peaty Soil	1	6	1	6	Low
1005	Point	240855.06	607531.25	0.20	SOIL	GRANULAR	10.24	Peaty Soil	1	6	1	6	Low
1006	Point	240951.74	607536.87	0.00	SOIL	GRANULAR	2.18	No Peat	0	2	1	0	None
1007	Point	241045.58	607541.70	0.20	SOIL	GRANULAR	4.42	Peaty Soil	1	4	1	4	Negligible
1008	Point	241062.75	607638.83	0.20	PEAT	GRANULAR	4.70	Peaty Soil	1	4	1	4	Negligible
1009	Point	241144.80	607539.03	0.20	PEAT	GRANULAR	5.88	Peaty Soil	1	4	1	4	Negligible
1010	Point	241268.40	607536.01	0.10	SOIL	GRANULAR	3.71	Peaty Soil	1	2	1	2	Negligible
1011	Point	241353.88	607531.55	0.40	PEAT	GRANULAR	2.43	Peaty Soil	1	2	1	2	Negligible
1012	Point	241453.78	607532.69	0.20	PEAT	GRANULAR	6.93	Peaty Soil	1	4	1	4	Negligible
1013	Point	241560.33	607541.71	0.10	PEAT	GRANULAR	6.42	Peaty Soil	1	4	1	4	Negligible
1014	Point	241642.49	607533.60	0.10	PEAT	GRANULAR	16.39	Peaty Soil	1	8	1	8	Low
1015	Point	241762.33	607663.21	0.50	PEAT	GRANULAR	5.09	Peaty Soil	1	4	1	4	Negligible
1016	Point	241822.56	607733.71	0.50	PEAT	GRANULAR	1.93	Peaty Soil	1	1	1	1	Negligible
1017	Point	240475.45	607785.26	0.30	PEAT	GRANULAR	9.76	Peaty Soil	1	6	1	6	Low
1018	Point	240502.04	607744.01	0.60	PEAT	GRANULAR	5.97	Thin Peat	2	4	1	8	Low
1019	Point	240535.55	607678.27	0.50	PEAT	GRANULAR	1.24	Peaty Soil	1	1	1	1	Negligible
1020	Point	240591.10	607574.13	0.60	PEAT	GRANULAR	0.72	Thin Peat	2	1	1	2	Negligible
1021	Point	240657.53	607508.83	0.40	PEAT	GRANULAR	4.55	Peaty Soil	1	4	1	4	Negligible
1022	Point	240856.68	607348.03	0.30	PEAT	GRANULAR	5.63	Peaty Soil	1	4	1	4	Negligible
1023	Point	240872.07	607260.11	1.10	PEAT	GRANULAR	10.05	Thin Peat	2	6	1	12	Low
1024	Point	240881.80	607184.64	1.10	PEAT	GRANULAR	0.67	Thin Peat	2	1	1	2	Negligible
1025	Point	240931.77	607190.27	1.20	PEAT	GRANULAR	2.65	Thin Peat	2	2	1	4	Negligible
1026	Point	240207.61	607354.80	0.20	PEAT	GRANULAR	4.37	Peaty Soil	1	4	1	4	Negligible
1027	Point	240176.82	607451.81	0.40	PEAT	GRANULAR	1.15	Peaty Soil	1	1	1	1	Negligible
1028	Point	240168.78	607540.10	0.30	PEAT	GRANULAR	0.50	Peaty Soil	1	1	1	1	Negligible
1029	Point	240198.71	607612.70	0.20	PEAT	GRANULAR	0.92	Peaty Soil	1	1	1	1	Negligible
1030	Point	240245.54	607614.99	0.30	PEAT	GRANULAR	2.29	Peaty Soil	1	2	1	2	Negligible
1031	Point	242560.85	607738.49	0.20	PEAT	GRANULAR	2.78	Peaty Soil	1	2	1	2	Negligible
1032	Point	242561.44	607642.58	0.90	PEAT	GRANULAR	2.34	Thin Peat	2	2	1	4	Negligible
1033	Point	242659.62	607438.11	1.10	PEAT	GRANULAR	2.68	Thin Peat	2	2	1	4	Negligible
1034	Point	242754.84	607345.45	2.90	PEAT	GRANULAR	0.69	Thick Peat	3	1	1	3	Negligible
1035	Point	242757.48	607442.51	1.90	PEAT	GRANULAR	2.10	Thick Peat	3	2	1	6	Low
1036	Point	242760.52	607546.87	0.80	PEAT	GRANULAR	3.21	Thin Peat	2	2	1	4	Negligible
1037	Point	242756.48	607640.26	1.50	PEAT	GRANULAR	5.46	Thin Peat	2	4	1	8	Low
1038	Point	242752.17	607744.49	0.40	PEAT	GRANULAR	3.00	Peaty Soil	1	2	1	2	Negligible
1039	Point	243059.08	607635.72	0.10	PEAT	GRANULAR	14.78	Peaty Soil	1	8	1	8	Low

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1040	Point	242959.19	607642.91	0.10	PEAT	GRANULAR	10.84	Peaty Soil	1	6	1	6	Low
1041	Point	242866.15	607644.06	0.10	PEAT	GRANULAR	2.10	Peaty Soil	1	2	1	2	Negligible
1042	Point	242953.46	607544.34	0.10	PEAT	GRANULAR	8.35	Peaty Soil	1	6	1	6	Low
1043	Point	242959.79	607435.88	0.30	PEAT	GRANULAR	6.39	Peaty Soil	1	4	1	4	Negligible
1044	Point	242953.61	607338.84	1.10	PEAT	GRANULAR	2.39	Thin Peat	2	2	1	4	Negligible
1045	Point	242953.56	607243.49	2.70	PEAT	GRANULAR	0.66	Thick Peat	3	1	1	3	Negligible
1046	Point	242753.49	607238.47	1.90	PEAT	GRANULAR	1.78	Thick Peat	3	1	1	3	Negligible
1047	Point	242648.39	607246.06	3.80	PEAT	GRANULAR	0.35	Thick Peat	3	1	1	3	Negligible
1048	Point	242546.89	607265.63	4.40	PEAT	GRANULAR	0.67	Thick Peat	3	1	1	3	Negligible
1049	Point	241200.43	607783.77	5.40	PEAT	GRANULAR	3.57	Thick Peat	3	2	1	6	Low
1050	Point	241273.13	607730.87	0.30	PEAT	GRANULAR	2.37	Peaty Soil	1	2	1	2	Negligible
1051	Point	241303.13	607694.65	1.10	PEAT	GRANULAR	3.41	Thin Peat	2	2	1	4	Negligible
1052	Point	241347.65	607338.89	3.30	PEAT	GRANULAR	1.98	Thick Peat	3	1	1	3	Negligible
1053	Point	241405.49	607769.65	3.00	PEAT	GRANULAR	1.70	Thick Peat	3	1	1	3	Negligible
1054	Point	241142.63	607766.33	1.80	PEAT	GRANULAR	4.63	Thick Peat	3	4	1	12	Low
1055	Point	241184.38	607732.60	0.90	PEAT	GRANULAR	2.11	Thin Peat	2	2	1	4	Negligible
1078	Point	239499.46	607244.13	0.25		GRANULAR	1.90	Peaty Soil	1	1	1	1	Negligible
1079	Point	239530.86	607334.83	0.21		GRANULAR	3.60	Peaty Soil	1	2	1	2	Negligible
1080	Point	239570.93	607363.53	0.40		GRANULAR	2.44	Peaty Soil	1	2	1	2	Negligible
1081	Point	240169.69	607463.25	0.60		GRANULAR	1.15	Thin Peat	2	1	1	2	Negligible
1082	Point	240223.34	607367.55	0.50		GRANULAR	11.87	Peaty Soil	1	6	1	6	Low
1083	Point	240223.16	607267.80	0.70		GRANULAR	3.70	Thin Peat	2	2	1	4	Negligible
1084	Point	240273.80	607173.29	0.50		GRANULAR	3.40	Peaty Soil	1	2	1	2	Negligible
1085	Point	242105.82	607169.13	0.40		GRANULAR	1.28	Peaty Soil	1	1	1	1	Negligible
1086	Point	242055.95	607256.15	0.40		GRANULAR	3.50	Peaty Soil	1	2	1	2	Negligible
1087	Point	241956.03	607290.15	0.40		GRANULAR	1.87	Peaty Soil	1	1	1	1	Negligible
1088	Point	241882.08	607359.60	0.40		GRANULAR	1.75	Peaty Soil	1	1	1	1	Negligible
1089	Point	241785.34	607396.34	0.40		GRANULAR	4.90	Peaty Soil	1	4	1	4	Negligible
1090	Point	241714.71	607475.28	0.05		GRANULAR	3.70	Peaty Soil	1	2	1	2	Negligible
1091	Point	241715.40	607575.51	0.20		GRANULAR	1.02	Peaty Soil	1	1	1	1	Negligible
1092	Point	241665.23	607662.39	0.20		GRANULAR	0.36	Peaty Soil	1	1	1	1	Negligible
1093	Point	241578.30	607696.75	0.50		GRANULAR	8.48	Peaty Soil	1	6	1	6	Low
1094	Point	241523.65	607778.92	0.50		GRANULAR	2.17	Peaty Soil	1	2	1	2	Negligible
1105	Point	239052.71	607448.30	0.53		GRANULAR	0.78	Thin Peat	2	1	1	2	Negligible
1106	Point	239152.54	607442.69	0.55		GRANULAR	2.86	Thin Peat	2	2	1	4	Negligible
1107	Point	239251.47	607428.51	0.17		GRANULAR	5.37	Peaty Soil	1	4	1	4	Negligible
1108	Point	239350.25	607412.98	0.42		GRANULAR	1.20	Peaty Soil	1	1	1	1	Negligible
1109	Point	239449.28	607399.02	0.90		GRANULAR	1.24	Thin Peat	2	1	1	2	Negligible
1110	Point	239548.29	607385.07	1.00		GRANULAR	2.90	Thin Peat	2	2	1	4	Negligible
1111	Point	239659.79	607331.37	0.30		GRANULAR	7.53	Peaty Soil	1	4	1	4	Negligible
1115	Point	239546.14	607480.21	0.50		GRANULAR	7.27	Peaty Soil	1	4	1	4	Negligible
1116	Point	239553.46	607576.63	0.40		GRANULAR	4.18	Peaty Soil	1	4	1	4	Negligible
1117	Point	239600.97	607604.66	0.52		GRANULAR	1.40	Thin Peat	2	1	1	2	Negligible
1118	Point	239677.79	607177.05	0.40		GRANULAR	5.16	Peaty Soil	1	4	1	4	Negligible
1119	Point	239662.19	607275.82	0.55		GRANULAR	3.72	Thin Peat	2	2	1	4	Negligible
1120	Point	239691.02	607362.65	0.60		GRANULAR	0.92	Thin Peat	2	1	1	2	Negligible
1121	Point	239761.67	607433.43	0.40		GRANULAR	7.38	Peaty Soil	1	4	1	4	Negligible
1122	Point	239838.06	607488.37	0.60		GRANULAR	5.31	Thin Peat	2	4	1	8	Low
1123	Point	239937.65	607479.35	0.50		GRANULAR	3.08	Peaty Soil	1	2	1	2	Negligible
1124	Point	239975.29	607475.95	0.30		GRANULAR	4.31	Peaty Soil	1	4	1	4	Negligible
1125	Point	239966.04	607187.51	0.50		GRANULAR	1.16	Peaty Soil	1	1	1	1	Negligible
1126	Point	239994.91	607227.68	0.30		GRANULAR	1.97	Peaty Soil	1	1	1	1	Negligible
1127	Point	239875.64	607408.24	0.50		GRANULAR	2.93	Peaty Soil	1	2	1	2	Negligible
1128	Point	239933.01	607326.33	0.40		GRANULAR	2.39	Peaty Soil	1	2	1	2	Negligible

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1129	Point	240033.83	607173.47	0.45		GRANULAR	6.28	Peaty Soil	1	4	1	4	Negligible
1130	Point	240020.28	607471.03	0.55		GRANULAR	5.63	Thin Peat	2	4	1	8	Low
1131	Point	240120.05	607464.27	0.80		GRANULAR	3.40	Thin Peat	2	2	1	4	Negligible
1132	Point	240219.81	607457.35	0.70		GRANULAR	2.27	Thin Peat	2	2	1	4	Negligible
1133	Point	240319.55	607450.15	0.40		GRANULAR	4.22	Peaty Soil	1	4	1	4	Negligible
1134	Point	240419.29	607442.95	1.30		GRANULAR	1.29	Thin Peat	2	1	1	2	Negligible
1135	Point	240519.02	607435.61	4.00		GRANULAR	2.12	Thick Peat	3	2	1	6	Low
1136	Point	240618.75	607428.27	0.40		GRANULAR	2.40	Peaty Soil	1	2	1	2	Negligible
1137	Point	240751.70	607368.47	0.40		GRANULAR	9.10	Peaty Soil	1	6	1	6	Low
1138	Point	240734.38	607269.98	0.50		GRANULAR	6.71	Peaty Soil	1	4	1	4	Negligible
1139	Point	240720.77	607170.96	0.70		GRANULAR	1.07	Thin Peat	2	1	1	2	Negligible
1140	Point	240505.91	607180.21	0.90		GRANULAR	0.83	Thin Peat	2	1	1	2	Negligible
1141	Point	240572.45	607254.84	0.60		GRANULAR	3.54	Thin Peat	2	2	1	4	Negligible
1142	Point	240639.61	607328.94	0.50		GRANULAR	8.06	Peaty Soil	1	6	1	6	Low
1143	Point	240706.76	607403.03	0.65		GRANULAR	4.85	Thin Peat	2	4	1	8	Low
1144	Point	241729.66	607327.44	0.40		GRANULAR	5.70	Peaty Soil	1	4	1	4	Negligible
1145	Point	241728.74	607227.78	0.50		GRANULAR	7.52	Peaty Soil	1	4	1	4	Negligible
1146	Point	242074.09	607803.40	0.30		GRANULAR	3.54	Peaty Soil	1	2	1	2	Negligible
1147	Point	242091.85	607708.27	0.50		GRANULAR	7.48	Peaty Soil	1	4	1	4	Negligible
1148	Point	242127.74	607614.93	1.50		GRANULAR	2.39	Thin Peat	2	2	1	4	Negligible
1149	Point	242163.63	607521.60	1.70		GRANULAR	2.34	Thick Peat	3	2	1	6	Low
1150	Point	242227.67	607450.00	1.50		GRANULAR	1.63	Thin Peat	2	1	1	2	Negligible
1151	Point	242318.14	607407.38	1.50		GRANULAR	6.05	Thin Peat	2	4	1	8	Low
1152	Point	242381.65	607331.10	4.00		GRANULAR	0.65	Thick Peat	3	1	1	3	Negligible
1153	Point	242537.36	607228.63	2.80		GRANULAR	0.61	Thick Peat	3	1	1	3	Negligible
1154	Point	242636.03	607212.39	3.50		GRANULAR	0.49	Thick Peat	3	1	1	3	Negligible
1155	Point	242660.60	607208.35	3.50		GRANULAR	0.88	Thick Peat	3	1	1	3	Negligible
1156	Point	242450.12	607242.98	3.00		GRANULAR	0.56	Thick Peat	3	1	1	3	Negligible
1157	Point	242173.07	607498.85	1.50		GRANULAR	1.48	Thin Peat	2	1	1	2	Negligible
1158	Point	242080.70	607460.55	2.50		GRANULAR	2.41	Thick Peat	3	2	1	6	Low
1159	Point	241986.41	607445.97	1.50		GRANULAR	1.75	Thin Peat	2	1	1	2	Negligible
1160	Point	241889.04	607468.69	0.80		GRANULAR	4.70	Thin Peat	2	4	1	8	Low
1161	Point	241798.31	607437.69	0.50		GRANULAR	4.52	Peaty Soil	1	4	1	4	Negligible
1162	Point	241311.27	607259.73	0.50		GRANULAR	3.19	Peaty Soil	1	2	1	2	Negligible
1163	Point	241325.09	607358.77	0.60		GRANULAR	3.99	Thin Peat	2	2	1	4	Negligible
1164	Point	241336.32	607458.14	0.40		GRANULAR	2.78	Peaty Soil	1	2	1	2	Negligible
1165	Point	241355.52	607555.92	0.60		GRANULAR	3.20	Thin Peat	2	2	1	4	Negligible
1166	Point	241347.80	607631.00	0.60		GRANULAR	3.28	Thin Peat	2	2	1	4	Negligible
1167	Point	241250.29	607653.21	0.40		GRANULAR	0.75	Peaty Soil	1	1	1	1	Negligible
1168	Point	241152.88	607675.71	0.50		GRANULAR	0.75	Peaty Soil	1	1	1	1	Negligible
1169	Point	241056.87	607703.66	0.40		GRANULAR	2.80	Peaty Soil	1	2	1	2	Negligible
1170	Point	241011.75	607721.66	0.50		GRANULAR	2.29	Peaty Soil	1	2	1	2	Negligible
1171	Point	241093.15	607779.72	1.50		GRANULAR	3.56	Thin Peat	2	2	1	4	Negligible
1172	Point	240937.67	607654.49	0.40		GRANULAR	5.15	Peaty Soil	1	4	1	4	Negligible
1173	Point	240859.85	607592.42	0.40		GRANULAR	7.54	Peaty Soil	1	4	1	4	Negligible
1174	Point	240768.96	607551.95	0.40		GRANULAR	3.61	Peaty Soil	1	2	1	2	Negligible
1175	Point	243131.85	607172.14	0.30		GRANULAR	0.67	Peaty Soil	1	1	1	1	Negligible
1176	Point	243123.88	607272.68	0.40		GRANULAR	5.11	Peaty Soil	1	4	1	4	Negligible
1177	Point	243157.81	607366.53	0.60		GRANULAR	9.32	Thin Peat	2	6	1	12	Low
1178	Point	243194.90	607459.40	0.90		GRANULAR	3.51	Thin Peat	2	2	1	4	Negligible
1179	Point	243231.99	607552.26	0.40		GRANULAR	7.91	Peaty Soil	1	4	1	4	Negligible
1180	Point	243252.64	607636.16	0.00		GRANULAR	9.59	No Peat	0	6	1	0	None
1181	Point	243331.45	607721.81	0.10		GRANULAR	1.63	Peaty Soil	1	1	1	1	Negligible
1182	Point	243404.21	607790.40	0.50		GRANULAR	3.90	Peaty Soil	1	2	1	2	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
1183	Point	243261.85	607793.63	0.30		GRANULAR	3.36	Peaty Soil	1	2	1	2	Negligible
1184	Point	243182.60	607697.31	0.50		GRANULAR	8.04	Peaty Soil	1	6	1	6	Low
1185	Point	243141.58	607595.48	0.50		GRANULAR	3.53	Peaty Soil	1	2	1	2	Negligible
1186	Point	243107.97	607511.35	0.50		GRANULAR	8.60	Peaty Soil	1	6	1	6	Low
1187	Point	243075.18	607413.52	0.50		GRANULAR	8.20	Peaty Soil	1	6	1	6	Low
1188	Point	243024.82	607286.51	1.30		GRANULAR	2.66	Thin Peat	2	2	1	4	Negligible
1189	Point	243238.77	607212.31	0.30		GRANULAR	5.21	Peaty Soil	1	4	1	4	Negligible
1190	Point	243222.65	607256.73	0.30		GRANULAR	7.91	Peaty Soil	1	4	1	4	Negligible
1191	Point	243250.57	607329.18	0.30		GRANULAR	11.19	Peaty Soil	1	6	1	6	Low
1192	Point	243288.02	607422.94	0.60		GRANULAR	8.10	Thin Peat	2	6	1	12	Low
1193	Point	243345.91	607530.38	0.00		GRANULAR	4.97	No Peat	0	4	1	0	None
1194	Point	243363.59	607612.13	0.25		GRANULAR	7.17	Peaty Soil	1	4	1	4	Negligible
1195	Point	243395.86	607645.10	0.40		GRANULAR	4.58	Peaty Soil	1	4	1	4	Negligible
1196	Point	243466.84	607712.01	0.20		GRANULAR	5.29	Peaty Soil	1	4	1	4	Negligible
1197	Point	243548.32	607788.81	0.25		GRANULAR	8.92	Peaty Soil	1	6	1	6	Low
1198	Point	240979.03	607099.60	0.10	SOIL	GRANULAR	2.44	Peaty Soil	1	2	1	2	Negligible
1199	Point	240967.39	607122.20	0.20	SOIL	GRANULAR	2.43	Peaty Soil	1	2	1	2	Negligible
1200	Point	241269.52	607098.23	0.20	SOIL	GRANULAR	4.83	Peaty Soil	1	4	1	4	Negligible
1201	Point	241229.34	607132.17	0.20	SOIL	GRANULAR	5.02	Peaty Soil	1	4	1	4	Negligible
1202	Point	241185.42	607164.14	0.30	SOIL	GRANULAR	4.48	Peaty Soil	1	4	1	4	Negligible
1203	Point	241218.28	607110.44	0.20	SOIL	GRANULAR	3.59	Peaty Soil	1	2	1	2	Negligible
1204	Point	241228.42	607087.31	0.30	SOIL	GRANULAR	3.56	Peaty Soil	1	2	1	2	Negligible
1205	Point	241188.23	607140.33	0.60	PEAT	GRANULAR	2.97	Thin Peat	2	2	1	4	Negligible
1206	Point	241189.08	607096.72	0.30	SOIL	GRANULAR	3.75	Peaty Soil	1	2	1	2	Negligible
1207	Point	242752.24	607116.36	2.40	PEAT	GRANULAR	1.66	Thick Peat	3	1	1	3	Negligible
1208	Point	242768.17	607097.23	2.40	PEAT	ROCK	1.70	Thick Peat	3	1	2	6	Low
1209	Point	242798.99	607142.35	3.50	PEAT	GRANULAR	1.20	Thick Peat	3	1	1	3	Negligible
1210	Point	242781.69	607161.91	4.20	PEAT	GRANULAR	0.59	Thick Peat	3	1	1	3	Negligible
1211	Point	242822.71	607130.93	3.50	PEAT	GRANULAR	2.18	Thick Peat	3	2	1	6	Low
1212	Point	242787.14	607088.94	2.40	PEAT	GRANULAR	0.80	Thick Peat	3	1	1	3	Negligible
1213	Point	242101.54	607156.48	0.90	PEAT	GRANULAR	2.52	Thin Peat	2	2	1	4	Negligible
1214	Point	242109.89	607144.30	1.10	PEAT	GRANULAR	2.53	Thin Peat	2	2	1	4	Negligible
1215	Point	242093.88	607131.70	0.30	SOIL	GRANULAR	2.47	Peaty Soil	1	2	1	2	Negligible
1216	Point	242121.28	607119.58	0.50	PEAT	GRANULAR	2.23	Peaty Soil	1	2	1	2	Negligible
1217	Point	242154.98	607085.32	0.80	PEAT	GRANULAR	1.94	Thin Peat	2	1	1	2	Negligible
1218	Point	242204.34	607086.34	0.20	SOIL	GRANULAR	1.32	Peaty Soil	1	1	1	1	Negligible
1219	Point	242184.23	607116.03	0.10	SOIL	GRANULAR	2.42	Peaty Soil	1	2	1	2	Negligible
1220	Point	242179.24	607153.89	0.30	SOIL	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
1221	Point	242139.11	607161.42	0.10	SOIL	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
1222	Point	242535.78	607103.47	1.80	PEAT	GRANULAR	0.36	Thick Peat	3	1	1	3	Negligible
1223	Point	242504.88	607118.49	1.90	PEAT	GRANULAR	1.29	Thick Peat	3	1	1	3	Negligible
1224	Point	242492.79	607123.75	2.10	PEAT	GRANULAR	1.18	Thick Peat	3	1	1	3	Negligible
1225	Point	242503.24	607143.62	2.20	PEAT	GRANULAR	1.69	Thick Peat	3	1	1	3	Negligible
1226	Point	242485.85	607154.63	2.30	PEAT	GRANULAR	1.85	Thick Peat	3	1	1	3	Negligible
1227	Point	242269.49	607153.26	2.30	PEAT	GRANULAR	1.45	Thick Peat	3	1	1	3	Negligible
1228	Point	242261.92	607125.13	2.60	PEAT	GRANULAR	1.22	Thick Peat	3	1	1	3	Negligible
1229	Point	242294.92	607106.69	2.20	PEAT	GRANULAR	0.78	Thick Peat	3	1	1	3	Negligible
1230	Point	242485.67	607086.35	0.40	PEAT	GRANULAR	1.39	Peaty Soil	1	1	1	1	Negligible
1231	Point	240618.45	607089.86	1.70	PEAT	GRANULAR	0.98	Thick Peat	3	1	1	3	Negligible
1232	Point	240638.48	607140.57	0.20	SOIL	GRANULAR	3.90	Peaty Soil	1	2	1	2	Negligible
1233	Point	240594.35	607135.58	0.20	SOIL	GRANULAR	0.46	Peaty Soil	1	1	1	1	Negligible
1234	Point	240972.43	607162.31	0.20	SOIL	GRANULAR	3.17	Peaty Soil	1	2	1	2	Negligible
1235	Point	240995.04	607158.34	0.10	SOIL	GRANULAR	5.27	Peaty Soil	1	4	1	4	Negligible
1236	Point	240934.40	607148.03	0.10	SOIL	GRANULAR	3.63	Peaty Soil	1	2	1	2	Negligible

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1237	Point	240967.32	607137.90	0.20	SOIL	GRANULAR	2.48	Peaty Soil	1	2	1	2	Negligible
1238	Point	241047.32	607161.28	0.20	SOIL	GRANULAR	2.29	Peaty Soil	1	2	1	2	Negligible
1239	Point	241053.94	607153.99	0.10	SOIL	GRANULAR	3.10	Peaty Soil	1	2	1	2	Negligible
1240	Point	241083.49	607134.17	0.10	SOIL	GRANULAR	4.12	Peaty Soil	1	4	1	4	Negligible
1241	Point	241098.52	607128.43	0.20	SOIL	GRANULAR	2.89	Peaty Soil	1	2	1	2	Negligible
1242	Point	241128.31	607141.47	0.20	SOIL	GRANULAR	3.47	Peaty Soil	1	2	1	2	Negligible
1243	Point	241134.83	607155.16	0.10	SOIL	GRANULAR	4.68	Peaty Soil	1	4	1	4	Negligible
1244	Point	241167.27	607138.96	0.20	SOIL	GRANULAR	3.04	Peaty Soil	1	2	1	2	Negligible
1245	Point	241202.80	607154.36	0.30	SOIL	GRANULAR	5.93	Peaty Soil	1	4	1	4	Negligible
1246	Point	241148.38	607119.96	0.20	SOIL	GRANULAR	3.53	Peaty Soil	1	2	1	2	Negligible
1247	Point	241172.42	607104.99	0.20	SOIL	GRANULAR	3.78	Peaty Soil	1	2	1	2	Negligible
1248	Point	241074.30	607139.80	0.10	SOIL	GRANULAR	3.09	Peaty Soil	1	2	1	2	Negligible
1249	Point	241128.74	607127.14	0.10	SOIL	GRANULAR	3.53	Peaty Soil	1	2	1	2	Negligible
1250	Point	241073.33	607087.20	0.70	PEAT	GRANULAR	4.29	Thin Peat	2	4	1	8	Low
1251	Point	241065.38	607113.29	0.30	SOIL	GRANULAR	4.36	Peaty Soil	1	4	1	4	Negligible
1252	Point	241033.22	607113.71	0.50	PEAT	GRANULAR	3.10	Peaty Soil	1	2	1	2	Negligible
1253	Point	241024.23	607131.48	0.10	SOIL	GRANULAR	3.10	Peaty Soil	1	2	1	2	Negligible
1254	Point	240984.83	607118.79	0.20	SOIL	GRANULAR	2.44	Peaty Soil	1	2	1	2	Negligible
1255	Point	240955.05	607094.06	0.50	PEAT	GRANULAR	2.39	Peaty Soil	1	2	1	2	Negligible
1256	Point	240241.58	607104.97	1.20	PEAT	GRANULAR	2.83	Thin Peat	2	2	1	4	Negligible
1257	Point	240242.84	607127.95	0.20	SOIL	GRANULAR	4.45	Peaty Soil	1	4	1	4	Negligible
1258	Point	240249.13	607149.82	0.20	SOIL	GRANULAR	4.67	Peaty Soil	1	4	1	4	Negligible
1259	Point	240341.39	607137.38	0.50	PEAT	GRANULAR	3.70	Peaty Soil	1	2	1	2	Negligible
1260	Point	240333.29	607112.42	0.50	PEAT	GRANULAR	2.30	Peaty Soil	1	2	1	2	Negligible
1261	Point	240304.79	607108.63	0.70	PEAT	GRANULAR	7.03	Thin Peat	2	4	1	8	Low
1262	Point	240928.15	607013.98	0.30	SOIL	GRANULAR	0.54	Peaty Soil	1	1	1	1	Negligible
1263	Point	240971.31	607032.62	0.20	SOIL	GRANULAR	0.64	Peaty Soil	1	1	1	1	Negligible
1264	Point	241017.12	607024.99	0.20	SOIL	GRANULAR	3.33	Peaty Soil	1	2	1	2	Negligible
1265	Point	241020.73	607028.38	0.10	SOIL	GRANULAR	3.24	Peaty Soil	1	2	1	2	Negligible
1266	Point	240995.54	607078.30	0.10	SOIL	GRANULAR	2.59	Peaty Soil	1	2	1	2	Negligible
1267	Point	241023.67	607051.11	0.10	SOIL	GRANULAR	4.25	Peaty Soil	1	4	1	4	Negligible
1268	Point	241048.05	607046.52	0.10	SOIL	GRANULAR	4.15	Peaty Soil	1	4	1	4	Negligible
1269	Point	241044.28	607073.33	0.10	SOIL	GRANULAR	4.25	Peaty Soil	1	4	1	4	Negligible
1270	Point	241089.65	607055.42	0.80	PEAT	GRANULAR	3.37	Thin Peat	2	2	1	4	Negligible
1271	Point	241093.10	607016.12	0.10	ROCK	GRANULAR	4.15	Peaty Soil	1	4	1	4	Negligible
1272	Point	241140.59	607049.90	0.20	SOIL	GRANULAR	2.72	Peaty Soil	1	2	1	2	Negligible
1273	Point	241344.13	607012.85	0.20	SOIL	GRANULAR	2.96	Peaty Soil	1	2	1	2	Negligible
1274	Point	241355.25	607036.40	0.10	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
1275	Point	241320.00	607065.70	0.10	SOIL	GRANULAR	6.15	Peaty Soil	1	4	1	4	Negligible
1276	Point	241301.13	607032.59	0.20	SOIL	GRANULAR	2.79	Peaty Soil	1	2	1	2	Negligible
1277	Point	241259.01	607079.49	0.30	SOIL	GRANULAR	4.75	Peaty Soil	1	4	1	4	Negligible
1278	Point	241272.82	607036.95	2.90	PEAT	GRANULAR	2.98	Thick Peat	3	2	1	6	Low
1279	Point	241265.72	607010.28	3.00	PEAT	GRANULAR	2.93	Thick Peat	3	2	1	6	Low
1280	Point	241214.66	607020.66	5.30	PEAT	GRANULAR	2.40	Thick Peat	3	2	1	6	Low
1281	Point	241234.32	607043.34	3.60	PEAT	GRANULAR	3.56	Thick Peat	3	2	1	6	Low
1282	Point	241229.26	607064.51	0.20	SOIL	GRANULAR	3.56	Peaty Soil	1	2	1	2	Negligible
1283	Point	241200.70	607070.92	0.30	SOIL	GRANULAR	3.42	Peaty Soil	1	2	1	2	Negligible
1284	Point	241177.96	607060.79	0.40	SOIL	GRANULAR	3.80	Peaty Soil	1	2	1	2	Negligible
1285	Point	240284.44	607008.18	0.40	SOIL	GRANULAR	4.69	Peaty Soil	1	4	1	4	Negligible
1286	Point	240310.59	607061.08	4.60	PEAT	GRANULAR	1.15	Thick Peat	3	1	1	3	Negligible
1287	Point	242668.28	607008.52	0.20	SOIL	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
1288	Point	242693.38	607041.60	1.90	PEAT	GRANULAR	0.92	Thick Peat	3	1	1	3	Negligible
1289	Point	242709.30	607022.09	1.80	PEAT	GRANULAR	1.24	Thick Peat	3	1	1	3	Negligible
1290	Point	242740.70	607056.80	3.60	PEAT	GRANULAR	0.32	Thick Peat	3	1	1	3	Negligible

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1291	Point	242727.37	607080.86	2.90	PEAT	GRANULAR	0.55	Thick Peat	3	1	1	3	Negligible
1292	Point	242746.17	607053.08	2.80	PEAT	GRANULAR	0.42	Thick Peat	3	1	1	3	Negligible
1293	Point	242725.61	607007.59	1.10	PEAT	GRANULAR	1.06	Thin Peat	2	1	1	2	Negligible
1294	Point	242178.60	607047.35	0.50	PEAT	GRANULAR	2.74	Peaty Soil	1	2	1	2	Negligible
1295	Point	242188.20	607022.87	0.10	SOIL	GRANULAR	11.26	Peaty Soil	1	6	1	6	Low
1296	Point	242234.79	607032.16	0.20	SOIL	GRANULAR	2.40	Peaty Soil	1	2	1	2	Negligible
1297	Point	242231.48	607069.97	0.20	SOIL	GRANULAR	1.37	Peaty Soil	1	1	1	1	Negligible
1298	Point	242579.17	607026.36	0.30	SOIL	GRANULAR	1.23	Peaty Soil	1	1	1	1	Negligible
1299	Point	242562.59	607039.21	0.20	SOIL	GRANULAR	1.28	Peaty Soil	1	1	1	1	Negligible
1300	Point	242540.16	607027.57	0.40	SOIL	GRANULAR	1.31	Peaty Soil	1	1	1	1	Negligible
1301	Point	242546.08	607048.15	0.60	PEAT	GRANULAR	1.24	Thin Peat	2	1	1	2	Negligible
1302	Point	242556.34	607077.67	0.70	PEAT	GRANULAR	0.38	Thin Peat	2	1	1	2	Negligible
1303	Point	242518.65	607074.38	0.90	PEAT	GRANULAR	0.35	Thin Peat	2	1	1	2	Negligible
1304	Point	242508.68	607043.91	0.30	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
1305	Point	242499.26	607032.18	0.20	SOIL	GRANULAR	3.55	Peaty Soil	1	2	1	2	Negligible
1306	Point	242522.00	607017.69	0.30	SOIL	GRANULAR	4.79	Peaty Soil	1	4	1	4	Negligible
1307	Point	242477.28	607024.24	0.30	SOIL	GRANULAR	2.98	Peaty Soil	1	2	1	2	Negligible
1308	Point	242488.22	607052.07	0.20	SOIL	GRANULAR	2.14	Peaty Soil	1	2	1	2	Negligible
1309	Point	242500.95	607082.43	0.20	SOIL	GRANULAR	0.95	Peaty Soil	1	1	1	1	Negligible
1310	Point	242328.50	607080.98	4.00	PEAT	GRANULAR	1.36	Thick Peat	3	1	1	3	Negligible
1311	Point	242356.26	607070.15	2.20	PEAT	GRANULAR	1.21	Thick Peat	3	1	1	3	Negligible
1312	Point	242386.15	607077.25	0.80	PEAT	GRANULAR	1.13	Thin Peat	2	1	1	2	Negligible
1313	Point	242423.89	607052.32	0.40	PEAT	GRANULAR	1.58	Peaty Soil	1	1	1	1	Negligible
1314	Point	242445.86	607036.50	0.30	SOIL	GRANULAR	1.87	Peaty Soil	1	1	1	1	Negligible
1315	Point	242452.95	607073.54	0.30	SOIL	GRANULAR	1.39	Peaty Soil	1	1	1	1	Negligible
1316	Point	242402.88	607012.23	2.70	PEAT	GRANULAR	3.39	Thick Peat	3	2	1	6	Low
1317	Point	242408.26	607044.34	0.70	PEAT	GRANULAR	0.83	Thin Peat	2	1	1	2	Negligible
1318	Point	242378.71	607028.87	2.80	PEAT	GRANULAR	2.02	Thick Peat	3	2	1	6	Low
1319	Point	240535.46	607031.04	2.70	PEAT	GRANULAR	1.05	Thick Peat	3	1	1	3	Negligible
1320	Point	240546.14	607071.68	3.20	PEAT	GRANULAR	0.51	Thick Peat	3	1	1	3	Negligible
1321	Point	240596.87	607034.49	3.00	PEAT	GRANULAR	0.62	Thick Peat	3	1	1	3	Negligible
1322	Point	240586.68	607057.22	3.40	PEAT	GRANULAR	1.23	Thick Peat	3	1	1	3	Negligible
1323	Point	241124.90	607084.97	0.30	SOIL	GRANULAR	3.92	Peaty Soil	1	2	1	2	Negligible
1324	Point	241148.36	607073.33	0.10	SOIL	GRANULAR	3.77	Peaty Soil	1	2	1	2	Negligible
1325	Point	240933.04	607073.69	0.10	SOIL	GRANULAR	2.35	Peaty Soil	1	2	1	2	Negligible
1326	Point	240900.16	607036.63	0.30	SOIL	GRANULAR	0.21	Peaty Soil	1	1	1	1	Negligible
1327	Point	240891.64	607011.50	0.50	PEAT	GRANULAR	1.39	Peaty Soil	1	1	1	1	Negligible
1328	Point	240273.20	607016.39	0.10	SOIL	GRANULAR	8.66	Peaty Soil	1	6	1	6	Low
1329	Point	240253.78	607035.47	0.30	SOIL	GRANULAR	2.42	Peaty Soil	1	2	1	2	Negligible
1330	Point	240237.46	607081.73	2.40	PEAT	GRANULAR	2.92	Thick Peat	3	2	1	6	Low
1331	Point	240308.88	607081.19	2.60	PEAT	GRANULAR	1.26	Thick Peat	3	1	1	3	Negligible
1332	Point	242202.22	606947.78	0.10	SOIL	GRANULAR	2.11	Peaty Soil	1	2	1	2	Negligible
1333	Point	240919.99	606949.58	1.10	PEAT	GRANULAR	4.85	Thin Peat	2	4	1	8	Low
1334	Point	240949.48	606998.46	0.30	SOIL	GRANULAR	1.39	Peaty Soil	1	1	1	1	Negligible
1335	Point	240989.70	607001.28	0.20	SOIL	GRANULAR	1.67	Peaty Soil	1	1	1	1	Negligible
1336	Point	241125.73	606999.17	0.10	SOIL	GRANULAR	3.96	Peaty Soil	1	2	1	2	Negligible
1337	Point	241139.06	606975.48	0.10	SOIL	GRANULAR	3.93	Peaty Soil	1	2	1	2	Negligible
1338	Point	241132.68	606954.17	0.90	PEAT	GRANULAR	1.74	Thin Peat	2	1	1	2	Negligible
1339	Point	241165.14	606935.74	2.70	PEAT	GRANULAR	2.61	Thick Peat	3	2	1	6	Low
1340	Point	241307.50	606938.79	5.90	PEAT	GRANULAR	0.35	Thick Peat	3	1	1	3	Negligible
1341	Point	241332.71	606995.43	2.70	PEAT	GRANULAR	2.79	Thick Peat	3	2	1	6	Low
1342	Point	241385.99	607002.43	0.20	SOIL	GRANULAR	3.28	Peaty Soil	1	2	1	2	Negligible
1343	Point	241376.95	606974.72	0.10	SOIL	GRANULAR	3.28	Peaty Soil	1	2	1	2	Negligible
1344	Point	241355.14	606971.27	0.90	PEAT	GRANULAR	3.27	Thin Peat	2	2	1	4	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
1345	Point	241389.31	606935.85	3.30	PEAT	GRANULAR	0.44	Thick Peat	3	1	1	3	Negligible
1346	Point	241422.12	606973.85	0.20	SOIL	GRANULAR	3.68	Peaty Soil	1	2	1	2	Negligible
1347	Point	241441.01	606960.96	0.20	SOIL	GRANULAR	3.61	Peaty Soil	1	2	1	2	Negligible
1348	Point	241438.31	606945.42	0.20	SOIL	GRANULAR	2.85	Peaty Soil	1	2	1	2	Negligible
1349	Point	241435.93	606930.69	0.80	PEAT	GRANULAR	3.48	Thin Peat	2	2	1	4	Negligible
1350	Point	241456.87	606933.38	0.60	PEAT	GRANULAR	1.85	Thin Peat	2	1	1	2	Negligible
1351	Point	241459.47	606943.58	0.20	SOIL	GRANULAR	3.27	Peaty Soil	1	2	1	2	Negligible
1352	Point	241466.27	606951.58	0.30	SOIL	GRANULAR	2.89	Peaty Soil	1	2	1	2	Negligible
1353	Point	241478.67	606943.98	0.50	SOIL	GRANULAR	1.67	Peaty Soil	1	1	1	1	Negligible
1354	Point	241476.64	606926.49	0.90	PEAT	GRANULAR	1.63	Thin Peat	2	1	1	2	Negligible
1355	Point	241497.21	606931.41	0.30	SOIL	GRANULAR	1.03	Peaty Soil	1	1	1	1	Negligible
1356	Point	241518.33	606935.80	0.30	SOIL	GRANULAR	2.32	Peaty Soil	1	2	1	2	Negligible
1357	Point	241442.20	606927.86	1.50	PEAT	GRANULAR	3.20	Thin Peat	2	2	1	4	Negligible
1358	Point	241179.88	606993.38	5.50	PEAT	GRANULAR	1.48	Thick Peat	3	1	1	3	Negligible
1359	Point	240406.80	606932.46	0.20	SOIL	GRANULAR	2.36	Peaty Soil	1	2	1	2	Negligible
1360	Point	240393.01	606943.36	0.10	SOIL	GRANULAR	2.65	Peaty Soil	1	2	1	2	Negligible
1361	Point	240371.64	606961.21	0.40	PEAT	GRANULAR	2.75	Peaty Soil	1	2	1	2	Negligible
1362	Point	240346.63	606951.53	0.20	SOIL	GRANULAR	2.74	Peaty Soil	1	2	1	2	Negligible
1363	Point	240327.11	606958.92	0.30	SOIL	GRANULAR	2.60	Peaty Soil	1	2	1	2	Negligible
1364	Point	242556.39	606933.79	0.20	SOIL	GRANULAR	7.02	Peaty Soil	1	4	1	4	Negligible
1365	Point	242584.45	606957.85	0.20	SOIL	GRANULAR	6.65	Peaty Soil	1	4	1	4	Negligible
1366	Point	242609.95	606978.48	0.10	SOIL	GRANULAR	3.51	Peaty Soil	1	2	1	2	Negligible
1367	Point	242637.37	606963.76	0.50	SOIL	GRANULAR	3.79	Peaty Soil	1	2	1	2	Negligible
1368	Point	242681.24	606980.21	0.60	PEAT	GRANULAR	1.80	Thin Peat	2	1	1	2	Negligible
1369	Point	242700.94	606973.33	0.70	PEAT	GRANULAR	2.00	Thin Peat	2	1	1	2	Negligible
1370	Point	242648.16	606937.02	0.30	SOIL	GRANULAR	7.14	Peaty Soil	1	4	1	4	Negligible
1371	Point	242605.51	606936.87	0.10	SOIL	GRANULAR	7.52	Peaty Soil	1	4	1	4	Negligible
1372	Point	242196.94	606994.42	0.50	PEAT	GRANULAR	1.27	Peaty Soil	1	1	1	1	Negligible
1373	Point	242211.88	606945.69	0.60	PEAT	GRANULAR	2.11	Thin Peat	2	2	1	4	Negligible
1374	Point	242253.57	606938.85	0.50	PEAT	GRANULAR	2.24	Peaty Soil	1	2	1	2	Negligible
1375	Point	242265.02	606957.19	0.70	PEAT	GRANULAR	1.26	Thin Peat	2	1	1	2	Negligible
1376	Point	242316.53	606942.13	0.50	PEAT	GRANULAR	0.27	Peaty Soil	1	1	1	1	Negligible
1377	Point	242356.43	606938.51	0.30	SOIL	GRANULAR	1.13	Peaty Soil	1	1	1	1	Negligible
1378	Point	242347.17	606958.55	0.30	SOIL	GRANULAR	1.59	Peaty Soil	1	1	1	1	Negligible
1379	Point	242385.04	606933.59	0.90	PEAT	GRANULAR	3.61	Thin Peat	2	2	1	4	Negligible
1380	Point	242397.24	606963.98	1.00	PEAT	GRANULAR	1.83	Thin Peat	2	1	1	2	Negligible
1381	Point	242367.42	606962.38	0.80	PEAT	GRANULAR	1.76	Thin Peat	2	1	1	2	Negligible
1382	Point	242394.77	606948.10	0.70	PEAT	GRANULAR	2.64	Thin Peat	2	2	1	4	Negligible
1383	Point	242414.15	606939.61	0.40	PEAT	GRANULAR	4.38	Peaty Soil	1	4	1	4	Negligible
1384	Point	242428.71	606962.38	0.50	PEAT	GRANULAR	4.25	Peaty Soil	1	4	1	4	Negligible
1385	Point	242447.74	606931.91	0.90	PEAT	GRANULAR	0.58	Thin Peat	2	1	1	2	Negligible
1386	Point	242454.39	606940.22	0.70	PEAT	GRANULAR	0.98	Thin Peat	2	1	1	2	Negligible
1387	Point	242464.05	606958.81	0.60	PEAT	GRANULAR	1.37	Thin Peat	2	1	1	2	Negligible
1388	Point	242481.94	606955.94	0.30	SOIL	GRANULAR	10.30	Peaty Soil	1	6	1	6	Low
1389	Point	242492.00	606944.44	0.10	SOIL	GRANULAR	7.66	Peaty Soil	1	4	1	4	Negligible
1390	Point	242506.96	606960.73	0.30	SOIL	GRANULAR	7.64	Peaty Soil	1	4	1	4	Negligible
1391	Point	242507.72	606934.04	0.10	SOIL	GRANULAR	6.72	Peaty Soil	1	4	1	4	Negligible
1392	Point	242541.77	606930.23	0.20	SOIL	GRANULAR	7.11	Peaty Soil	1	4	1	4	Negligible
1393	Point	242548.66	606939.45	0.20	SOIL	GRANULAR	7.80	Peaty Soil	1	4	1	4	Negligible
1394	Point	242545.87	606959.23	0.10	SOIL	GRANULAR	6.94	Peaty Soil	1	4	1	4	Negligible
1395	Point	242525.02	606963.47	0.20	SOIL	GRANULAR	7.65	Peaty Soil	1	4	1	4	Negligible
1396	Point	242556.09	606981.70	0.10	SOIL	GRANULAR	5.39	Peaty Soil	1	4	1	4	Negligible
1397	Point	242562.45	606996.70	0.10	SOIL	GRANULAR	4.03	Peaty Soil	1	4	1	4	Negligible
1398	Point	242541.44	607000.68	0.20	SOIL	GRANULAR	4.51	Peaty Soil	1	4	1	4	Negligible

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1399	Point	242537.06	606978.79	0.20	SOIL	GRANULAR	4.66	Peaty Soil	1	4	1	4	Negligible
1400	Point	242521.74	606980.98	0.20	SOIL	GRANULAR	4.20	Peaty Soil	1	4	1	4	Negligible
1401	Point	242504.23	606984.27	0.10	SOIL	GRANULAR	4.20	Peaty Soil	1	4	1	4	Negligible
1402	Point	242523.36	606998.71	0.20	SOIL	GRANULAR	4.14	Peaty Soil	1	4	1	4	Negligible
1403	Point	242503.02	607002.78	0.20	SOIL	GRANULAR	4.83	Peaty Soil	1	4	1	4	Negligible
1404	Point	242486.08	607000.74	0.30	SOIL	GRANULAR	4.71	Peaty Soil	1	4	1	4	Negligible
1405	Point	242483.37	606983.12	0.20	SOIL	GRANULAR	4.37	Peaty Soil	1	4	1	4	Negligible
1406	Point	242431.22	606999.71	0.90	PEAT	GRANULAR	2.81	Thin Peat	2	2	1	4	Negligible
1407	Point	242466.46	606990.31	0.80	PEAT	GRANULAR	4.92	Thin Peat	2	4	1	8	Low
1408	Point	242453.66	606977.50	0.60	PEAT	GRANULAR	5.66	Thin Peat	2	4	1	8	Low
1409	Point	242419.17	606979.35	0.70	PEAT	GRANULAR	2.75	Thin Peat	2	2	1	4	Negligible
1410	Point	242393.98	606985.44	2.00	PEAT	GRANULAR	3.19	Thick Peat	3	2	1	6	Low
1411	Point	242359.98	607002.44	2.70	PEAT	GRANULAR	2.69	Thick Peat	3	2	1	6	Low
1412	Point	242350.11	606986.82	0.80	PEAT	GRANULAR	3.91	Thin Peat	2	2	1	4	Negligible
1413	Point	242379.67	606978.92	0.70	PEAT	GRANULAR	0.51	Thin Peat	2	1	1	2	Negligible
1414	Point	242330.96	606998.92	0.90	PEAT	GRANULAR	3.90	Thin Peat	2	2	1	4	Negligible
1415	Point	242310.31	606998.46	0.10	SOIL	GRANULAR	3.82	Peaty Soil	1	2	1	2	Negligible
1416	Point	242275.77	606991.52	0.60	PEAT	GRANULAR	2.19	Thin Peat	2	2	1	4	Negligible
1417	Point	242255.27	606983.53	0.40	PEAT	GRANULAR	1.02	Peaty Soil	1	1	1	1	Negligible
1418	Point	242285.06	606973.94	0.30	SOIL	GRANULAR	0.89	Peaty Soil	1	1	1	1	Negligible
1419	Point	242246.64	607000.98	0.30	SOIL	GRANULAR	2.99	Peaty Soil	1	2	1	2	Negligible
1420	Point	242241.11	606972.34	0.30	SOIL	GRANULAR	1.39	Peaty Soil	1	1	1	1	Negligible
1421	Point	242224.76	606964.76	0.10	SOIL	GRANULAR	2.11	Peaty Soil	1	2	1	2	Negligible
1422	Point	242241.54	606925.17	0.20	SOIL	GRANULAR	2.91	Peaty Soil	1	2	1	2	Negligible
1423	Point	242281.66	606937.77	0.10	SOIL	GRANULAR	3.81	Peaty Soil	1	2	1	2	Negligible
1424	Point	242300.82	606939.04	0.20	SOIL	GRANULAR	3.38	Peaty Soil	1	2	1	2	Negligible
1425	Point	240682.48	606984.51	1.80	PEAT	GRANULAR	3.66	Thick Peat	3	2	1	6	Low
1426	Point	240643.94	606978.11	2.80	PEAT	GRANULAR	2.28	Thick Peat	3	2	1	6	Low
1427	Point	240603.65	606976.22	2.70	PEAT	GRANULAR	0.05	Thick Peat	3	1	1	3	Negligible
1428	Point	240575.12	606980.41	2.70	PEAT	GRANULAR	1.64	Thick Peat	3	1	1	3	Negligible
1429	Point	240539.96	606985.76	2.10	PEAT	GRANULAR	1.64	Thick Peat	3	1	1	3	Negligible
1430	Point	240506.90	606991.75	1.90	PEAT	GRANULAR	0.25	Thick Peat	3	1	1	3	Negligible
1431	Point	240899.02	606963.71	1.10	PEAT	GRANULAR	2.44	Thin Peat	2	2	1	4	Negligible
1432	Point	240862.68	606945.15	2.00	PEAT	GRANULAR	2.36	Thick Peat	3	2	1	6	Low
1433	Point	240295.20	606946.25	0.20	SOIL	GRANULAR	1.23	Peaty Soil	1	1	1	1	Negligible
1434	Point	240281.13	606980.70	0.10	SOIL	GRANULAR	2.96	Peaty Soil	1	2	1	2	Negligible
1435	Point	241414.52	606957.03	1.20	NOTES ONLY	GRANULAR	3.71	Thin Peat	2	2	1	4	Negligible
1436	Point	242216.21	606912.34	0.10	SOIL	GRANULAR	3.39	Peaty Soil	1	2	1	2	Negligible
1437	Point	242217.10	606885.06	0.10	SOIL	GRANULAR	3.36	Peaty Soil	1	2	1	2	Negligible
1438	Point	242210.18	606859.08	0.10	SOIL	GRANULAR	3.69	Peaty Soil	1	2	1	2	Negligible
1439	Point	241712.79	606860.18	0.90	PEAT	GRANULAR	2.15	Thin Peat	2	2	1	4	Negligible
1440	Point	241675.03	606874.34	0.10	SOIL	GRANULAR	6.40	Peaty Soil	1	4	1	4	Negligible
1441	Point	241686.72	606862.65	0.70	PEAT	GRANULAR	6.84	Thin Peat	2	4	1	8	Low
1442	Point	242243.26	606861.29	0.20	SOIL	GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
1443	Point	242243.26	606847.18	0.20	SOIL	GRANULAR	3.90	Peaty Soil	1	2	1	2	Negligible
1444	Point	242261.24	606854.47	0.10	SOIL	GRANULAR	2.24	Peaty Soil	1	2	1	2	Negligible
1445	Point	242278.55	606861.29	0.10	SOIL	GRANULAR	2.16	Peaty Soil	1	2	1	2	Negligible
1446	Point	242297.37	606862.47	0.20	SOIL	GRANULAR	2.12	Peaty Soil	1	2	1	2	Negligible
1447	Point	240866.60	606864.49	0.30	SOIL	GRANULAR	1.89	Peaty Soil	1	1	1	1	Negligible
1448	Point	240899.51	606906.88	2.80	PEAT	GRANULAR	1.43	Thick Peat	3	1	1	3	Negligible
1449	Point	241192.22	606908.77	4.00	PEAT	GRANULAR	0.94	Thick Peat	3	1	1	3	Negligible
1450	Point	241228.20	606885.20	5.20	PEAT	GRANULAR	1.40	Thick Peat	3	1	1	3	Negligible
1451	Point	241249.57	606875.50	5.10	PEAT	GRANULAR	2.11	Thick Peat	3	2	1	6	Low
1452	Point	241256.64	606904.79	5.70	PEAT	GRANULAR	1.39	Thick Peat	3	1	1	3	Negligible

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1453	Point	241453.65	606923.88	0.90	PEAT	GRANULAR	1.68	Thin Peat	2	1	1	2	Negligible
1454	Point	241466.54	606914.32	1.80	PEAT	GRANULAR	1.65	Thick Peat	3	1	1	3	Negligible
1455	Point	241487.75	606909.66	2.90	PEAT	GRANULAR	1.65	Thick Peat	3	1	1	3	Negligible
1456	Point	241499.63	606907.38	2.70	PEAT	GRANULAR	1.63	Thick Peat	3	1	1	3	Negligible
1457	Point	241495.76	606919.08	0.80	PEAT	GRANULAR	1.61	Thin Peat	2	1	1	2	Negligible
1458	Point	241512.78	606919.90	0.60	PEAT	GRANULAR	0.70	Thin Peat	2	1	1	2	Negligible
1459	Point	241530.01	606916.69	0.70	PEAT	GRANULAR	1.90	Thin Peat	2	1	1	2	Negligible
1460	Point	241539.03	606921.47	0.40	SOIL	GRANULAR	3.85	Peaty Soil	1	2	1	2	Negligible
1461	Point	241520.47	606901.25	1.00	PEAT	GRANULAR	1.25	Thin Peat	2	1	1	2	Negligible
1462	Point	241541.85	606898.44	0.90	PEAT	GRANULAR	1.26	Thin Peat	2	1	1	2	Negligible
1463	Point	241558.68	606906.07	0.60	PEAT	GRANULAR	1.00	Thin Peat	2	1	1	2	Negligible
1464	Point	241536.91	606908.73	0.90	PEAT	GRANULAR	1.41	Thin Peat	2	1	1	2	Negligible
1465	Point	241556.02	606886.23	0.90	PEAT	GRANULAR	1.92	Thin Peat	2	1	1	2	Negligible
1466	Point	241579.26	606904.94	0.60	PEAT	GRANULAR	1.98	Thin Peat	2	1	1	2	Negligible
1467	Point	241577.64	606881.19	0.90	PEAT	GRANULAR	1.94	Thin Peat	2	1	1	2	Negligible
1468	Point	241600.37	606884.85	0.80	PEAT	GRANULAR	2.93	Thin Peat	2	2	1	4	Negligible
1469	Point	241597.97	606900.84	0.40	SOIL	GRANULAR	1.66	Peaty Soil	1	1	1	1	Negligible
1470	Point	241618.77	606897.64	0.40	SOIL	GRANULAR	2.07	Peaty Soil	1	2	1	2	Negligible
1471	Point	241614.46	606866.13	0.20	SOIL	GRANULAR	0.23	Peaty Soil	1	1	1	1	Negligible
1472	Point	241635.17	606878.85	0.20	SOIL	GRANULAR	0.97	Peaty Soil	1	1	1	1	Negligible
1473	Point	241644.77	606859.65	0.40	SOIL	GRANULAR	0.23	Peaty Soil	1	1	1	1	Negligible
1474	Point	241657.56	606878.85	0.10	SOIL	GRANULAR	1.91	Peaty Soil	1	1	1	1	Negligible
1475	Point	241665.86	606852.09	0.50	PEAT	GRANULAR	0.81	Peaty Soil	1	1	1	1	Negligible
1476	Point	241596.89	606862.55	0.30	SOIL	GRANULAR	1.11	Peaty Soil	1	1	1	1	Negligible
1477	Point	241577.06	606861.90	0.10	SOIL	GRANULAR	1.76	Peaty Soil	1	1	1	1	Negligible
1478	Point	241556.77	606862.81	0.10	SOIL	GRANULAR	1.89	Peaty Soil	1	1	1	1	Negligible
1479	Point	241523.02	606857.34	0.20	SOIL	GRANULAR	2.51	Peaty Soil	1	2	1	2	Negligible
1480	Point	241531.62	606878.77	0.40	SOIL	GRANULAR	1.44	Peaty Soil	1	1	1	1	Negligible
1481	Point	241500.59	606884.14	0.40	SOIL	GRANULAR	1.59	Peaty Soil	1	1	1	1	Negligible
1482	Point	241483.67	606881.40	0.50	SOIL	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
1483	Point	241477.15	606897.48	0.50	SOIL	GRANULAR	1.63	Peaty Soil	1	1	1	1	Negligible
1484	Point	241465.48	606879.09	0.20	SOIL	GRANULAR	1.38	Peaty Soil	1	1	1	1	Negligible
1485	Point	241452.81	606879.73	0.90	PEAT	GRANULAR	1.36	Thin Peat	2	1	1	2	Negligible
1486	Point	241460.52	606903.30	0.50	PEAT	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
1487	Point	241436.35	606887.19	1.70	PEAT	GRANULAR	1.58	Thick Peat	3	1	1	3	Negligible
1488	Point	241430.50	606915.80	2.70	PEAT	GRANULAR	3.46	Thick Peat	3	2	1	6	Low
1489	Point	241428.39	606921.82	2.30	PEAT	GRANULAR	3.77	Thick Peat	3	2	1	6	Low
1490	Point	241439.56	606921.25	2.10	PEAT	GRANULAR	3.21	Thick Peat	3	2	1	6	Low
1491	Point	241417.42	606899.77	2.20	PEAT	GRANULAR	3.86	Thick Peat	3	2	1	6	Low
1492	Point	241402.02	606883.22	2.90	PEAT	GRANULAR	1.10	Thick Peat	3	1	1	3	Negligible
1493	Point	241368.40	606901.88	1.80	PEAT	GRANULAR	0.73	Thick Peat	3	1	1	3	Negligible
1494	Point	240535.03	606852.08	0.10	SOIL	GRANULAR	4.27	Peaty Soil	1	4	1	4	Negligible
1495	Point	240516.99	606871.30	0.10	SOIL	GRANULAR	3.91	Peaty Soil	1	2	1	2	Negligible
1496	Point	240486.00	606872.16	0.10	SOIL	GRANULAR	4.29	Peaty Soil	1	4	1	4	Negligible
1497	Point	240463.72	606891.47	0.20	SOIL	GRANULAR	5.51	Peaty Soil	1	4	1	4	Negligible
1498	Point	240445.90	606901.86	0.10	SOIL	GRANULAR	4.20	Peaty Soil	1	4	1	4	Negligible
1499	Point	240423.00	606913.52	0.10	SOIL	GRANULAR	2.10	Peaty Soil	1	2	1	2	Negligible
1500	Point	242265.47	606922.27	0.60	PEAT	GRANULAR	2.67	Thin Peat	2	2	1	4	Negligible
1501	Point	242290.92	606917.83	0.20	SOIL	GRANULAR	3.20	Peaty Soil	1	2	1	2	Negligible
1502	Point	242307.92	606907.76	0.40	SUPERFICIAL	GRANULAR	3.44	Peaty Soil	1	2	1	2	Negligible
1503	Point	242291.23	606891.09	0.70	PEAT	GRANULAR	2.25	Thin Peat	2	2	1	4	Negligible
1504	Point	242282.94	606901.99	0.20	SOIL	GRANULAR	2.14	Peaty Soil	1	2	1	2	Negligible
1505	Point	242262.50	606902.63	0.20	SOIL	GRANULAR	2.61	Peaty Soil	1	2	1	2	Negligible
1506	Point	242242.06	606901.99	0.30	SOIL	GRANULAR	2.80	Peaty Soil	1	2	1	2	Negligible

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1507	Point	242299.13	606869.09	0.90	PEAT	GRANULAR	2.17	Thin Peat	2	2	1	4	Negligible
1508	Point	242278.56	606880.03	0.40	SUPERFICIAL	GRANULAR	2.17	Peaty Soil	1	2	1	2	Negligible
1509	Point	242257.07	606876.90	0.30	SOIL	GRANULAR	2.08	Peaty Soil	1	2	1	2	Negligible
1510	Point	242238.20	606876.09	0.30	SOIL	GRANULAR	2.57	Peaty Soil	1	2	1	2	Negligible
1511	Point	240882.54	606923.64	2.70	PEAT	GRANULAR	1.12	Thick Peat	3	1	1	3	Negligible
1512	Point	240836.41	606903.58	2.80	PEAT	GRANULAR	0.35	Thick Peat	3	1	1	3	Negligible
1513	Point	240847.01	606877.58	1.30	PEAT	GRANULAR	14.86	Thin Peat	2	8	1	16	Medium
1514	Point	240821.04	606876.47	0.80	PEAT	GRANULAR	2.51	Thin Peat	2	2	1	4	Negligible
1515	Point	240843.25	606849.50	0.40	PEAT	GRANULAR	2.80	Peaty Soil	1	2	1	2	Negligible
1516	Point	240807.08	606858.97	0.50	PEAT	GRANULAR	3.54	Peaty Soil	1	2	1	2	Negligible
1517	Point	240779.62	606884.10	1.30	PEAT	GRANULAR	1.37	Thin Peat	2	1	1	2	Negligible
1518	Point	240749.71	606894.09	1.30	PEAT	GRANULAR	3.30	Thin Peat	2	2	1	4	Negligible
1519	Point	240730.62	606899.04	3.60	PEAT	GRANULAR	2.38	Thick Peat	3	2	1	6	Low
1520	Point	240744.50	606862.15	1.80	PEAT	GRANULAR	3.75	Thick Peat	3	2	1	6	Low
1521	Point	240430.21	606848.26	0.10	SOIL	GRANULAR	2.76	Peaty Soil	1	2	1	2	Negligible
1522	Point	240408.16	606864.84	0.10	SOIL	GRANULAR	2.94	Peaty Soil	1	2	1	2	Negligible
1523	Point	240392.47	606878.77	0.10	SOIL	GRANULAR	3.49	Peaty Soil	1	2	1	2	Negligible
1524	Point	240392.28	606896.79	0.10	SOIL	GRANULAR	2.49	Peaty Soil	1	2	1	2	Negligible
1525	Point	240391.57	606912.22	0.10	SOIL	GRANULAR	1.19	Peaty Soil	1	1	1	1	Negligible
1526	Point	240379.67	606898.60	0.10	SOIL	GRANULAR	2.61	Peaty Soil	1	2	1	2	Negligible
1527	Point	240362.34	606906.18	0.10	SOIL	GRANULAR	1.96	Peaty Soil	1	1	1	1	Negligible
1528	Point	240346.09	606912.68	0.10	SOIL	GRANULAR	2.08	Peaty Soil	1	2	1	2	Negligible
1529	Point	240326.60	606917.01	0.10	SOIL	GRANULAR	2.01	Peaty Soil	1	2	1	2	Negligible
1530	Point	242209.02	606826.64	0.20	SOIL	GRANULAR	4.32	Peaty Soil	1	4	1	4	Negligible
1531	Point	242200.91	606786.27	1.00	PEAT	GRANULAR	3.74	Thin Peat	2	2	1	4	Negligible
1532	Point	241770.29	606790.17	0.80	PEAT	GRANULAR	0.99	Thin Peat	2	1	1	2	Negligible
1533	Point	241750.05	606822.09	0.70	PEAT	GRANULAR	0.92	Thin Peat	2	1	1	2	Negligible
1534	Point	241725.17	606839.69	0.10	SOIL	GRANULAR	1.53	Peaty Soil	1	1	1	1	Negligible
1535	Point	241681.79	606834.19	0.80	PEAT	GRANULAR	0.47	Thin Peat	2	1	1	2	Negligible
1536	Point	241660.60	606815.64	0.10	SOIL	GRANULAR	0.37	Peaty Soil	1	1	1	1	Negligible
1537	Point	241633.70	606794.70	0.10	SOIL	GRANULAR	1.67	Peaty Soil	1	1	1	1	Negligible
1538	Point	241633.74	606766.11	1.00	PEAT	GRANULAR	1.28	Thin Peat	2	1	1	2	Negligible
1539	Point	241701.28	606797.20	0.40	SOIL	GRANULAR	1.01	Peaty Soil	1	1	1	1	Negligible
1540	Point	241728.15	606807.16	0.50	PEAT	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
1541	Point	241764.98	606769.33	0.30	SOIL	GRANULAR	2.15	Peaty Soil	1	2	1	2	Negligible
1542	Point	241880.42	606808.61	0.70	PEAT	GRANULAR	2.57	Thin Peat	2	2	1	4	Negligible
1543	Point	241894.90	606766.86	0.40	SOIL	GRANULAR	3.33	Peaty Soil	1	2	1	2	Negligible
1544	Point	242314.03	606770.71	0.20	SOIL	GRANULAR	3.33	Peaty Soil	1	2	1	2	Negligible
1545	Point	242287.68	606785.77	0.30	SOIL	GRANULAR	3.41	Peaty Soil	1	2	1	2	Negligible
1546	Point	242268.58	606784.22	0.20	SOIL	GRANULAR	2.98	Peaty Soil	1	2	1	2	Negligible
1547	Point	242259.36	606810.73	0.10	SOIL	GRANULAR	2.56	Peaty Soil	1	2	1	2	Negligible
1548	Point	242251.49	606830.32	0.10	ROCK	GRANULAR	3.28	Peaty Soil	1	2	1	2	Negligible
1549	Point	242278.55	606840.12	0.20	SOIL	GRANULAR	2.08	Peaty Soil	1	2	1	2	Negligible
1550	Point	242279.73	606824.83	0.10	SOIL	GRANULAR	2.45	Peaty Soil	1	2	1	2	Negligible
1551	Point	242295.02	606824.83	0.20	SOIL	GRANULAR	2.13	Peaty Soil	1	2	1	2	Negligible
1552	Point	242282.08	606808.36	0.10	SOIL	GRANULAR	2.47	Peaty Soil	1	2	1	2	Negligible
1553	Point	242296.20	606800.13	0.20	SOIL	GRANULAR	2.44	Peaty Soil	1	2	1	2	Negligible
1554	Point	242245.62	606784.84	0.20	SOIL	GRANULAR	4.73	Peaty Soil	1	4	1	4	Negligible
1555	Point	242295.02	606841.30	0.10	SOIL	GRANULAR	1.99	Peaty Soil	1	1	1	1	Negligible
1556	Point	242266.79	606830.71	0.10	SOIL	GRANULAR	2.47	Peaty Soil	1	2	1	2	Negligible
1557	Point	242244.68	606809.72	0.20	SOIL	GRANULAR	3.26	Peaty Soil	1	2	1	2	Negligible
1558	Point	240971.88	606782.85	1.80	PEAT	GRANULAR	0.83	Thick Peat	3	1	1	3	Negligible
1559	Point	240945.96	606827.23	1.00	PEAT	GRANULAR	0.78	Thin Peat	2	1	1	2	Negligible
1560	Point	240865.55	606834.03	0.30	SOIL	GRANULAR	1.73	Peaty Soil	1	1	1	1	Negligible

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1561	Point	241682.22	606832.45	0.80	PEAT	GRANULAR	0.47	Thin Peat	2	1	1	2	Negligible
1562	Point	241609.03	606844.41	0.10	SOIL	GRANULAR	1.73	Peaty Soil	1	1	1	1	Negligible
1563	Point	241636.39	606840.52	0.10	SOIL	GRANULAR	0.23	Peaty Soil	1	1	1	1	Negligible
1564	Point	241503.51	606844.67	0.30	SOIL	GRANULAR	2.32	Peaty Soil	1	2	1	2	Negligible
1565	Point	241039.28	606805.86	3.40	PEAT	GRANULAR	0.85	Thick Peat	3	1	1	3	Negligible
1566	Point	240780.49	606769.84	0.40	SOIL	GRANULAR	1.65	Peaty Soil	1	1	1	1	Negligible
1567	Point	240669.37	606767.95	0.20	SOIL	GRANULAR	1.70	Peaty Soil	1	1	1	1	Negligible
1568	Point	240638.50	606789.31	0.20	SOIL	GRANULAR	1.76	Peaty Soil	1	1	1	1	Negligible
1569	Point	240613.64	606807.28	0.10	SOIL	GRANULAR	1.78	Peaty Soil	1	1	1	1	Negligible
1570	Point	240596.88	606817.91	0.10	SOIL	GRANULAR	2.04	Peaty Soil	1	2	1	2	Negligible
1571	Point	240565.49	606833.90	0.10	SOIL	GRANULAR	3.73	Peaty Soil	1	2	1	2	Negligible
1572	Point	240713.11	606824.30	0.20	SOIL	GRANULAR	6.58	Peaty Soil	1	4	1	4	Negligible
1573	Point	240732.42	606787.40	0.10	SOIL	GRANULAR	3.46	Peaty Soil	1	2	1	2	Negligible
1574	Point	240748.46	606786.26	0.20	SOIL	GRANULAR	3.43	Peaty Soil	1	2	1	2	Negligible
1575	Point	240750.01	606767.64	0.10	SOIL	GRANULAR	4.18	Peaty Soil	1	4	1	4	Negligible
1576	Point	240710.08	606781.34	0.10	SOIL	GRANULAR	1.68	Peaty Soil	1	1	1	1	Negligible
1577	Point	240658.05	606776.72	0.10	SOIL	GRANULAR	1.60	Peaty Soil	1	1	1	1	Negligible
1578	Point	240527.20	606775.87	0.20	SOIL	GRANULAR	3.17	Peaty Soil	1	2	1	2	Negligible
1579	Point	240539.95	606790.31	0.20	SOIL	GRANULAR	3.69	Peaty Soil	1	2	1	2	Negligible
1580	Point	240561.60	606781.64	0.10	SOIL	GRANULAR	2.67	Peaty Soil	1	2	1	2	Negligible
1581	Point	240516.02	606791.69	0.10	SOIL	GRANULAR	3.91	Peaty Soil	1	2	1	2	Negligible
1582	Point	240503.54	606797.89	0.10	SOIL	GRANULAR	2.80	Peaty Soil	1	2	1	2	Negligible
1583	Point	240505.83	606785.43	0.10	SOIL	GRANULAR	2.10	Peaty Soil	1	2	1	2	Negligible
1584	Point	240487.42	606791.93	0.10	SOIL	GRANULAR	2.02	Peaty Soil	1	2	1	2	Negligible
1585	Point	240526.41	606806.01	0.20	SOIL	GRANULAR	3.65	Peaty Soil	1	2	1	2	Negligible
1586	Point	240511.25	606815.75	0.10	SOIL	GRANULAR	3.80	Peaty Soil	1	2	1	2	Negligible
1587	Point	240488.49	606809.02	0.10	SOIL	GRANULAR	2.37	Peaty Soil	1	2	1	2	Negligible
1588	Point	240470.91	606817.45	0.10	SOIL	GRANULAR	2.80	Peaty Soil	1	2	1	2	Negligible
1589	Point	240459.93	606826.95	0.10	SOIL	GRANULAR	2.80	Peaty Soil	1	2	1	2	Negligible
1590	Point	240440.90	606836.55	0.10	SOIL	GRANULAR	2.62	Peaty Soil	1	2	1	2	Negligible
1591	Point	242191.16	606747.26	0.70	PEAT	GRANULAR	0.77	Thin Peat	2	1	1	2	Negligible
1592	Point	242186.85	606703.09	0.10	SOIL	GRANULAR	2.32	Peaty Soil	1	2	1	2	Negligible
1593	Point	242061.44	606706.29	0.30	SOIL	GRANULAR	2.87	Peaty Soil	1	2	1	2	Negligible
1594	Point	242027.94	606690.72	0.90	PEAT	GRANULAR	2.81	Thin Peat	2	2	1	4	Negligible
1595	Point	242031.53	606705.26	0.20	SOIL	GRANULAR	2.92	Peaty Soil	1	2	1	2	Negligible
1596	Point	242029.44	606717.34	0.20	SOIL	GRANULAR	2.92	Peaty Soil	1	2	1	2	Negligible
1597	Point	242039.10	606723.17	0.20	SOIL	GRANULAR	2.98	Peaty Soil	1	2	1	2	Negligible
1598	Point	242019.05	606711.46	0.10	SOIL	GRANULAR	2.84	Peaty Soil	1	2	1	2	Negligible
1599	Point	242017.67	606702.60	1.10	PEAT	GRANULAR	2.96	Thin Peat	2	2	1	4	Negligible
1600	Point	242019.24	606691.13	1.60	PEAT	GRANULAR	3.28	Thick Peat	3	2	1	6	Low
1601	Point	241981.28	606685.33	1.80	PEAT	GRANULAR	3.73	Thick Peat	3	2	1	6	Low
1602	Point	241988.19	606700.87	1.60	PEAT	GRANULAR	3.83	Thick Peat	3	2	1	6	Low
1603	Point	241999.93	606688.75	1.00	PEAT	GRANULAR	3.83	Thin Peat	2	2	1	4	Negligible
1604	Point	242011.23	606688.88	0.90	PEAT	GRANULAR	3.83	Thin Peat	2	2	1	4	Negligible
1605	Point	242000.46	606709.52	0.20	SOIL	GRANULAR	3.85	Peaty Soil	1	2	1	2	Negligible
1606	Point	242008.02	606705.54	0.20	SOIL	GRANULAR	3.73	Peaty Soil	1	2	1	2	Negligible
1607	Point	241999.92	606721.24	0.10	SOIL	GRANULAR	3.83	Peaty Soil	1	2	1	2	Negligible
1608	Point	242018.60	606731.50	0.10	SOIL	GRANULAR	2.92	Peaty Soil	1	2	1	2	Negligible
1609	Point	242006.27	606729.92	0.10	SOIL	GRANULAR	3.09	Peaty Soil	1	2	1	2	Negligible
1610	Point	241999.68	606734.99	0.10	SOIL	GRANULAR	3.79	Peaty Soil	1	2	1	2	Negligible
1611	Point	242015.07	606746.55	0.20	SOIL	GRANULAR	2.96	Peaty Soil	1	2	1	2	Negligible
1612	Point	242030.45	606740.79	0.10	SOIL	GRANULAR	2.97	Peaty Soil	1	2	1	2	Negligible
1613	Point	241983.22	606730.75	0.10	SOIL	GRANULAR	4.06	Peaty Soil	1	4	1	4	Negligible
1614	Point	241980.15	606714.84	0.10	SOIL	GRANULAR	3.83	Peaty Soil	1	2	1	2	Negligible

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1615	Point	241989.12	606712.27	0.20	SOIL	GRANULAR	3.83	Peaty Soil	1	2	1	2	Negligible
1616	Point	241955.24	606714.67	0.20	SOIL	GRANULAR	2.67	Peaty Soil	1	2	1	2	Negligible
1617	Point	241969.26	606718.04	0.30	SOIL	GRANULAR	3.77	Peaty Soil	1	2	1	2	Negligible
1618	Point	241940.37	606710.38	0.10	SOIL	GRANULAR	2.62	Peaty Soil	1	2	1	2	Negligible
1619	Point	241960.29	606703.30	0.30	SOIL	GRANULAR	2.78	Peaty Soil	1	2	1	2	Negligible
1620	Point	241931.98	606700.84	0.20	SOIL	GRANULAR	2.69	Peaty Soil	1	2	1	2	Negligible
1621	Point	241924.65	606685.13	0.80	PEAT	GRANULAR	2.74	Thin Peat	2	2	1	4	Negligible
1622	Point	241891.64	606706.18	0.10	SOIL	GRANULAR	2.61	Peaty Soil	1	2	1	2	Negligible
1623	Point	241899.56	606720.38	0.30	SOIL	GRANULAR	2.59	Peaty Soil	1	2	1	2	Negligible
1624	Point	241911.59	606704.58	0.50	PEAT	GRANULAR	2.63	Peaty Soil	1	2	1	2	Negligible
1625	Point	241883.23	606707.78	0.50	PEAT	GRANULAR	2.01	Peaty Soil	1	2	1	2	Negligible
1626	Point	241878.24	606721.61	0.30	SOIL	GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
1627	Point	241877.80	606686.25	0.30	SOIL	GRANULAR	3.02	Peaty Soil	1	2	1	2	Negligible
1628	Point	241875.03	606696.42	0.20	SOIL	GRANULAR	1.96	Peaty Soil	1	1	1	1	Negligible
1629	Point	241861.29	606704.67	0.20	SOIL	GRANULAR	2.05	Peaty Soil	1	2	1	2	Negligible
1630	Point	241839.29	606711.52	0.10	SOIL	GRANULAR	2.09	Peaty Soil	1	2	1	2	Negligible
1631	Point	241859.41	606721.95	0.40	SOIL	GRANULAR	2.05	Peaty Soil	1	2	1	2	Negligible
1632	Point	241832.15	606720.75	0.20	SOIL	GRANULAR	1.90	Peaty Soil	1	1	1	1	Negligible
1633	Point	241810.07	606745.68	0.40	SOIL	GRANULAR	0.96	Peaty Soil	1	1	1	1	Negligible
1634	Point	241791.58	606761.19	0.10	SOIL	GRANULAR	0.88	Peaty Soil	1	1	1	1	Negligible
1635	Point	241640.27	606738.77	1.00	PEAT	GRANULAR	1.33	Thin Peat	2	1	1	2	Negligible
1636	Point	241629.17	606694.80	3.00	PEAT	GRANULAR	1.33	Thick Peat	3	1	1	3	Negligible
1637	Point	241688.76	606706.77	0.30	PEAT	GRANULAR	1.50	Peaty Soil	1	1	1	1	Negligible
1638	Point	241694.82	606745.91	0.30	SOIL	GRANULAR	0.95	Peaty Soil	1	1	1	1	Negligible
1639	Point	241745.31	606760.81	0.20	SOIL	GRANULAR	2.24	Peaty Soil	1	2	1	2	Negligible
1640	Point	241774.02	606725.99	0.20	SOIL	GRANULAR	2.10	Peaty Soil	1	2	1	2	Negligible
1641	Point	241792.36	606732.00	0.20	SOIL	GRANULAR	2.20	Peaty Soil	1	2	1	2	Negligible
1642	Point	241761.15	606691.92	0.10	SOIL	GRANULAR	1.96	Peaty Soil	1	1	1	1	Negligible
1643	Point	241817.74	606701.64	0.10	SOIL	GRANULAR	1.86	Peaty Soil	1	1	1	1	Negligible
1644	Point	241943.70	606697.08	0.30	SOIL	GRANULAR	2.72	Peaty Soil	1	2	1	2	Negligible
1645	Point	241911.40	606743.76	0.30	SOIL	GRANULAR	2.61	Peaty Soil	1	2	1	2	Negligible
1646	Point	242238.62	606727.92	0.30	SOIL	GRANULAR	8.49	Peaty Soil	1	6	1	6	Low
1647	Point	242256.62	606746.22	0.20	SOIL	GRANULAR	1.74	Peaty Soil	1	1	1	1	Negligible
1648	Point	242280.78	606728.83	0.20	SOIL	GRANULAR	4.96	Peaty Soil	1	4	1	4	Negligible
1649	Point	242309.27	606741.18	0.10	SOIL	GRANULAR	4.85	Peaty Soil	1	4	1	4	Negligible
1650	Point	240883.93	606695.05	0.50	SOIL	GRANULAR	1.19	Peaty Soil	1	1	1	1	Negligible
1651	Point	240911.60	606719.67	2.00	PEAT	GRANULAR	1.07	Thick Peat	3	1	1	3	Negligible
1652	Point	240960.51	606696.37	3.60	PEAT	GRANULAR	0.22	Thick Peat	3	1	1	3	Negligible
1653	Point	240984.43	606740.63	3.30	PEAT	GRANULAR	0.15	Thick Peat	3	1	1	3	Negligible
1654	Point	240935.14	606756.14	0.90	PEAT	GRANULAR	1.55	Thin Peat	2	1	1	2	Negligible
1655	Point	240880.61	606740.84	0.20	SOIL	GRANULAR	1.34	Peaty Soil	1	1	1	1	Negligible
1656	Point	240826.05	606758.45	0.30	SOIL	GRANULAR	0.34	Peaty Soil	1	1	1	1	Negligible
1657	Point	240761.13	606686.71	0.40	SOIL	GRANULAR	4.73	Peaty Soil	1	4	1	4	Negligible
1658	Point	240698.11	606742.97	0.20	SOIL	GRANULAR	1.34	Peaty Soil	1	1	1	1	Negligible
1659	Point	242246.93	606686.55	0.60	PEAT	GRANULAR	1.71	Thin Peat	2	1	1	2	Negligible
1660	Point	240700.22	606745.86	0.10	SOIL	GRANULAR	1.30	Peaty Soil	1	1	1	1	Negligible
1661	Point	240721.95	606726.20	0.10	SOIL	GRANULAR	3.87	Peaty Soil	1	2	1	2	Negligible
1662	Point	240684.00	606736.24	0.10	SOIL	GRANULAR	1.32	Peaty Soil	1	1	1	1	Negligible
1663	Point	240633.80	606738.23	0.10	SOIL	GRANULAR	2.59	Peaty Soil	1	2	1	2	Negligible
1664	Point	240627.65	606720.45	0.20	SOIL	GRANULAR	7.30	Peaty Soil	1	4	1	4	Negligible
1665	Point	240610.49	606711.41	0.20	SOIL	GRANULAR	2.70	Peaty Soil	1	2	1	2	Negligible
1666	Point	240573.23	606714.24	0.10	SOIL	GRANULAR	0.94	Peaty Soil	1	1	1	1	Negligible
1667	Point	240550.53	606727.50	0.20	SOIL	GRANULAR	1.61	Peaty Soil	1	1	1	1	Negligible
1668	Point	240527.56	606742.07	0.10	SOIL	GRANULAR	1.55	Peaty Soil	1	1	1	1	Negligible

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1723	Point	242044.83	606535.65	0.90	PEAT	GRANULAR	4.34	Thin Peat	2	4	1	8	Low
1724	Point	242085.11	606528.73	0.90	PEAT	GRANULAR	2.66	Thin Peat	2	2	1	4	Negligible
1725	Point	242101.76	606529.53	1.80	PEAT	GRANULAR	2.02	Thick Peat	3	2	1	6	Low
1726	Point	242117.51	606558.30	2.70	PEAT	GRANULAR	1.26	Thick Peat	3	1	1	3	Negligible
1727	Point	242093.00	606577.56	1.80	PEAT	GRANULAR	0.90	Thick Peat	3	1	1	3	Negligible
1728	Point	242131.27	606602.73	0.90	PEAT	GRANULAR	1.90	Thin Peat	2	1	1	2	Negligible
1729	Point	242167.83	606603.98	0.80	PEAT	GRANULAR	1.39	Thin Peat	2	1	1	2	Negligible
1730	Point	242235.63	606570.04	1.80	PEAT	GRANULAR	5.54	Thick Peat	3	4	1	12	Low
1731	Point	242243.34	606525.40	3.10	PEAT	GRANULAR	2.20	Thick Peat	3	2	1	6	Low
1732	Point	242167.09	606550.77	2.50	PEAT	GRANULAR	3.02	Thick Peat	3	2	1	6	Low
1733	Point	242165.12	606569.59	2.60	PEAT	GRANULAR	4.12	Thick Peat	3	4	1	12	Low
1734	Point	242168.77	606591.93	0.30	SOIL	GRANULAR	1.89	Peaty Soil	1	1	1	1	Negligible
1735	Point	241629.55	607159.66	0.90	PEAT	GRANULAR	3.38	Thin Peat	2	2	1	4	Negligible
1736	Point	241705.46	607148.77	0.90	PEAT	GRANULAR	2.51	Thin Peat	2	2	1	4	Negligible
1737	Point	241157.79	607163.62	0.20	SOIL	GRANULAR	3.82	Peaty Soil	1	2	1	2	Negligible
1738	Point	241235.33	607104.02	0.20	SOIL	GRANULAR	3.56	Peaty Soil	1	2	1	2	Negligible
1739	Point	241330.38	607060.13	0.30	SOIL	GRANULAR	6.15	Peaty Soil	1	4	1	4	Negligible
1740	Point	241399.77	606994.32	0.30	SOIL	GRANULAR	3.53	Peaty Soil	1	2	1	2	Negligible
1741	Point	241473.21	606949.73	0.80	PEAT	GRANULAR	2.00	Thin Peat	2	2	1	4	Negligible
1742	Point	241573.08	606904.37	1.20	PEAT	GRANULAR	2.13	Thin Peat	2	2	1	4	Negligible
1743	Point	241651.51	606869.07	0.40	PEAT	GRANULAR	1.06	Peaty Soil	1	1	1	1	Negligible
1744	Point	241726.89	606804.91	0.30	SOIL	GRANULAR	1.42	Peaty Soil	1	1	1	1	Negligible
1745	Point	241792.24	606732.39	0.40	PEAT	GRANULAR	2.20	Peaty Soil	1	2	1	2	Negligible
1746	Point	241851.58	606678.10	0.10	SOIL	GRANULAR	3.18	Peaty Soil	1	2	1	2	Negligible
1747	Point	241906.68	606597.22	0.40	PEAT	GRANULAR	0.55	Peaty Soil	1	1	1	1	Negligible
1748	Point	241966.32	606639.61	0.30	SOIL	GRANULAR	3.05	Peaty Soil	1	2	1	2	Negligible
1749	Point	242027.19	606675.58	0.40	PEAT	GRANULAR	2.89	Peaty Soil	1	2	1	2	Negligible
1750	Point	241913.32	606540.17	0.10	SOIL	GRANULAR	8.27	Peaty Soil	1	6	1	6	Low
1751	Point	241358.95	606560.75	0.80	PEAT	GRANULAR	0.57	Thin Peat	2	1	1	2	Negligible
1752	Point	241439.19	606527.54	0.50	PEAT	GRANULAR	1.05	Peaty Soil	1	1	1	1	Negligible
1753	Point	241300.84	606563.52	0.70	PEAT	GRANULAR	0.45	Thin Peat	2	1	1	2	Negligible
1754	Point	240582.96	606801.89	0.10	SOIL	GRANULAR	0.98	Peaty Soil	1	1	1	1	Negligible
1755	Point	240280.85	606964.68	0.10	SOIL	GRANULAR	2.95	Peaty Soil	1	2	1	2	Negligible
1756	Point	240198.82	606985.10	0.30	SOIL	GRANULAR	4.73	Peaty Soil	1	4	1	4	Negligible
1757	Point	240056.00	606983.78	0.30	SOIL	GRANULAR	0.80	Peaty Soil	1	1	1	1	Negligible
1758	Point	240063.17	607012.30	0.30	SOIL	GRANULAR	2.63	Peaty Soil	1	2	1	2	Negligible
1759	Point	240052.51	607103.65	0.20	SOIL	GRANULAR	1.91	Peaty Soil	1	1	1	1	Negligible
1760	Point	242864.93	607154.49	2.20	PEAT	GRANULAR	1.59	Thick Peat	3	1	1	3	Negligible
1761	Point	242843.80	607042.73	0.90	PEAT	GRANULAR	0.93	Thin Peat	2	1	1	2	Negligible
1762	Point	242851.55	606945.18	0.40	PEAT	GRANULAR	1.38	Peaty Soil	1	1	1	1	Negligible
1763	Point	242862.60	606845.28	0.30	SOIL	GRANULAR	6.13	Peaty Soil	1	4	1	4	Negligible
1764	Point	242846.72	606770.84	0.20	SOIL	GRANULAR	7.11	Peaty Soil	1	4	1	4	Negligible
1765	Point	242653.98	606758.77	0.00	SOIL	GRANULAR	3.12	No Peat	0	2	1	0	None
1766	Point	242559.87	606754.31	0.20	SOIL	GRANULAR	3.48	Peaty Soil	1	2	1	2	Negligible
1767	Point	242468.04	606765.11	0.40	PEAT	GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
1768	Point	242651.61	606829.03	0.10	SOIL	GRANULAR	3.67	Peaty Soil	1	2	1	2	Negligible
1769	Point	242565.27	606846.14	0.20	SOIL	GRANULAR	4.59	Peaty Soil	1	4	1	4	Negligible
1770	Point	242583.97	606938.38	0.10	SOIL	GRANULAR	6.87	Peaty Soil	1	4	1	4	Negligible
1771	Point	242667.90	606943.36	0.20	SOIL	GRANULAR	7.05	Peaty Soil	1	4	1	4	Negligible
1772	Point	242609.34	606993.91	0.30	SOIL	GRANULAR	3.15	Peaty Soil	1	2	1	2	Negligible
1773	Point	242662.03	607055.89	1.00	PEAT	GRANULAR	0.67	Thin Peat	2	1	1	2	Negligible
1774	Point	242626.85	607081.28	1.40	PEAT	GRANULAR	0.24	Thin Peat	2	1	1	2	Negligible
1775	Point	242658.09	607141.25	2.50	PEAT	GRANULAR	1.15	Thick Peat	3	1	1	3	Negligible
1776	Point	242169.23	606980.66	0.20	SOIL	GRANULAR	1.28	Peaty Soil	1	1	1	1	Negligible

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1831	Point	243052.26	606840.22	0.20	PEAT	GRANULAR	3.18	Peaty Soil	1	2	1	2	Negligible
1832	Point	242959.33	606839.90	0.10	PEAT	GRANULAR	4.40	Peaty Soil	1	4	1	4	Negligible
1833	Point	242956.76	606741.56	0.20	PEAT	GRANULAR	5.16	Peaty Soil	1	4	1	4	Negligible
1834	Point	242759.62	606746.58	0.10	PEAT	GRANULAR	4.16	Peaty Soil	1	4	1	4	Negligible
1835	Point	242760.27	606846.28	0.20	PEAT	GRANULAR	4.93	Peaty Soil	1	4	1	4	Negligible
1836	Point	242756.50	606943.53	0.30	PEAT	GRANULAR	1.83	Peaty Soil	1	1	1	1	Negligible
1837	Point	242760.49	607043.94	2.80	PEAT	GRANULAR	0.42	Thick Peat	3	1	1	3	Negligible
1838	Point	242756.88	607142.05	3.30	PEAT	GRANULAR	1.25	Thick Peat	3	1	1	3	Negligible
1839	Point	242184.97	606667.82	0.20	PEAT	GRANULAR	4.34	Peaty Soil	1	4	1	4	Negligible
1840	Point	242117.63	606674.66	0.30	PEAT	GRANULAR	2.35	Peaty Soil	1	2	1	2	Negligible
1841	Point	242047.69	606672.93	1.00	PEAT	GRANULAR	2.87	Thin Peat	2	2	1	4	Negligible
1842	Point	241970.07	606681.74	2.90	PEAT	GRANULAR	3.15	Thick Peat	3	2	1	6	Low
1843	Point	241924.76	606732.90	0.20	PEAT	GRANULAR	2.59	Peaty Soil	1	2	1	2	Negligible
1844	Point	241975.47	606734.57	0.30	PEAT	GRANULAR	4.09	Peaty Soil	1	4	1	4	Negligible
1845	Point	242027.46	606737.07	0.20	PEAT	GRANULAR	2.92	Peaty Soil	1	2	1	2	Negligible
1846	Point	242084.26	606721.04	0.20	PEAT	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
1847	Point	242137.64	606738.98	0.10	PEAT	GRANULAR	2.38	Peaty Soil	1	2	1	2	Negligible
1848	Point	242196.90	606736.90	0.90	PEAT	GRANULAR	1.47	Thin Peat	2	1	1	2	Negligible
1875	Point	240272.10	607073.78	0.60		GRANULAR	0.85	Thin Peat	2	1	1	2	Negligible
1876	Point	240288.86	606986.65	0.30		GRANULAR	5.19	Peaty Soil	1	4	1	4	Negligible
1877	Point	240371.81	606906.34	0.30		GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
1878	Point	240462.61	606876.77	0.40		GRANULAR	1.14	Peaty Soil	1	1	1	1	Negligible
1879	Point	240543.47	606803.48	0.30		GRANULAR	3.40	Peaty Soil	1	2	1	2	Negligible
1880	Point	240630.13	606766.65	0.30		GRANULAR	2.05	Peaty Soil	1	2	1	2	Negligible
1881	Point	240710.80	606720.51	0.20		GRANULAR	3.83	Peaty Soil	1	2	1	2	Negligible
1882	Point	240804.08	606702.27	0.80		GRANULAR	2.57	Thin Peat	2	2	1	4	Negligible
1883	Point	240889.55	606631.31	1.00		GRANULAR	1.07	Thin Peat	2	1	1	2	Negligible
1884	Point	240986.70	606590.06	0.60		GRANULAR	1.02	Thin Peat	2	1	1	2	Negligible
1885	Point	241069.84	606551.56	2.50		GRANULAR	0.80	Thick Peat	3	1	1	3	Negligible
1886	Point	241170.53	606525.92	0.50		GRANULAR	2.72	Peaty Soil	1	2	1	2	Negligible
1887	Point	241269.79	606536.55	2.80		GRANULAR	0.33	Thick Peat	3	1	1	3	Negligible
1888	Point	240678.77	606728.70	0.40		GRANULAR	3.70	Peaty Soil	1	2	1	2	Negligible
1889	Point	240647.30	606623.73	0.40		GRANULAR	3.27	Peaty Soil	1	2	1	2	Negligible
1890	Point	242185.05	606610.05	0.15		GRANULAR	0.64	Peaty Soil	1	1	1	1	Negligible
1891	Point	242230.96	606704.78	0.40		GRANULAR	8.56	Peaty Soil	1	6	1	6	Low
1892	Point	242225.92	606805.37	0.90		GRANULAR	5.32	Thin Peat	2	4	1	8	Low
1893	Point	242243.62	606905.97	0.50		GRANULAR	2.96	Peaty Soil	1	2	1	2	Negligible
1894	Point	242203.26	607002.74	0.25		GRANULAR	2.23	Peaty Soil	1	2	1	2	Negligible
1895	Point	242185.09	607097.19	0.40		GRANULAR	1.75	Peaty Soil	1	1	1	1	Negligible
1896	Point	239747.62	606783.27	0.30		GRANULAR	5.16	Peaty Soil	1	4	1	4	Negligible
1897	Point	239728.26	606881.37	2.40		GRANULAR	0.88	Thick Peat	3	1	1	3	Negligible
1898	Point	239708.99	606979.49	0.40		GRANULAR	1.86	Peaty Soil	1	1	1	1	Negligible
1899	Point	239693.39	607078.27	0.40		GRANULAR	3.42	Peaty Soil	1	2	1	2	Negligible
1900	Point	239790.88	606943.96	0.50		GRANULAR	2.23	Peaty Soil	1	2	1	2	Negligible
1901	Point	239849.30	607025.12	0.40		GRANULAR	1.72	Peaty Soil	1	1	1	1	Negligible
1902	Point	239907.67	607106.32	0.30		GRANULAR	1.68	Peaty Soil	1	1	1	1	Negligible
1903	Point	239694.32	606666.89	0.30		GRANULAR	1.05	Peaty Soil	1	1	1	1	Negligible
1904	Point	239771.81	606660.56	0.50		GRANULAR	1.00	Peaty Soil	1	1	1	1	Negligible
1905	Point	239791.07	606562.43	0.30		GRANULAR	3.54	Peaty Soil	1	2	1	2	Negligible
1906	Point	240713.13	607071.27	3.20		Granular	2.66	Thick Peat	3	2	1	6	Low
1907	Point	240718.87	606972.33	3.40		Granular	2.42	Thick Peat	3	2	1	6	Low
1908	Point	240724.67	606875.18	3.00		Granular	2.85	Thick Peat	3	2	1	6	Low
1909	Point	240694.99	606779.71	0.40		Granular	1.31	Peaty Soil	1	1	1	1	Negligible
1910	Point	240372.53	607031.17	4.00		Granular	1.16	Thick Peat	3	1	1	3	Negligible

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1911	Point	240439.40	607105.53	4.00		Granular	1.28	Thick Peat	3	1	1	3	Negligible
1912	Point	240746.00	606690.69	0.55		Granular	4.21	Thin Peat	2	4	1	8	Low
1913	Point	240799.47	606791.73	0.80		Granular	1.06	Thin Peat	2	1	1	2	Negligible
1914	Point	240852.15	606876.73	2.80		Granular	11.32	Thick Peat	3	6	1	18	Medium
1915	Point	240905.33	606961.42	1.40		Granular	1.41	Thin Peat	2	1	1	2	Negligible
1916	Point	240957.49	607043.58	0.40		Granular	0.18	Peaty Soil	1	1	1	1	Negligible
1917	Point	241127.37	606628.67	3.00		Granular	1.26	Thick Peat	3	1	1	3	Negligible
1918	Point	241174.87	606716.66	1.50		Granular	0.90	Thin Peat	2	1	1	2	Negligible
1919	Point	241221.57	606805.08	4.00		Granular	0.43	Thick Peat	3	1	1	3	Negligible
1920	Point	241270.16	606892.48	1.30		Granular	0.96	Thin Peat	2	1	1	2	Negligible
1921	Point	241317.66	606980.48	4.00		Granular	2.63	Thick Peat	3	2	1	6	Low
1922	Point	241351.44	607043.44	0.40		Granular	3.74	Peaty Soil	1	2	1	2	Negligible
1923	Point	241745.30	607133.59	1.10		Granular	5.17	Thin Peat	2	4	1	8	Low
1924	Point	241695.70	607070.62	2.50		Granular	1.34	Thick Peat	3	1	1	3	Negligible
1925	Point	241614.79	607011.84	0.50		Granular	1.32	Peaty Soil	1	1	1	1	Negligible
1926	Point	241532.47	607036.24	0.50		Granular	7.16	Peaty Soil	1	4	1	4	Negligible
1927	Point	241493.43	606946.81	0.30		Granular	0.41	Peaty Soil	1	1	1	1	Negligible
1928	Point	241500.91	606847.09	0.40		Granular	2.30	Peaty Soil	1	2	1	2	Negligible
1929	Point	241509.50	606747.46	2.50		Granular	2.48	Thick Peat	3	2	1	6	Low
1930	Point	241517.25	606647.77	4.00		Granular	0.50	Thick Peat	3	1	1	3	Negligible
1931	Point	241524.88	606548.06	3.00		Granular	0.98	Thick Peat	3	1	1	3	Negligible
1932	Point	242496.23	606848.98	1.50		Granular	2.78	Thin Peat	2	2	1	4	Negligible
1933	Point	242401.31	606877.51	0.70		Granular	3.95	Thin Peat	2	2	1	4	Negligible
1934	Point	242315.42	606928.72	0.50		Granular	2.59	Peaty Soil	1	2	1	2	Negligible
1935	Point	242228.91	606982.73	0.50		Granular	2.44	Peaty Soil	1	2	1	2	Negligible
1936	Point	242041.66	607109.39	0.30		Granular	2.55	Peaty Soil	1	2	1	2	Negligible
1937	Point	241952.63	607063.87	0.60		Granular	3.27	Thin Peat	2	2	1	4	Negligible
1938	Point	241863.59	607018.35	0.60		Granular	2.29	Thin Peat	2	2	1	4	Negligible
1939	Point	241796.66	606950.49	1.00		Granular	3.53	Thin Peat	2	2	1	4	Negligible
1940	Point	241750.25	606861.92	1.60		Granular	2.50	Thick Peat	3	2	1	6	Low
1941	Point	241728.38	606820.19	1.10		Granular	1.54	Thin Peat	2	1	1	2	Negligible
1942	Point	242227.12	607130.23	3.50		Granular	1.28	Thick Peat	3	1	1	3	Negligible
1943	Point	242326.99	607128.81	1.50		Granular	0.59	Thin Peat	2	1	1	2	Negligible
1944	Point	242411.67	607158.74	2.50		Granular	1.52	Thick Peat	3	1	1	3	Negligible
1945	Point	242949.40	606579.06	3.80		Granular	0.98	Thick Peat	3	1	1	3	Negligible
1946	Point	243049.27	606584.05	4.00		Granular	1.42	Thick Peat	3	1	1	3	Negligible
1947	Point	243138.31	606616.01	4.00		Granular	1.11	Thick Peat	3	1	1	3	Negligible
1948	Point	243173.81	606709.44	0.30		Granular	8.13	Peaty Soil	1	6	1	6	Low
1949	Point	243208.43	606803.25	0.35		Granular	9.45	Peaty Soil	1	6	1	6	Low
1950	Point	243243.04	606897.07	0.30		Granular	6.34	Peaty Soil	1	4	1	4	Negligible
1951	Point	243211.40	606987.37	0.40		Granular	4.35	Peaty Soil	1	4	1	4	Negligible
1952	Point	243195.56	607088.73	0.70		Granular	4.12	Thin Peat	2	4	1	8	Low
1953	Point	243049.77	607145.98	2.40		Granular	0.96	Thick Peat	3	1	1	3	Negligible
1954	Point	243091.71	607044.74	1.30		Granular	3.88	Thin Peat	2	2	1	4	Negligible
1955	Point	243124.71	606965.10	0.35		Granular	10.74	Peaty Soil	1	6	1	6	Low
1956	Point	243149.18	606916.16	0.60		Granular	1.95	Thin Peat	2	1	1	2	Negligible
1957	Point	243115.67	606834.23	0.40		Granular	3.60	Peaty Soil	1	2	1	2	Negligible
1958	Point	243080.89	606746.50	0.20		Granular	6.10	Peaty Soil	1	4	1	4	Negligible
1959	Point	243058.06	606684.61	0.20		Granular	9.32	Peaty Soil	1	6	1	6	Low
1960	Point	242944.31	606678.93	0.40		Granular	7.83	Peaty Soil	1	4	1	4	Negligible
1961	Point	242841.97	606673.81	1.00		Granular	2.30	Thin Peat	2	2	1	4	Negligible
1962	Point	242743.34	606668.88	2.40		Granular	1.81	Thick Peat	3	1	1	3	Negligible
1963	Point	243209.13	606543.29	1.60		Granular	1.15	Thick Peat	3	1	1	3	Negligible
1964	Point	243268.24	606676.49	2.60		Granular	0.62	Thick Peat	3	1	1	3	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
1965	Point	243304.15	606773.80	1.30		Granular	2.28	Thin Peat	2	2	1	4	Negligible
1966	Point	243343.37	606884.33	0.50		Granular	6.76	Peaty Soil	1	4	1	4	Negligible
1967	Point	243319.26	607018.06	0.30		Granular	8.93	Peaty Soil	1	6	1	6	Low
1968	Point	243274.90	607125.10	0.50		Granular	1.22	Peaty Soil	1	1	1	1	Negligible
1969	Point	242250.30	606544.10	3.10		Granular	1.18	Thick Peat	3	1	1	3	Negligible
1970	Point	242350.10	606549.10	4.15		Granular	1.99	Thick Peat	3	1	1	3	Negligible
1971	Point	242450.00	606554.10	3.50		Granular	0.43	Thick Peat	3	1	1	3	Negligible
1972	Point	242549.90	606559.10	4.50		Granular	1.27	Thick Peat	3	1	1	3	Negligible
1973	Point	242649.80	606564.10	0.55		Granular	4.53	Thin Peat	2	4	1	8	Low
1974	Point	242749.60	606569.10	0.38		Granular	2.16	Peaty Soil	1	2	1	2	Negligible
1975	Point	242849.50	606574.10	0.55		Granular	2.03	Thin Peat	2	2	1	4	Negligible
1976	Point	242646.50	606664.00	4.40		Granular	1.06	Thick Peat	3	1	1	3	Negligible
1977	Point	242545.90	606659.00	2.45		Granular	1.87	Thick Peat	3	1	1	3	Negligible
1978	Point	242445.40	606654.00	2.40		Granular	1.61	Thick Peat	3	1	1	3	Negligible
1979	Point	242346.70	606651.80	2.30		Granular	0.78	Thick Peat	3	1	1	3	Negligible
1980	Point	242251.70	606648.00	0.60		Granular	3.80	Thin Peat	2	2	1	4	Negligible
1981	Point	242116.07	606515.92	1.00	PEAT	GRANULAR	3.95	Thin Peat	2	2	1	4	Negligible
1982	Point	242268.69	606506.11	0.80	PEAT	GRANULAR	3.62	Thin Peat	2	2	1	4	Negligible
1983	Point	242273.39	606486.63	0.20	SOIL	GRANULAR	7.19	Peaty Soil	1	4	1	4	Negligible
1984	Point	242298.17	606474.98	0.10	SOIL	GRANULAR	5.54	Peaty Soil	1	4	1	4	Negligible
1985	Point	242311.28	606447.96	0.20	SOIL	GRANULAR	5.71	Peaty Soil	1	4	1	4	Negligible
1986	Point	242232.98	606466.54	0.10	SOIL	GRANULAR	3.18	Peaty Soil	1	2	1	2	Negligible
1987	Point	242188.01	606487.64	0.20	SOIL	GRANULAR	5.40	Peaty Soil	1	4	1	4	Negligible
1988	Point	242181.19	606507.01	2.70	PEAT	GRANULAR	3.77	Thick Peat	3	2	1	6	Low
1989	Point	242158.13	606522.31	2.70	PEAT	GRANULAR	2.26	Thick Peat	3	2	1	6	Low
1990	Point	242357.56	606406.47	0.10	SOIL	GRANULAR	4.82	Peaty Soil	1	4	1	4	Negligible
1991	Point	242297.21	606401.66	0.10	SOIL	GRANULAR	2.53	Peaty Soil	1	2	1	2	Negligible
1992	Point	242263.08	606435.21	0.20	SOIL	GRANULAR	0.58	Peaty Soil	1	1	1	1	Negligible
1993	Point	242384.18	606363.64	0.20	SOIL	GRANULAR	7.20	Peaty Soil	1	4	1	4	Negligible
1994	Point	242330.93	606361.32	0.10	SOIL	GRANULAR	3.72	Peaty Soil	1	2	1	2	Negligible
1995	Point	242425.27	606327.18	0.10	SOIL	GRANULAR	5.03	Peaty Soil	1	4	1	4	Negligible
1996	Point	242467.52	606304.60	0.30	SOIL	GRANULAR	2.87	Peaty Soil	1	2	1	2	Negligible
1997	Point	242396.09	606286.30	0.10	SOIL	GRANULAR	2.36	Peaty Soil	1	2	1	2	Negligible
1998	Point	242356.07	606331.03	0.10	SOIL	GRANULAR	5.26	Peaty Soil	1	4	1	4	Negligible
1999	Point	242507.79	606277.77	0.20	SOIL	GRANULAR	3.68	Peaty Soil	1	2	1	2	Negligible
2000	Point	242549.46	606247.68	0.10	SOIL	GRANULAR	4.77	Peaty Soil	1	4	1	4	Negligible
2001	Point	242595.18	606222.79	0.20	SOIL	GRANULAR	3.52	Peaty Soil	1	2	1	2	Negligible
2002	Point	242520.87	606206.26	0.10	SOIL	GRANULAR	2.03	Peaty Soil	1	2	1	2	Negligible
2003	Point	242476.14	606236.86	0.20	SOIL	GRANULAR	2.89	Peaty Soil	1	2	1	2	Negligible
2004	Point	242438.47	606260.40	0.10	SOIL	GRANULAR	2.55	Peaty Soil	1	2	1	2	Negligible
2005	Point	242626.43	606185.75	0.10	SOIL	GRANULAR	4.79	Peaty Soil	1	4	1	4	Negligible
2006	Point	242665.21	606152.76	0.30	SOIL	GRANULAR	5.59	Peaty Soil	1	4	1	4	Negligible
2007	Point	242598.56	606152.11	0.10	SOIL	GRANULAR	4.24	Peaty Soil	1	4	1	4	Negligible
2008	Point	242565.60	606182.71	0.10	SOIL	GRANULAR	2.59	Peaty Soil	1	2	1	2	Negligible
2009	Point	242709.21	606112.08	0.30	SOIL	GRANULAR	1.76	Peaty Soil	1	1	1	1	Negligible
2010	Point	242659.77	606097.96	0.10	SOIL	GRANULAR	1.66	Peaty Soil	1	1	1	1	Negligible
2011	Point	242638.59	606109.73	0.20	SOIL	GRANULAR	1.36	Peaty Soil	1	1	1	1	Negligible
2012	Point	242649.03	606124.02	0.10	SOIL	GRANULAR	3.82	Peaty Soil	1	2	1	2	Negligible
2013	Point	242437.26	606285.48	0.10	SOIL	GRANULAR	0.96	Peaty Soil	1	1	1	1	Negligible
2014	Point	242457.28	606333.40	0.70	PEAT	GRANULAR	5.60	Thin Peat	2	4	1	8	Low
2015	Point	242559.26	606349.44	0.10	SOIL	GRANULAR	5.68	Peaty Soil	1	4	1	4	Negligible
2016	Point	242659.07	606334.56	0.80	PEAT	GRANULAR	1.85	Thin Peat	2	1	1	2	Negligible
2017	Point	242759.01	606320.23	1.70	PEAT	GRANULAR	1.28	Thick Peat	3	1	1	3	Negligible
2018	Point	242956.80	606337.42	0.90	PEAT	GRANULAR	3.04	Thin Peat	2	2	1	4	Negligible

ID	Source	Easting	Northing	Peat Depth (m)	Surface	Substrate	Slope (Degrees)	Ground Condition Coefficient	Peat Coefficient	Slope Coefficient	Substrate Coefficient	Risk Coefficient	Potential Instability
2019	Point	242859.96	606347.44	1.80	PEAT	GRANULAR	1.56	Thick Peat	3	1	1	3	Negligible
2020	Point	242841.58	606240.06	1.60	PEAT	GRANULAR	5.37	Thick Peat	3	4	1	12	Low
2021	Point	242776.00	606217.70	0.60	PEAT	GRANULAR	0.65	Thin Peat	2	1	1	2	Negligible
2022	Point	242735.36	606170.14	2.10	PEAT	GRANULAR	4.72	Thick Peat	3	4	1	12	Low
2023	Point	241873.78	606488.31	0.10	SOIL	GRANULAR	10.49	Peaty Soil	1	6	1	6	Low
2024	Point	241836.88	606436.35	0.90	PEAT	GRANULAR	5.82	Thin Peat	2	4	1	8	Low
2025	Point	241794.99	606383.82	0.30	SOIL	GRANULAR	2.07	Peaty Soil	1	2	1	2	Negligible
2026	Point	241757.87	606434.91	0.20	SOIL	GRANULAR	2.63	Peaty Soil	1	2	1	2	Negligible
2027	Point	241710.02	606440.71	0.80	PEAT	GRANULAR	6.74	Thin Peat	2	4	1	8	Low
2028	Point	241615.54	606447.81	0.20	SOIL	GRANULAR	2.76	Peaty Soil	1	2	1	2	Negligible
2029	Point	241560.68	606473.54	1.50	PEAT	GRANULAR	5.07	Thin Peat	2	4	1	8	Low
2030	Point	241495.40	606453.61	0.80	PEAT	GRANULAR	3.88	Thin Peat	2	2	1	4	Negligible
2031	Point	241443.94	606467.89	1.00	PEAT	GRANULAR	1.52	Thin Peat	2	1	1	2	Negligible
2032	Point	241392.18	606497.23	0.70	PEAT	GRANULAR	0.53	Thin Peat	2	1	1	2	Negligible
2033	Point	241303.22	606513.61	0.30	SOIL	GRANULAR	1.94	Peaty Soil	1	1	1	1	Negligible
2034	Point	241536.02	606472.52	2.00	PEAT	GRANULAR	3.16	Thick Peat	3	2	1	6	Low
2035	Point	241543.00	606401.33	0.20	PEAT	GRANULAR	1.71	Peaty Soil	1	1	1	1	Negligible
2039	Point	241351.07	606467.99	1.00		Granular	2.91	Thin Peat	2	2	1	4	Negligible
2040	Point	241447.17	606432.00	1.50		Granular	2.18	Thin Peat	2	2	1	4	Negligible
2041	Point	241528.75	606367.82	0.20		Granular	3.25	Peaty Soil	1	2	1	2	Negligible
2042	Point	240650.02	606521.38	1.00		Granular	0.77	Thin Peat	2	1	1	2	Negligible
2043	Point	240599.98	606431.84	0.60		Granular	1.08	Thin Peat	2	1	1	2	Negligible
2044	Point	240540.12	606355.33	0.60		Granular	3.46	Thin Peat	2	2	1	4	Negligible
2045	Point	240440.28	606311.60	0.20		Granular	4.04	Peaty Soil	1	4	1	4	Negligible
2046	Point	240384.50	606232.22	0.75		Granular	11.49	Thin Peat	2	6	1	12	Low
2047	Point	240307.29	606163.38	0.30		Granular	3.72	Peaty Soil	1	2	1	2	Negligible
2048	Point	240319.77	606061.74	0.20		Granular	6.25	Peaty Soil	1	4	1	4	Negligible
2049	Point	240291.76	605962.74	0.60		Granular	0.36	Thin Peat	2	1	1	2	Negligible
2050	Point	239808.83	606464.03	0.40		Granular	4.27	Peaty Soil	1	4	1	4	Negligible
2051	Point	239742.52	606417.97	1.10		Granular	2.07	Thin Peat	2	2	1	4	Negligible
2058	Point	241528.00	606448.16	1.00		Granular	2.56	Thin Peat	2	2	1	4	Negligible
2059	Point	242247.99	606448.81	0.40		Granular	0.62	Peaty Soil	1	1	1	1	Negligible
2060	Point	242334.50	606448.21	0.55		Granular	2.96	Thin Peat	2	2	1	4	Negligible
2061	Point	242456.25	606454.28	0.50		Granular	1.03	Peaty Soil	1	1	1	1	Negligible
2062	Point	242554.97	606459.22	0.38		Granular	2.62	Peaty Soil	1	2	1	2	Negligible
2063	Point	242657.59	606464.35	2.70		Granular	1.69	Thick Peat	3	1	1	3	Negligible
2064	Point	242756.30	606469.28	1.70		Granular	2.93	Thick Peat	3	2	1	6	Low
2065	Point	242858.36	606474.38	0.30		Granular	2.73	Peaty Soil	1	2	1	2	Negligible
2066	Point	242959.31	606479.43	0.50		Granular	2.80	Peaty Soil	1	2	1	2	Negligible
2067	Point	243055.99	606484.25	0.50		Granular	3.36	Peaty Soil	1	2	1	2	Negligible
2068	Point	240322.73	605863.00	0.30		Granular	7.42	Peaty Soil	1	4	1	4	Negligible
2069	Point	240272.55	605777.63	0.10		Granular	16.47	Peaty Soil	1	8	1	8	Low
2070	Point	240214.31	605693.50	0.35		Granular	14.78	Peaty Soil	1	8	1	8	Low
2071	Point	240231.28	605592.47	0.60		Granular	0.58	Thin Peat	2	1	1	2	Negligible
2072	Point	240240.37	605563.17	0.40		Granular	6.96	Peaty Soil	1	4	1	4	Negligible

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SCLENTEUCH WIND FARM

**Technical Appendix 9.2
Peat Management Plan**

Prepared for: **Renewable Energy Systems Ltd**

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APPENDICES

Appendix TA 01: Excavated Materials Calculator

1.0 Introduction

SLR Consulting Ltd (SLR) was commissioned by Renewable Energy Systems Ltd (RES) to undertake a Stage 1 Peat Management Plan (PMP) at the proposed Scienteuch Wind Farm (the 'Proposed Development').

The Proposed Development would comprise nine wind turbine foundations along with associated infrastructure arranged as illustrated on Figure TA 9.2.1 **Error! Reference source not found.**

The Proposed Development would include the following key components:

- Nine wind turbine foundations (see Table 1.1 below)
- Foundations supporting each wind turbine;
- Associated low to medium voltage transformers and related switchgear at each wind turbine location;
- Associated crane hardstands at each wind turbine location;
- A site entrance from the A713;
- A network of access tracks and associated watercourse crossings;
- A network of underground electrical cables
- A substation compound including communications mast;
- A battery energy storage systems compound;
- Temporary construction compound;
- Borrow pits; and
- Felling to accommodate the above listed infrastructure.

For a full description of the proposed development refer to Chapter 2: Proposed Development.

1.1 Scope of Assessment

A comprehensive programme of soils and peat probing has been completed at the Proposed Development Area as detailed within Technical Appendix 9.1: Peat Landslide Hazard and Risk Assessment. This report uses this information and provides indicative volumes for peat extraction and outlines recommendations for the handling, re-use and storage of peat during construction and operation of the Proposed Development Area. Areas of the Proposed Development Area where soils are less than 0.5 m thick are considered to be too thin to be classified as peat and are therefore classified as soils.

Figure TA 9.2.3 and Figure TA 9.2.4 show the areas of the Proposed Development Area where soils/peat in excess of 0.5 m have been identified. Areas within the Proposed Development Area that are not impacted by proposed development infrastructure, or which have been proven to have soil depths of < 0.5 m are not within the scope of the PMP.

The purpose of this report is to ensure that there has been systematic consideration of peat management and a quantitative assessment throughout the development process.

1.2 Methodology

Scottish Planning Policy states that *"Where peat and other carbon rich soils are present, applicants should assess the likely effects of development on carbon dioxide (CO₂) emissions. Where peatland is drained or otherwise disturbed, there is liable to be release of CO₂ to the atmosphere. Developments should aim to minimise this release."*

The Stage 1 PMP considers the excavation of peat and soil across the Proposed Development Area as a result of construction of the proposed development. It considers the potential for minimising excavation and disturbance in order to reduce any unnecessary surplus of soils and peat.

SEPA has provided a hierarchy of management approaches through which the effectiveness of the approach to peat management is optimised at development sites, as summarised below (SEPA 2017¹, Scottish Government, SNH and SEPA², SR and SEPA 2012³):

The objectives have been achieved by completion of the following:

- **Prevent Creation of Waste Peat** – avoiding generating excess peat during construction (e.g. by avoiding peat areas or by using construction methods that do not require excavation such as floating tracks);
- **Re-use on-site or offsite for peatland restoration** – use of peat produced on-site in restoration or landscaping, providing that its use is fully justified and suitable;
- **Recycling/Recovery/Treatment** – modify peat produced on-site for agricultural benefit; use as fuel, or as a compost/soil conditioner, or dewater peat to improve its mechanical properties in support to re-use; and
- **Storage** – storage of peat up to a depth of 2m is not classified as a waste and does not require authorisation from SEPA, however care must be taken to ensure that it does not cause environmental pollution, create an unnatural habitat or a safety risk.

This report presents site specific data and proposals to address the requirements of SEPA's guidance and proposes that **prevention** and **re-use** are the most appropriate means of managing peat excavated during construction at this Proposed Development Area.

This report details the methodologies required to assess all potential surplus materials and presents preliminary estimates of the expected volume of excavated materials and required re-use volumes for reinstatement and restoration purposes.

In particular, this report considers the construction of access tracks, site compounds, turbine foundations and all other associated infrastructure which result in the excavation of peat and sub-soils potentially resulting in surplus materials.

Many of the issues associated with peat on a windfarm site can be accommodated by modifying the development layout to avoid potentially difficult or sensitive areas. Such areas would include:

- Areas of deep peat, requiring potentially large volumes of excavation;
- Areas of very wet peat (such as flushes, pool and hummock complexes and gullied peatland);
- Areas of moderate to steep slopes (where site infrastructure might increase the chance of peat instability); and
- Areas of sensitive habitat.

This report estimates the extent of materials generated during the construction phase and identifies potential areas where peat can be re-used through the following:

- The avoidance of creating surplus materials, and

¹ SEPA (May 2017), SEPA Regulatory Position Statement – Developments on Peat and Off-site Uses of Waste Peat (SEPA Guidance., WST-G-052. Version 1.

² Scottish Government, SNH, SEPA (2017), Peatland Survey. Guidance on Developments on Peatland, on-line version only.

³ Scottish Renewables, Scottish Environmental Protection Agency (2012) Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste, Version 1.

- Re-use of materials on-site.

1.3 Legislation, Guidance and Good Practice

Legislation relevant to the management of peat includes the following:

- The UK Climate Change Act 2008 (c27);
- Environmental Protection Act 1990 (as amended);
- Landfill (Scotland) Regulations 2003 (as amended);
- The Waste Management Licensing (Scotland) Regulations 2011; and
- Scottish Planning Policy (2014).

There are a number of guidance documents appropriate to the activities planned on-site which have been used to guide this assessment, as follows:

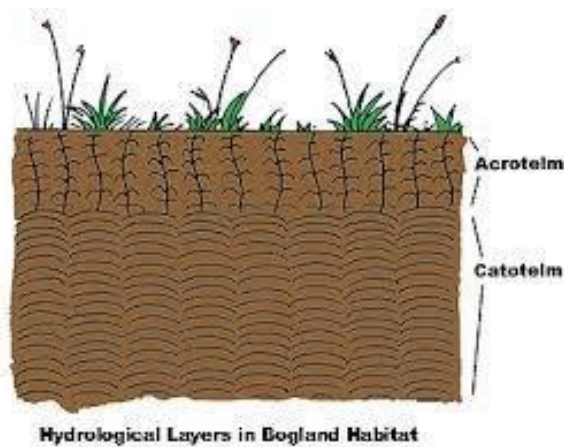
- Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only Guidance on the assessment of peat volumes, re-use of excavated peat and the minimisation of waste (SR, SEPA, January 2012);
- SEPA Regulatory Position Statement – Developments on Peat (SEPA, February 2010);
- Good practice during windfarm construction (SR, SNH, SEPA, FCS, HES, Marine Scotland Science, 4th Edition 2019);
- Floating roads on peat (SNH, FCS; August 2010);
- Constructed tracks in the Scottish Uplands (SNH, September 2015); and
- Restoration techniques using peat spoil from construction works (SEPA 2011).

1.4 Definitions of Peat

Peat is defined as a sedimentary material consisting of the partially decomposed remains of plant material and organic matter preserved over a period of time in a waterlogged environment resulting in anaerobic conditions, and is considered to be of depths > 0.5 m.

Peat can be classed as two principal types, the acrotelm layer, and the catotelm layer as shown on Plate 1 and described in the following paragraphs.

Plate 1-1 Hydrological Layers in Bogland Habitat



The acrotelm layer is found in the upper layer of peat where conditions are relatively dry and comprises living vegetation and partially decomposed plant material. Hydraulic conductivity in this layer tends to be higher in relation to distance from the water table.

The thickness of the acrotelm layer varies depending on topography such as steepness of slope, peat hags, and hummocks. In particular, the acrotelm layer can be affected during periods of drought or as a consequence of drainage. Fibrous in texture, the acrotelm layer has some tensile strength and is generally considered to be stable for storage and re-use.

The catotelm layer is found under the acrotelm layer and comprises decayed plant material and organisms and is denser and with a very low hydraulic conductivity. The catotelm layer sits below the water table resulting in permanent anaerobic conditions. The catotelm layer is amorphous and has very low tensile strength making it less suitable for storage and re-use.

2.0 Occurrence of Peat

2.1 Peat Conditions

Peat depth surveys have been undertaken across two phases by SLR between July 2015 and October 2021.

Peat is generally defined as an organic soil in excess of 0.5 m, if the soil is less than 0.5 m, then it is considered peaty soil. The peat was found to vary across the Proposed Development Area in terms of thickness and coverage.

Thin peat was classed as being 0.5 m to 1.5 m thick, with deposits in excess of this being classed as thick peat. The thickness ranges used were intended to reflect the probability of instability associated with both peat slides (in thin peat) and bog slides. Where the probing recorded less than 0.5 m thick, this has been considered to be an organic peaty soil rather than peat.

The results of the probing survey are detailed within Figure TA 9.2.3 and Figure TA 9.2.4 with a summary of peat depths included within Table 2-1 below.

Table 2-1
Peat Probing Data

Peat Thickness (m)	No. of Probes	Percentage (of total probes undertaken on-site)
0 (no peat)	24	1.2
0.01 – 0.49 (peaty soil)	1218	61.2
0.5 – 0.99	382	19.2
1.0 – 1.49	85	4.3
1.5 – 1.99	70	3.5
2 – 2.49	38	1.9
2.5 – 2.99	73	3.7
3 – 3.49	29	1.5
3.50 – 3.99	24	1.2
> 4.0	46	2.31

In summary the peat depth probing has shown that:

- The peat was found to vary across the Proposed Development Area in terms of thickness, surface slopes and apparent characteristics;
- Peat thickness varies from 0.5 m to 5.9 m on the Proposed Development Area and generally mimicked the topography, with peat identified on the topographically flat lying areas; and
- Probing identified terraces of peat deposits between stepped slopes mainly comprised of thin layers of superficial deposits over bedrock.

Where possible, the thickest areas of peat have been avoided. Where thick peat could not be avoided, floated roads have been proposed – to limit the excavation of peat. Table 2-2 below shows the peat thickness identified at each turbine location.

Table 2-2
Ground Conditions at Proposed Wind Turbine Locations

Turbine No.	Peat Thickness (m)	Peat Conditions	Slope (°)
T1	0.13	Peaty Soil	2.57
T2	1.02	Thin Peat	0.50
T3	0.07	Peaty Soil	4.99
T4	0.50	Thin Peat	1.60
T5	0.86	Thin Peat	3.95
T6	0.55	Thin Peat	1.58
T7	0.39	Thin Peat	3.50
T8	0.70	Peaty Soil	2.89
T9	0.11	Thin Peat	5.70

3.0 Potential Impacts on Peat from Construction Activities

3.1 Wind Turbine Foundations

Wind turbine foundations in peatlands would normally require full and permanent excavation of peat to competent strata, with temporary excavation of peat from a wider diameter to enable safe access to the base of the excavation.

The resulting peat generated could be considered as a permanent loss; unless satisfactory re-use could be achieved within the development site. The peat would normally be used to reinstate track shoulders, around crane hardstands and wind turbine foundations.

3.2 Crane Hardstands

In order to assemble the wind turbine and enable servicing during operation, crane hardstands are constructed adjacent to each wind turbine foundations. These must be sufficient to take the weight of both the crane and turbine components, and therefore excavation to underlying competent strata is required. Without adequate drainage controls, permanent excavation may disrupt natural hydrological pathways.

Crane hardstands must remain in place for the life of the proposed development to enable routine inspection and maintenance. Peat generated from these excavations would be considered a permanent loss; unless satisfactory re-use could be achieved within the development site.

3.3 Construction Compound

Temporary construction compounds are provided during the construction phase to enable storage of construction materials, turbine components and fuel, concrete batching plant, siting of welfare facilities and site offices.

Due to their temporary nature, peat excavated for compounds would normally be stored and reinstated, and therefore re-use is required.

3.4 Borrow Pits

Where access track and hardstand construction materials are required, it is intended to source the material from borrow pits on-site.

Soil/peat overlying Glacial Till and/or weathered rock and bedrock is normally excavated and temporarily stored for the duration of construction, and then re-used for borrow pit restoration and landscaping post construction, and therefore re-use is required. Peat is not anticipated at any of the proposed borrow pit options for the proposed development.

For further information on proposed borrow pits, refer to Technical Appendix 10.5: Borrow Pit Appraisal.

3.5 Access Tracks

Access tracks are required to enable passage of construction and servicing traffic around the windfarm site. Over peatlands, the choice of access track design normally reflects the peat depths along the route, with shallow peat/organic soils <1 m deep excavated to competent strata (cut and fill tracks), and deeper peats overlain by floating tracks (with no excavation).

Access tracks are permanent infrastructure, peat excavated for cut and fill would be considered a permanent loss, unless the peat can be re-used elsewhere on-site.

No excavations are undertaken for floating tracks, and therefore there is no associated peat excavation.

In excavated tracks, the surface vegetation (i.e. habitat) would be lost unless stored and reinstated elsewhere, however the intention will be to re-use excavated turves and peat on verges and track shoulders (including along the verges of floated track sections) and hardstands for landscaping and restoration purposes.

Both types of access track have the potential to disrupt natural hydrological drainage pathways, appropriate drainage will be designed to mitigate this.

3.6 Cable Trenching

Electrical cabling is typically buried or ducted adjacent to the access track, either into existing peat (requires excavation, laying and backfilling) or wherever possible ducts are laid within reinstated material at the sides of floated tracks (no excavation of in-situ peat required). Where excavation is required, peat generated from cable trenching is normally replaced at its point of origin, and therefore is not considered a volume loss and re-use is a certainty.

4.0 Proposed Mitigation During Construction

There are a number of ways in which detailed design and construction activities can be specified to minimise impacts on peatlands. The following section outlines briefly the likely mitigation required to minimise impact, based on the reuse of peat specific to key elements of the windfarm development.

4.1 Wind Turbine Foundations

Wind turbine foundations represent permanent excavation and the primary mitigation measure is to locate the wind turbine foundations to avoid the areas of deepest peat, thereby reducing excavated volumes.

All turbine locations for the proposed development are located on peaty soils/thin peat, with an average peaty soil/thin peat depth of 0.53 m, ranging from 0.16 m to 1.37 m.

4.2 Crane Hardstands and Temporary Compounds

In relation to crane hardstand, guidance is to avoid their full reinstatement post-construction, given the likelihood of re-use for maintenance activities associated with the wind turbine foundations.

In relation to temporary compounds, the following good practice guidance applies:

- Peat stripped from compound and hard standing areas will require particularly careful storage due to its volume, and the relatively long residence times for stored peat;
- Stripped turves are generally used for final restoration, however where turves are insufficient or vegetation regeneration requires reseeding, temporary fencing may be considered around compound areas undergoing restoration in order to prevent grazing; and
- The choice of seed mix for reseeding should be appropriate to the ecological and hydrological conditions of the restored compound location and surrounding habitats.

4.3 Borrow Pits

Peat may be re-used within borrow pits for the purpose of their restoration provided the method of re-use is consistent with the environmental reinstatement objectives of the Proposed Development Area and presents no residual risks from pollution of the environment or harm to human health (SEPA, 2017¹).

Key issues for borrow pit restoration are:

- Prevention of desiccation and carbon losses from peat used in the restoration;
- Development of complete vegetation cover through emplacement of peat turves or seeding with an appropriate species; and
- Fencing where required, to exclude grazing stock and to encourage vegetation establishment.

4.4 Access Tracks

In comparison to infrastructure specific to wind turbines, there is considerably more guidance^{4,5} available to support access track design in peatlands. Guidance is generally focused on floating tracks and excavated tracks and is summarised below.

4.4.1 Floated Access Tracks

Over deeper peat (typically >1.0 m), floating tracks are used to remove the requirement for peat excavation and limit disruption of hydrological pathways. The success of construction requires careful planning to take account of the unique characteristics of peat soils. Specific guidance⁵ is available on design, the duration and timing of construction, the sequence of construction and the re-use of peat on the shoulders of the floating access track.

Design of Floating Access Tracks

The following issues should be considered during detailed design of floating access tracks:

- Adopting conservative values for peat geotechnical properties during detailed design (post-consent);
- Applying a maximum depth rule whereby an individual layer of geogrid and aggregate should not normally exceed 450 mm without another layer of geogrid being added;
- On gently sloping ground and where the access track runs transverse to the prevailing slope, accommodating natural hydrological pathways such as flushes and peat pipes through installation of a permanent conduit within or underneath the track and allowing for as much diffuse discharge (while minimising disturbance to existing peatland) on the downslope as possible;
- Ensuring transitions between floating tracks and excavated tracks (or other forms of track not subject to long term settlement) are staged in order to minimise likelihood of track failure at the boundary between construction types;
- Scheduling access track construction to accommodate for, and reduce peat settlement characteristics; and
- Re-use of existing roads (with upgrading if required), where possible.

Duration and Timing of Construction of Floating Access Tracks

The critical factor in successful construction of floating access tracks is the timescale of construction, and the following good practice guidance is provided:

- The settlement characteristics of peat; should be accommodated by appropriate scheduling of access track construction, as follows:
 - Prior to construction works, the setting out the centreline of the proposed access track to identify any ground instability concerns or particularly wet zones;
 - Identifying 'stop' rules, i.e. weather dependent criteria for cessation of access track construction based on local meteorological data;
 - Maximising the interval between material deliveries over newly constructed access tracks that are still observed to be within the primary consolidation phase.

⁴ Scottish Renewables, Scottish Natural Heritage, Scottish Environmental Protection Agency, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland, AEECoW (2019)., *Good Practice During Wind Farm Construction*. 4th Edition.

⁵ Scottish Natural Heritage, Forestry Commission (August 2010)., *Floating Roads on Peat*

Sequence of Construction

The sequence of construction is normally stipulated in guidance provided by the supplier of the geotextile or geogrid layer, and suppliers are often involved in the detailed access track design. Good practice in relation to the sequence of access track construction is as follows:

- Retaining rather than stripping the vegetation layer (i.e. the acrotelm, providing tensile strength), and laying the first geotextile/geogrid directly on the peat surface;
- Adding the first rock layer;
- Adding the second geotextile/geogrid, and add overlying graded rock fill as a running surface;
- Heavy plant and Heavy Goods Vehicles (HGV) using the access tracks during the construction period should be trafficked slowly in the centre of the track to minimise dynamic loading from cornering, breaking and accelerating;
- Ensuring wheel loads should remain at least 0.5m from the edge of the geogrid, markers should be laid out, monitored and maintained on the access track surface to clearly emphasise these boundaries; and
- Ongoing 'toolbox' talks and subsequent feedback to construction and maintenance workers and drivers to emphasise the importance of the implementing the above measures.

Use of Peat as Trackside Shoulders

A key opportunity to re-use peat is to employ it in landscaping of constructed access tracks. Wedge-shaped reinstatement at the margins of a floating access track (which is elevated above the peat surface) is termed shoulders, and good practice guidance is as follows:

- Re-using peat excavated from elsewhere on-site as shoulders adjacent to the floating track;
- Peat shoulders should taper from just below the track sides (thereby preventing over high shoulders from causing ponding on the track surface) to join the surrounding peat surface, keeping as natural a profile as possible to tie in with existing slope profiles;
- Limiting the width of peat shoulders to avoid unnecessary smothering of intact vegetation adjacent to the floating track;
- Peat must not be laid too thinly (minimum 0.5 m) to avoid drying out;
- Peat must not be compressed during reinstatement to prevent cracking; and
- Where possible these should be capped with turves or seeded as quickly as possible to prevent run off erosion and should not be left bare for excessive periods.

4.4.2 Excavated Access Tracks

Excavated tracks require complete excavation of soil/peat to a competent substrate. Excavated tracks will generally be undertaken where peat depths are less than 1.0 m. This peat/soil would require storage ahead of re-use elsewhere on-site. Good practice guidance¹ relates mainly to drainage in association with excavated tracks:

- Trackside ditches should capture surface water (within the acrotelm) before it reaches the road;
- Interceptor drains should be shallow and flat bottomed (and preferably entirely within the acrotelm to limit drawdown of the water table);
- Any stripped peat turves should be placed back in the invert and sides of the ditch to assist regeneration and prevent erosion to the peat and wash out that could occur; and

- Culverts and cross drains should be installed under excavated tracks to maintain subsurface drainage pathways (such as natural soil pipes or flushes). Discharge from constructed drainage should allow for as much diffuse dispersion of clean (silt free) water as possible while minimising disturbance to existing peatland as far as possible. Silt mitigation measures will be incorporated into all constructed drainage as per the requirements of the outline Construction Environmental Management Plan (CEMP).

Although excavation is normally undertaken in peat of minor thickness (< 1.0m), there is a possibility of minor slippage from the cut face of the peat mass. Accordingly:

- Free faces should be inspected for evidence of instability (cracking, bulging, excessive discharge of water or sudden cessation in discharge); and
- Where significant depths of peat are to be stored adjacent to an excavation, stability analysis should be conducted to determine Factor of Safety (FoS) and an acceptable FoS adopted for loaded areas.

As with floating tracks, regular routine monitoring should be scheduled post-construction to ensure that hydrological pathways and track integrity have been suitably maintained.

4.5 Cable Trenches

Cable trenches either require peat excavation specifically for this purpose, or they can be constructed within landscaping of shoulders adjacent to floating tracks. Guidance⁴ is as follows:

- Utilise peat shoulders for cable lays where possible to minimise peat excavations specifically for this purpose, in this case, peat shoulders should be 1.0m to 1.5m thick;
- Where cable trenching is constructed adjacent to a floating road, ensure the trench is backfilled to prevent void filling by material migration;
- Minimise time between excavation of the cable trench and peat reinstatement, preferably avoiding excavation until the electrical contractor has cables on-site ready for installation; and
- Avoid incorporating substrate materials in the excavation, to minimise contamination of the peat to be reinstated. Replace excavated materials sequentially.

4.6 Peat Excavation, Storage and Transport

Where peat is to be re-used or reinstated with the intention that its supported habitat continues to be viable, the following good practice outlined below applies.

4.6.1 Excavation

Excavated peat should be excavated as turves, including the acrotelm (surface vegetation) and a layer of adjoining catotelm (more humified peat) typically up to 500 mm thick in total, or as blocks of catotelm; the acrotelm should not be separated from its underlying peat;

- The turves should be as large as possible to minimise desiccation during storage, though the practicalities of handling should be considered;
- Contamination of excavated peat with substrate materials to be avoided at all times; and
- Consider timing of excavation activities to avoid very wet weather and multiple handling to minimise the likelihood of excavated peat losing structural integrity.

If possible, extract intact full depth acrotelm layers from the top surface of the peat deposit. This technique will maintain connectivity between the surface vegetation and the partially decomposed upper layers of the catotelm.

4.6.2 Storage

The following good practice applies to the storage of peaty soils/peat:

- Stripped materials should be carefully separated to keep peat and other soils apart;
- To minimise handling and haulage distances, excavated material should be stored local to the site of excavation or end point of restoration;
- Peat turves should be stored in wet conditions or irrigated in order to prevent desiccation (once dried, peat will not rewet);
- Stockpiling of peat should be in large volumes to minimise exposure to wind and sun (and desiccation), but with due consideration for slope stability, but should not exceed 1m in height to maintain stability of stockpile;
- Stockpiles should be isolated from watercourses or drains with appropriate bunding to minimise pollution risks;
- Excavated peat and topsoil stored separately, should be stored to a maximum of 1m thickness;
- Stores of non-turf (catotelm) peat should be bladed off to reduce the surface area and desiccation of the stored peat; and
- Peat storage areas should be monitoring during periods of very wet weather, or during snowmelt, to identify early signs of peat instability.

4.6.3 Temporary Storage

Any peaty soils/peat to be removed during construction would require a temporary storage area near to the construction works/area of re-use. Where peat cannot be transferred immediately to an appropriate restoration area, short term storage will be required. In this case, the following good practice applies:

- Peat should be stored around the turbine perimeter at sufficient distance from the cut face to prevent overburden induced failure,
- Local gullies, diffuse drainage lines (or very wet ground) and locally steep slopes should be avoided for peat storage;
- Drying of stored peat should be avoided by irrigation (although this is unlikely to be significant for peat materials stored less than 2 months).

For crane hardstands, borrow pits and compounds (with longer term storage requirements), the following good practice applies:

- Peat generated from crane hardstand locations should be transported directly to its allocated restoration location, to minimise the volume being stockpiled with the possibility of drying out;
- Stores of catotelmic peat should be bladed off to reduce their surface area and minimise desiccation;
- Where transport cannot be undertaken immediately, stored peat should be irrigated to limit drying and stored on a geotextile mat to promote stability;
- Monitoring of large areas of peat storage during wet weather or snowmelt should be undertaken to identify any early signs of peat instability.

4.6.4 Transport

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

4.6.5 Handling

Following refinement of the site peat model, a detailed storage and handling plan would be provided as part of the detailed PMP and should be prepared, including:

- Best estimate excavation volume at each infrastructure location (including peat volumes split into area/volume of 'acrotelm' or 'turf', and volume of catotelm).
- Volume to be stored locally and volume to be transferred directly on excavation to restoration areas elsewhere (e.g. disused quarries, borrow pits or forest drains) in order to minimise handling;
- Location and size of storage area relative to turbine foundation, crane hardstand and natural peat morphology / drainage features;
- Irrigation requirements and methods to minimise desiccation of excavated peat during short term storage.

These parameters are best determined post-consent in light of detailed ground investigation with the micro-siting areas for each element of infrastructure.

4.7 Restoration

During restoration, the following best practice should be followed:

- Carefully evaluate potential restoration sites, such as borrow pits for their suitability, and agree that these sites are appropriate with the ECoW, landowners and relevant consultees;
- Undertake restoration and revegetation or reseedling work as soon as possible;
- Where required, consider exclusion of livestock from areas of the site undergoing restoration, to minimise impacts on revegetation; and
- As far as reasonably practicable, restoration should be carried out concurrently with construction rather than at its conclusion.

5.0 Site Based Peat Excavation and Management Assessment

The Stage 1 PMP has been undertaken as part of the Environmental Impact Assessment for the proposed development, to ensure that there is an understanding of the extent of peat on-site, the total amount of peat that might be excavated, a demonstration that the current design avoids areas of deep peat where possible and that the reuse of the excavated materials is certain and minimised where possible, and in line with updated industry good practices and guidance.

The proposed development layout comprises 9 No. wind turbine foundations and associated infrastructure. Existing tracks will be utilised across the Proposed Development Area.

5.1.1 Probing

Probing has been undertaken by SLR over a number of phases to an approximate 100 m grid. The results have been used to produce a peat isopach map (Figure TA 9.2.3 and Figure TA 9.2.4). A total of 2008 probe locations were undertaken in areas of identified peaty soil/peat to determine the thickness thereof; and the overall conclusion regarding peat stability is that there is a low risk of peat instability over most of the Proposed Development Area although some limited areas of medium risk have been identified.

The layout has been carefully designed to minimise excavating or disturbing thick peat, where possible, and where this cannot be avoided, mitigated by the use of floating roads.

**Table 5-1
 Excavated Materials Management Plan**

Method	Volume of Excavated Material (m3)	How much of this can be re-used on-site (%)	Opportunity for Avoidance or Minimisation of Excavated Material	Re-use Requirements	Hierarchy Adherence	Limitations and Considerations
<p>Excavated Access Tracks</p> <p>Total Length of the new (excavated) access tracks on-site would be 6.786 km.</p> <p>The excavated access tracks would be located on an average peat depth of 0.27 m.</p>	<p>14729 m³ (5776 m x 5 m x 0.51m)</p>	100%	Where possible track width would be minimised.	<p>Verge Restoration and visual screening, particularly along access track.</p> <p>17328m³ (5776 m x 3 m x 0.5 m) of excavated peat and peaty soil would be used along access tracks.</p>	<p>Avoidance was first level of screening to avoid areas of thicker peat. Routing has been planned on thinner peat or peaty soils where possible.</p> <p>The layout design has been guided by constraints which highlight ecological, hydrogeological and geomorphological - all of which identify the peat areas to avoid</p>	<p>Requires detailed ground investigation to fully characterise peat.</p> <p>Detailed assessment may identify further lengths of floating access tracks, which would further reduce requirement for excavation.</p>
<p>Floating Access Tracks</p> <p>It is anticipated that 674 m of floating tracks would be required, which would generate no surplus peat.</p>	Not applicable	Not applicable	No excavated material.	<p>Verge restoration along access tracks</p> <p>2022m³ (674 m x 3 m x 0.5 m)</p>	<p>Looked at different cut off depths for floating access track. Based on > 1m depth.</p>	<p>Verge restoration must avoid impacting existing unexcavated peat.</p>

Method	Volume of Excavated Material (m3)	How much of this can be re-used on-site (%)	Opportunity for Avoidance or Minimisation of Excavated Material	Re-use Requirements	Hierarchy Adherence	Limitations and Considerations
<p>Upgraded Existing Access Tracks</p> <p>It is anticipated that 3564 m of existing tracks on-site would be upgraded.</p>	<p>1319 m³ (3564 m x 2 x 0.29 m)</p>	100%	Existing tracks have been utilised where possible to minimise the disturbance of the peat.	<p>Verge restoration along access tracks 5346 m³ 3564m x 3 m x 0.5 m</p>	Avoidance was first level of screening to avoid areas of thicker peat. Routing has been planned to utilise existing tracks.	Requires detailed ground investigation to fully characterise peat and conditions of existing track.
<p>Turbine Foundations</p> <p>9 No. turbines</p> <p>With average excavation of 28 m diameter x 0.45 m (average thickness of peat at turbines).</p>	<p>2659 m³ (28 m x 28 m x 0.48m) x 9</p>	100%	Turbine locations have been subject to a number of design iterations to avoid thicker peat and steep slopes. Average thickness of peat at turbine sites is ~0.48 m	<p>At turbine foundations topsoil would be stripped keeping top 200mm of turf intact. This would be stored adjacent to the base working area and would be limited to 1m height.</p> <p>1512 m³ (84 m x 0.5 m x 2m) x 9</p>	Avoided areas of thick peat for turbine bases where possible to minimise removal of excessive materials.	Requires detailed ground investigation to fully characterise peat.
<p>Hardstands</p> <p>It is anticipated that 9 No. hardstands will be required on the Site.</p>	<p>6120 m³ (55 m x 35 m x 0.45m) x 9</p>	100%	Crane hardstand locations have been influenced by the turbine design iterations to avoid thicker peat and steep slopes. Average thickness of peat at crane hardstand sites is ~0.45 m.	<p>At crane hardstands topsoil would be stripped keeping top 200mm of turf intact. This would be stored adjacent to the base working area and would be limited to 1m height.</p> <p>2610 m³ could be re-used to dress the edges of the hardstand area.</p>	Avoided areas of thick peat for turbine bases to minimise removal of excessive materials.	Requires detailed ground investigation to fully characterise peat.

Method	Volume of Excavated Material (m3)	How much of this can be re-used on-site (%)	Opportunity for Avoidance or Minimisation of Excavated Material	Re-use Requirements	Hierarchy Adherence	Limitations and Considerations
				(145 (55 + 55 + 35) m x 0.8 m x 2 m) x 9	Orientation of crane hardstands to be designed following detailed ground investigation, to avoid constraints and minimise requirement for peat excavation.	
Proposed Substation Compound (South)	1,221 m³ (55 m x 60 m x 0.37 m)	100%	The proposed construction compounds would largely be located on peaty/glacial soils adjacent to the proposed access tracks.	368 m³ (230 m x 2 m x 0.8 m)	Avoided siting substation on thick peat areas where possible.	Requires detailed ground investigation to fully characterise ground conditions.
Proposed Substation Compound (North)	186 m³ (28 m x 18 m x 0.37 m)	100%	The proposed construction compounds would largely be located on peaty/glacial soils adjacent to the proposed access tracks.	102 m³ (64 m x 2 m x 0.8 m)	Avoided siting substation on thick peat areas where possible.	Requires detailed ground investigation to fully characterise ground conditions.
Proposed Enabling Works Compound 2 No.	136 m³ (20 m x 20 m x 0.17 m x2)	100%	The proposed construction compound would largely be located on peaty/glacial soils adjacent to the proposed access tracks.	136 m³ (20 m x 20 m x 0.17 m x 2) Materials would be re-used on-site to reinstate working areas and for appropriate landscaping.	Avoided siting construction compound on thick peat areas where possible.	Fully reinstated

Method	Volume of Excavated Material (m3)	How much of this can be re-used on-site (%)	Opportunity for Avoidance or Minimisation of Excavated Material	Re-use Requirements	Hierarchy Adherence	Limitations and Considerations
Proposed Battery Storage Compound South	1,974 m³ (86 m x 45 m x 0.51 m)	100%	The proposed construction compounds would largely be located on peaty/glacial soils adjacent to the proposed access tracks.	268 m³ (266m x 2 m x 0.8 m)	Avoided siting substation on thick peat areas where possible.	Requires detailed ground investigation to fully characterise ground conditions.
Proposed Construction Compound	1,607 m³ (70 m x 45 m x 0.51 m)	100%	The proposed construction compounds would largely be located on peaty/glacial soils adjacent to the proposed access tracks.	268 m³ (266m x 2 m x 0.8 m)	Avoided siting substation on thick peat areas where possible.	Requires detailed ground investigation to fully characterise ground conditions.
Borrow Pits There are 2 No. borrow pit options, generally with limited peat cover.	2700 m³ (150 m x 100 m x 0.17 m) 2250 m³ (150 m x 100 m x 0.15 m)	Not applicable	There is limited peaty soils/peat overlying the selected borrow pits.	Limited peaty topsoil can be stockpiled and used for restoration. 1,920 m³ (120 m x 80 m x 0.2 m) 1,920 m³ (120 m x 80 m x 0.2 m)	Site selection avoided areas of peat for borrow pits, identified sites on bedrock or close to minimise removal of excessive materials.	Current calculations are based on conservative re-use and based on the use of both borrow pits. Detailed ground investigation is required to assess the ground conditions at each site.
Total Excavated	32,650m³			33.217m³		

Based on the values indicated, there is a balance of materials with no a surplus peat anticipated to be generated on-site – See Appendix TA 01.

Should further ground investigation information become available, the Figures will need to be re-calculated, the Figures in the table are indicative only.

6.0 Peat Excavation Considerations

This section of the outline PMP includes the method for dealing with peat which could potentially be classified as waste (only if the above volumes estimate significant quantities of catotelmic peat, which cannot be re-used). Table 6-1 below outlines where those materials that are likely to be generated on-site fall within the Waste Licensing Regulations.

Based on the results presented in Table 6-1, it has been concluded that all of the materials to be excavated on-site would fall within the non-waste classification as most of the topsoil and peaty soils would be re-used on-site. Based on a detailed probing exercise and visual inspection of the peat, it is predominantly fibrous – pseudo-fibrous peat which would be suitable to be re-used on-site. Typically, the peat was found to be fibrous and fairly dry within the top metre before becoming more amorphous with depth.

The majority of the excavated peat is therefore entirely re-useable as it is predominantly fibrous and easily re-used on-site. Areas of deep peat have been avoided by design where possible.

Table 6-1
Excavated Materials – Assessment of Suitability

Excavated Material	Indicative Volume on-site by % of total excavated soils	Is there a suitable use for material	Is the Material required for use on-site	Material Classified as Waste	Re-use Potential	Re-use on-site
Mineral Soil	25	Yes	Yes	Not classified as waste	Yes	Will be re-used in reinstatement of floated access track verges, cut and fill verges, road verges, side slopes and check drains. Peripheral embankments of turbine bases, crane hardstands and restoration of borrow pits
Turf (Surface layer of vegetation and fibrous matt)	35	Yes	Yes	Not classified as waste	Yes	Will be re-used in reinstatement of floated access track verges, cut and fill verges, road verges, side slopes and check drains. Peripheral embankments of turbine bases, crane hardstands and restoration of borrow pits.
Acrotelmic peat	35	Yes	Yes	Not classified as waste	Yes	Will be re-used in reinstatement of floated access track verges, cut and fill verges, road verges, side slopes and check drains. Peripheral embankments of turbine bases, crane hardstands and restoration of borrow pits.
Catotelmic Peat (amorphous material unable to stand unsupported when stockpiled >1m)	5 Very limited as it has been avoided by design.	Potentially	Potentially ⁶	Potentially if not required as justifiable restoration of habitat management works	Limited	If peat does not require treatment prior to re-use it can be used on-site providing adequate justification and method statements are provided and approved by SEPA If it is unsuitable for use without treatment then it may be regarded as a waste. However every attempt to avoid this type of peat has been incorporated into the design.

⁶ Such uses for this type of material are limited, however there may be justification for use in the base of borrow pits to maintain waterlogged conditions and prevent desiccation of restored area and in some habitat management works such as gully or ditch blocking where saturated peat is required to mimic mire type habitats and encourage establishment of sphagnum.

7.0 Conclusion

The figures detailed within this report are to be considered indicative at this stage and will require review following the results of detailed ground investigation. The total peat volumes are based on a series of assumptions for the proposed development layout and peat depth data averaged across discrete areas of the development. Such parameters can still vary over small scale and therefore topographic changes in the bedrock profile may impact the total accuracy of the volume calculations.

The figures shown in the tables suggest that the volumes of peat excavated on-site would be re-used without creating surplus materials which would require to be classified as waste. Post consent, the Stage 1 PMP and the outline Construction Environmental Management Plan (CEMP) would be updated with information obtained during detailed ground investigations and design stage.

These plans would be developed to update the CEMP, with detailed post construction restoration plans. This would be reviewed and monitored along with the updated PMP and CEMP to ensure compliance with method statements and to keep track of volumes.

FIGURES AND APPENDICES

FIGURES

FIGURE TA 9.2.1

Site Location



SCLENTEUCH WIND FARM

FIGURE 1

SITE LOCATION

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 Site Boundary



LAYOUT DWG

T-LAYOUT NO.

DRAWING NUMBER

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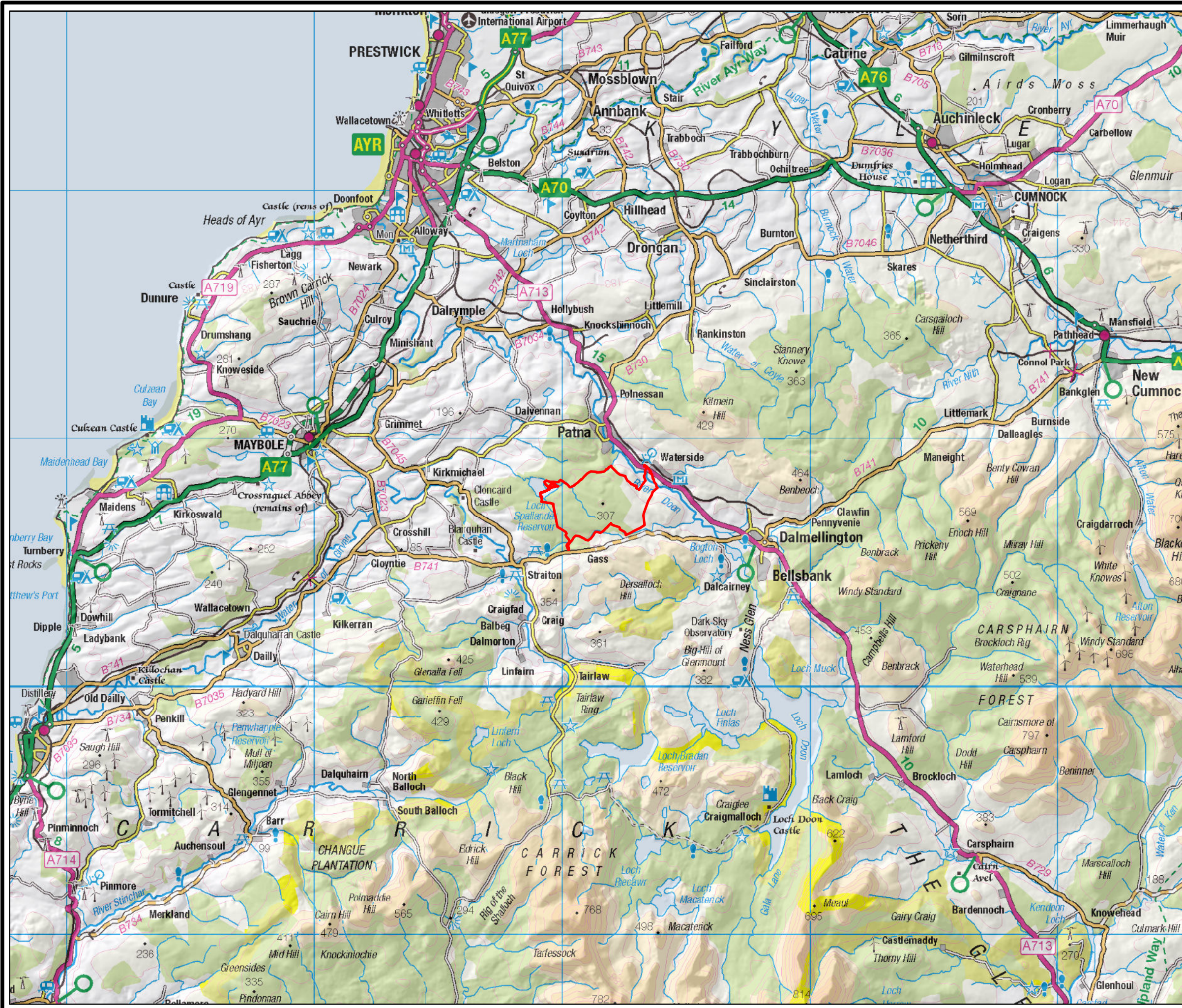


FIGURE TA 9.2.2

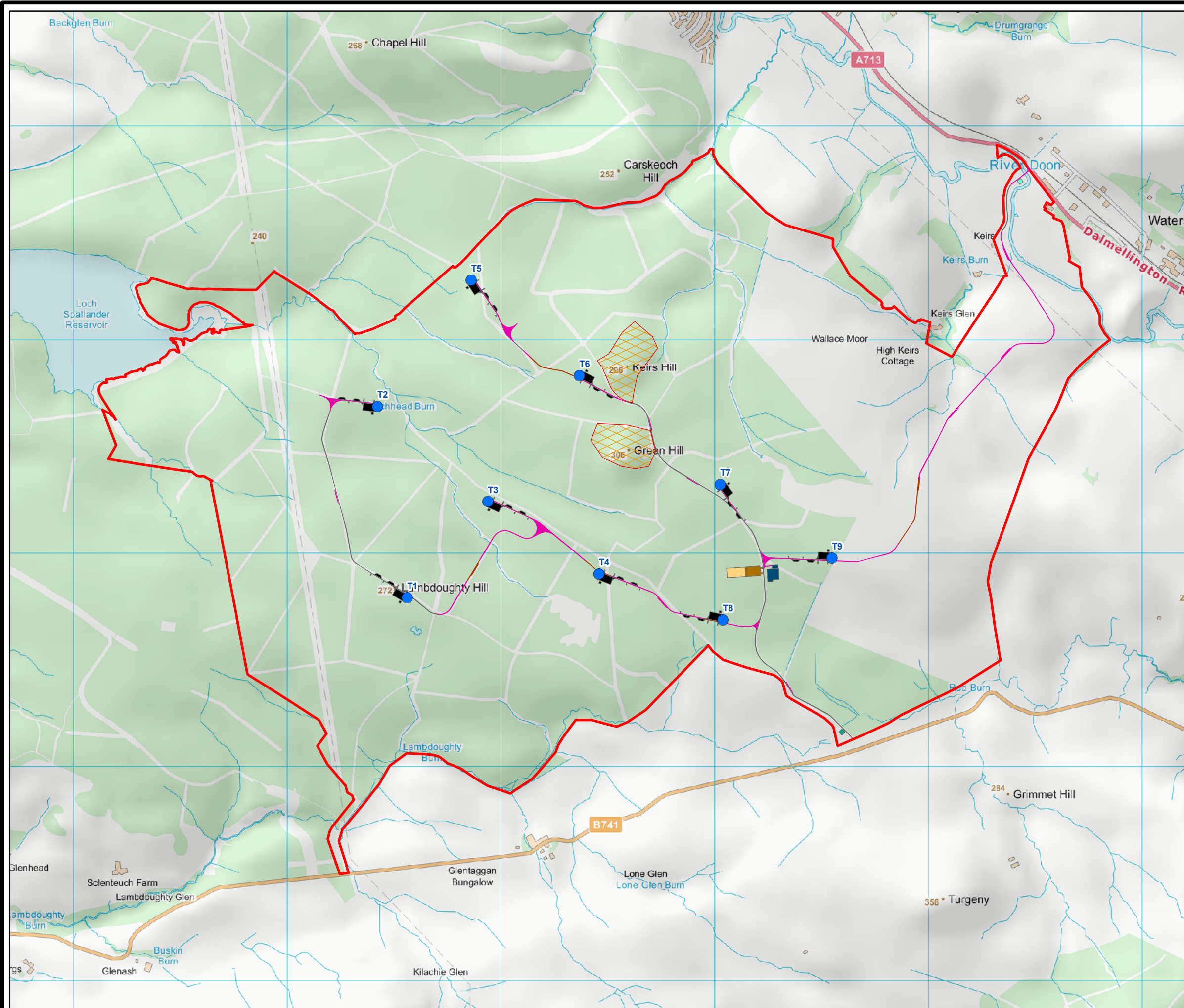
Site Layout



SCLENTEUCH WIND FARM

FIGURE 2 SITE LAYOUT

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- Site Boundary
- Turbine Location
- New Site Track - Excavated
- New Site Track - Floated
- Upgraded Site Track
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search



LAYOUT DWG: T-LAYOUT NO.

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FIGURE TA 9.2.3

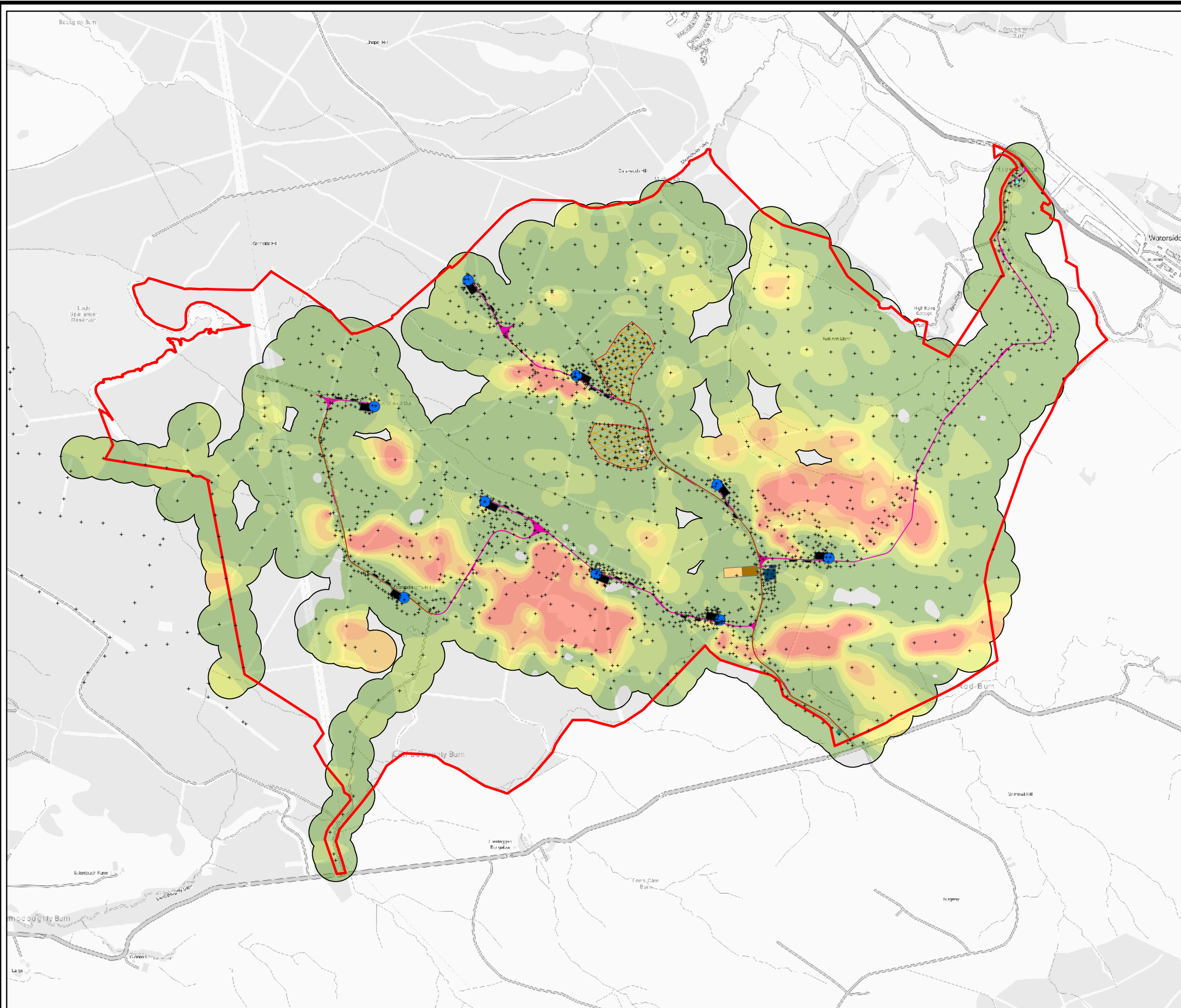
Peat Depth



SCLENTEUCH WIND FARM

FIGURE 2 PEAT DEPTHS

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- Site Boundary
- Turbine Location
- Upgraded Site Tracks
- New Site Tracks
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search Area
- Peat Probe Location

Peat Depth (m)

- 0
- 0 - 0.5
- 0.5 - 1
- 1 - 1.5
- 1.5 - 2
- 2 - 2.5
- 2.5 - 3
- >3



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FIGURE TA 9.2.4

Peat Depth > 0.5 m

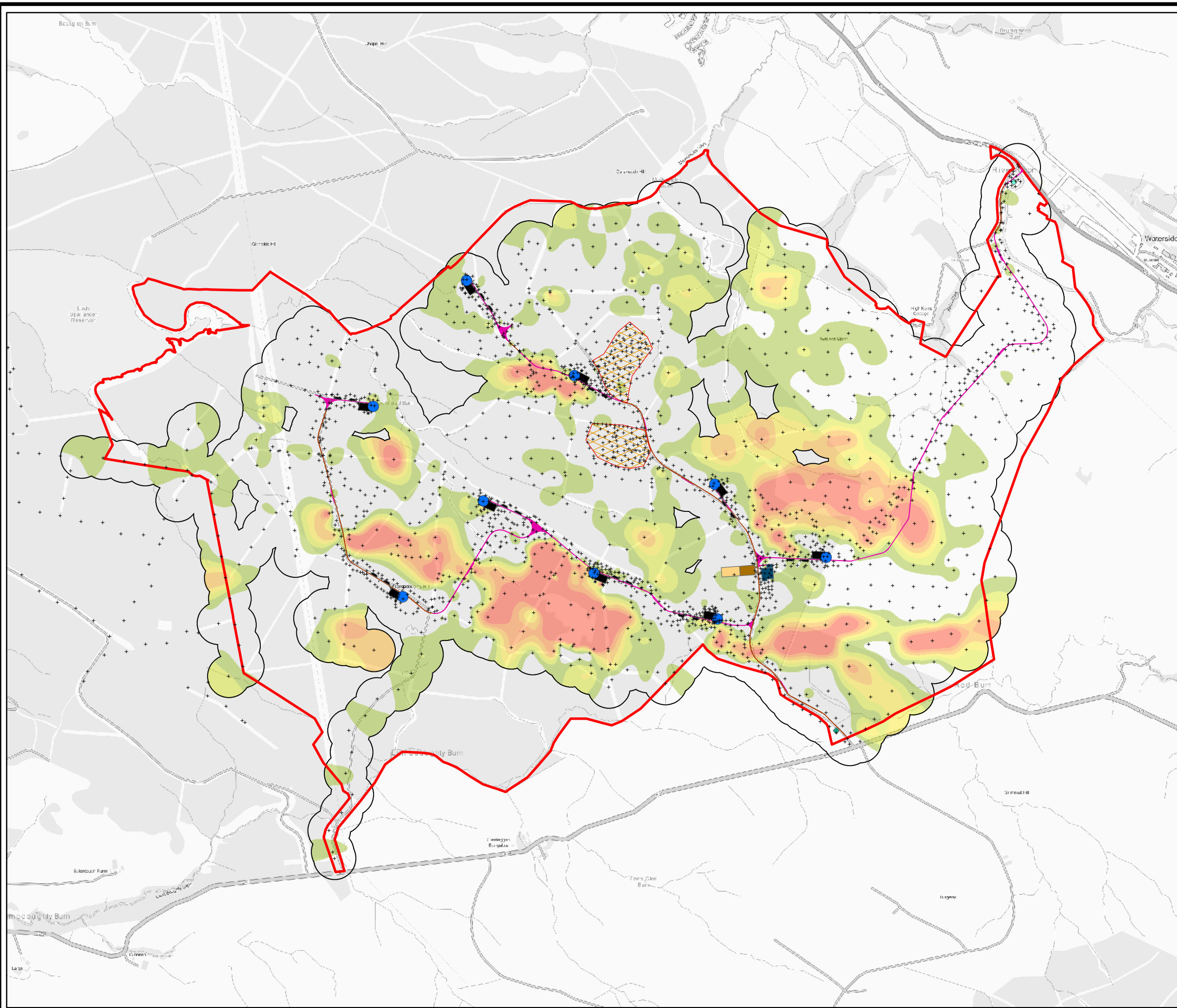


SCLENTEUCH WIND FARM

FIGURE 3

PEAT DEPTHS > 0.5M

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- Site Boundary
- Turbine Location
- Upgraded Site Tracks
- New Site Tracks
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Borrow Pit Search Area
- Peat Probe Location

- Peat Depth (m)**
- 0.5 - 1
 - 1.0 - 1.5
 - 1.5 - 2
 - 2.0 - 2.5
 - 2.5 - 3
 - >3



LAYOUT DWG

T-LAYOUT NO.

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APPENDIX TA 01

Excavated Materials Calculator

Infrastructure	Length (m)	Width (m)	Average Depth (m)	Number	Total Volume Excavated (m3)	Length (m)	Width (m)	Average Depth (m)	Number	Total Re-use Volume (m3)	Notes
New Excavated Track	5776	5	0.51	1	14729	5776	3	0.5	2	17328	
Existing Upgraded Track	3564	1	0.37	1	1319	3564	3	0.5	1	5346	
Floating Track (on site)	674	6	0.00	0	0	674	3	0.5	2	2022	
Turbine Bases (Formation only)	28	28	0.48	9	2659	84	2	1	9	1512	
Crane Hardstandings	55	35	0.45	9	6120	145	2	1	9	2610	
Turning Heads				2	0		2	0.8	1	0	
Substation and Control Building South	55	60	0.37	1	1221	230	2	0.8	1	368	
Met Masts				1	0		2	0.8	1	0	
Battery Storage	86	45	0.51	1	1549	266	2	0.5	1	266	
Temporary Construction Compound	20	20	0.17	1	68	20	20	0.17	1	68	
Borrow Pit North	150	100	0.18	1	2700	120	80	0.20	1	1920	
Borrow Pit South	150	100	0.15	1	2250	120	80	0.20	1	1920	

Total Excavated Volume (m3)	30365
Total Re-use Volume (m3)	31440
Net Balance (m3)	-1075

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COAL MINING RISK ASSESSMENT

Scienteuch Wind Farm, Near Patna
Prepared for: **Renewable Energy Systems Ltd**

SLR Ref: 428-103539-00015
Version No: Draft
April 2022



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Figure 1 Proposed Development Area (RES)

Figure 2 Superficial Geology

Figure 3 Solid Geology

Figure 4 Extent of Underground Mining Constraints

APPENDICES

Appendix A: Coal Mining Report (5100223565001)

Appendix B: Coal Mining Abandonment Plans

- 4669 Patna Thick
- S1113 Keirs Mining
- Geology 6" Plan 1900 to 1940

Appendix C: Borehole Logs

Appendix D: Keirs Hill Wind Farm Geotechnical and Mining Desk Study Report

1.0 INTRODUCTION

A coal mining risk assessment has been undertaken to address any potential historic mining activities that may impact the proposed Scienteuch Wind Farm (the 'Proposed Development') This report concerns the Proposed Development Area, 1 km to the southwest of Patna, and 1 km west of Waterside, identified in Figure No.1 Proposed Development Area.

The Proposed Development is to comprise nine wind turbines with associated infrastructure including borrow pits, substation compound, battery energy storage systems compound and tracks.

The following sections of the report introduce the site, the assessment works undertaken and their results, along with a preliminary assessment of the mining risk under the site and in the vicinity of the infrastructure.

The report has been undertaken in response to the client's concern over the extent of mine workings in the area, based on evidence from geological, historical OS plans and evidence of past opencast workings and underground workings on aerial photographs and on the ground.

This report has been prepared on behalf of RES Ltd, by the Land Quality Group based at the Stirling Office of SLR Consulting Limited, No.50 Stirling Business Centre, Wellgreen, Stirling, FK8 2DZ, under the supervision of an experienced mining geologist.

- The site is identified as located within a **Coal Mining Reporting Area**, meaning it is underlain by Carboniferous coal bearing strata (Coal Measures) and thus a coal mining risk assessment should be undertaken.
- The site is also in an area classed as a **Development High Risk Area**. This is a coal mine reporting area which contains one or more recorded coal mining features which have potential for instability or a degree of risk to the surface from the legacy of coal mining operations. Our records indicate that recorded and probable coal mining is likely to have taken place beneath the site at shallow depth.

This would include a combination of features which could include:

- mine entries;
- shallow coal workings (recorded and probable);
- recorded coal mining related hazards;
- recorded gas sites; and
- fissures and breaklines and previous surface mining sites.

In addition consideration of the following:

- If surface coal resources are present, whether extraction of the mineral resource is still practicable and/or viable;
- Whether Coal Authority permission is required to intersect, enter, or disturb any coal or coal workings during site investigation or development work; and
- Provide indicative recommendations for any remedial or further detailed investigative works, as required.

The opportunity has also been taken to review publicly accessible data. In summary, the work comprised the following:

- A review of previous Coal Mining Risk Assessment (Keirs Hill Wind Farm Geotechnical and Mining Desk Study Report, N.A. Brown April 2013 (Appendix D))

- A review of historical map records;
- Review of mine abandonment plans;
- A review of information held on British Geological Survey and Coal Authority website;
- Collating information about site conditions and assessing the potential mining risks; and
- A site walkover by an experienced mining geologist in May 2020.

To complete this coal mining risk assessment, geological information and maps were obtained from the British Geological Survey (BGS), 1:50,000 scale Ordnance Survey maps were also reviewed, as well as *Geology of Central Ayrshire(1949)*¹ and *Mining, Ayrshires Lost Industry*². Additional searches were requested from the Coal Authority to address the extent of coal mining undertaken at the site and, based on past mining activity, a search of suitable coal mining abandonment plans was undertaken. To support the findings a review of available from BGS boreholes drilled into the Coal Measures was also carried out to verify findings and in some instances confirm the location of coal seams and potential for workings.

This report thus provides a review of the likelihood of any mining activity (including traditional underground mining, both recorded and potentially unrecorded) which has taken place on the site.

The geological setting and mining framework of the site and surrounding area are described in Section 2.0, which is followed by the Mining Assessment in Section 3.0. Conclusions are presented in Section 4.0.

¹ Geology of Central Ayrshire, Geological Survey Scotland 1949

² Mining, Ayrshires Lost Industry, Guthrie Hutton, 1996

2.0 GEOLOGICAL SETTING

2.1 Geology and Hydrogeology

Information on geology and mining has been obtained from BGS maps and memoirs, including BGS Scotland 1:50,000 Sheet 14E Cumnock (Solid and Drift Editions) and 14W Ayr (Solid and Drift Editions).

2.1.1 Superficial deposits

The extent of the Drift Geology underlying the site is sourced from the 1:50,000 Drift Geology Edition, Sheet 14E for Cumnock, published by the British Geological Survey (1976) and 14W Ayr (Drift Editions) published by the British Geological Survey (1978). (Figure 2).

The drift geology on the Proposed Development Area comprises peat overlying glacial till. There is peat located under one of the nine proposed turbines. The extent of peat was confirmed by probing on site.

2.1.2 Solid Geology

The extent of the Solid Geology underlying the site is shown on the 1:50,000 Solid Geology Edition, Sheet 14E for Cumnock, published by the British Geological Survey 1976 and 14W Ayr (Solid Editions published by the British Geological Survey (1978) (Figure 3). Near the site, the underlying bedrock comprises rocks of the Middle Coal Measures overlying the Lower Coal Measures (MCMS and LCMS) (Upper Carboniferous (Westphalian)) which forms part of the Ayrshire Coalfield. The Middle and Lower Coal Measures in turn overlie the Namurian Series, which comprises the Passage Group, the Upper Limestone Formation and the Limestone Coal Formation. Of the coal bearing strata, only the Limestone Coal Formation is present within the red line boundary of the site.

The whole area around the site is faulted extensively. In general, the faults are normal and bear an east west to northwest to southeast strike. There is considerable faulting recorded near the site, which accounts for the complex mining history of the site.

The stratigraphic succession of interest in the surrounding area extends from the Patna and Diamond Coal in the Limestone Coal Group to the Lower Dalmellington Black Band Ironstone (LCMS) to the Ell Coal (MCMS) and consists of up to 10 seams in the local area, of which at least two were mined for ironstone. Only the Patna Coal is present on the site.

There is an extensive history of both underground and opencast limestone workings in the vicinity of the site.

2.2 Coal Mining History

The site and surrounding area lie within the South Ayrshire Coalfield and there is a long history of coal exploitation in the locality. A number of economic coal seams are present in the strata beneath the site, with workings in many of these (from the various Collieries continuing until the mid-1970's), including very old workings present below the site. Several old mine shafts and collieries, including Burnfoot, Bowmill, Drumgrange, Downieston, Houldsworth, Polnessan, Knockkippen and Littlehill, are indicated on the historical maps in the surrounding area, with 14 shafts alone located close to the Proposed Development Area and 8 within the red line boundary. The shafts are located over the eastern portion of the site, with shallow shafts and adits coincident with the shallow workings. This is consistent with workings immediately below the site close to the site entrance. The site is therefore considered to be underlain by worked coal measures in the eastern portion close to Keirs Castle, with no workings under the proposed turbine development area. The only area potentially at risk from shallow mining will be the access track from the main road the A713 to the turbines.

The Coal Report did not record any depths for the Patna and Diamond Coal (in the Limestone Coal Formation) below the site, although the Patna Coal has been mined at shallow depths around Keirs Castle from shafts and adits.

The evidence also suggests that there is no coal present in the turbine development area, only close to the access tracks to the site. Borehole logs from the surrounding area are included in Appendix C and identify coals along the track location in the order of 22 fathoms below surface (40m below surface).

2.3 Hydrogeology

The solid geology underlying the site is classified as moderately permeable comprising the Lower Limestone Group, the Limestone Coal Group and the Upper Limestone Group. These rocks are classified as moderately to highly permeable, which could produce large quantities of water for abstraction, but are important for local supplies and in supplying base flow to rivers.

3.0 MINING ASSESSMENT

3.1 Coal Mining Report

A site-specific Coal Mining Report was obtained from the Coal Authority, see *Report Reference 51002713731001* (Appendix B). Key sections of the mining report are reproduced below, and the report only relates to the Proposed Development Area, where the track crosses known mining features and probable coal measures.

3.1.1 Underground Coal Mining

Past

The property is not within a surface area that could be affected by any past recorded underground coal mining.

However, the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

Present

The property is not within a surface area that could be affected by present underground mining.

Future

The property is not in an area where the Coal Authority has received an application for and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

3.1.2 Mine entries

Within, or within 20 metres of, the boundary of the property there are six mine entries, the approximate positions of which are shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

There is no record of what steps, if any, have been taken to treat most of the mine entries.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

3.1.3 Coal Mining Geology

The Coal Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.

3.1.4 Opencast Coal Mining

Past

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Present

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

Future

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

3.1.5 Coal Mining Subsidence

There is no evidence of any damage from coal mining subsidence.

3.1.6 Mine Gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

3.2 Coal Mining Abandonment Plans

The mining search identified underground workings to have taken place within the site and to the east of the site. Opencast mining has also taken place later in the same general area of the site, particularly on the Keirs Limestone. We initially based our findings on the use Geological Plans, the Coal Authority Web Site and our current knowledge of the local area. Only limited mining plans are available, and the mining assessment has used these plans:

- Plan 4669 Patna Thick
- Plan S1113

The 4669 Patna Thick plan shows workings to the east of the red line boundary and nothing on the site. These workings were on the Patna Coal from the No. 10 Shaft at Waterside to the north east.

The second plan shows local workings on the site around Keirs Castle, no workings shown only a few shaft sites and the extent of limestone workings.

The shafts, extent of possible unrecorded workings on the Patna Coal and the Keirs Limestone (opencast) are shown on the Mining Constraints plan.

3.2.1 Mine Entries

There are several known mine entries (6 No.) within the site boundary and associated with the Keir Lime Works (opencast shallow mining), the Burnfoot Opencast (opencast shallow limestone) to the east of the site, the Keirs Coal Pit and The Keirs Hill Pit (Coal), several older pits and adits are identified, there may also be unrecorded workings and further shafts and adits may exist. However, given the significant volume of available information for this site it is considered highly unlikely that an unrecorded mine entry exists within the site boundary, which has not been identified. It is therefore considered mine entries are considered to pose a Medium Risk. If during any construction works a mine entry is uncovered, then this will need to be treated and capped in accordance with Coal Authority guidance.

3.3 Borehole Records

A search for available borehole records was undertaken on the British Geological Survey (BGS) website. This search revealed several boreholes within the boundary of the site. The boreholes indicate the strata to generally comprise:

- Shale
- Siltstones.
- Sandstones
- Coal seams

The boreholes have been reviewed to confirm the nature of the possible seams present and likelihood of workings. Most of the boreholes were drilled in the 1890's and confirm the presence of the Patna Coal seam at depths more than 40 metres below surface. There are no boreholes, post mining which encounter evidence of mining activity (such as mine waste, mining voids etc.). A borehole in the limestone (shallow depth) confirms the Index Limestone overlies coals at over 40 metres depth, anticipated to be the Patna Coal.

3.4 Assessment

For the purposes of this mining risk assessment all sources (abandonment plans, available borehole records etc.) have been assessed and assigned a relative degree of risk to highlight potential areas of concern based on identified features and potential future actions.

Figure 4 illustrates a constraints plan, detailing areas of potential risk from past mine workings.

3.3 Coal Mining Risk Assessment

For the purposes of this mining risk assessment all sources (abandonment plans (not available), Coal Authority reports, available borehole records etc) have been assessed and assigned a relative degree of risk to highlight potential areas of concern based on identified features and potential future actions.

3.4 Risk Assessment

Table 3-1 presents the framework used to complete the assessment.

**Table 3-1
 Risk Assessment Framework**

Risk Status	Action
No Risk	Identified feature(s) not considered to pose any risk to proposed development. No further action required.
Low Risk	Identified feature(s) are unlikely to pose a risk to any future proposed development and further action may be required such as intrusive site investigation works.
Medium Risk	Identified feature(s) may present a risk to any future proposed development and further actions are likely to be required including but not limited to an intrusive site investigation works and potentially ground improvement works.
High Risk	Identified feature(s) present a risk to any future proposed development and further actions are required including but not limited to an intrusive site investigation works and potentially ground improvement works.

3.4.1 Abandonment Plans

An assessment of underground mining based primarily on the geological plans was undertaken primarily in the 1900 -1940's 6" plans as well as 1st and 2nd Edition Ordnance Survey plans. Figure 4 outlines the extent of underground mining below the site, and depths to seams have been established from boreholes and mining plans. This information has been validated by confirming depths from abandonment plans, which are limited but available.

3.4.2 Borehole Records

The historic borehole records that were reviewed, as discussed in Section 3.3 provides evidence of the Patna coal seam that is known to be present within the site.

Based on the review of the above, this provides evidence to confirm that there is minimal risk to the development from coal workings beneath the site at moderate to deep depths (greater than 30m) within the areas detailed.

The geology identified throughout the historic boreholes would suggest that there are no workings underlying the entire Proposed Development Area at shallow depths and can therefore be considered Low Risk. The turbines and substation will be located to the west of the area and there are no underground mine workings therefore no risk.

4.0 IMPACTS ON THE DEVELOPMENT

3.4.2 Proposed Development Area

Based on the Risk Assessment undertaken for the Proposed Development Area it has been determined that there are no underground mine workings present beneath the turbine development area.

There are also no known opencast workings under the Proposed Development Area.

The Proposed Development location falls out with these areas; the Proposed Development is therefore in an area of No Risk from historic opencast mining. Indications from the shaft data indicate the seams mined are all shallow and very limited in extent to impact the development, with seam depth estimated to be ranging from shallow to over 40m, so deemed to be a Medium to High Risk. However, mining plans and the Coal Authority interactive plans (<https://mapapps2.bgs.ac.uk/coalauthority/home.html>) indicate shallow workings will not impact the development. Also, where coal is present below the access track there is no evidence of any mining present, however the coal at these depths is sufficiently deep to mitigate any mining risk.

The eastern site should be monitored prior to construction to confirm whether mine gases pose a risk. The Coal Authority Report suggests there is no risk, however the presence of shallow workings in the vicinity should be considered from a hazardous gas risk. Any drilling in the future will also require undertaking a coal mining risk assessment prior to drilling.

5.0 SUMMARY AND RECOMMENDATIONS

The mining assessment has established that a limited area within the site boundary has been subject to past underground mining. The site has areas of High Risk Development Area, as indicated by the Coal Authority, but these areas are all located away from the turbine locations.

The site is underlain by shallow coals and has also been subject to limited opencast mining on coal and limestone, the proposed layout all avoids past opencast workings

Based on review of borehole records it has been confirmed that there has been coal mining below the eastern portion of the site at depths less than 30m, however this appears to be located to the north of the proposed access track

Underground mining is known to have taken place between the mid 1800's up until the early 1900s.

Boreholes and geological and mining plans reviewed from the BGS and Coal Authority website, discussed in Section 3.3 provide evidence that there are coal seams underlying the entire site, although no shallow coals or ironstones impact the western part of the Proposed Development Area where the turbines are located.

Figure 4 provides a constraints plan showing the areas of the site affected by underground workings. The proposed development location is situated in an area where there are identified constraints, based on the depth of workings ranging from Low to Medium Risk. The potential for unrecorded workings is considered to pose a Low Risk but cannot be discounted entirely.

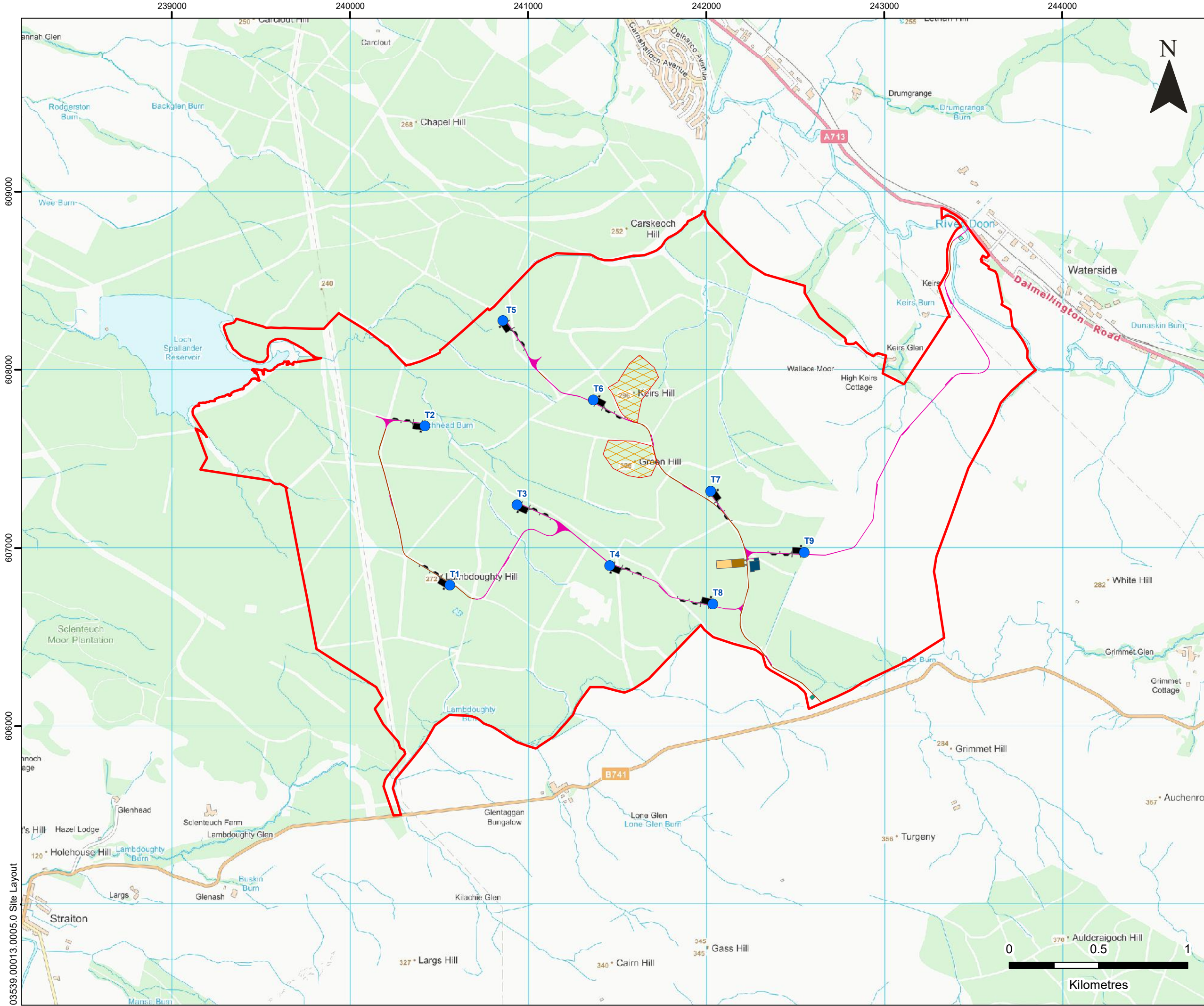
Former underground workings, presence of shafts and adits are considered a Medium Risk.

Overall, the site development should be considered ranging from Low Risk, with some areas of Medium Risk from either shallow workings or mine shafts or adits (Figure 4).

The turbine layout at present can be considered to avoid any risk sites, i.e., shallow underground mining, opencast workings and shafts. However, the infrastructure layout can avoid most of these areas by careful planning. However, the mining constraints and any variations in layout must be considered in evaluating the layout.

FIGURES

Figure 1 Proposed Development Area



LEGEND

- Site Boundary
- Turbine Location
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Borrow Pit Search Area
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Upgraded Site Tracks
- New Site Tracks



SLR 4/5 LOCHSIDE VIEW
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T: +44 (0)131 335 6830
www.slrconsulting.com

**SCLENTEUCH WIND FARM
COAL MINING RISK ASSESSMENT
DEVELOPMENT OVERVIEW
PLAN (RES)**

FIGURE B1

Scale 1:20,000 @ A3 Date JUNE 2022

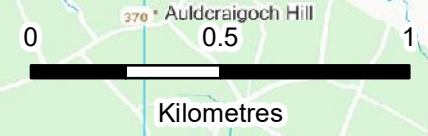
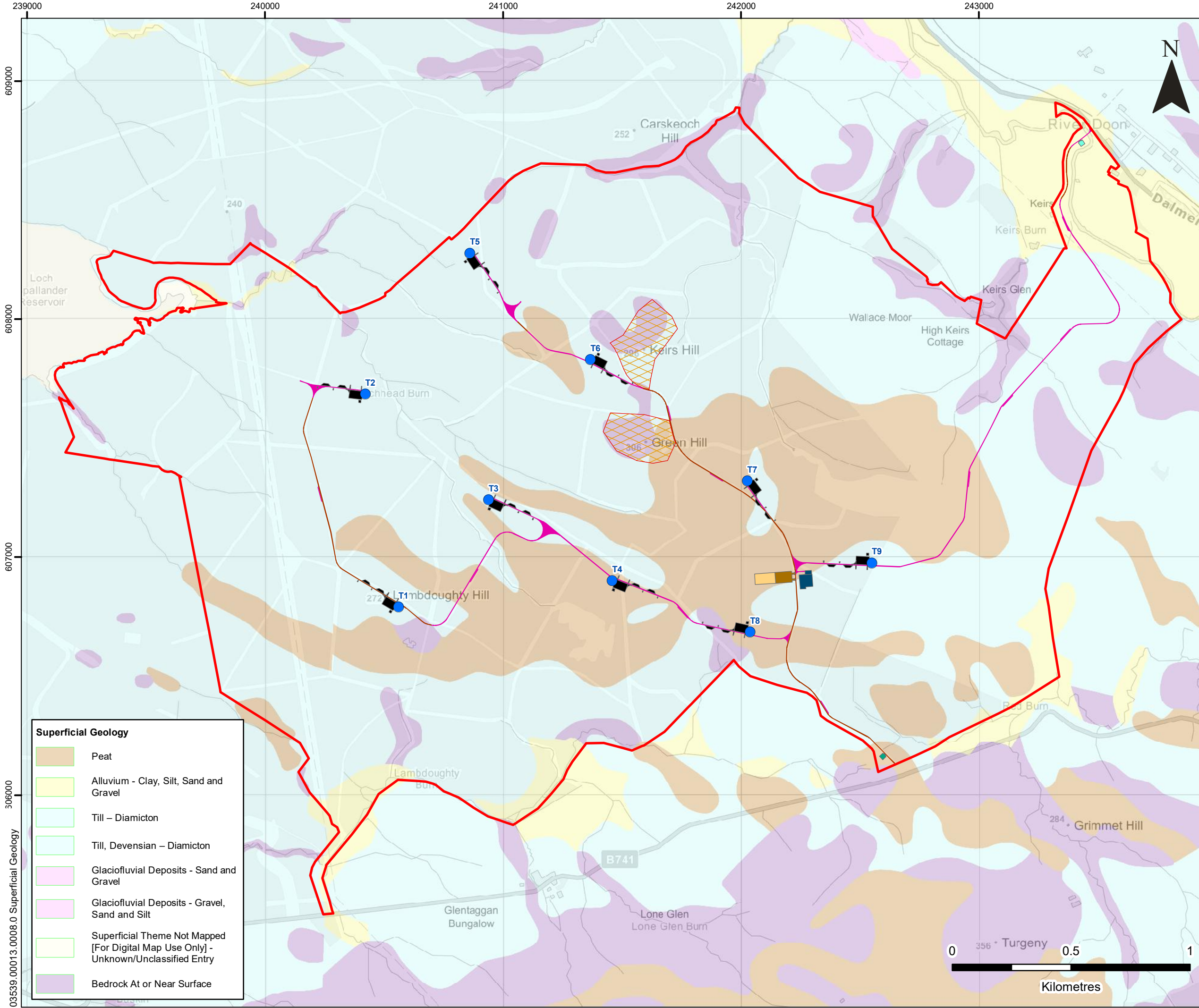


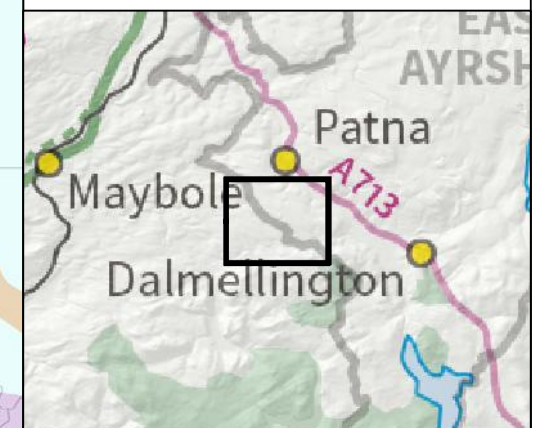
Figure 2 Superficial Geology



NOTES
 1. Superficial Geology Data Obtained Via BGS WMS. British Geological Survey ©NERC 2021. All rights Reserved.

LEGEND

	Site Boundary
	Turbine Location
	Crane and Compound Hardstanding
	Control Building, Substation Compound and Permanent Hardstanding
	Borrow Pit Search Area
	Battery Storage
	Temporary Construction Compound and Battery Storage
	Temporary Enabling Works Compound
	Alternative Temporary Enabling Works Compound
	Upgraded Site Tracks
	New Site Tracks



Superficial Geology

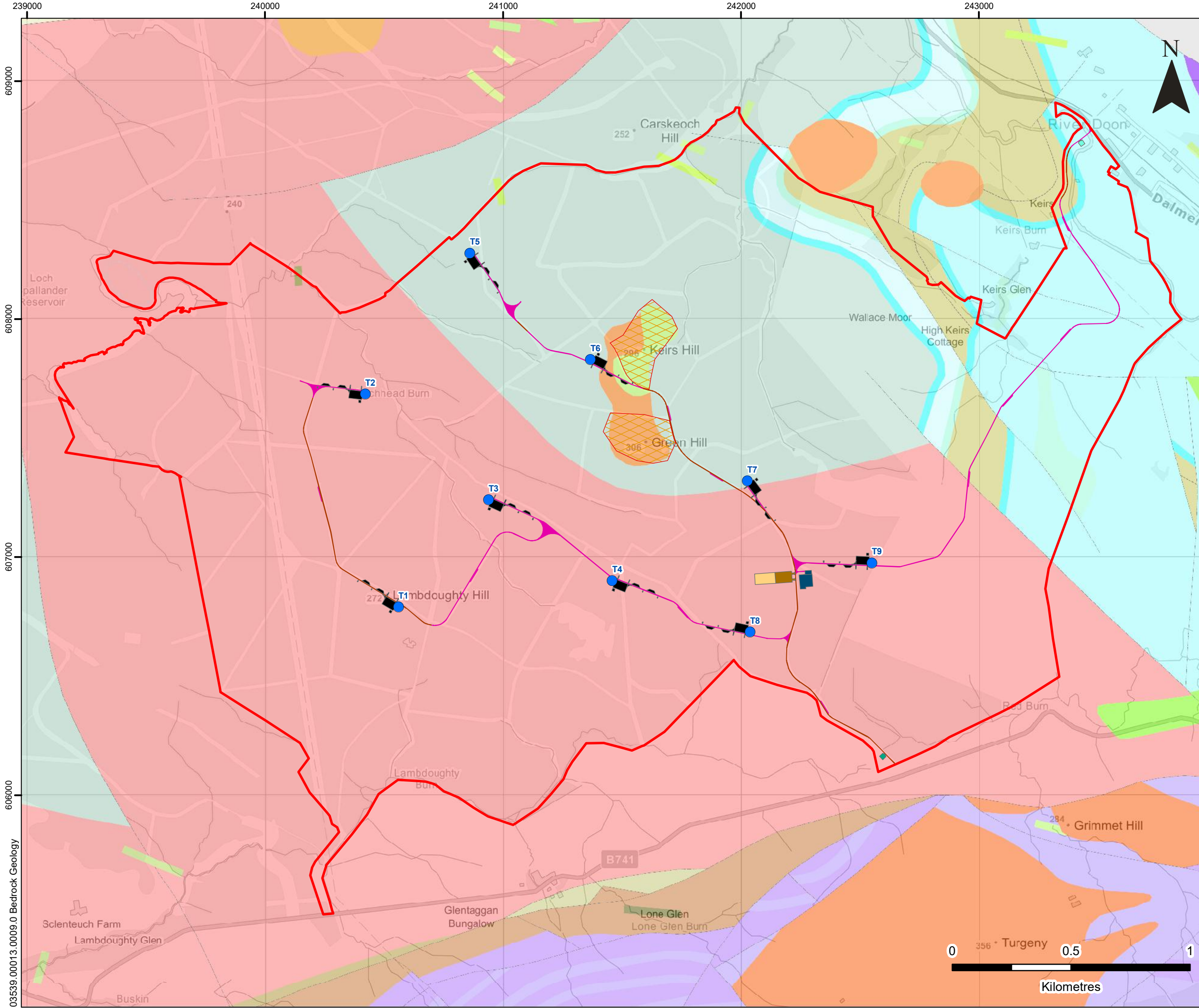
	Peat
	Alluvium - Clay, Silt, Sand and Gravel
	Till - Diamicton
	Till, Devensian - Diamicton
	Glaciofluvial Deposits - Sand and Gravel
	Glaciofluvial Deposits - Gravel, Sand and Silt
	Superficial Theme Not Mapped [For Digital Map Use Only] - Unknown/Unclassified Entry
	Bedrock At or Near Surface



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SCLENTEUCH WIND FARM
COAL MINING RISK ASSESSMENT
SUPERFICIAL GEOLOGY
FIGURE B2
 Scale 1:15,000 @ A3 Date JUNE 2022

Figure 3 Solid Geology

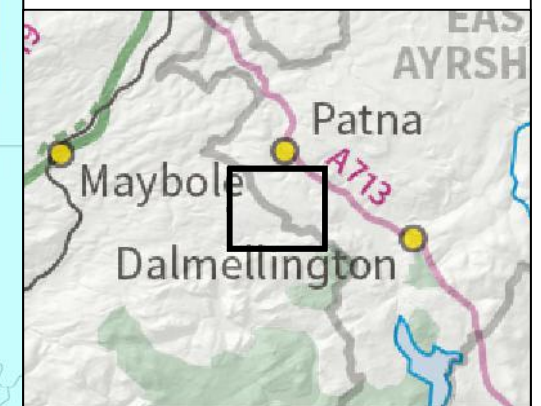


NOTES
 1. Bedrock Geology Data Obtained Via BGS WMS. British Geological Survey ©NERC 2021. All rights Reserved.

LEGEND

- Site Boundary
- Turbine Location
- Crane and Compound Hardstanding
- Control Building, Substation Compound and Permanent Hardstanding
- Borrow Pit Search Area
- Battery Storage
- Temporary Construction Compound and Battery Storage
- Temporary Enabling Works Compound
- Alternative Temporary Enabling Works Compound
- Upgraded Site Tracks
- New Site Tracks
- Drumlin, Form Line at Base
- Coal Seam, Inferred
- Fault, Inferred, Displacement Unknown

Bedrock Legend on Figure 03.2

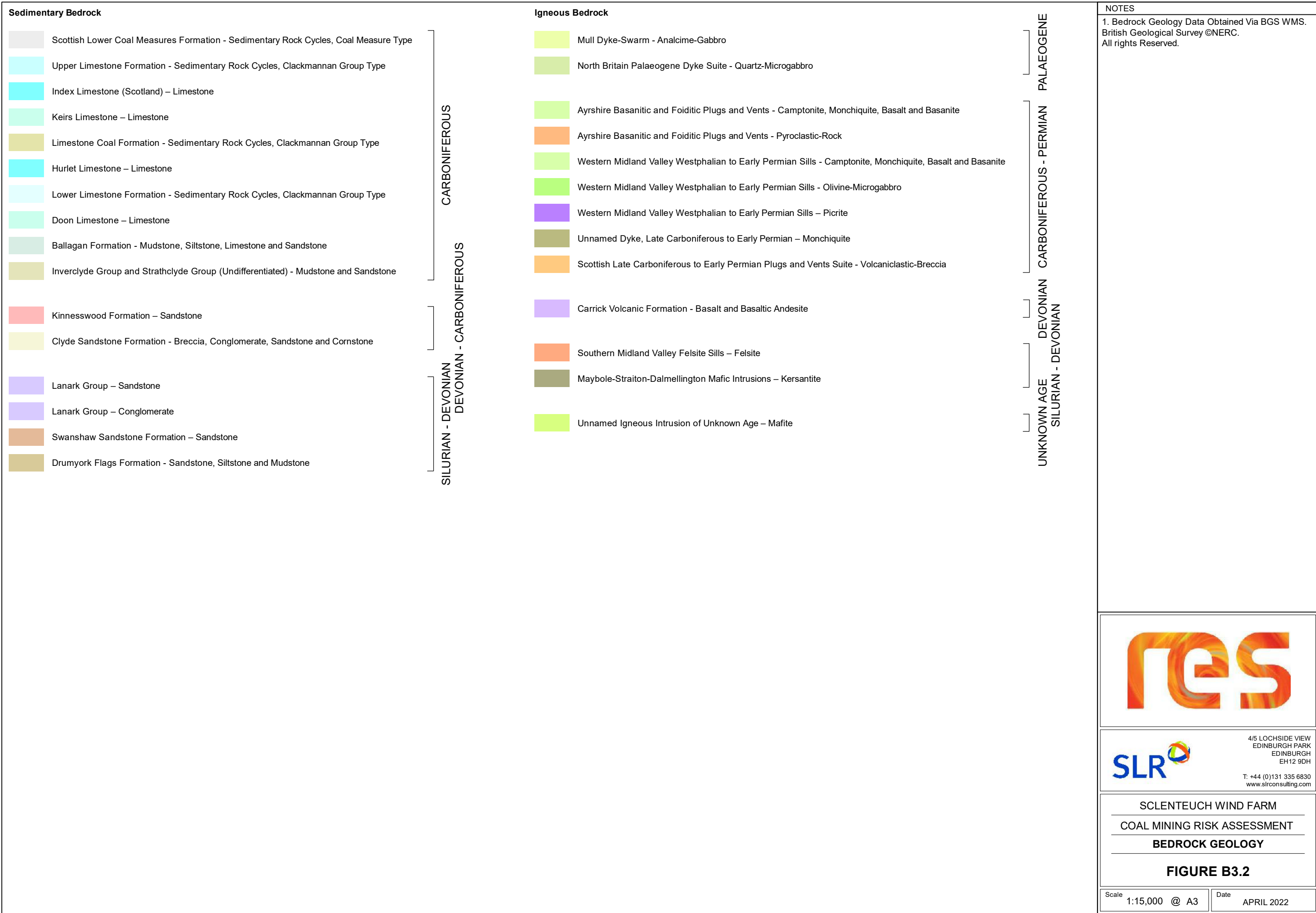


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SCLENTEUCH WIND FARM
COAL MINING RISK ASSESSMENT
BEDROCK GEOLOGY

FIGURE B3.1

Scale 1:15,000 @ A3 Date JUNE 2022



CARBONIFEROUS

SILURIAN - DEVONIAN
DEVONIAN - CARBONIFEROUS

UNKNOWN AGE
SILURIAN - DEVONIAN
DEVONIAN
CARBONIFEROUS - PERMIAN
PERMIAN
PALAEOGENE



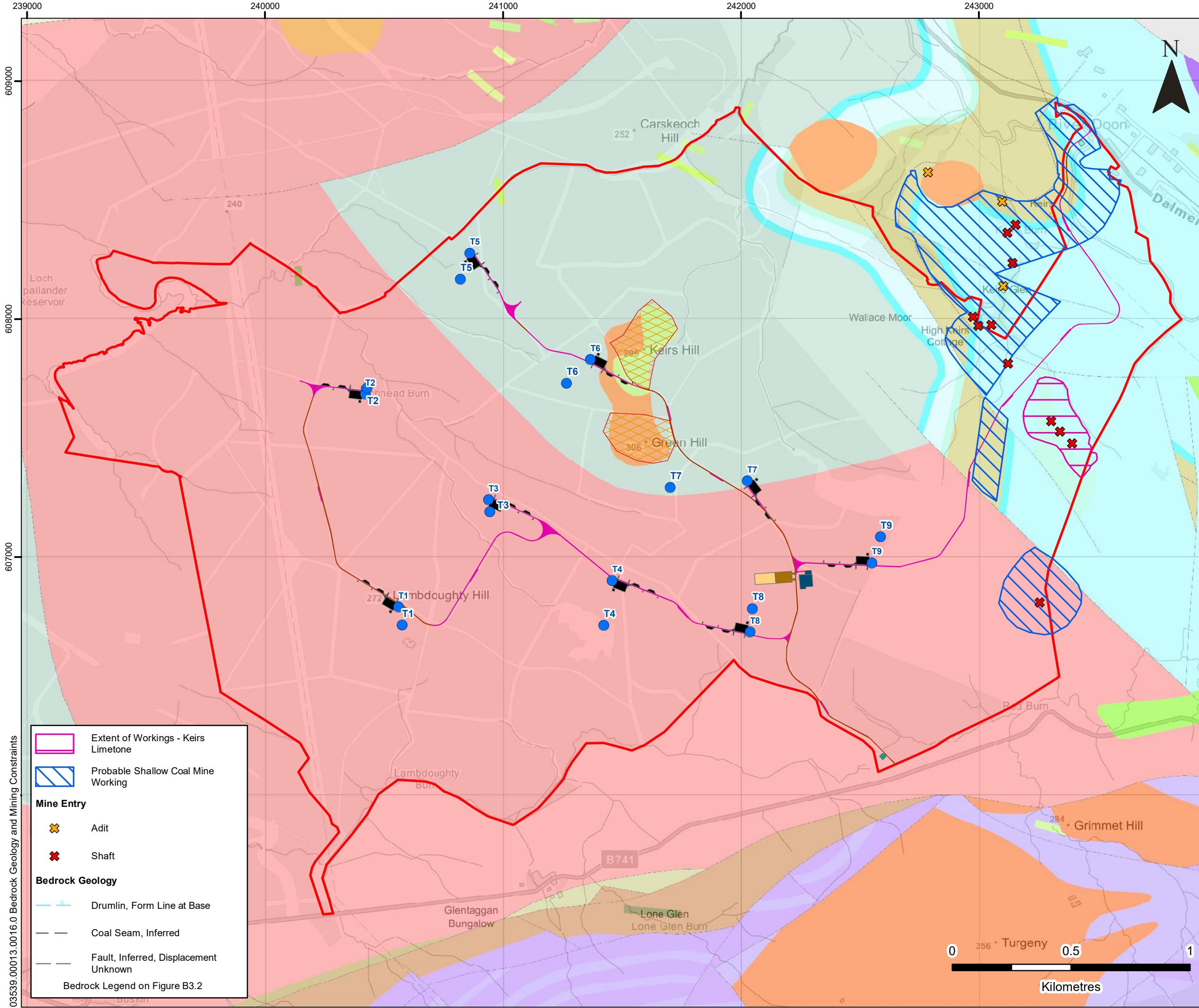
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SCLENTEUCH WIND FARM
COAL MINING RISK ASSESSMENT
BEDROCK GEOLOGY

FIGURE B3.2

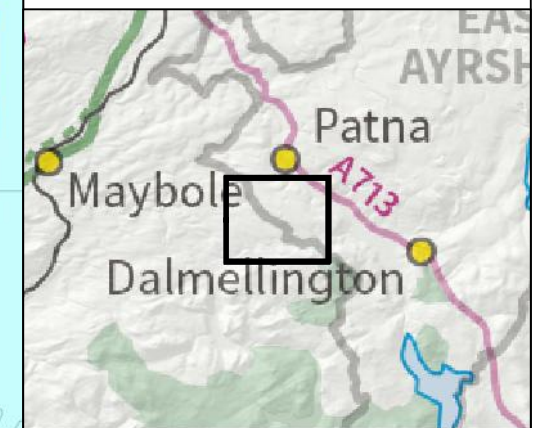
Scale 1:15,000 @ A3 Date APRIL 2022

Figure 4 Extent of Underground Mining



NOTES
 1. Bedrock Geology Data Obtained Via BGS WMS. British Geological Survey ©NERC 2021. All rights Reserved.

- LEGEND**
- Site Boundary
 - Turbine Location
 - Crane and Compound Hardstanding
 - Control Building, Substation Compound and Permanent Hardstanding
 - Borrow Pit Search Area
 - Battery Storage
 - Temporary Construction Compound and Battery Storage
 - Temporary Enabling Works Compound
 - Alternative Temporary Enabling Works Compound
 - Upgraded Site Tracks
 - New Site Tracks



- Extent of Workings - Keirs Limestone
- Probable Shallow Coal Mine Working
- Mine Entry**
- ✕ Adit
 - ✕ Shaft
- Bedrock Geology**
- Drumlin, Form Line at Base
 - Coal Seam, Inferred
 - Fault, Inferred, Displacement Unknown
- Bedrock Legend on Figure B3.2

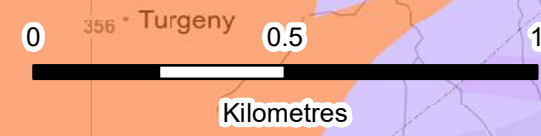


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SCLENTEUCH WIND FARM
COAL MINING RISK ASSESSMENT
EXTENT OF UNDERGROUND MINING CONSTRAINTS

FIGURE B4

Scale: 1:15,000 @ A3 Date: JUNE 2022



03539_00013_0016.0 Bedrock Geology and Mining Constraints

APPENDIX A

Coal Mining Report (51002713731001)



The Coal
Authority

CON29M

coal mining report

HIGH KEIRS FARM, HIGH KEIRS AND LOW KEIRS ACCESS ROAD, PATNA, EAST AYRSHIRE, KA6 7JJ



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5



Further action

These additional reports can give further detail on the risks identified:

- Mine entry interpretive report
- Mine entry plan and data sheets

For more information please see our **Further action reports** on page 10



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see **page 3** for further details on **Future development**.

Your reference: **428.3539.000015**
Our reference: **51002713731001**
Date: **1 November 2021**

Client name:
Colin Duncan

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

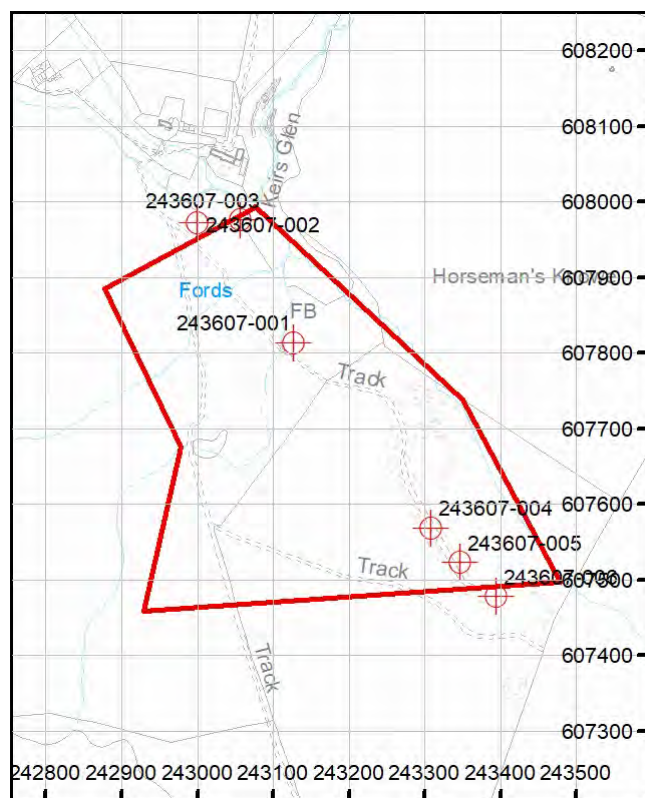
Enquiry boundary

Key

Approximate position of enquiry boundary shown



Disused mineshaft



We can confirm that the location is
on the coalfield



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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Your reference: **428.3539.000015**
Our reference: **51002713731001**
Date: **1 November 2021**

Client name:
Colin Duncan

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

Professional opinion



Mine entries

The enquiry boundary shows the approximate location of the disused mine entry/entries referred to in this report. Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage caused by disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.coal.gov.uk. Please note this Act is not valid where coal was worked or extracted by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wishes to examine the source plans from which the information has been taken, these are available to view, at our Coal Authority head office in Mansfield. To book an appointment please call **01623 637 225**. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission must be sought from the owner. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call **01623 646 333**.



Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email cmra@coal.gov.uk.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

The Coal Authority owns the copyright in this report and the information used to produce this report is protected by our database rights. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

However the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4 Mine entries

Within, or within 20 metres of, the boundary of the property there are 6 mine entries, the approximate positions of which are shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

There is no record of what steps, if any, have been taken to treat the mine entries.

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie for development sites and new build).

For further advice on how to order this additional information please visit www.groundstability.com.

Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.



Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.



Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.



Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.



Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.



Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Your reference: **428.3539.000015**
Our reference: **51002713731001**
Date: **1 November 2021**

Client name:
Colin Duncan

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings



Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:

<https://www2.groundstability.com/interpretive-report>

Mine entry plan and data sheets - give additional information on mine entries recorded on a piece of land. To order this report use the same boundary as the CON29M report and a member of our team will contact you to confirm the mine entries to include in this bespoke report.

For more information and to order this report please visit:

<https://www2.groundstability.com/plan-and-data-sheets>

APPENDIX B

Mine Abandonment Plans

4669 Patna Thick

Lethan Hill



NOTES
1. DRAFT COPY - FOR INFORMATION ONLY

LEGEND
 Site Boundary



Keirs Burn

Keirs Glen

High Keirs Cottage




45, LOCHSIDE VIEW
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SCLENTEUCH WIND FARM
FOR INFORMATION
GEOTECH PLAN
DRAWING 1

Scale 1:2,000 @ A1 Date NOVEMBER 2021

S1113 Keirs Mining



Geology 6" Plan 1900 to 1940



S.M. 120.9

Well

Water

Spy Knowe

Keira Pit Wood

Waterwise

Hatten Loop

S.M. 127.7

800

700

Lincolne

719

The Weel Pool

S.M. 122.3
Burnfoot

Lincolne Quay

Deep Res.

R O R

S.M. 123.2
Aires Castle

Aires

S.M. 144.04

Well

Horscote Knowe

Colliers Row

Old Coal Shaft

700

S.M. 125.5
Keira Hill

L L

Keira Hill Works

No. 120.0

800

800

Old Lincolne

800

APPENDIX C

Borehole Logs

NS 40 NW 12 1/2
 25 1/2

SECTION OF No. 8. Box - Keiss Farm.
 About 24 yards to the dip of No. 7.

3 1/2' Section S. 1/2' Section S. 1/2' Section S. 1/2'

D. 1/2
 BK II P 193

Surface Level 7513.5 O.D.

Communicated Oct. 14 24 by Dalmellington Iron Co. Ltd.

Date of boring or sinking 1892. Borer Robt. Hutchison.

One-inch Map 14 Six-inch Map (County and Half-Quarter Sheet) ayr. 46 IV. W. E.

Drawn

	Thickness.		Depth from Surface.	
	Fathoms.	feet. ins.	Fathoms.	feet. ins.
Surface mud.	15	-	2	3
DK. sharp sand	13	-	4	4
Grey mud.	12	-	6	4
Lt. sand mud.	29	6	11	3 6
Gravel.	16		11	5 0
Clay	10	6	13	3 6
Gravel.	8	6	15	0 0
Clay stoney	5	5	15	5 5
Gravel.	2	-	16	1 5
Grey lit	1	3	16	2 8
- blaes	7	4	17	4 0
- fks with sa ribs	5	11	18	3 11
- blaes	1	3	18	5 2
DK. fks.	1	9	19	- 11
BK. blaes.	1	0	19	1 11
Lt. sa. hd.	7	-	20	2 11
DK. blaes.	0	8	20	3 7
BK. sa.	4	8	21	2 3
- blaes	2	-	21	4 3
Coal.	3	6	22	1 9
Grey blaes.	3		22	2 0
Coal.	11		22	2 11
Grey fcl.	9		22	3 8
Coal.	3	-	23	- 8
Grey fky blaes.	1	6	23	2 2
Ep. hd. sa.	3	5	23	5 7
do. softer.	3	6	24	3 1
Grey fky blaes.	8		24	3 9

NS 40 NW / 26

(826) WI 5034 11.25 M & G LAL Q 26

SECTION OF No. 8. Box. Lino Farm.

Six-inch Map (County and Quarter Sheet) 46 NW. E

26/26 P

B. 18: Geology Survey

B. 18: Geology Survey

Ex. hd. sa.

Grey fks.
blacs.

BK.

Coal.

BK. fel.

Grey --

Coaly --

Grey fks.

st. fel.

Coaly fel.

Coal.

Grey fks.

Ex. hd. sa.

Grey fks with hd. ribs

Ex. h. d. sa.

B. 18: Geology Survey

B. 18: Geology Survey

Thickness			Depth from Surface		
Fathoms.	feet.	ins.	Fathoms.	feet.	ins.
10	1		26	1	10
8	7		27	4	5
	14		27	5	9
	4		28	-	1
	7		28	-	8
	2		28	-	10
2	10		28	3	8
1	11		28	5	7
	9		29	-	4
2	3		29	2	7
3	3		29	5	10
	8		30	-	6
	6		30	1	0
	14		30	2	7
5	-		31	1	9
4			31	2	1

B. 18: Geology Survey

B. 18: Geology Survey

B. 18: Geology Survey

NS40NW/30

(2254) W17385-28 2000 10.23 M & G Ltd. 4.29

NS40NW/30
2
6/30/1

SECTION OF No. 9 Bone Hill Farm.
About 5 yds from the dyke at the
me a doc.

Surface Level ^{21.16} 525.4 O.D.
BR. 3P.212

Communicated Oct. 1924 by Dalmeilington Iron Coy. Ltd.

Date of boring or sinking 1893 Borer Robt. Hutchinson

One-inch Map 14 Six-inch Map (County and Half-Quarter Sheet) 46 N.W.E

Drawn:

	Thickness.		Depth from Surface.	
	Fathoms.	feet. ins.	Fathoms.	feet. ins.
Surface + stoney clay.	18	-	3	-
Clay + gravel.	6	-	4	-
Grey stoney clay.	12	-	6	-
Gravel.	2	-	6	2
Grey stoney clay.	6	-	4	2
Gravel.	1	6	4	3
Grey stoney clay.	14	6	10	5
Clay + gravel.	5	-	10	5
Grey stoney clay.	4	-	11	3
Clay + gravel.	4	1	12	1
Lt. grey fly blas	1	6	12	2
Grey fcl. coaly.			12	3
- fcl.	1	4	12	4
Sa. with soft flis	3	10	13	2
Lt. sa. ex. hd.	1	8	13	3
do	1	-	13	4
do with dk. flis	2	4	14	1
Grey blas		4	14	1
- list.	6	5	15	2
- limey blas	1	-	15	3
- list.	10	-	17	1
- limey blas	1	10	17	2
- list. soft.	3	10	18	-
limey kingle.	3	2	18	3
lt. sa.	4	6	19	2
Grey fks.	6	11	20	3
Ex. hd. sa	1	6	20	4
Grey fks.	5	8	21	4

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SECTION OF No. 2. Bone Grimmer

In bottom of old Limestone Quarry near

March Dyke of Heiss

316' Geologica Survey

Surface Level O.D.

Communicated Oct. 1924 by Dalmeington Iron Coy. Ltd.

Date of boring or sinking 1909. Borer

One-inch Map 14. Six-inch Map (County and Half-Quarter Sheet) Apr. 46 S.W.E

Down

	Thickness.			Depth from Surface.		
	Fathoms.	feet.	ins.	Fathoms.	feet.	ins.
Surface		3	-		3	-
<u>List</u>		4	4		1	1 4
Dk. grey fks.		1	2		1	2 6
La. (very hard)			6		1	3 0
Lt. sa.		4	-		2	1 0
Lt. grey fks.		5	-		3	- 0
Dk. grey fks.		1	-		3	1 -
Lt. sa.		1	3		3	2 3
Dk. grey fks.		11	1		5	1 4
Grey fks.		9	8		6	5 0
Dk. grey fks.		11	6		8	5 6
La. + fks.		2	3		9	- 9
- +fk. plies		6	9		10	1 6
Grey fks.		5	-		11	- 6
Lt. sa.		5	2		11	5 8
- grey fks.		3	6		12	3 2
Dk. -		4	6		13	1 8
Grey fks.		4	4		14	3 3
<u>List</u>		26	7		19	0 0
Hd. sa.		1	9		19	1 9
Lt. -		4	4		20	3 1
Dk. fks.		1	6		20	4 4
<u>Coal</u>		2	-		21	- 4
Grey fks.		3	-		21	3 4
<u>Coal</u>		2	2		21	5 9
<u>Fcl.</u>		2	6		22	2 3
<u>Coal</u>		1	8		22	3 11
<u>Fcl.</u>			5		22	4 4

APPENDIX D

Keirs Hill Wind Farm Geotechnical and Mining Desk Study Report

KEIRS HILL WIND FARM GEOTECHNICAL AND MINING DESK STUDY REPORT

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Date: April 2013

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1.0 INTRODUCTION

At the instruction of RES Ltd. an assessment of geotechnical issues, past mining and potential hazards associated with mining has been carried out at the site of a proposed wind farm at Keirs Hill, near Patna in Ayrshire. The current proposals are for 17 turbines.

The brief for this report was to undertake a walk-over survey of the site to identify features associated with mining and quarrying. The study was also to identify other significant geotechnical factors such as slope stability, likely founding conditions, suitable areas for borrow pits etc.

The area lies partially within the Ayrshire Coalfield and there are a number of old mine shafts, adits and quarries in and around the site which indicate past working of coal and other minerals.

This report details the results of the geotechnical and mining desk study and site walk-over. It draws together all of the available information and gives an indication of the areas of potential hazard associated with geotechnical issues and past mining.

Part of the site has been the subject of a previous study for a potential windfarm development. Raeburn Drilling and Geotechnical Ltd undertook a geoenvironmental risk assessment for Lambdoughty Wind Farm in 2010, which incorporated the central and western area of the site. This report was made available during the current study.

2.0 SEARCHES

A number of searches were carried out as part of the study. Published information on geology, mining and mineral occurrences was obtained from the British Geological Survey, Doon Valley Museum and the Carnegie Library, Ayr. The Royal Commission on the Ancient and Historical Monuments of Scotland provided copies of historical air photos for research purposes. Landmark Information Group provided extracts of archive Ordnance Survey plans. The Coal Authority carried out a search of mine abandonment plans and provided copies of a number of relevant plans. Landmark Surveys provided details on groundwater abstraction, contamination incidents and flooding. The Meteorological Office provided general climactic data.

2.1 Local Reference Sources

Several local institutions were visited to obtain information on mining in the area.

The Doon Valley Museum in Dalmellington provided several publications by local authors together with copies of manuscripts and short articles written by former miners or local residents with an interest in local history.

The Carnegie Library in Ayr provided access to several publications on local mining and industrial heritage.

The Royal Commission on the Ancient and Historical Monuments of Scotland provided copies of historical air photos for research purposes. Copies of photos from 1946 and 1988 of the site were obtained.

2.2 British Geological Survey

A search of the British Geological Survey Geoscience Database provided details on mineral occurrences, borehole records, site investigation reports, active mines and quarries and opencast coal prospecting sites.

The British Geological Survey provided the following information:-

- A copy of the geological survey sheet number 14E Cumnock, at a scale of 1:50,000;
- A copy of the 1:10,560 geological sheets, NZ09SE and NZ19SW;
- Historical information on earthquakes in the region; and
- A copy of Memoirs of the Geological Survey Scotland – ‘The Geology of Central Ayrshire’ (1947).

2.3 Landmark Surveys

Landmark Surveys Envirocheck on-line reporting service provided the following information:-

- Environment Agency data on groundwater vulnerability and flood risk;
- Local authority landfill data;

- Sensitive land use, industrial land use and hazardous substances;
- BGS data on geological hazards;
- Extracts of the archive Ordnance Survey plans for the site at a scale of 1:10,560 (6 inches to 1 mile) and 1 to 10,000.

The geo-environmental data is discussed in detail in Section 4.0. Extracts of the archive OS plans are shown in Appendix A.

2.4 Coal Authority

The Coal Authority, Mining Records in Mansfield provided information on past mining. A search of their records only provided two plans relating mining in the eastern part of the site. Copies of these plans were obtained.

The results of the mining assessment are discussed in Section 5.0. The Coal Authority letter is copied in Appendix B.

2.5 Meteorological Office

Information on general climactic data was obtained from the Meteorological Office website. The data provided included monthly average temperature figures and soil temperature at 30cms depth. Data on ground temperatures at 1 metre depth was not available for this area.

A copy of the data obtained is shown in Appendix D.

3.0 EXISTING SITE CONDITIONS

3.1 Location

The site lies approximately 2 kilometres to the south of Patna, East Ayrshire. The location of the site is shown on Figure 1.

The site covers approximately 5.5 square kilometres. It is irregular in shape and measures a maximum of 3.5 kilometres from east to west and 2.9 kilometres from north to south.

The site consists of rough grazing agricultural land to the east and coniferous forest to the west.

There are no settlements within the site boundaries but High Keirs and Low Keirs (formerly Burnfoot) farmsteads are close to the eastern boundary.

The current turbine locations are mainly within the forested area to the west, with a small number on the grazing land to the south. The current locations are shown on Figure 2.

3.2 Topography

The site is centred on Keirs Hill which lies in the west central part of the site and rises to an elevation of 306 metres above Ordnance Datum (AOD). The site generally slopes to the north-east, toward the Doon River which flows in a broad valley a short distance to the east of the site. Close to the valley the slopes are quite steep. The area of forestry is generally rolling upland terrain with some deeply incised stream valleys.

3.3 Drainage

There are several streams which rise on the site, some of which have carved deeply incised valleys. Lockhead Burn and Meikelholm Burn flow north-westward from the site. The former flows into Lock Spallander Reservoir and the latter flows into the River Doon.

Red Burn flows close to the southern boundary and there are several small tributaries flowing from the site into this stream.

Keirs Burn flows north-eastward into the River Doon and drains the area close to the eastern boundary. There are several small streams which rise in this area and coalesce to form Keirs Burn. The stream flows in a deeply incised valley.

3.4 Walk-over Survey

A walk-over survey was carried out on 21st March 2013. The walk-over was undertaken to identify mining and geotechnical features which may have a bearing on the stability of the development.

The particular features included:-

- Mine entries (shafts and adits)
- Mine spoil tips
- Mining subsidence features and collapses
- Quarries
- Slope instability
- General ground conditions

The weather during the walk-over was sunny but very cold and there was a light covering of snow on the higher ground.

Main features identified are tabulated in Appendix E and shown on Figure 5.

4.0 GEOTECHNICAL AND ENVIRONMENTAL ASSESSMENT

4.1 Geology

The British Geological Survey 1:10,560 scale sheet shows the site to be underlain by Lower Carboniferous strata of Calciferous Sandstone Measure in the northern and central part of the site, Lower Limestone strata and Upper Carboniferous, Limestone Coal Group in the eastern section of the site and Devonian Old Red Sandstone in the southern and western parts of the site. In addition to the sedimentary strata there are late Carboniferous/Permian igneous rocks in the form of vent agglomerates in the west central part of the site. Vent agglomerates are the product of volcanic activity and form the infill to the former volcanic vents. There are numerous exposures of rock around the site, particularly in the deeply incised stream valleys.

The youngest of the sedimentary strata is present in the eastern part of the site. The Upper Carboniferous, Upper Limestone Group consists of interbedded limestones, sandstones and shales. Several of the limestones units have been exploited extensively in the area, including the Index and Keirs Limestone units.

The Upper Carboniferous, Limestone Coal Group consists of interbedded limestones, and sandstones with some coal seams. The Patna Coal crops at two locations close to the eastern boundary. The crops are separated by geological faults. The Patna Coal is a composite seam comprising a number of leaves of coal separated by shale bands. According to the BGS plan the total thickness of coal ranges from around 3m to 5.5m. There is some alteration of the coal due to the proximity to the volcanic vents and igneous dykes, and this has resulted in 'burnt' coal which reduces the quality of the coal. This seam has been worked extensively in the area.

The Lower Carboniferous, Lower Limestone Group strata outcrop in a narrow band in the eastern part of the site and consist of interbedded limestones, mudstones and sandstones. Several important bands of limestone, including the Patna and Doon limestones are present in the eastern part of the site and some have been exploited by surface quarrying.

The Lower Carboniferous, Calciferous Sandstone measures outcrop beneath the north and central parts of the site and consist of interbedded limestones, mudstones, marls and sandstones. In stream sections around the northern boundary intrusive igneous rocks in the form of dykes are present. The dykes are associated with the volcanic vent deposits.

The Devonian Old Red Sandstone cropping in the western and southern parts of the site consists of calcareous sandstones and marls with conglomerates.

Superficial deposits of Glacial Till (Boulder Clay), are shown underlying most of the site. Extensive areas of peat are shown to be present in the southern part of the site. The thickness of the Till is shown at only one location and is indicated as 7.6m thick but exposures of rock at various locations around the site suggests that the till is thin or absent. In the southern part of the site there is a large area of peat shown overlying the Till. The thickness is indicated as at least 1.8m.

The geological structure of the site consists of a general north-easterly dip of the strata at a relatively shallow angle. There are a series of geological faults running in a north-west to south-east in the eastern part of the site. The faults generally down-throw to the east.

Extracts of the geological sheet and legend are shown in Figures 3 and 4.

4.2 Environmental Data

The Envirocheck report provided the geo-environmental data. Only relevant data and data not covered by other, more detailed searches are included in the sections below.

4.2.1 Groundwater

- Groundwater vulnerability – moderate to highly permeable aquifer
- Soil Classification - soils of low leaching potential
- Drift deposits – low permeability
- Bedrock aquifer designation – secondary aquifer A and B
- Superficial aquifer designation – secondary aquifer A
- River flood data (River Doon Valley) – flood plain depth 0 – 2m

4.2.2 BGS Estimated Soil Chemistry

- Arsenic - 0 to 25mg/kg
- Cadmium - <1.8mg/kg
- Chromium - 60 to 180mg/kg
- Lead - <150mg/kg
- Nickel – 15 to 30mg/kg

4.2.3 BGS Recorded Mineral Sites

- Keirs Lime Works – opencast, ceased
- Burnfoot – opencast, ceased
- Keirs Coal Pit – underground, ceased
- Keirs Hill Pit – underground, ceased

4.2.4 Ground Stability Hazards

- Potential for collapsible ground – no hazard to low
- Potential for compressible ground – no hazard to high
- Potential for ground dissolution – no hazard to very low
- Potential for landslides – no hazard to low
- Potential for running sand – no hazard to low
- Potential for shrinking or swelling clay – no hazard to very low
- Radon potential – stage 1 radon protection measures

4.2.5 Environmentally Sensitive Areas

Eastern section of the site, outside of the forested area, is defined as the Western Southern Uplands Environmentally Sensitive Area.

4.3 Meteorological Data

The Meteorological Office website provided data on average mean annual temperature and also mean annual soil temperature at 30cms depth. A full site specific search was outside the scope of this report.

The meteorological data is contained in Appendix D.

4.4 Seismicity

A search of the Geoscience Data Index for historical earthquake records from data between 1970 and the present and for events of magnitude 1 and above was undertaken and the results are shown on the map in Appendix F.

The data shows that there was one event of magnitude 2.1 on 20 May 1978, approximately 6km to the east of the site.

4.5 Groundwater and Minewater

A detailed survey of watercourses and drainage features was outside the scope of this report but where drainage features were encountered they were noted. Many of the streams rise in the forestry area where access is restricted by the dense tree cover.

There were a number of streams rising on the site but none of those encountered showed evidence of minewater drainage. Most of the streams rise from areas underlain by non-coal bearing strata, such as Old Red Sandstone and Lower Carboniferous sandstones.

There was limited evidence of groundwater abstraction, including a man-hole and below ground storage tank a short distance to the south of High Keirs. Within the forestry area to the south there was a man-made excavation that appeared to be an attenuation lagoon.

4.6 Slope Stability

There were no slope instability features identified during the walk-over and none reported in any of the data accessed for the site. Some of the streams have formed deep, steep sided valleys but no evidence of significant slope stability issues were seen.

Peat stability is being addressed by others.

5.0 MINING ASSESSMENT

5.1 General

The assessment of the mining situation beneath the site has been undertaken by using geological data, archive Ordnance Survey plans, abandoned mine plans and results of the walk-over survey.

The assessment indicates that there has been limited past mining of coal, as well as some limestone quarrying, in and around the eastern part of the site. The site appears to be underlain by limited workings on the Patna Coal at crop or possibly at shallow depth which could affect the ground stability. There are a small number of mine shafts within and just outside the site boundary, and these are unlikely to have been infilled or capped to a standard which would allow construction to be carried out over or near them.

There are no indications of extensive underground mining.

5.2 Geological Data

The main coal bearing strata is the Upper Carboniferous, Limestone Coal Group. The BGS plan shows these strata to crop in a narrow band close to the eastern boundary of the site. Only one coal seam is shown underlying the site, the Patna Coal. The strata are significantly disturbed by faulting and annotations on the plan suggest that the coal has been 'burnt' probably as a result of the nearby igneous intrusions.

There are three areas of the site where the Patna Coal crops. All are within the eastern part of the site. The first section is a short distance to the west of High Keirs. A second lies to the south of High Keirs and a third lies to the north of Low Keirs (formerly Burnfoot). The areas are divided by geological faults. Within two of these faulted blocks there is evidence of mining. The BGS plan shows two mine shafts within the site boundary a short distance to the south of High Keirs. There are also two shafts and a mine adit just outside the site boundary to the north of High Keirs.

An old shaft is also shown close to the boundary in the south of the site but this does not appear to be within the coal bearing strata.

5.3 Archive Ordnance Survey Plans

Extracts of the archive Ordnance Survey plans from 1860 and 1990 give snapshots of the historical development of the site. Copies of these plans are shown in Appendix A.

The First Edition plan of 1860 shows the site to be unforested at this time. Near the current High Keirs the ruins of Keirs Castle are shown. In the eastern part of the site, to the south of High Keirs there is industrial development including Keirs Lime Works and also some indication of coal mining in the form of an old coal shaft and a residential development called Colliers Row. In the valley between High Keirs and Low Keirs a limestone quarry is shown. In the southern part of the site an old coal pit is shown close to the site boundary.

The edition of 1897 shows fewer features of interest. Keirs Lime Works is now shown to be disused. Colliers Row is no longer present and the old shaft nearby is no longer shown. The old shaft in the south is still shown.

The editions of 1910-11 and 1979 show no new features.

The edition of 1990 shows the western part of the site to be forested.

5.4 Mine Abandonment Plan Search

The abandoned mine workings search results (shown in Appendix B) showed that there were only two plans available for the site and surrounding area and copies of these have been obtained from the Coal Authority.

The plans obtained were:-

- 4669 Drumgrange No. 10 Pit workings
- S1113 Survey plan of Keirs area

It should be noted that it only became a requirement to lodge plans with the inspectorate from 1872, so earlier workings could exist without any records being available.

5.4.1 Plan 4669

This plan shows underground workings on the Patna Coal, The workings are adjacent to but outside the eastern site boundary. Two sets of workings are shown corresponding to top and bottom leaves of the main seam. A section of the seam shows the top coal to be 0.95m thick and the bottom coal 0.9m thick. The leaves are separated by a band of fireclay 0.33m thick.

The workings were carried out from No. 10 Pit which is to the north of Waterside. The workings were undertaken between 1892 and 1904. The shaft is shown as being 120 metres deep. The dip of the seam is shown as 1 in 6 to the south-east.

The workings extend to within around 30m of the River Doon, although a few prospect ends were driven south below the river.

5.4.2 Plan S1113

This plan appears to be a survey of the surface features around Keirs. It is dated 1847. No underground workings are shown but several shafts are shown, along with the Keirs Lime Works.

5.5 Mining Features from Walk-Over Survey

Many of the features identified during the desk study were observed on site during the walk-over.

In the southern part of the site the old shaft shown on the OS plans is visible as a water-filled hollow. An exposure of rock in this area consists of coarse sandstone and

conglomerate and there appears to be several small man-made excavations, possible quarries for rock.

Kiers Lime Works quarry forms a large area of man-made excavations and spoil heaps in the south-eastern part of the site.

Just to the south of High Keirs there is a line of man-made excavations and spoil heaps. These may be small quarries for limestone as the Index Limestone is shown to crop close to this location on the BGS plan. This area is also the location of former Colliers houses.

To the south-west of High Keirs there is a circular hollow which could be one of the mineshafts shown on BGS plan.

A short distance to the west of High Keirs there is another line of man-made excavations and spoil heaps which appear to correspond with the crop of the Patna Coal as shown on the BGS plan.

6.0 POTENTIAL GEOTECHNICAL AND MINING HAZARDS

6.1 General

There appear to be few geotechnical issues that could pose hazards to the current proposed development.

The presence of old mine workings and quarries in the eastern part of the site do not present a hazard to the current turbine layout although it is possible that that main site access road may cross this area.

In order to quantify the hazards there are a number of aspects which need to be considered:-

- the possibility of ground movement due to progressive collapse of shallow mine workings, leading to the formation of crown holes and subsidence features;
- the possibility of sudden collapse of partially backfilled or covered shafts and adits; and
- the possibility of poor ground bearing capacity due to backfilled excavations or loosely compacted mine or quarry spoil.

6.2 Effects of Shallow Mine Workings and Quarrying

Generally the extent to which underground mining can affect surface development is a function of the following factors:-

- age of the workings,
- the depth below surface of the workings,
- the height of the worked seam (or in some cases the height of roadways)
- the nature of the rock strata overlying the workings (strength, jointing etc),
- the nature of the rock in the roof and floor of the workings,
- presence of geological faults or other discontinuities,
- groundwater conditions,
- method of mining (e.g. longwall, pillar and stall etc.),
- extent of back-stowing of waste material in the workings,
- backfilling of workings, and
- the extraction ratio.

Large scale surface subsidence is usually associated with the more modern 'longwall' methods of mining, where the coal is completely removed over large areas and the resultant void closes almost completely behind the working face. In these cases surface subsidence occurs soon after mining passes underneath. There may be some residual movements occurring up to several years after mining has been completed, but these are generally small. The effects of this type of mining can extend from great depths.

Where the coal has been selectively removed and some of the coal has been left insitu to support the roof, (such as 'pillar and stall' or 'bord and pillar' mining etc) the ground movements are more difficult to predict. Progressive collapse of the roof rock to the mine workings, floor heave, pillar crushing and spalling, the action of groundwater and

weathering are time dependant factors which could lead to unpredictable surface movements. Construction processes including vibration and ground loading may accelerate the progressive collapse, particularly in areas of marginal stability. The strata overlying the workings can continue to collapse for many years after the working of coal has ceased. Generally as the roof strata collapse progresses, the resultant void migrates upward. However, as collapse occurs so the bulking effect of the collapsed material begins to reduce the size of the void. This eventually leads to choking off of the void and formation of a stable situation as the collapsed rock effectively supports the strata above. In some cases collapse may migrate to a stable strata layer at which point it may also stop. This is known as arching.

There are many approximations relating the maximum height to which voids may migrate above workings. The majority of published sources and case history data suggest that the maximum height of void migration to be equivalent to 10 times the workings height. For example, if a coal seam is mined at 2 metres height, the maximum height of void migration would be expected to be 20 metres. However, this is dependant on the nature of the roof rock in terms of its strength, weathering, fracture spacing and orientation etc. In cases of strong roof strata the formation of a stable arch may occur at heights less than 10 times above the workings. Conversely there are cases recorded where void migration has occurred up to 20 times working height, mainly in weak mudstone strata.

6.3 Extent of Shallow Mine Workings

Only one coal seam occurs beneath the site, the Patna Seam. There are no available mine abandonment plans to indicate any mining having taken place beneath the site. However, the presence of several 'old shafts' and man-made excavations near the crop of the coal seam in one area could indicate that there was some underground mining in the eastern part of the site. A second area of the site where the seam crops does not show any indication of having been worked but it remains a possibility and therefore a hazard zone has been defined around it. A third area, close to the River Doon, where underground mining of the Patna Coal is known to have been carried out, is defined as a hazard zone as there is the possibility that mining, pre-dating the charted workings, may have occurred. There is some evidence to support this such as two shafts and an adit to the north-west of Low Keirs, close to the site boundary.

For the assessment of the mining hazard zones it has been assumed that the Patna Coal beneath the site has been mined at 2.2 working height and the seam dips at 20 degrees to the east.

Based on the above criteria a plan showing the potential mining hazard zones has been compiled and this is shown in Figure 6. The criteria for assigning the zones are shown in the table below. The criteria have been assigned on either the proximity to known mineshafts, quarries or on the likely extent and depth of underground workings, or on a combination of these.

Hazard Zone	Assigned Risk	Criteria		Mitigation Measures
		Shafts/adits/quarries	Underground or crop workings	
1	High	Within 20 metres of expected location of shaft, adit, or highwall of deep quarry	High probability of crop or underground workings within 10 times workings height of surface	Proposed development should be located outside the hazard zone. If unavoidable a detailed ground investigation and stabilisation works may be required.
2	Moderate	No suspected shafts, adits	High probability of underground workings between 10 and 20 times workings height of surface	If proposed development lies in this zone, carry out ground investigation to confirm the level of risk.
		Presence of shallow quarries	Moderate probability of crop or underground workings within 10 times workings height of surface	
3	Low	No suspected shafts, adits or quarries	Low probability of crop or underground workings within 10 times workings height of surface	Undertake basic checks for unusual features during construction (soft/loose/broken ground, presence of made ground, increased topsoil/subsoil thicknesses, unusual groundwater flows etc)
		Presence of made ground associated with quarrying		

The level of risk has been based on the available data and engineering judgement. Some latitude has been given to the boundaries to the hazard zones to account for translation of data from the plans and possible inaccuracies in the plans. Never-the-less, it is possible that the hazard zones or classifications could be different to those shown. Also, while it is likely that most of the mining hazards have been identified, there remains the possibility that some have not been located during this study.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The geotechnical assessment has indicated that there appear to be few hazards to the proposed windfarm development. The proposed site of the turbine bases is not near steep and potentially unstable slopes. The near surface underlying deposits are likely to consist of peat, Glacial Till or rock strata.

The presence of large areas of peat in the proposed turbine areas could cause problems for turbine foundation excavation stability and also for access road construction. Groundwater issues into excavations from peat deposits could require dewatering controls.

The depth of Glacial Till (Boulder Clay) is likely to be extremely variable. Generally till can be expected to consist of overconsolidated gravelly clays. Sufficient bearing capacity can generally be achieved in these materials but variations in the nature and shear strength of these materials across the turbine base could lead to differential settlement.

The mining assessment has indicated that some areas of the eastern part of the site may be undermined at shallow depths by workings on the Patna Coal, together with limestone quarrying, and this could have an adverse effect on any part of the proposed windfarm development within this area.

The significant mining related hazards to the proposed development are in the form of old shafts, surface subsidence from time dependant collapse of shallow mine workings, quarrying and spoil heaps (made ground).

The highest risk hazard zones are around the parts of the site where there is clear evidence of mining and quarrying in the form of man-made excavations, spoil heaps and shafts.

On the basis of the available information hazard zones have been defined and these are shown on Figure 6.

At this stage the only likely part of the proposed development which may be affected by mining and quarrying constraints is the proposed site access road.

7.2 Recommendations

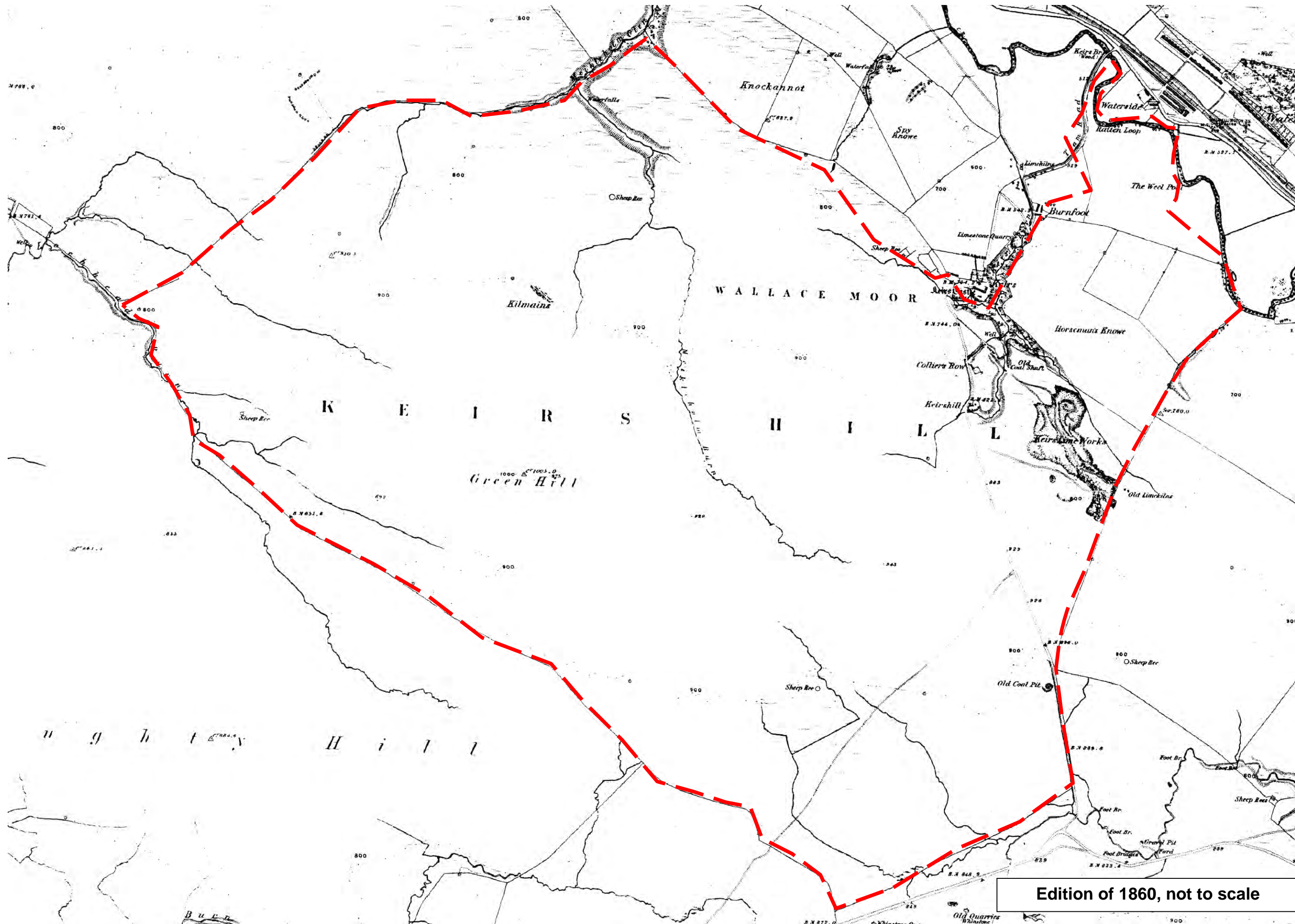
It may be possible to provide a layout for the access road to avoid siting them within the mining hazard zones. If this cannot be done then will be necessary to undertake ground investigation works to confirm the mining situation.

The ground investigation could consist of machine excavated trial pits to investigate near surface deposits and rotary open-hole drilling followed by down-hole geologging (gamma/density) to investigate deeper strata and mineworkings.

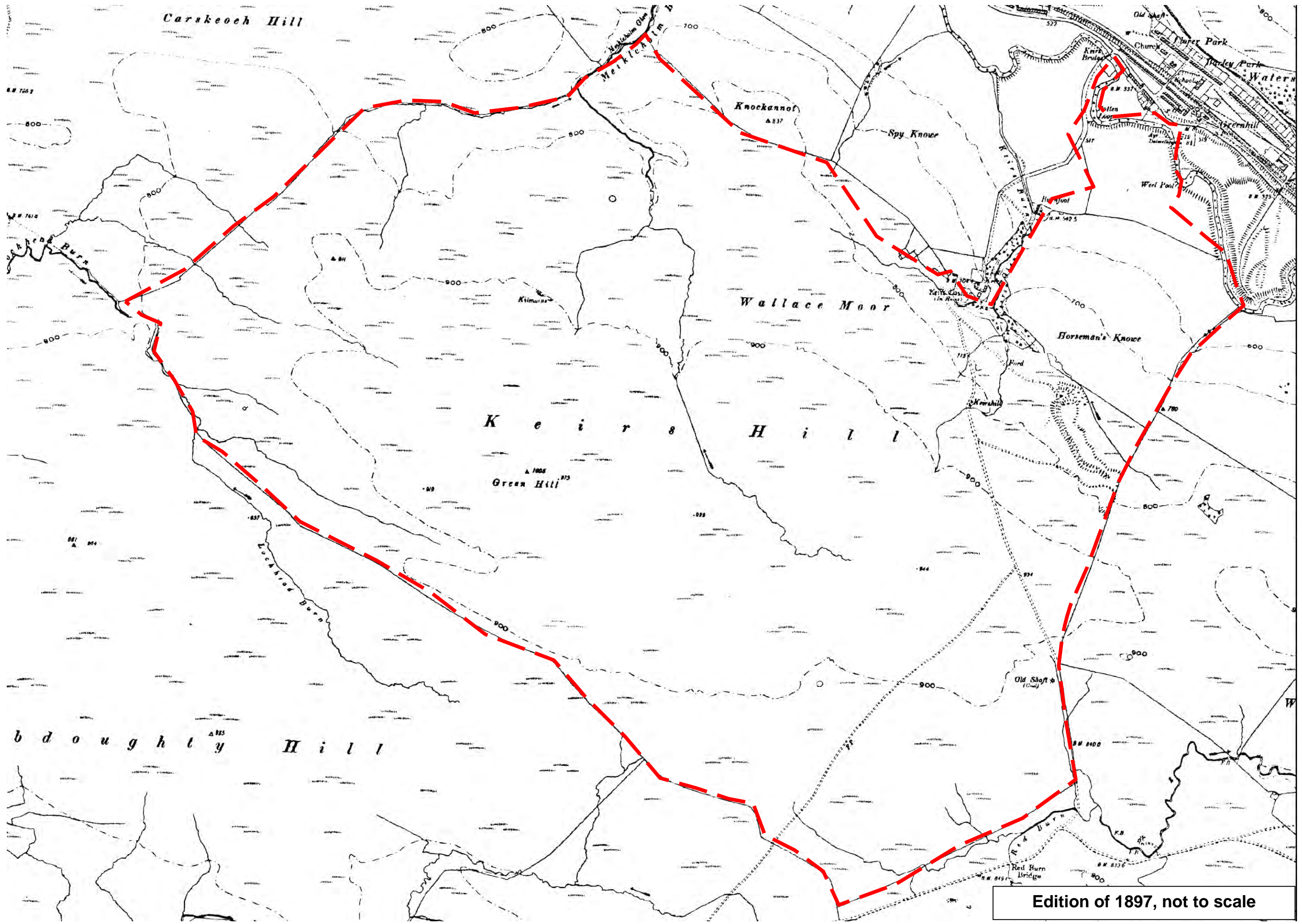
It would be prudent to assess the founding conditions at each turbine base such as material at founding level, strength and variations in strength, presence of soft/weak layers, excavation side-slope stability, groundwater levels etc.

Investigations could be undertaken along the line of the access road to determine road construction requirements, and at any other infrastructure locations (sub-stations etc). Suitable locations for borrow pits and the material properties of the fill arising could also be assessed by the investigation

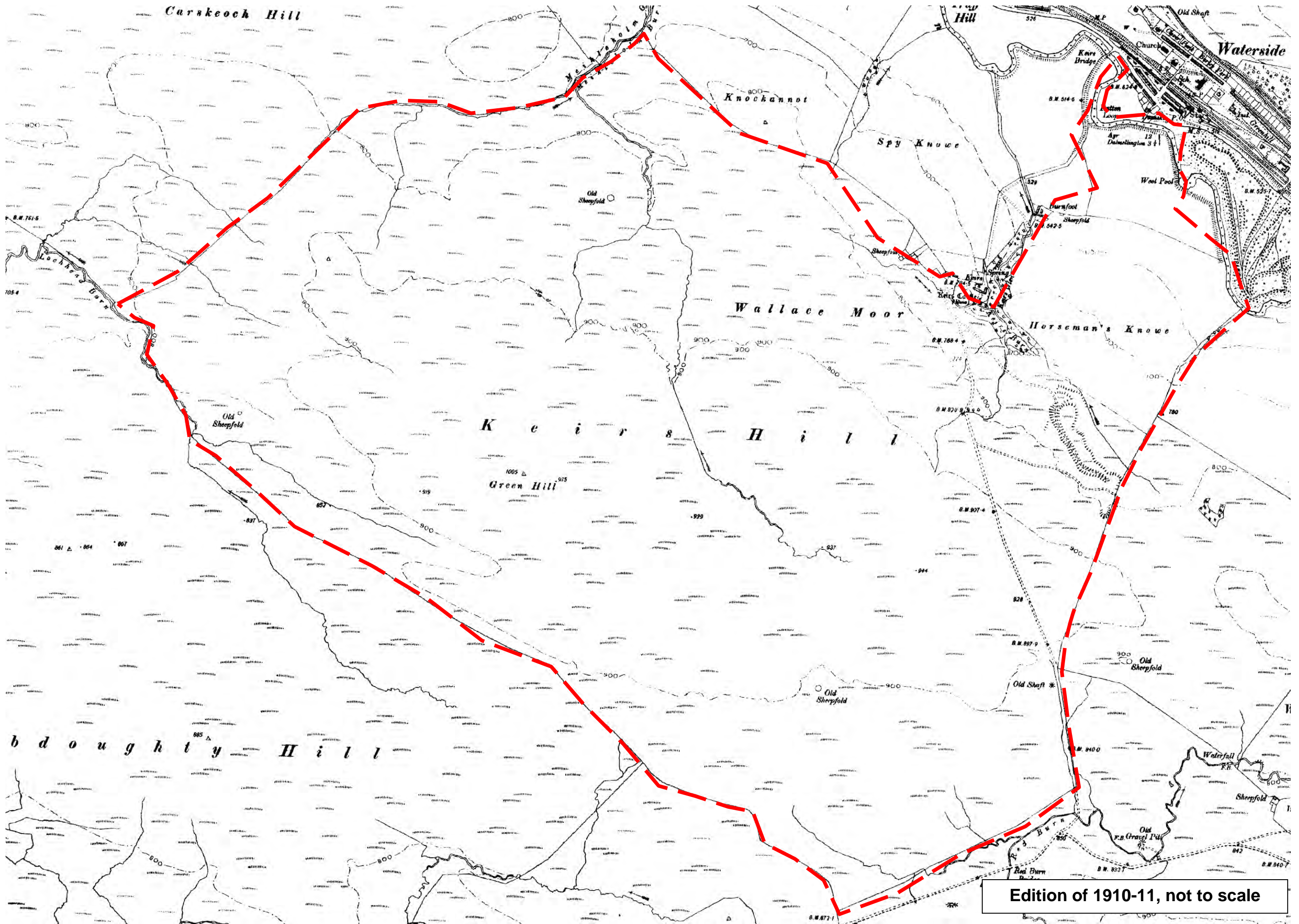
APPENDIX A
Extracts of Archive Ordnance Survey Plans



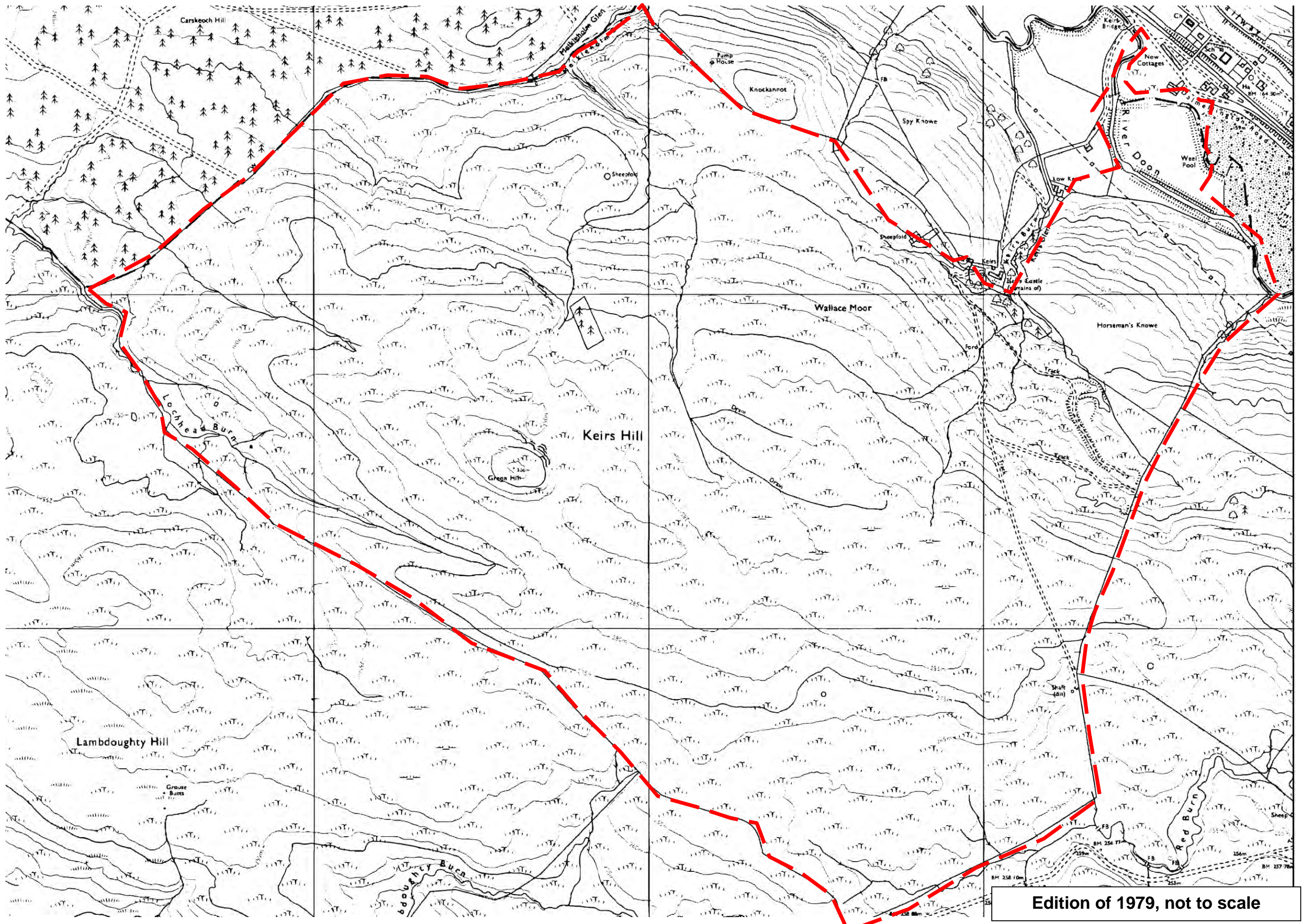
Edition of 1860, not to scale



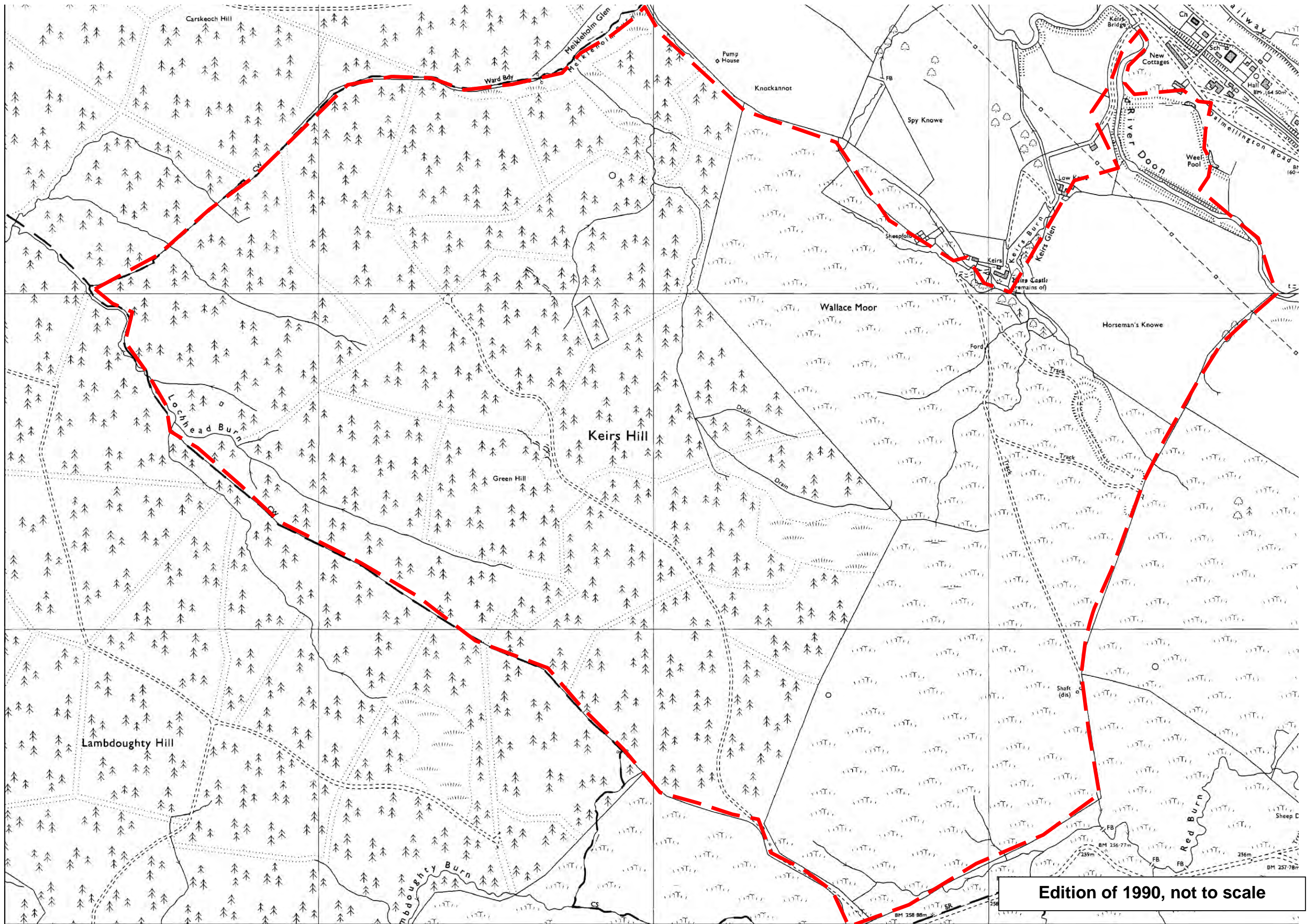
Edition of 1897, not to scale



Edition of 1910-11, not to scale



Edition of 1979, not to scale



Edition of 1990, not to scale

APPENDIX B

Coal Authority Correspondence



The Coal
Authority



INVESTOR IN PEOPLE

Property Search Office
200 Lichfield Lane
Berry Hill
Mansfield
Nottinghamshire
NG18 4RG
DX: 716176 Mansfield 5

Tel: 0845 7626 848
Fax: 01623 637 338
Email: groundstability@coal.gov.uk
Web: www.groundstability.com

Date: 5th March 2013

Our Reference: CA29/12/45/3/1/182

Dear Nick

Re:- Site at Keirs Hill, Patna, Ayrshire.

In response to your email dated 28th February 2013, the Coal Authority's Mining Records Office holds all the coal abandonment plans which have been deposited, via the Mines Inspectorate, since the passing of the relevant Act of Parliament in 1872. These plans, which number in excess of 120,000 in total, depict not only the extents of the coaling operation but also the locations of the mine entries associated therewith.

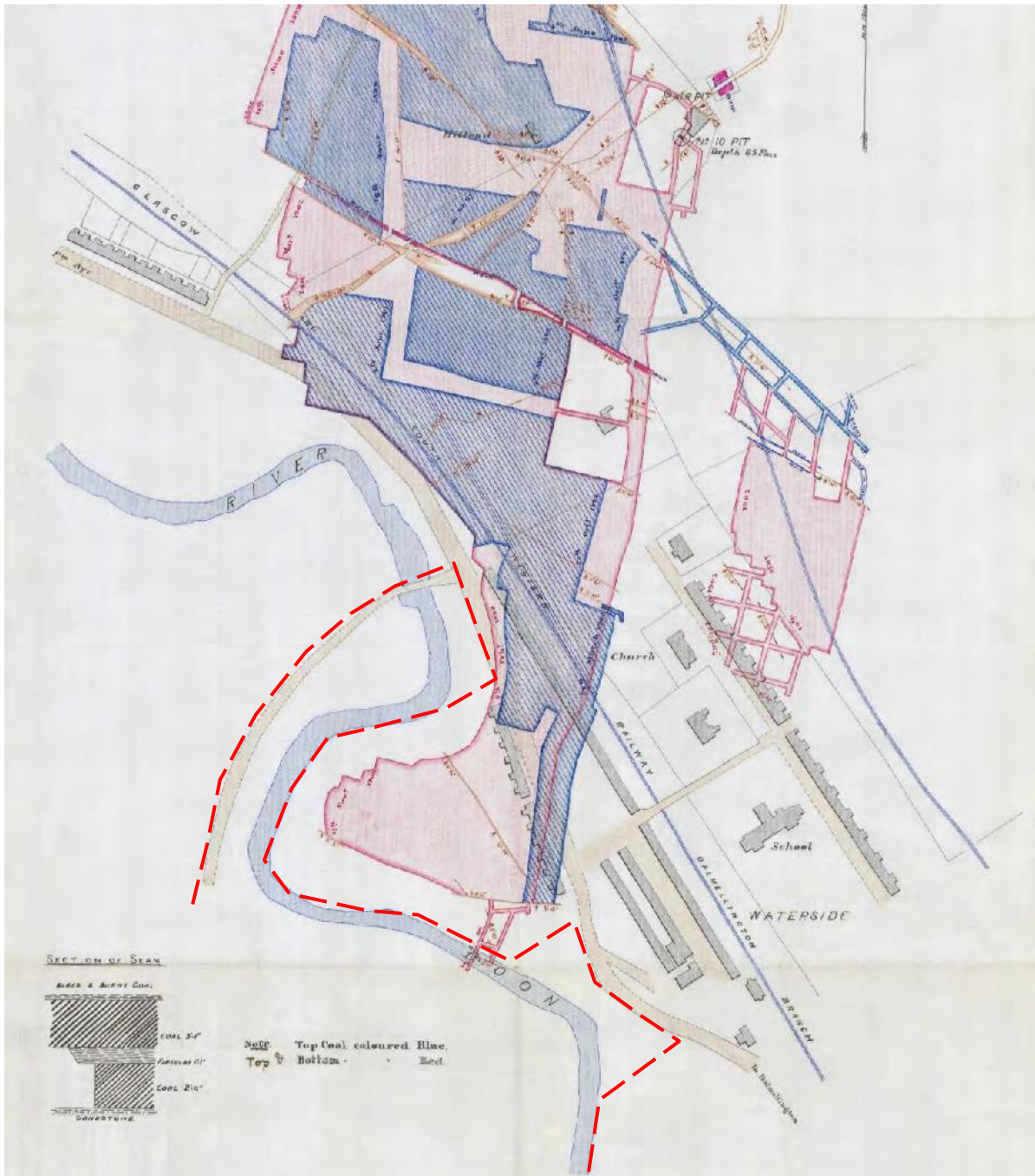
Examination of the above collection reveals we hold plans depicting workings in 1 seam of coal, the extents of which are shown of the following abandonment plans:

PATNA - 4669

Enclosed is a quotation for the provision of a copy of the above plans, which if required will be despatched on receipt of the appropriate payment. Payments can be made by credit/debit card by contacting our customer helpline on 0845 7626 848, the cost of the plans can be added to your monthly invoice account if applicable. Please provide the quotation reference number when making or confirming payment.

Yours sincerely

Mining Information Customer Service Team



SECTION ON W. SEAM

BASE & BENT COAL



Top Coal coloured Blue,
Bottom - Red.

PLAN SHEWING THE PATNA COAL WORKINGS IN N° 10 PIT
DRUMCRANGE SITUATED IN THE PARISH OF DALMELLINGTON COUNTY OF AYR
BELONGING TO THE DALMELLINGTON IRON COY L^{TD}

- ABANDONED 8TH JULY 1904. -

- Scale 1/2 inch = 1 Chain -

Dalmellington Iron Works
19th September 1904.

I certify the accuracy of this Plan
It being an accurate Plan of the Mine
Alex^r Gillespie.

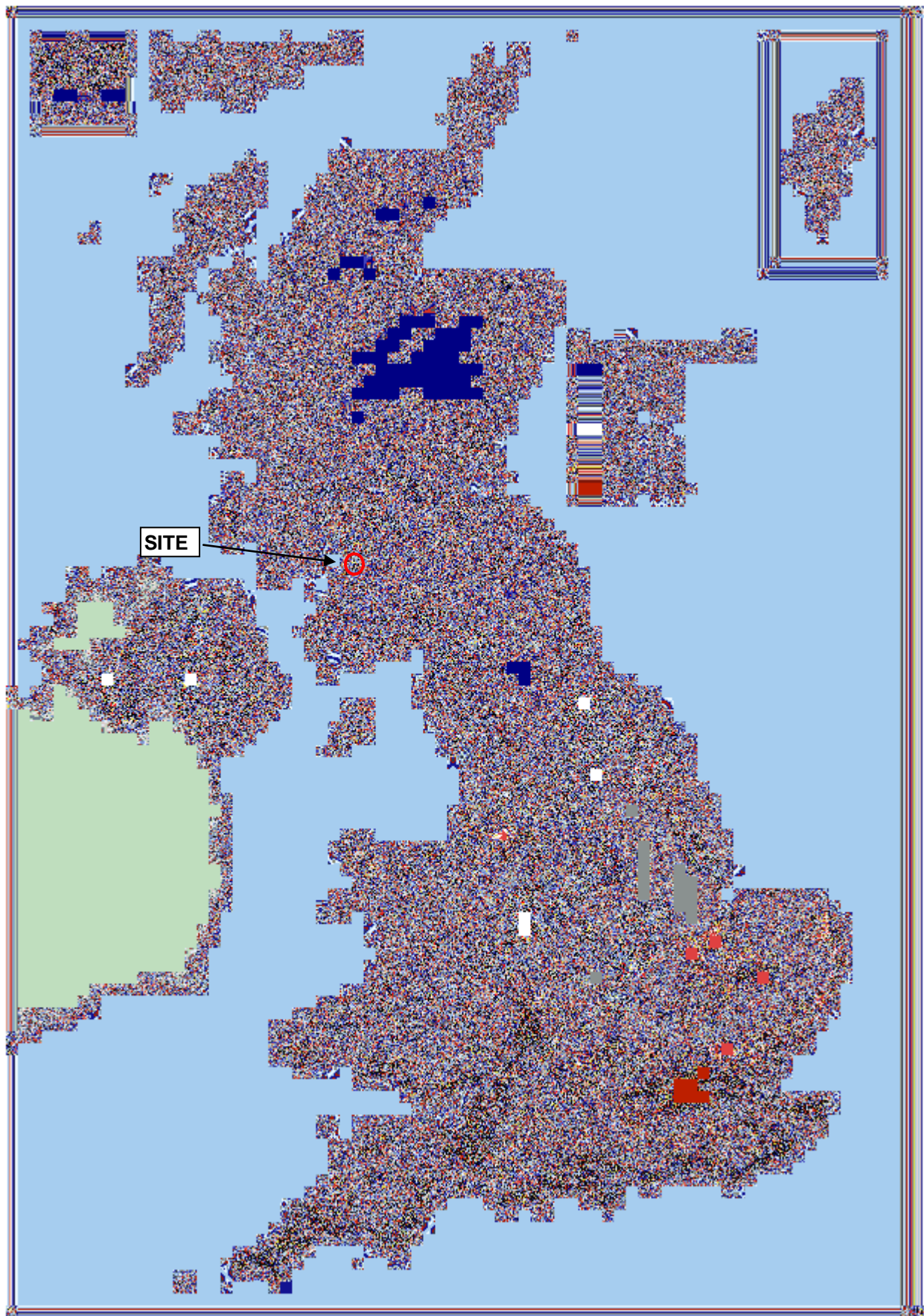
Hppd
6594 W°

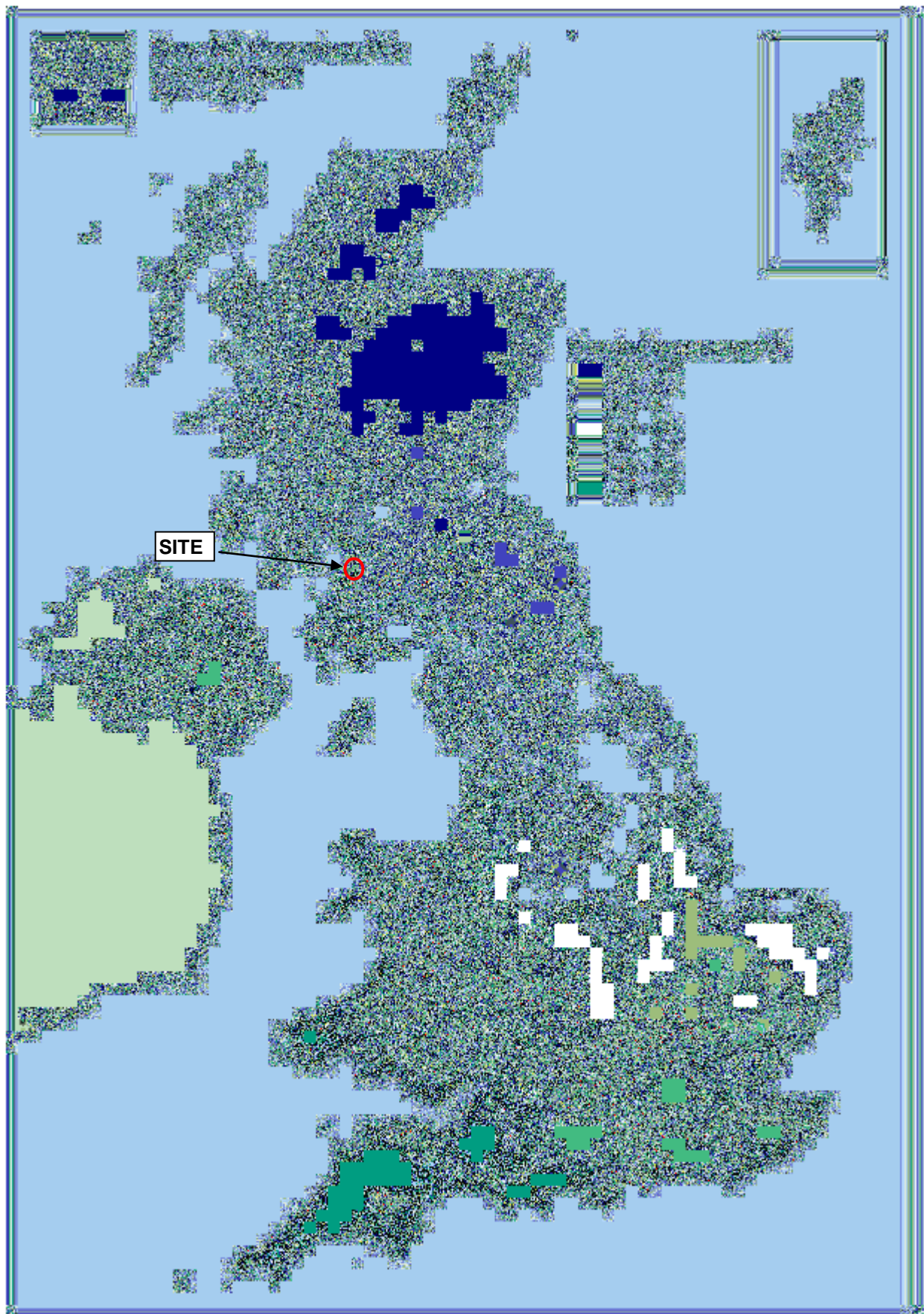




**APPENDIX C
Envirocheck Data**

APPENDIX D
Meteorological Office Data





APPENDIX E

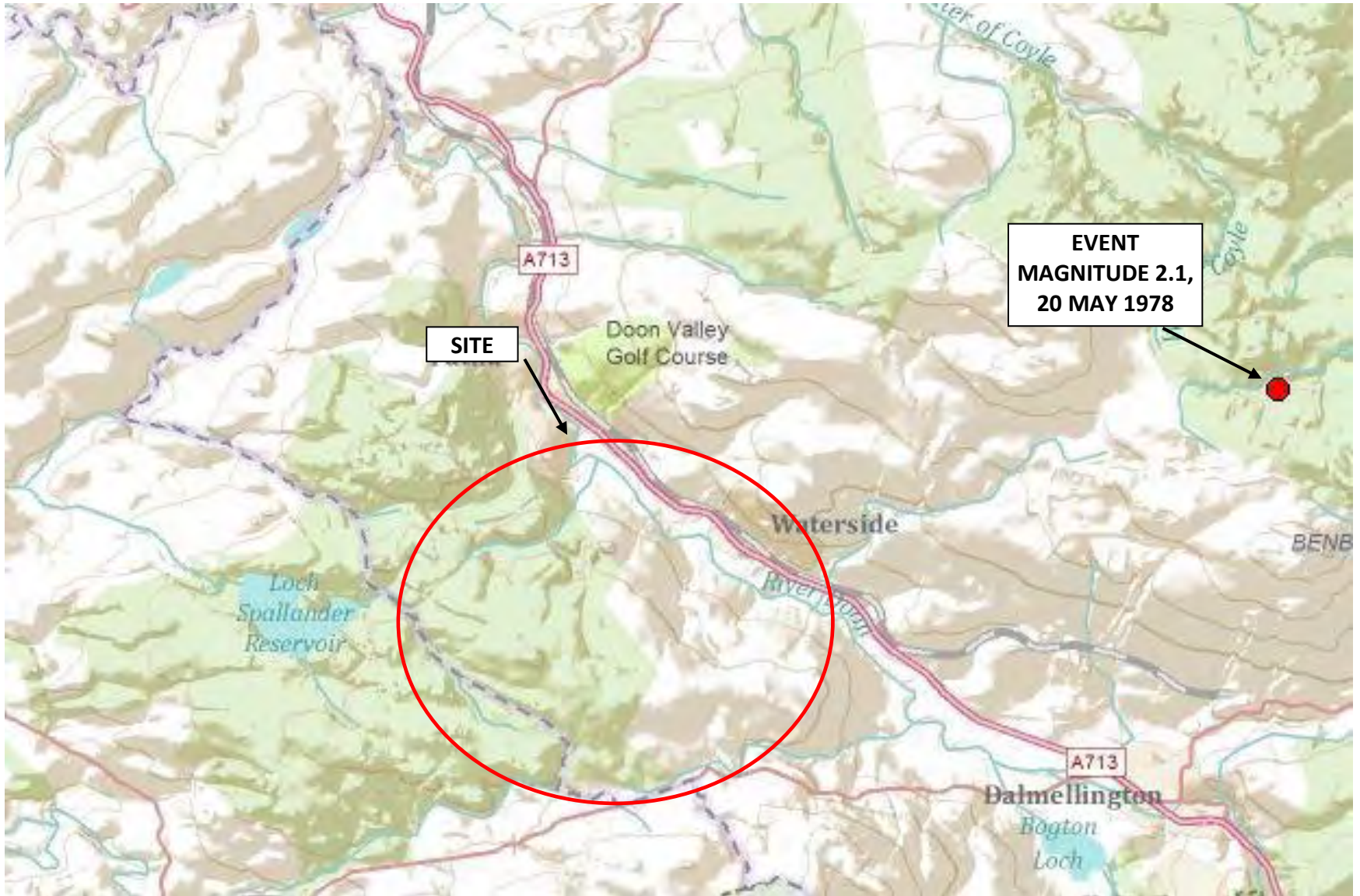
Walk-over Survey Data

WALK-OVER SURVEY DATA

Number	Easting	Northing	Feature
1	243232	606616	Location of Turbine 8. Ground looks quite soft and boggy, possible quite thick peat
2	243269	606814	Possible shaft, shown on OS plan, water filled hollow around 5m diameter, small mound of spoil surrounding. Exposure of rock nearby of coarse sandstone and conglomerate, probably ORS and not Coal Measures strata
3	243237	606883	Man-made excavation, possible small quarry for sandstone
4	243207	606822	Derelict fenced off hollow, possible old shaft but no indication of spoil, could be old sheep fold
5	242975	606950	Location of Turbine 9. Undulating ground crossed by man-made ditches and small incised stream close by, very boggy patches
6	243025	607653	Water tank, next to stream, probably collecting water for supply to nearby farmsteads
7	243320	607630	Extensive areas of man-made excavations and spoil heaps, former limestone quarry
8	243011	607808	Line of man-made excavations and small spoil tips. Possible crop mining for coal
9	242999	607849	Circular hollow around 4m diameter, possible old mine shaft
10	242960	608015	Rock exposed in incised stream valley, interbedded sandstone and siltstone, dipping approx. 15 degrees to E
11	242906	608038	Line of irregular excavations and mounds, possible crop mining for coal
12	242822	608109	Northern end of line of excavations and mounds
13	242005	608880	Meikelholm Burn, deeply incised, steep sided stream valley
14	241745	608704	Deeply incised stream flowing off site into Meikelholm Burn
15	241691	607498	Rock outcrop adjacent to main forestry track, on top of small hill. Rock looks like volcanic tuff and agglomerate
16	242435	607204	Large area of boggy ground between forestry areas
17	242359	606436	Man-made excavation, looks like lagoon
18	242416	606436	Location of Turbine 7, undulating ground, close to head of small stream

Locations obtained using hand-held GPS with reported accuracy of 5 metres. In forestry areas access was restricted to the main forestry tracks so some significant features may not have been recorded.

APPENDIX F Earthquake Data



FIGURES

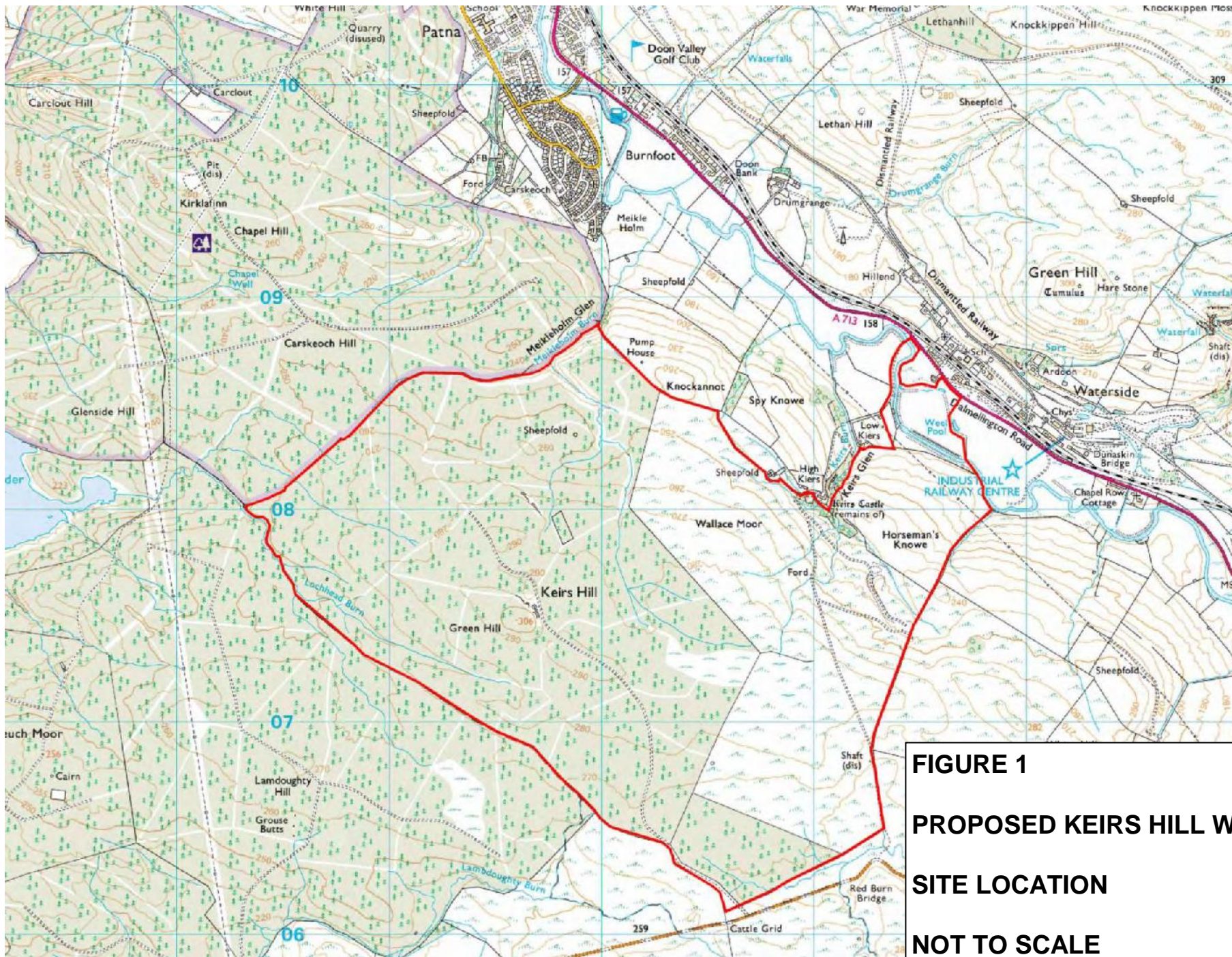


FIGURE 1
PROPOSED KEIRS HILL WINDFARM
SITE LOCATION
NOT TO SCALE

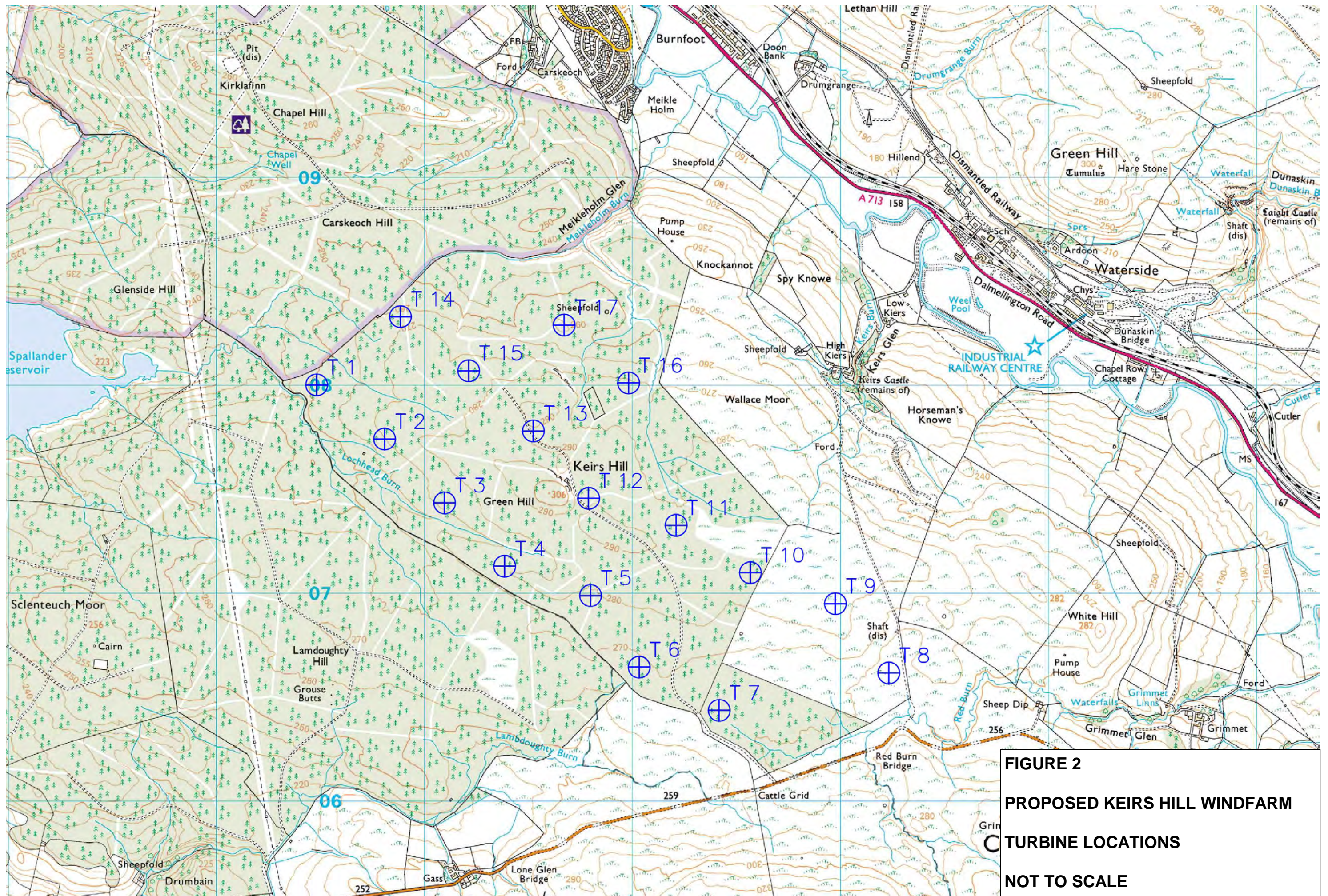


FIGURE 2
PROPOSED KEIRS HILL WINDFARM
TURBINE LOCATIONS
NOT TO SCALE

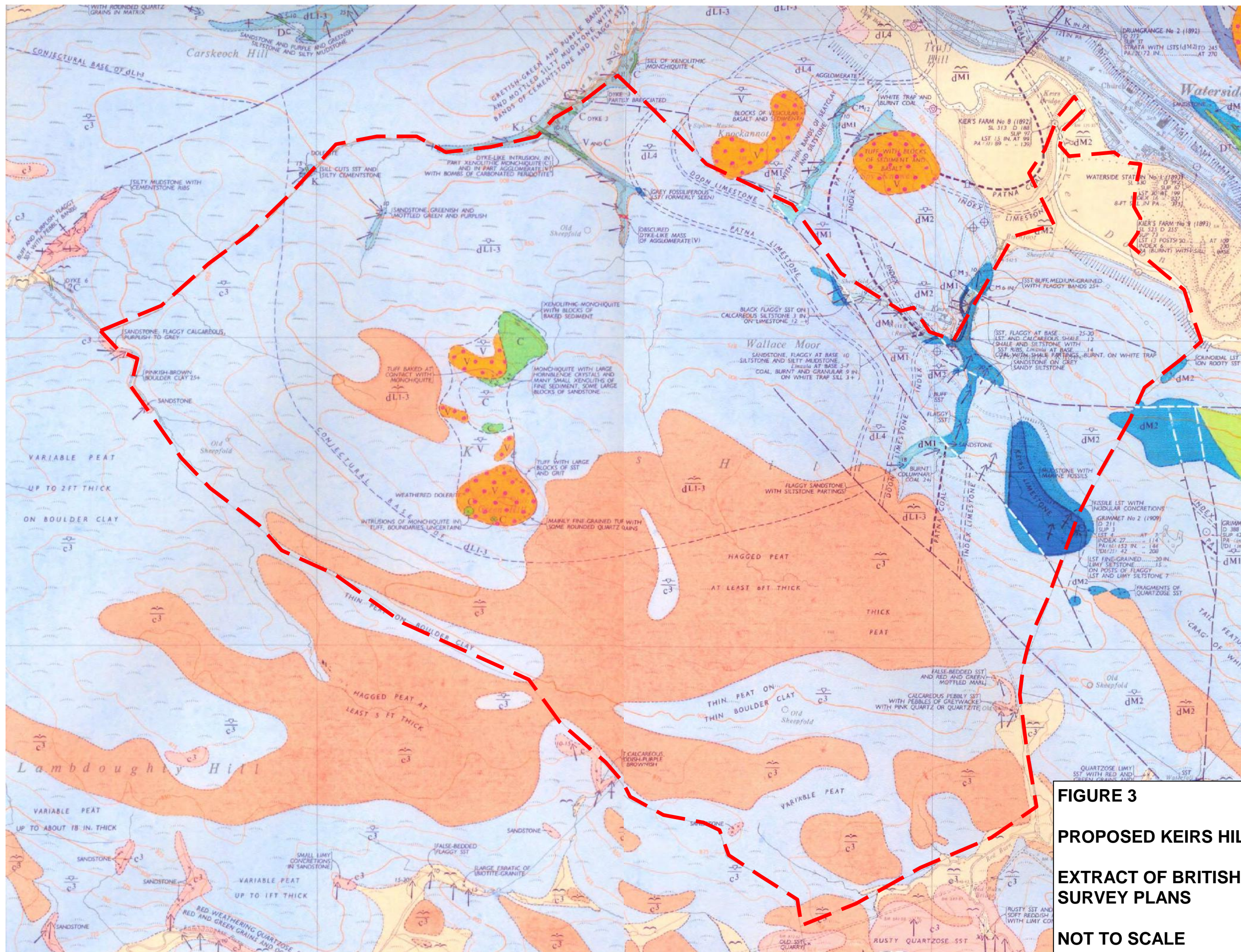


FIGURE 3
PROPOSED KEIRS HILL WINDFARM
EXTRACT OF BRITISH GEOLOGICAL
SURVEY PLANS
NOT TO SCALE

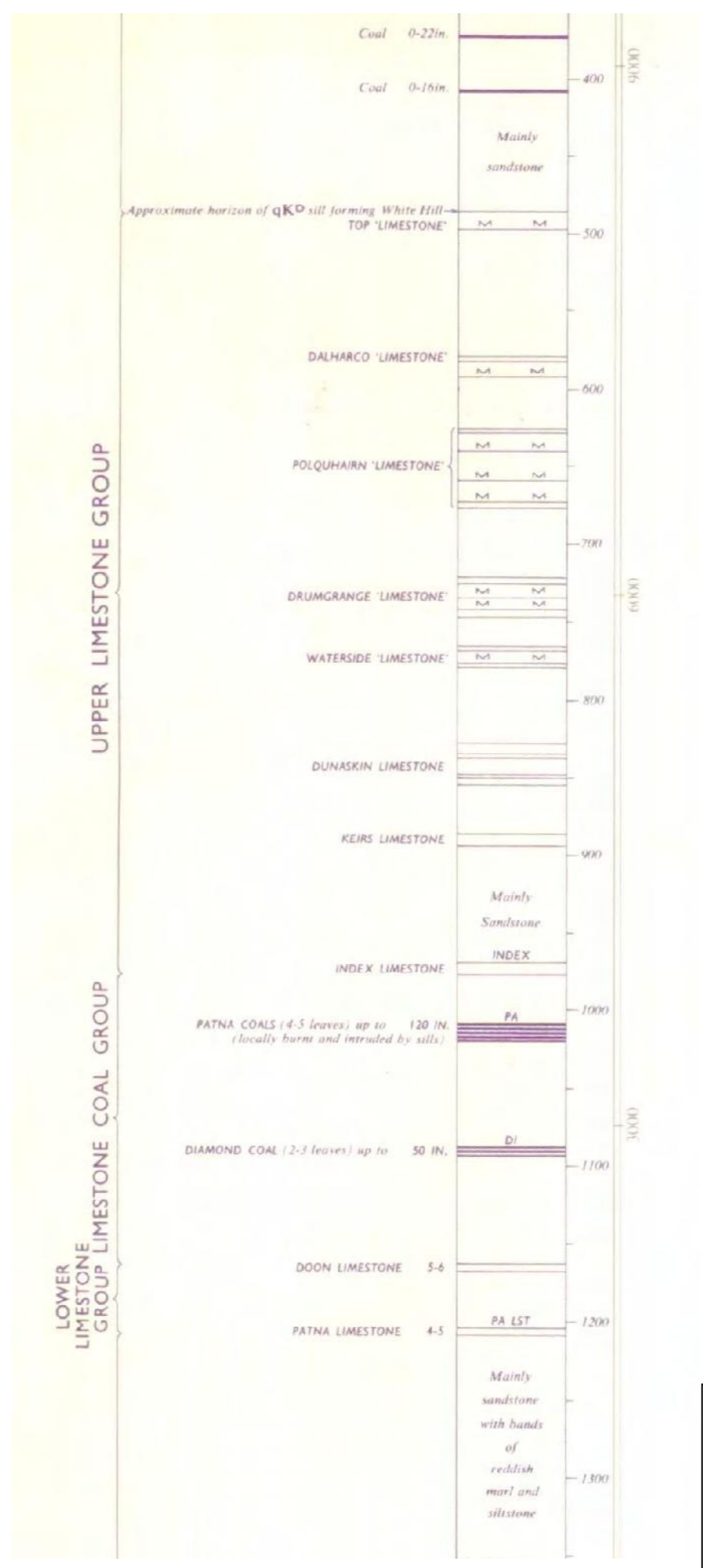
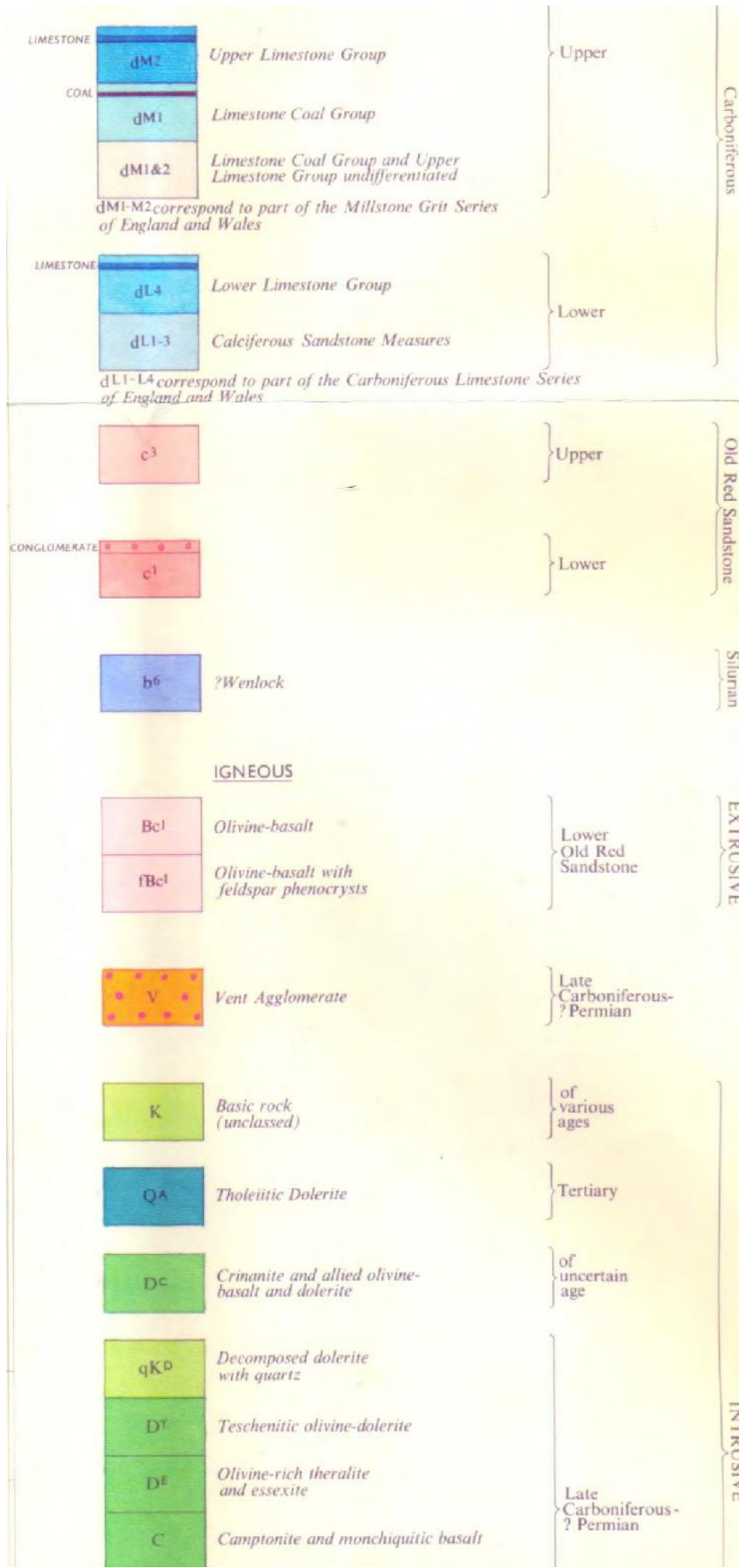


FIGURE 4
PROPOSED KEIRS HILL WINDFARM
GEOLOGICAL KEY AND LEGEND

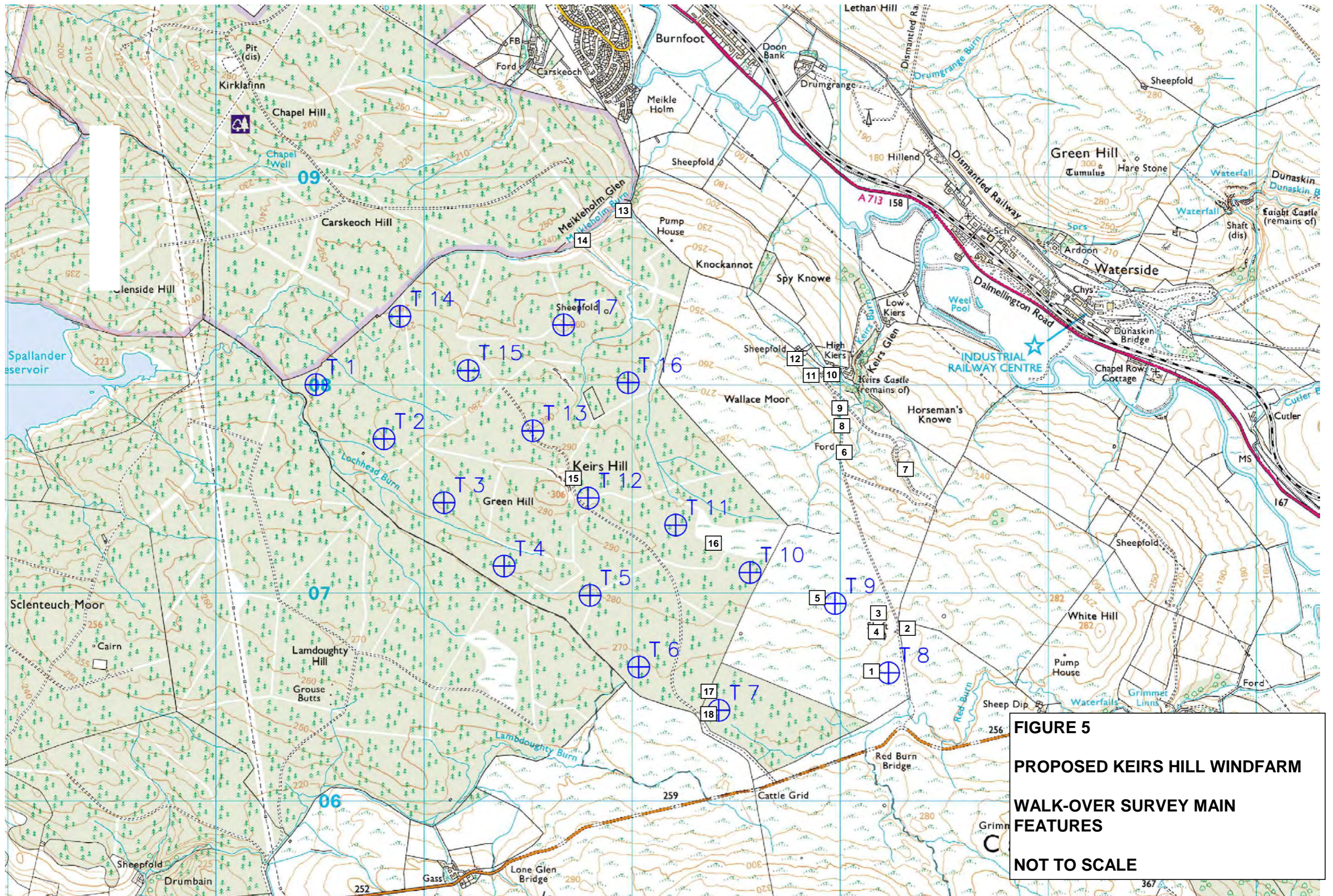
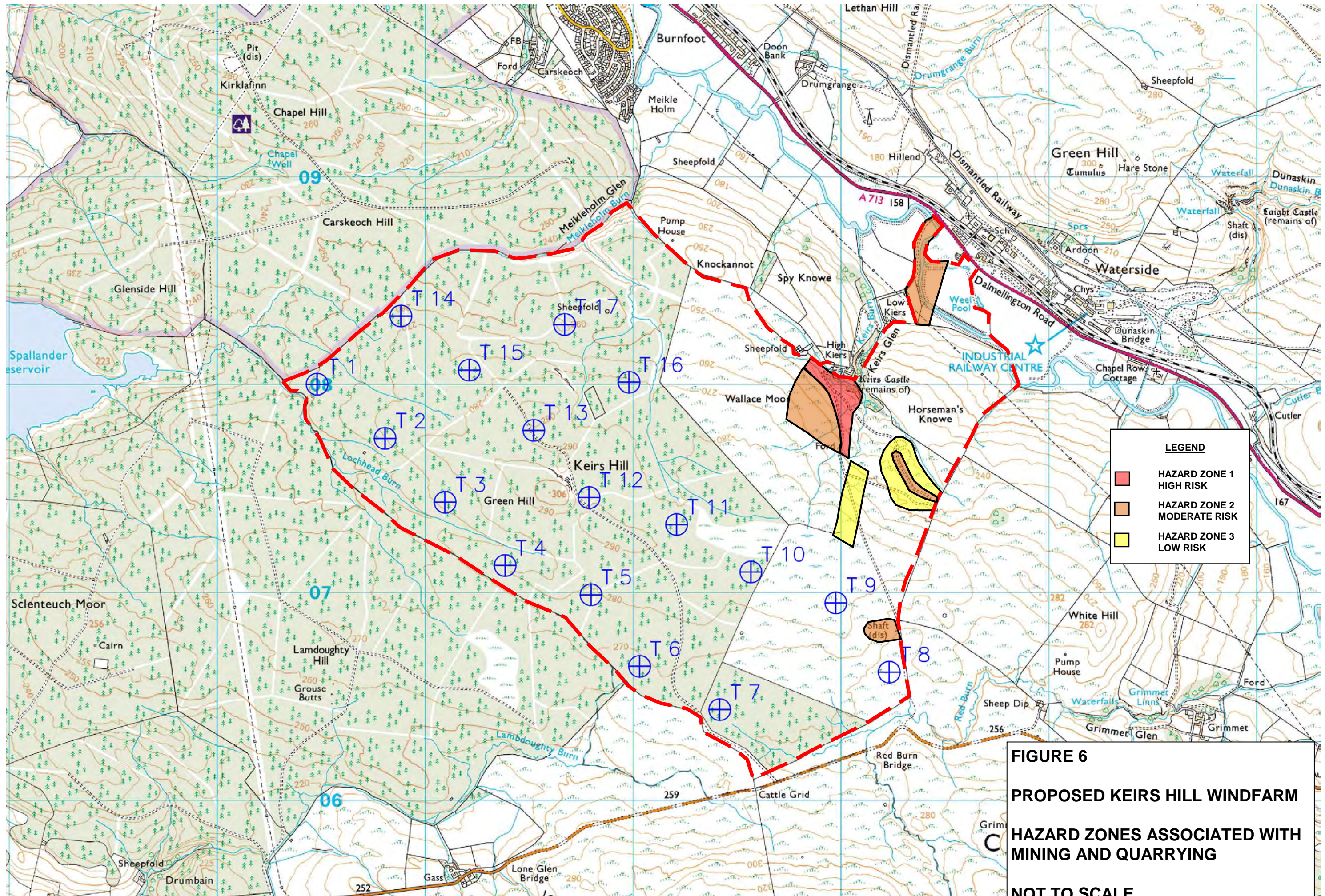


FIGURE 5
PROPOSED KEIRS HILL WINDFARM
WALK-OVER SURVEY MAIN
FEATURES
NOT TO SCALE



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SCLENTEUCH WIND FARM

Technical Appendix 9.4

Schedule of Watercourse Crossings

Prepared for: Renewable Energy Systems (RES) Ltd

SLR Ref: 428.03539.00013
Version No: 01
May 2022



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Location of watercourse crossings shown on Figure 9.1 (Local Hydrology)

CONTENTS

WATERCOURSE CROSSING WC1	1
WATERCOURSE CROSSING WC2	2
WATERCOURSE CROSSING WC3	3
WATERCOURSE CROSSING WC4	4



Watercourse Crossing WC1

<p>Watercourse Crossing ID (refer to Figure 9.1 for location)</p>	<p>WC1</p>
<p>Watercourse Crossing Details</p>	<p>Watercourse Crossing: WC1 NGR: NS4344 08832 Status: New Notes: No watercourse could be located during site survey. Existing (and the proposed site access) is on the catchment divide between the Lambdoughty Burn and the Red Burn.</p>
<p>Looking south from site access track toward WC1 and B741 (e.g. along catchment divide)</p>	
<p>Headwater of Red Burn at WC1 (no culvert or crossing beneath existing track)</p>	



Watercourse Crossing WC2

Watercourse Crossing ID (refer to Figure 9.1 for location)	WC2
Watercourse Crossing Details	Watercourse Crossing: WC2 NGR: NS 4097 0704 Status: New Watercourse Width: 0.5 m Watercourse Depth: 0.5 m Notes: Minor overgrown stream.
Photograph of Crossing Location	

Watercourse Crossing WC3

Watercourse Crossing ID (refer to Figure 9.1 for location)	WC3
Watercourse Crossing Details	Watercourse Crossing: WC3 NGR: NS 4323 0785 0785Status: New Watercourse Width: 0.2 – 0.8 m Watercourse Depth: 0.1 – 0.3 m Notes: Incised and meandering. Coarse bed.
Photograph Looking Upstream	 A wide-angle photograph showing a person standing in a grassy field. The field is covered in tall, dry grasses. In the background, there is a low, rolling hill under a cloudy sky. The watercourse is visible as a dark line in the distance.
Photograph Looking Downstream	 A photograph showing a small stream flowing through a grassy field. The stream is narrow and appears to be incised into the ground. The surrounding area is covered in tall, dry grasses. In the background, there is a low, rolling hill under a cloudy sky.

Watercourse Crossing WC4

<p>Watercourse Crossing ID (refer to Figure 9.1 for location)</p>	<p>WC4</p>
<p>Watercourse Crossing Details</p>	<p>Watercourse Crossing: WC4 NGR: NS 4344 0880 Status: Existing Construction Type: Open span deck Watercourse Width: 14 m Watercourse Depth: 0.8 m Notes: Straight, free flowing, watercourse.</p>
<p>Photograph Looking at Existing Bridge from Upstream</p>	
<p>Photograph Looking at Existing Bridge from Downstream</p>	

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