

GORDONBUSH WIND FARM EXTENSION

Technical Appendix A9.1
Borrow Pit Assessment



SLR Ref: 405.00660.00025
Version No: rev3
June 2019



BASIS OF REPORT

This document has been prepared by SLR Consulting Limited with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with SSE Renewables (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

CONTENTS

| | |
|---|-----------|
| 1.0 INTRODUCTION | 1 |
| 1.1 Borrow Pit Selection Methodology | 1 |
| 1.2 Sources of Information | 2 |
| 2.0 REVIEW OF SITE GEOLOGY | 3 |
| 2.1 Soils | 3 |
| 2.2 Superficial Geology | 3 |
| 2.3 Solid Geology | 3 |
| 2.4 Rock Extraction History at the Site | 4 |
| 2.5 Economic Geology | 4 |
| 3.0 BORROW PIT SEARCH AREAS | 5 |
| 3.1 Borrow Pit BP1 (NGR 284827, 912623) | 7 |
| 3.2 Borrow Pit BP3 (NGR 285989, 913374) | 8 |
| 3.3 Summary | 9 |
| 4.0 CONSTRUCTION REQUIREMENTS | 11 |
| 4.1 Extraction Operations | 11 |
| 4.2 Environmental Management | 12 |
| 5.0 PROPOSED BORROW PIT DESIGN | 13 |
| 5.1 Summary | 13 |
| 6.0 CLOSURE | 14 |

DOCUMENT REFERENCES

TABLES

| | |
|---|---|
| Table 2-1 Site Stratigraphy | 4 |
| Table 3-1 Borrow Pit BP1..... | 8 |
| Table 3-2 Borrow Pit BP3..... | 9 |
| Table 3-3 Indicative aggregate volumes..... | 9 |

PHOTOGRAPHS

| | |
|--|---|
| Photo 3-1 Restored original Borrow Pit Site BP1 | 5 |
| Photo 3-2 Restored original Borrow Pit Site BP3 | 6 |
| Photo 3-3 Borrow Pit BP1 in operational stage showing vertical high wall. | 7 |

FIGURES

| | |
|------------|-------------------------|
| Figure 1.0 | Site Location |
| Figure 2.0 | Site Layout |
| Figure 3.0 | Peat Plan |
| Figure 4.0 | Borrow Pit Layout – BP1 |
| Figure 5.0 | Borrow Pit Layout – BP3 |

1.0 INTRODUCTION

1.1 Borrow Pit Selection Methodology

This report provides details of the proposed borrow pits, which would be necessary to provide the aggregates required to construct the Proposed Varied Development (Addendum), as described in Chapter A4: Description of the Development, of this Addendum to the EIA Report (January 2019). This report presents an assessment of the borrow pits and evaluates the selected locality's merit in the context of the construction requirements of the Proposed Varied Development (Addendum).

It was originally proposed to reuse two of the borrow pits (BP1 and BP2) from the construction of the operational Gordonbush Wind Farm. However, borrow pit BP2 has been removed from the assessment due to ground investigation results and an alternative borrow pit (BP3) has been assessed to maintain the anticipated onsite rock extraction quantities. The proposed borrow pit locations and search areas have been selected because of their potential to be extended, their morphology, accessibility from existing access tracks, orientation and the expected proximity of rock to the surface along with any physical or environmental constraints. The borrow pit search areas are in areas where the peat coverage (confirmed during recent site visit 30th May 2019) is minimal and where aggregate reserves are known to occur near the surface.

The Development is located on Gordonbush Estate, adjacent to the operational Gordonbush Wind Farm and approximately 9.5 kilometres (km) to the north-west of Brora. Access to the Site is gained via the existing wind farm access track constructed as part of Gordonbush Wind Farm.

The operational wind farm would include the following key components (full details provided in Chapter A4: Description of Development):

- 11 wind turbines at 149.9m tip height; and
- crane hardstanding area at each wind turbine base with a maximum area of 1900m²;
- one LiDAR and associated hardstand with a maximum area of 100m²;
- on site access tracks (of which approximately 5.56 km are new access tracks and approximately 11 km are existing tracks;
- a network of underground (buried) cabling to connect each wind turbine to the existing onsite substation; and
- Modifications to the existing on-site substation to accommodate additional cables and equipment.

In addition to the above components of the operational wind farm, the construction phase would comprise the following:

- a temporary concrete batching plant;
- temporary telecoms infrastructure;
- a temporary construction compound and laydown area; and
- extension to 2 of the original borrow pits (BP 1 and BP3) used to construct the operational Gordonbush Wind Farm.

Existing infrastructure from the operational Gordonbush Wind Farm would be utilised for the proposed extension where possible and is therefore included within the site boundary. This includes the use of the existing substation for the grid connection; existing access tracks and two of the original borrow pits during construction within the site boundary.

This report provides details of the change to borrow pit extraction from that reported in the EIA Report (January 2019) for the Proposed Varied Development and that now proposed as per of the Proposed Varied Development (Addendum) in the form of deletion of borrow pit search area 2 and substitution with borrow pit search area 3. The site is located as shown on Figure 1.0. Figure 2.0 illustrates the proposed site layout for the Proposed Varied Development (Addendum).

The work undertaken so far has involved a review of all geological plans, including historic geological plans, topographic and slope plans and review of the available memoirs. Information from the site was also collected and a review and assessment of borrow pits used for the original site development was undertaken.

1.2 Sources of Information

The following sources of information have been reviewed and assessed:

- British Geological Survey (BGS) Scotland Sheets 103W – Golspie - Solid and Drift Geology Edition. 1:50,000 series;
- The Macaulay Institute for Soil Research Soil Survey of Scotland Sheet 103 – Golspie, Land Capability for Agriculture Map. 1:250,000 scale, 1982;
- BGS Map and Map data viewers (www.bgs.ac.uk/data/mapViewers/home.html); and
- Scotland's Environment (www.environment.scotland.gov.uk).

2.0 REVIEW OF SITE GEOLOGY

The geology of the superficial deposits and bedrock at the site have been determined by a review of existing geological information published by the BGS, and site inspection of the ground.

A search was also made of the BGS GeoIndex for geological conditions and online boreholes. The database indicates that the BGS hold no borehole data for the site or its immediate surrounds.

The geological information presented in this report has been obtained from various sources. The area was originally mapped in 1925 and re-mapped in 2002, by the BGS; the BGS Memoir Geology of the Golspie District (1925) is no longer published.

2.1 Soils

There has been no change to the soils on site from that reported in the EIA Report (January 2019) for the Proposed Varied Development. Published soils mapping indicates that the western boundary and south-east of the site are underlain by peaty gleyed podzols of the Arkaig soil association, with parent material derived from schists, gneisses, granulites and quartzites principally of the Moine Series. The far north of the site is underlain by dystrophic deep blanket peat soils. The soil type across the centre of the site has not been recorded.

2.2 Superficial Geology

There has been no change to superficial geology from that reported in the EIA Report (January 2019) for the Proposed Varied Development. The BGS Sheet 103W (Golspie) confirms that the superficial geology at site is recorded as being predominantly Glacial Till of Late Devensian age. Peat is present and is developed over the Development site, overlying the Glacial Till predominantly in the flatter lying areas. Three areas have been identified from the BGS Geological Sheet as having peat present; to the north-west and south-east of Allt nan Nathraichean, and to the south-west of the site towards the existing access road. The changes introduced by the Proposed Varied Development (Addendum) are not located on deep peat.

2.3 Solid Geology

There has been no change to solid geology from that reported in the EIA Report (January 2019) for the Proposed Varied Development. The BGS 1:50,000 solid geology map indicates that the solid geology beneath the majority of the site, including the new borrow pit BP3 comprises psammite and micaceous psammite of the Kildonan Psammite Formation, which is part of the Loch Eil Group and Moine Supergroup. The psammite is a metamorphosed sedimentary rock.

The psammite and pelites of the Loch Eil Group all occur in thick formations as well as in striped or banded units characterised by rapid alterations of lithology on centimetric scales. The area has been extensively glaciated with a general movement of the ice to the north. Much of the higher ground consists of glacially rounded hills with intervening peat filled hollows. Solid rock is exposed sporadically on the hills and in the numerous streams. The lowermost ground along river channels is mostly underlain by fluvio-glacial gravelly sands and alluvium.

The Moine Supergroup consists of beds of psammite and pelite, commonly 2-30cm thick intercalated with thinner layers of micaceous psammite. Sedimentary structures are often present in areas of tectonic strain, although cross bedding is still preserved, the original sedimentary grains have been completely recrystallised. Calc-silicates are the most prominent metamorphic mineral, which forms hornblende/plagioclase assemblages which are partially replaced by aggregates of white mica.

A granitic intrusive is recorded outcropping along the Allt nan Nathraichean, orientated in a north north-west to south south-east orientation. The geological strata are summarised in Table 2-1 below

Table 2--1
Site Stratigraphy

| Age | Unit | Typical Description |
|-------------------|----------------|---|
| Quaternary | Peat | Accumulations of wet, dark brown, partially decomposed vegetation. |
| | Glacial Till | Well consolidated deposits of silty clay or sandy clay, containing numerous rounded pebbles and boulders. |
| Moine | Loch Eil Group | Psammite and micaceous psammite of the Kildonan Psammite Formation |

2.4 Rock Extraction History at the Site

The BGS GeoIndex website shows that there are no active mines or quarries within the vicinity of the Proposed Varied Development (Addendum) boundary. There is no history of mining or quarrying within the site, other than the use of borrow pits associated with the construction of the operational Gordonbush Wind Farm.

2.5 Economic Geology

There is limited information of the economic uses of the rock types within the site. The rock has been previously used in the construction of the operational Gordonbush windfarm for both aggregate and tracks.

3.0 BORROW PIT SEARCH AREAS

There are limited options within the Proposed Varied Development (Addendum) area for the potential to develop new borrow pits. On review and assessment of the borrow pits used during the construction of the operational Gordonbush Wind Farm, it has been established that there is potential to reopen borrow pits BP1 (Photo 3-1), and BP3 (Photo 3-2). As indicated BP2 has now been excluded due to ground investigation results and is removed from the s.36c Proposed Varied Development application.. Both the proposed borrow pits (BP1 and BP3) are in good locations to assist in the development of the proposed extension and have the potential to be extended to provide adequate volumes of material. BP1, previously assessed as part of the S36c EIA Report (January 2019), is located towards the south east of the Proposed Varied Development, and BP3 is located towards the west of the Proposed Varied Development site close to the main access to site. Both borrow pits have good established access tracks from their previous operation. There is no change to the BP1 assessment from the S36c Proposed Varied Development application, as reported within Appendix 9.1 of the EIA Report (January 2019). The addition of BP3 is a variation to the 2019 EIAR, to compensate for the removal of BP2.

The geological setting of the borrow pits comprises rocks of the Kildonan Psammite Formation. Each borrow pit has the potential to be extended to the west.

Photo 3--1
Restored original Borrow Pit Site BP1



Site BP1 is situated to the south-east of the Revised Development with potential to extend towards the west.

Photo 3--2
Restored original Borrow Pit Site BP3



Site BP3 is situated to the south-west of the Proposed Varied Development (Addendum) with potential to extend towards the west.

Photo 3--3
Borrow Pit BP1 in operational stage showing vertical high wall.



Photo 3-3 illustrates BP1 in its operational phase indicating the high vertical face which can be easily reopened.

To meet the requirements for the Proposed Varied Development (Addendum), construction aggregates would be sourced from reopening borrow pits BP 1 and BP3. Prior to any extraction from the borrow pits it will be necessary to remove the restoration soils to expose the operational face within each pit. Full consideration of appropriate storage locations for the excavated restoration soils will need to be considered prior to any excavation. As shown in Photo 3-1, the nature of the restoration soils is a loose mixture of unsorted granular materials ranging from fine grained material to cobbles and including silty material and peat. It is likely that in the region of 27,000 m³ to 36,000 m³ of restoration material would require removal from each borrow pit site prior to any extraction works. Table 3.1 and 3.2 give further detail of the restoration material that would require excavation at each borrow pit.

The borrow pit locations have been selected because of their morphology, accessibility from existing access tracks, orientation and the expected proximity of rock to the surface. The aggregate has already been proven to be suitable for construction purposes and both borrow pits are in areas where the peat coverage is minimal and where bedrock outcrops and aggregate reserves are expected to occur near the surface.

A preliminary assessment of each borrow pit has been undertaken to evaluate their merit in the context of the construction requirements of the Proposed Varied Development (Addendum).

3.1 Borrow Pit BP1 (NGR 284827, 912623)

The borrow pit is located on bedrock comprising Kildonan metasedimentary rocks. This proposed borrow pit extension is located on shallow bedrock and has a suitable profile for maximising extraction from the borrow pit once it is reopened. It is anticipated that once the restoration overburden is removed from the borrow pit, it should offer a significant volume of material. The rock comprises primarily psammite. No significant peat cover exists at this location over the virgin excavation area (see Figure 3.0).

The rocks are from the Kildonan Psammite Formation, comprising Psammite and micaceous psammite of the Loch Eil Group and Moine Supergroup. The general characteristics and indicative aggregate volumes estimated from the borrow pit is provided in Table 3-1.

Table 3--1
Borrow Pit BP1

| | |
|--|--|
| Site Area | Maximum dimensions – Potential Excavation Area 120 m length, 110 m width |
| Height of Excavation | 8m maximum |
| Area of land impacted | ~14,850m ² |
| Gradient of floor during construction | Slope increases to the east at 1 in 100 |
| Details of Extraction | Combination of ripping and blasting |
| Overburden type and depth | Restoration soils present from former restoration works. Approximate volume of 27,000m ³ to be removed prior to any extraction. Within the virgin excavation area of the proposed excavation there is limited soil cover, peaty soil less than ~0.5 m but not an extensive cover. |
| Extent of Aggregate Extraction | An approximate volume of 105,600m ³ of rock depending on excavation depth. |
| Aggregate Composition | These rocks are described as psammite. |

3.2 Borrow Pit BP3 (NGR 285989, 913374)

The borrow pit is located on bedrock comprising Kildonan metasedimentary rocks. This borrow pit was originally used as part of the original site enabling works for the construction of the operational Gordonbush Wind Farm. This proposed borrow pit extension is located on shallow bedrock and is situated on the eastern flank of slope and has a suitable profile for maximising extraction from the borrow pit once it is reopened. It is anticipated that once the restoration overburden is removed from the borrow pit, it should offer a volume of material and the smaller volume of the two borrow pits. No significant peat cover (proven by peat probing on 30th May 2019) exists at this location over the virgin excavation area but may have glacial till overlying bedrock (see Figure 3.0).

The rocks are from the Kildonan Psammite Formation, comprising Psammite and micaceous psammite of the Loch Eil Group and Moine Supergroup. The general characteristics and indicative aggregate volumes estimated from the borrow pit is provided in Table 3-2.

Table 3--2
Borrow Pit BP3

| | |
|--|---|
| Site Area | Maximum dimensions – Potential Excavation Area 120 m length, 60 m width |
| Height of Excavation | 5-6 m |
| Area of land impacted | ~8,920 m ² |
| Gradient of floor during construction | Slope increases to the east at 1 in 100 |
| Details of Extraction | Combination of ripping and blasting |
| Overburden type and depth | Restoration soils present from former restoration works. Approximate volume of 20,000m ³ to be removed prior to any extraction. Within the virgin excavation area of the proposed excavation there is limited soil cover, peaty soil less than ~0.5 m with 2-3m of glacial till. |
| Extent of Aggregate Extraction | An approximate volume of 20,000m ³ of rock. |
| Aggregate Composition | These rocks are described as psammite. |

As these borrow pits have been previously used, the rock has been proven as suitable for construction purposes for both aggregate and tracks.

3.3 Summary

Indicative aggregate volumes that could be obtained from each borrow pit are summarised in Table 3-3 below.

Table 3--3
Indicative aggregate volumes

| Borrow Pit | Volume of gravel/rock m ³ | Predominant Material |
|--------------|---|----------------------|
| BP1 | ~ 105,600m ³ | Rock |
| BP3 | ~20,000 m ³ | Rock |
| Total | ~125,600 m³ | |

Borrow Pit BP3 is anticipated to supply aggregate for construction of the new access tracks for the Proposed Varied Development (Addendum), while borrow pit BP1, by virtue of the known quality and volume of rock

available, would supply most of the aggregate for the access tracks, crane pads and bases in the Revised Development. The total available aggregate is slightly less than the volumes referred to in Appendix 9.1 of the EIA Report (January 2019), however there is sufficient rock to satisfy the demands for construction of the Proposed Varied Development (Addendum) within these two borrow pits.

4.0 CONSTRUCTION REQUIREMENTS

The proposed wind turbines and their subsequent maintenance would require the construction of a purpose built network of access tracks. These tracks would be single track and un-metalled, and would be constructed to the specifications normally associated with forestry developments, as a minimum standard. The Proposed Varied Development (Addendum) changes increase the total linear meterage of permanent new access tracks by 230m to approximately 5.56 km.

A total maximum volume required will be in the order of 109,000 m³, which is less than the maximum volumes assessed which could be extracted from the borrow pit sites.

4.1 Extraction Operations

The requirement to produce various grades of aggregate would necessitate the use of mobile plant and equipment. This operation would comprise of a number of different elements which are summarised below:

- Drilling and Blasting – No change from the EIA Report (January 2019) for the Proposed Varied Development. It is envisaged that a major proportion of the proposed extraction materials would require drilling and blasting due to the relative strength and competency of the metasedimentary rocks. It is proposed that a lightweight crawler mounted blast hole rig is employed together with an attendant compressor. Safe operation, transportation and storage of the explosives would need to be considered in detail. The Contractor may also wish to re-evaluate any alternatives to the requirement for blasting on the basis of the available rock quality data.
- Initial Stripping and Preparation – As the borrow pits have been previously used, initial access routes to them are already in place. These may require a minimal element of upgrading but should still remain in a useable condition. A temporary bailey bridge will be used to access BP3. Following access into each of the borrow pits the overburden / unsuitable material will need to be excavated prior to any extraction. It is anticipated that the removal of these soils would consist of a series of excavators and dump trucks to transport the material to a suitable stockpile area. Borrow pit BP1 would provide the most space to store excavated materials. It is anticipated that an area of approximately 10,000 m³ – 20,000 m³ would be required to store the restoration materials.
- In addition the area of the plant site and the materials storage area would require to be stripped of the superficial material including any soil which lies above bedrock. This material would need to be carefully lifted and placed in storage mounds within the appropriate storage area .
- Crushing and Screening - No change from the EIA Report (January 2019) for the Proposed Varied Development. The primary component of this operation would consist of a mobile crushing and screening system. Modern mobile crushing plants are available in a number of different formats and are usually available complete with screening capability. The contractor would need to provide a plant setup that meets the project requirements in terms of the ability to process the raw material, the quantities of the material required and the quality and size gradings of the product.
- It is also envisaged that a rubber tyred front end loader would also be required in order to serve the crushing and stockpiling operation, as well as to produce loadout facilities for the truck and shovel based roadmaking operation.
- Drainage - It is likely that a drainage and surface water management system would be required in order to control surface water run-off. Due to the relatively small size of any proposed excavation together with the associated plant site it is thought that the system would comprise of a peripheral cut-off ditch together with minor attenuation features or soakaways. Farm scale trenching or ditching plant together with hydraulic breaker capability is thought likely to be most appropriate to this task.

4.2 Environmental Management

There are a number of general pollution prevention measures that could be employed to ensure that both ground and surface waters are not contaminated at any stage of the development. The Proposed Varied Development (Addendum) would be designed, constructed, operated and decommissioned in line with the Construction Environmental Management Plan (CEMP) and Pollution Prevention Plan as required under the CAR Construction Site License requirements, relevant Pollution Prevention Guidelines (PPGs) and other codes of best practice, to ensure that both ground and surface waters are not contaminated. These should include:

- PPG2 – Above Ground Oil Storage Tanks;
- PPG3 – Use and Design of Oil Separators in Surface Water Drainage Systems;
- PPG4 – Treatment and Disposal of Sewage Where Foul Sewer is Available;
- PPG5 – Works and Maintenance in or near Water;
- PPG6 – Working at Construction and Demolition Sites;
- PPG18 – Managing Fire water and Major Spillages;
- PPG21 – Pollution Incident Response Planning; and
- PPG22 – Dealing with Spillages.

All of the above PPG Notes are jointly produced by SEPA, Natural Resources Wales and the Northern Ireland Environment Agency and are available via SEPA's website (www.sepa.org.uk). In addition, the other relevant codes of best practice and Planning Advice Notes relevant to the site include:

- Controlling the Environmental Effects of Surface Mineral Workings, Planning Advice Note PAN50
- Code of Practice for Site Investigations, BS5930;
- Control of Water Pollution from Construction Sites; and
- Environmental Good Practice on Site.

5.0 PROPOSED BORROW PIT DESIGN

The indicative borrow pit reuse designs are shown in Figures 4.0 & 5.0. The indicative borrow pit profiles have been designed to best utilise the borrow pits based on the previous excavation profiles. Following removal of the overburden material, excavation will commence on the historical high wall, continuing the previous excavation operation. A rectangular shaped excavation has been proposed within each of the borrow pits in order to meet the estimated requirements for construction materials. Based upon the indicative borrow pit profiles a total maximum in situ excavation volume of 125,600 m³ could be achieved by the two pits combined. There is no change to the design of BP1 and BP3 has been added as an alternate site.

As discussed in section 4.0, the total required volume of material is ~109,000 m³. The current borrow pit profile for the larger of the two borrow pits BP1 is 120m x 110m, giving a volume of ~105,600m³ while the smaller of the two borrow pits BP3 is based on a cut of 80m x 50m by a cut depth of 5m, giving a volume of 20,000 m³ as described in Table 3-2.

There are no other changes to the original design parameters included in the EIA Report (January 2019).

5.1 Summary

In summary, the change presented in the Proposed Varied Development (Addendum) remove borrow pit 2 and propose borrow pit 3. The two borrow pits used during the construction of Gordonbush Wind Farm have been selected to be reopened for construction of the Proposed Varied Development. Assessment of each borrow pit has identified that there is sufficient volume of aggregate available that would be required for the Revised Development. Reopening existing borrow pits would cause minimal impact to the ground conditions and water environment.

The implementation of the Draft Construction Environment Management Plan (Appendix 4.1: Draft CEMP (EIA Report January 2019)) and following best practice guidelines would provide adequate mitigation to prevent impact to the water environment.

The conclusions of the Proposed Varied Development (Addendum) Borrow Pit Report remain unchanged from the EIA Report (January 2019) for the Proposed Varied Development.

6.0 CLOSURE

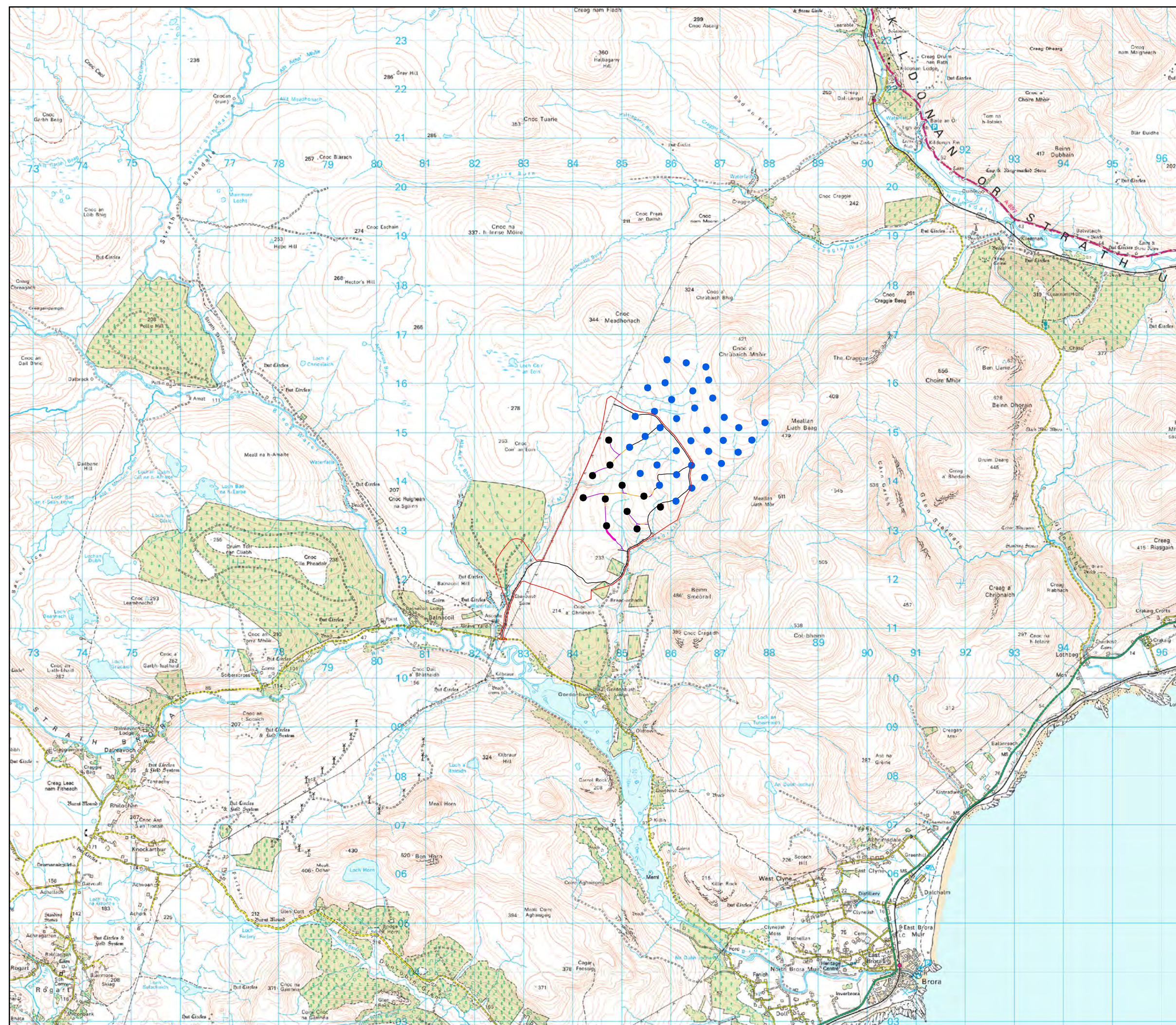
This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of SSE Renewables (UK) Ltd; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

FIGURES

Figure 1.0 - Site Location



- Site Boundary
- Turbine
- Operational Turbine
- Access Track**
- Existing
- Cut
- Float
- New Access Track
- Existing Track to Proposed Borrow Pit Search Area

Scale 1:75,000 @ A3

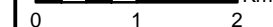
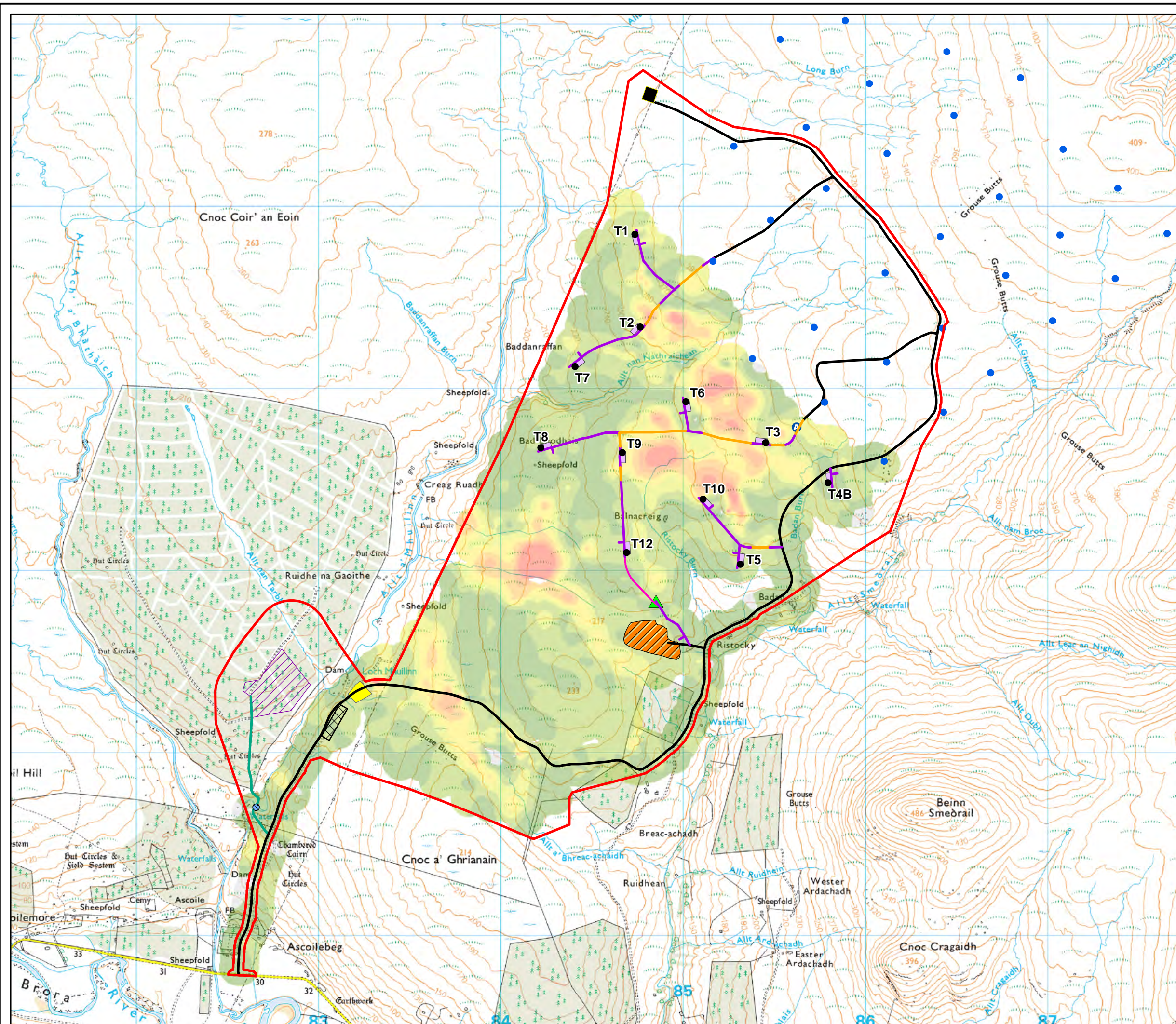



Figure 1.0
Site Location

Gordonbush Extension Wind Farm
Appendix A9.1

Figure 2.0 - Site Layout

Figure 3.0 - Peat Plan



Key

- Site Boundary
- Turbine
- Operational Turbine
- ⊗ Watercrossing (Temporary Bridge)
- Access Track**
 - Existing
 - Cut
 - Float
 - New Access Track
 - Existing Track to Proposed Borrow Pit Search Area
 - ▲ Proposed LiDAR
 - Ⓐ Operational Met Mast
 - Existing Substation
 - Construction Compound
 - Indicative Hardstanding
 - Proposed Borrow Pit Search Area
 - Borrow Pit
 - Relocated Batching Plant

Peat Depth (m)

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

Scale 1:20,000 @ A3

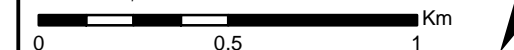


Figure 3.0
Peat Plan

Gordonbush Extension Wind Farm
Appendix A9.1

Figure 4.0 - Borrow Pit Layout – BP1



PHOTOGRAPH 3



PHOTOGRAPH 2



PHOTOGRAPH 1



- Site Boundary
- ▲ Proposed LiDAR
- Access Track**
 - Existing
 - Cut
 - New Access Track
 - Borrow Pit
 - Photo Location and Direction
 - High Wall
 - Fill / Overburden
 - Slope
 - Bottom Break of Slope
 - Potential Excavation

Dimensions

120m x 100m x 8m = 105,600m³
(Assuming 8m Depth)

Figure 4.0
Potential Borrow Pit Reuse - BP1

Figure 5.0 - Borrow Pit Layout – BP3



- Site Boundary
- Existing Track to Proposed Borrow Pit Search Area
- Proposed Borrow Pit Search
- 1 Photo Location and Direction
- High Wall
- Fill / Overburden
- Slope
- Potential Excavation

Dimensions

80m x 50m x 5m = 20,000m³
(Assuming 5m Depth)

Scale 1:1,250 @ A3
0 10 20 30 40 50 Metres



Figure 5.0
Potential Borrow Pit Reuse - BP3

Gordonbush Extension Wind Farm
Appendix A9.1

EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380

BELFAST

T: +44 (0)28 9073 2493

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 906 4280

CAMBRIDGE

T: + 44 (0)1223 813805

CARDIFF

T: +44 (0)29 2049 1010

CHELMSFORD

T: +44 (0)1245 392170

EDINBURGH

T: +44 (0)131 335 6830

EXETER

T: + 44 (0)1392 490152

GLASGOW

T: +44 (0)141 353 5037

GUILDFORD

T: +44 (0)1483 889800

LEEDS

T: +44 (0)113 258 0650

LONDON

T: +44 (0)203 805 6418

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER

T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

NOTTINGHAM

T: +44 (0)115 964 7280

SHEFFIELD

T: +44 (0)114 245 5153

SHREWSBURY

T: +44 (0)1743 23 9250

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310

Ireland

DUBLIN

T: + 353 (0)1 296 4667

France

GRENOBLE

T: +33 (0)6 23 37 14 14