

# REVISED COIRE GLAS PUMPED STORAGE SCHEME

**DRAFT Peat Management Plan**

Prepared for: ASH design+assessment Ltd

SLR Ref: 428.04707.00003  
Version No: 3  
March 2018



## 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 ASH design+assessment Ltd (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

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Scope of Assessment .....	1
1.2	Methodology Used .....	1
1.3	Guidance & Good Industry Practice .....	2
1.4	Definition of Peat .....	2
<b>2.0</b>	<b>OCCURRENCE OF PEAT AT COIRE GLAS .....</b>	<b>4</b>
2.1	Existing Land Use .....	4
2.2	Habitat Mapping .....	4
2.3	Peat Conditions .....	4
<b>3.0</b>	<b>POTENTIAL IMPACT ON PEAT FROM CONSTRUCTION .....</b>	<b>6</b>
<b>4.0</b>	<b>OUTLINE PEAT MANAGEMENT PROPOSALS .....</b>	<b>8</b>
4.1	Excavation .....	8
4.2	Storage .....	8
4.3	Transport .....	9
4.4	Handling and Restoration .....	9
4.5	Access Tracks .....	9
<b>5.0</b>	<b>SITE BASED PEAT EXCAVATION AND MANAGEMENT ASSESSMENT .....</b>	<b>10</b>
<b>6.0</b>	<b>CONCLUSION .....</b>	<b>12</b>

---

## DOCUMENT REFERENCES

### TABLES

Table 1 Proposed Infrastructure Locations and Soil / Peat Depths .....	5
Table 2 Indicative Volume of Peat Disturbed by The Proposed Development .....	7
Table 3 Excavation Materials – Assessment of Suitability .....	10
Table 4 Outline Peat Management Proposals.....	11

### FIGURES

Figure PMP1: Peat Data
Figure PMP2: Slope Plan
Figure PMP3: Geomorphological Mapping
Figure PMP4: Access Tracks

### APPENDICIES

APPENDIX A	Peat Probing Data Plans
------------	-------------------------

## 1.0 Introduction

This Stage 1 Peat Management Plan (PMP) has been prepared by SLR Consulting Ltd and forms a technical appendix to Chapter 14 (Geology and Water Environment) of the Environmental Impact Assessment (EIA) Report, for the revised Coire Glas Pumped Storage Scheme (The Proposed Development). Its purpose is to demonstrate that there has been a systematic assessment to the management and treatment of peat that would be excavated during the construction of The Proposed Development.

This Stage 1 PMP will be further developed during the detailed design process and will form part of the appointed Principal Contractor's Construction Environmental Management Plan (CEMP) for The Proposed Development.

### 1.1 Scope of Assessment

A comprehensive programme of soils and peat probing has been completed at site. This document 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 site. The peat volumes and re-use / storage proposals would be further developed as part of the detailed site design.

The assessment is based on the description of The Proposed Development provided in Chapter 3 (Description of Development) of the EIA Report.

Areas of the site 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. Areas of the site subject to The Proposed Development and which have been proven to have soil depths of <0.5 m are not within the scope of the PMP.

### 1.2 Methodology Used

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 (CO<sub>2</sub>) emissions. Where peatland is drained or otherwise disturbed, there is liable to be release of CO<sub>2</sub> to the atmosphere. Developments should aim to minimise this release."*

This Stage 1 PMP considers the excavation of peat across the development site as a result of the construction of The Proposed Development.

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 2010<sup>1</sup>, SR and SEPA 2012<sup>2</sup>):

- **Prevention** – 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** – use of peat produced on site in restoration or landscaping, provided that its use is fully justified and suitable;

<sup>1</sup> SEPA Regulatory Position Statement – Developments on Peat (SEPA, February 2010)

<sup>2</sup> Scottish Renewables, Scottish Environment Protection Agency (2012) Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste, Version 1

- **Recycling / Recovery / Treatment** – modify peat produced on site for 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 2 m 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.

The guidance identifies three main stages in the development process and describes what data should be gathered and assessed at each stage to inform a site-specific PMP:

- **Stage 1:** Environmental Impact Assessment (EIA);
- **Stage 2:** Post-consent / pre-construction; and
- **Stage 3:** Construction.

This report presents site specific data and proposals to address the requirements of Stage 1 of SEPA's guidance.

### 1.3 Guidance & Good Industry Practice

Legislation relevant to the management of peat includes the following:

- The UK Climate Change Act 2008 (c 27);
- 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:

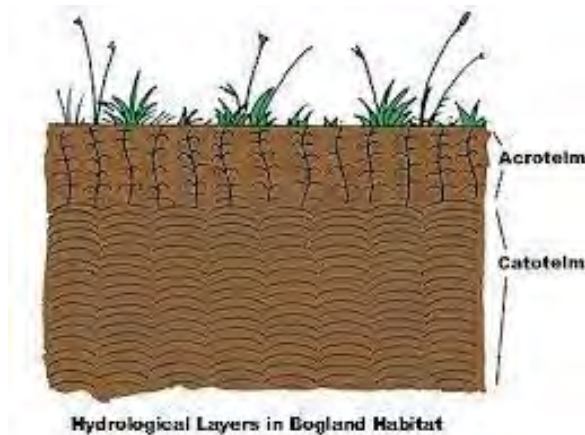
- Guidance on Developments on Peatland (SNH, SEPA 2017);
- Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste (SR, SEPA, January 2012);
- SEPA Regulatory Position Statement – Developments on Peat (SEPA, February 2010);
- Good practice during wind farm construction (SR, SNH, SEPA, FCS, HES; September 2015);
- 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 Definition 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: 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 at Coire Glas

### 2.1 Existing Land Use

The lower reservoir works are situated in commercial forestry on the western side of Loch Lochy linked by access tracks along the western side of the loch which passes through semi-improved pasture, woodland and commercial forestry. The upper reservoir works are located on upland moorland with no active land use.

### 2.2 Habitat Mapping

The findings of the habitat types are set out in Chapter 10 (Terrestrial Ecology) and include details of the National Vegetation Classification (NVC) mapping across The Proposed Development area. The survey identified a number of NVC communities associated with peat land.

### 2.3 Peat Conditions

A comprehensive peat probing survey was undertaken by SLR between September and December 2017 by experienced geotechnical engineers and hydrogeologists in areas of particular interest, including the footprint of the proposed dam and reservoir, lower control works and administration building area, potential borrow pit locations and access tracks; these were probed on a 100 m grid or less. Probing was undertaken in areas in commercial forestry where access was possible and could be safely completed. A geomorphological mapping exercise was also completed.

A peat depth survey was completed in support of The Consented Development (in 2011 – 2012) which focussed on proposed access tracks considered for that application. This data has been incorporated and added to the 2017 peat probe data in order to complete this assessment (e.g. the assessment has used all available peat probe data).

A total of 1544 locations were probed across the area of The Proposed Development as shown on Figure PMP1. The average depth of peat for each element of The Proposed Development was then calculated as shown on Table 1. Detailed peat depth data is shown on plans presented in Appendix A.

In general, peat was found to be limited within The Proposed Development footprint with the majority being classified as a soil (e.g. less than 0.5 m depth) draped extensively across glacial till and bedrock and dissected by watercourses. The peat has been subject to limited erosion with some haggling occurring to the north east of the proposed dam abutment). Elsewhere, there is very limited erosion to peat as a consequence of fluvial activity, grazing or natural movement.

Table 1 demonstrates that peat probe depths vary across the development site from zero to 2.1 m. Figure PMP1 shows that The Proposed Development footprint is predominantly covered by a depth of 0 – 0.5 m with thicker peat deposits of 1.1 – 1.5 m found in small areas within the glen either side of Allt a' Coire Glas and to the north of Meall nan Dearcag.

Peat has been proven to be absent from the hill tops locally and on steeper hills sides (see Figures PMP2 and PMP3).



**Table 1 Proposed Infrastructure Locations and Soil / Peat Depths**

Infrastructure	Total No. of Probes	No. of Probes and Soil / Peat Thickness (m)					Average Peat Depth (m)
		0	0 - 0.5	0.5 - 1	1 – 1.5	> 1.5	
Dam, Spillway & Diversion Works	92	-	65	18	6	3	0.50
Borrow Pit 1	5	-	5	-	-	-	0.12
Borrow Pit 2	2	-	2	-	-	-	0.3
Borrow Pit 3	7	-	7	-	-	-	0.11
Borrow Pit 4	14	-	11	2	-	1	0.37
Borrow Pit 5	5	-	3	2	-	-	0.36
Storage Bund	4	-	1	1	2	-	1.00
Concrete Batching	2	-	-	1	1	-	0.79
Quarries within reservoir footprint	24	-	14	6	4	-	0.49
Offices	3	-	-	1	-	2	1.50
Reservoir Basin	124	-	74	30	9	11	0.40
AT1 - North Laggan – Kilfinnan Farm	39	-	39	-	-	-	0.17
AT2 - Kilfinnan Farm – Lower reservoir works	48	-	48	-	-	-	0.12
AT3 - Whitebridge – Edge of Forestry	156	3	131	19	2	1	0.32
AT4 - Edge of Forestry to Dam	209	3	148	40	16	2	0.43
AT5 - Surge / Ventilation Shaft	50	2	38	8	1	1	0.37
AT6 - Lower reservoir works – Dam	65	-	41	18	4	2	0.49

### 3.0 Potential Impact on Peat from Construction

With reference to Section 2.0 and Table 1 effects on peat have the potential to occur at the following construction locations:

- Upper dam and reservoir basin (including temporary works within the reservoir footprint e.g. quarries, peat storage bund and concrete batching);
- Proposed borrow pit locations BP4 and BP5;
- Access Track AT3 – Upgrade of existing forestry track between White Bridge – Edge of Forestry;
- Access Track AT4 – Construction of new permanent track between the edge of Forestry to upper reservoir;
- Access Track AT5 – Construction of a new permanent track to the Surge / Ventilation Shaft; and
- Access Track AT6 – Construction of a new temporary track between the lower reservoir works and the Dam.

See Figure PMP4 for locations of the proposed infrastructure.

Table 2 shows a summary of the potential volume of peat that would be disturbed at each of the construction locations and confirms that the borrow pits and access tracks have been located in areas / locations where little peat has been recorded.

It is noted that the quantities of peat, and the management proposals for the peat, will be finalised as part of the detailed site design. The finalised peat management proposals would be agreed with SEPA.

**Table 2 Indicative Volume of Peat Disturbed by The Proposed Development**

Location	Volume of Peat Disturbed and Required to be Reused / Managed (m <sup>3</sup> )
Upper Dam and Reservoir Basin (inc. temporary works within reservoir footprint)	120,200
Upper Dam Temporary Construction Compound and Offices	11,400
Borrow Pits:	
1	0
2	0
3	0
4	700
5	200
Access Tracks:	
AT1	0
AT2	0
AT3	300
AT4	2,600
AT5	1,300
AT6	5,700
TOTAL	142,400

**Notes:**

1. Upper dam and reservoir includes dam wall / diversion works, spillway and all peat within the reservoir footprint from the reservoir floor to the proposed maximum operating water level (588.1m AOD).
2. All access tracks are assumed to have an average width of 8 m.

## 4.0 Outline Peat Management Proposals

The following good practice applies to the excavation, storage and re-use of peat.

It is proposed that these principals will be developed as part of a Stage 2 PMP assessment in agreement with SEPA following detailed site design.

### 4.1 Excavation

Peat should be excavated as turves, including the acrotelm (surface vegetation) typically up to 500 mm thick. The following best practice should be applied:

- the turves should be as large as possible to minimise desiccation during storage;
- turves should be kept vegetation side up to avoid damage to living vegetation;
- contamination of excavated peat with substrate materials should be avoided; and
- the timing of excavation activities should be considered to avoid very wet weather and multiple handling to minimise the likelihood of excavated peat losing structural integrity.

### 4.2 Storage

Temporary peat storage, during the construction phase only of the upper reservoir, will be required prior to development of the quarries. This draft PMP assumes the temporary storage will be provided within the footprint of the upper reservoir and will be moved prior to commissioning and operation of the reservoir to the quarries.

A secondary temporary peat storage area will be developed adjacent to the office compound downstream of the dam for peat excavated in the creation of the office compound platform. This peat would be used to restore the office compound on completion of the construction works.

Further stockpiles would be formed along access tracks where required and where appropriate to do so.

During storage, the following best practice should be applied:

- 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;
- stockpiles should be isolated from watercourses or drains with appropriate bunding to minimise pollution risks;
- storage locations should be designed to minimise impact on sensitive habitats and species;
- 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 and environmental constraints;
- peat storage areas should be monitored during periods of very wet weather, or during snowmelt, to identify early signs of peat instability; and
- excavated peat that requires to be stored temporarily should be placed to a maximum of 1 m in height and to reduce impact to habitat, on pre stripped areas.

## 4.3 Transport

During transportation, the following good practice should be applied:

- 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 dump trucks that are used for transporting non-peat material are also to be used for peat measures should be taken to minimise cross-contamination of peat with other materials.

## 4.4 Handling and Restoration

Peat will be used to reinstate areas of construction or identified habitat improvement. Restoration peat depths will match surrounding peat depths or target restoration habitats.

Where appropriate, peat and turves from within the reservoir inundation area will be harvested for use elsewhere on site (e.g. for restoring areas of bare peat or drainage works) rather than be used in the quarries once worked. Since the quarry restoration will be below the water level of the reservoir, a restored peat depth of 2m is considered appropriate. Peat placed in the quarry will be stabilised by a geotextile/geogrid system and rock from the quarry on top as a covering and stabilising layer prior to flooding the reservoir.

Material stored in the track stockpiles would be used for the progressive reinstatement on cut and fill slopes and verges as well as the reinstatement of access tracks. No mineral / soil will be used as final top dressing. Peat will be used as a top dressing to match surrounding peat depths and target restoration habitats to ensure any reseeded in the absence of turves is successful.

## 4.5 Access Tracks

There is much guidance available to support access track design in peatlands. Guidance is generally focused on floating tracks on areas of deeper peat and excavated tracks; the latter being applicable for The Proposed Development, due to the depth of peat.

Excavated tracks require complete excavation of peat to a competent substrate. Excavated tracks are generally undertaken where peat depths are less than 1 m. This peat would require temporary storage ahead of re-use in the reinstatement of track verges. Good practice guidance relates mainly to drainage in association with excavated tracks as follows:

- 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
- 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 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 and will be detailed in the site specific CEMP.

Although excavation is normally undertaken in peat of minor thickness (< 1 m), 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).

## 5.0 Site Based Peat Excavation and Management Assessment

This Stage 1 PMP has been requested by SEPA as part of the planning process to ensure 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 excavated peat can be appropriately managed.

An estimate of the extent of acrotelmic peat (fibrous) and catotelmic peat (amorphous) which will be excavated is presented in Table 3<sup>3</sup>.

**Table 3 Excavation Materials – Assessment of Suitability**

Excavated Material	Indicative Volume on Site by % of Total Excavated Peat	Is there a Suitable use of Material on Site (see Table 4)	Material Classified as a Waste
Acrotelmic Peat & Catotelmic Peat with H3 to H4 classification (very slightly decomposed to slightly decomposed semi-fibrous with low moisture content). Likely to have suitable structural integrity for re-use on site (fibrous material retains integral structure and can stand unsupported when stockpiled >1 m).	H3: 65	Yes	No
	H4: 33	Yes	No
Catotelmic Peat (amorphous material unable to stand unsupported when stockpiled >1 m)	2	Yes	No

Table 4 presents a summary of the peat volumes that require to be managed and how the peat will be managed. As noted previously, the peat quantities and management proposals would be refined and confirmed following detailed site design and as part of a Stage 2 PMP assessment.

Tables 3 and 4 demonstrate that all the peat that might be disturbed by The Proposed Development can be managed and used within the site. Therefore, the peat will remain as a ‘carbon sink’ and store of carbon.

<sup>3</sup> For geotechnical purposes the degree of decomposition (humification) can be estimated in the field by applying the ‘squeezing test’ proposed by von Post and Grunland (1926). The humification value ranges from H1 (no decomposition) to H10 (highly decomposed).

**Table 4 Outline Peat Management Proposals**

Infrastructure	Volume of Excavated Peat m <sup>3</sup>	How much of this can be reused on site %	Outline Peat Management Proposals
Upper Dam and Reservoir Basin (inc. temporary works within reservoir footprint)	120,200	100	Temporary peat storage will occur within the footprint of the upper reservoir. Peat stored in this location will be moved prior to commissioning and operation of the reservoir to the quarries. Peat would be used to reinstate the quarries once worked. Peat would be placed within pre-constructed cells to a maximum depth of 2 m. A geotextile/geogrid system will be laid over the peat surface in the quarries and rock from the quarry will be placed on top as a covering and stabilising layer.
Upper Dam Temporary Construction Compound and Offices	11,400	100	Where appropriate, peat and turves from within the reservoir inundation area will be harvested for use elsewhere on site (e.g. for restoring areas of bare peat or drainage works) rather than be used in the quarries once worked. Peat removed from the temporary construction compound and office area will be used to re-instate this area following construction.
Access Tracks	9,900	100	Peat would be re-used to restore verges following the reduction in width of the access track after construction.
Borrow Pits	900	100	Peat would be reused for the progressive reinstatement on cut slopes.

Notes:

1. Upper dam and reservoir includes dam wall / diversion works, spillway and all peat within the reservoir footprint from the reservoir floor to the proposed maximum operating water level (588.1m AOD).
2. All access tracks are assumed to have an average width of 8 m.

## 6.0 Conclusion

A comprehensive programme of peat depth probing has been completed at site as part of this Stage 1 assessment. The findings have been used to quantify the volume of peat that may be disturbed and require to be managed as part of The Proposed Development.

Whilst the detailed proposals for peat management would be developed and agreed with stakeholders prior to construction as part of the Stage 2 PMP, principles for the handling, storage and use of peat have been presented. The Stage 2 PMP assessment would also be informed by the site specific peat landslide and hazard risk assessment and further detailed site investigations that would be completed as part of the detailed site design. The finalised PMP will then form an appendix to the CEMP.

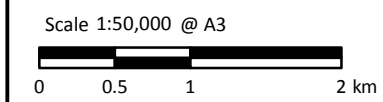
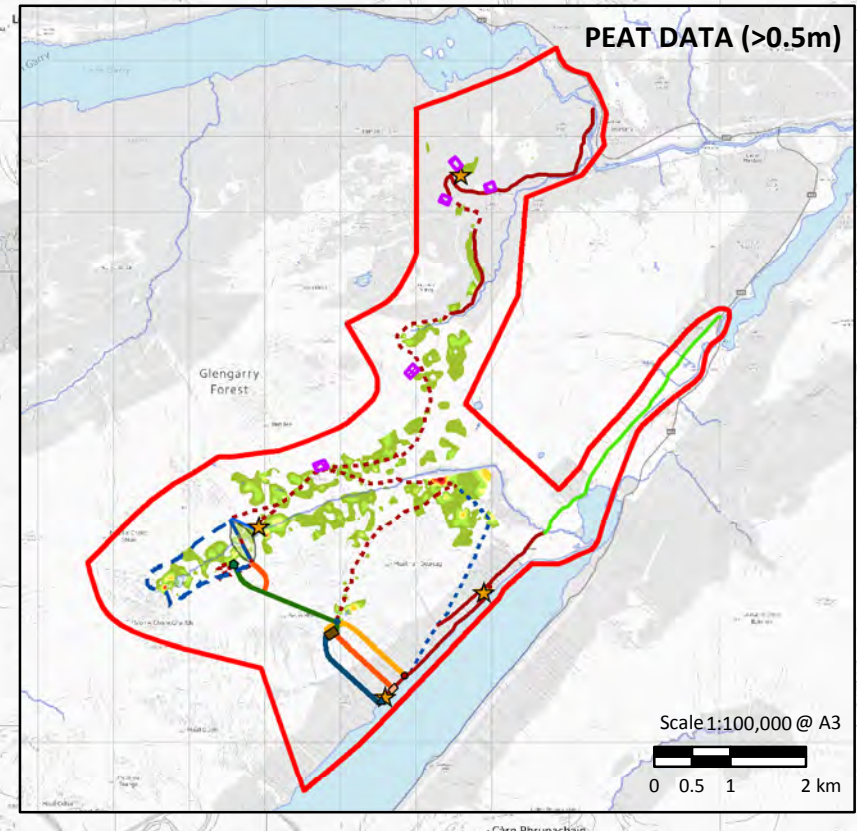
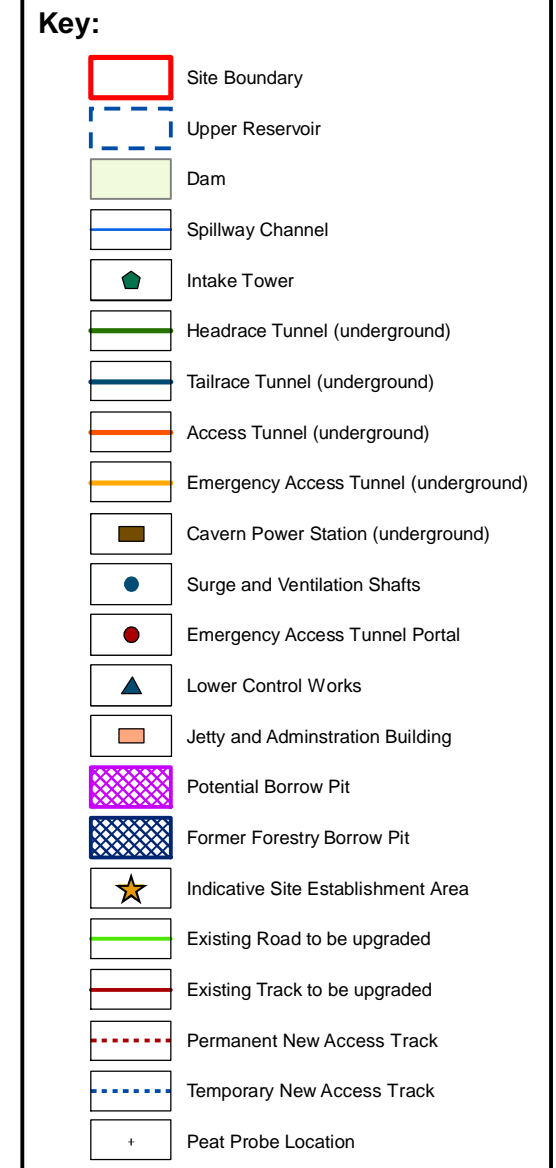
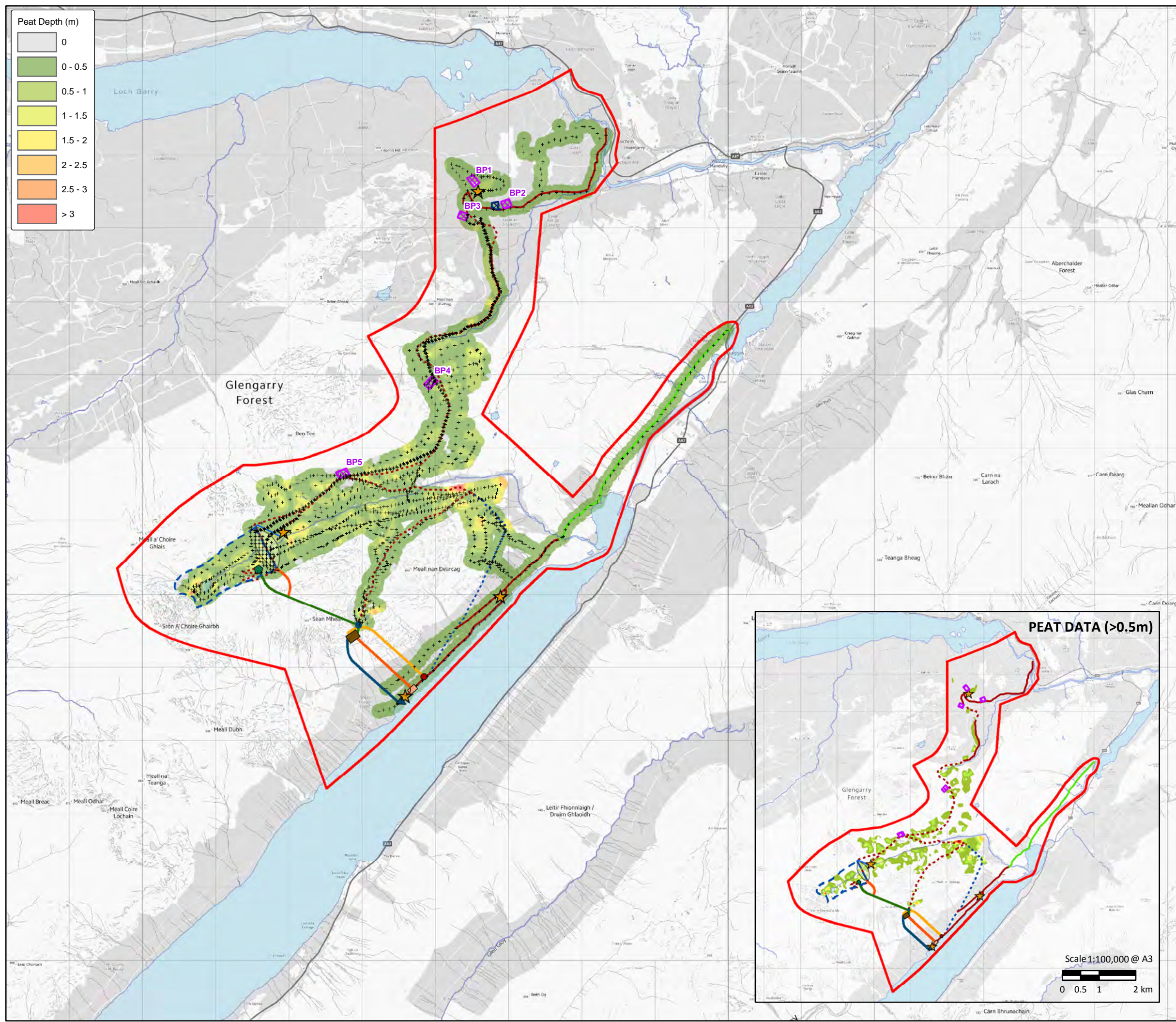
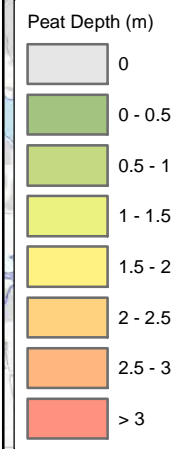
The peat probing and geomorphological mapping completed at site has confirmed that there are few areas of deep peat and that the site design has avoided these where technically possible.

Much of the peat at site has been proven to be fibrous and thus readily handled and suitable for storage and re-use on site. Proposals for the re-use and management of peat on site have been outlined. It has been shown provision can be made to store and re-use peat on site and in a manner which does not pose a hazard to the environment and maintains the existing carbon store within the peat.

Specifically the assessment has shown that no waste peat would be generated by The Proposed Development, and areas would be reinstated to depths up to 2m.

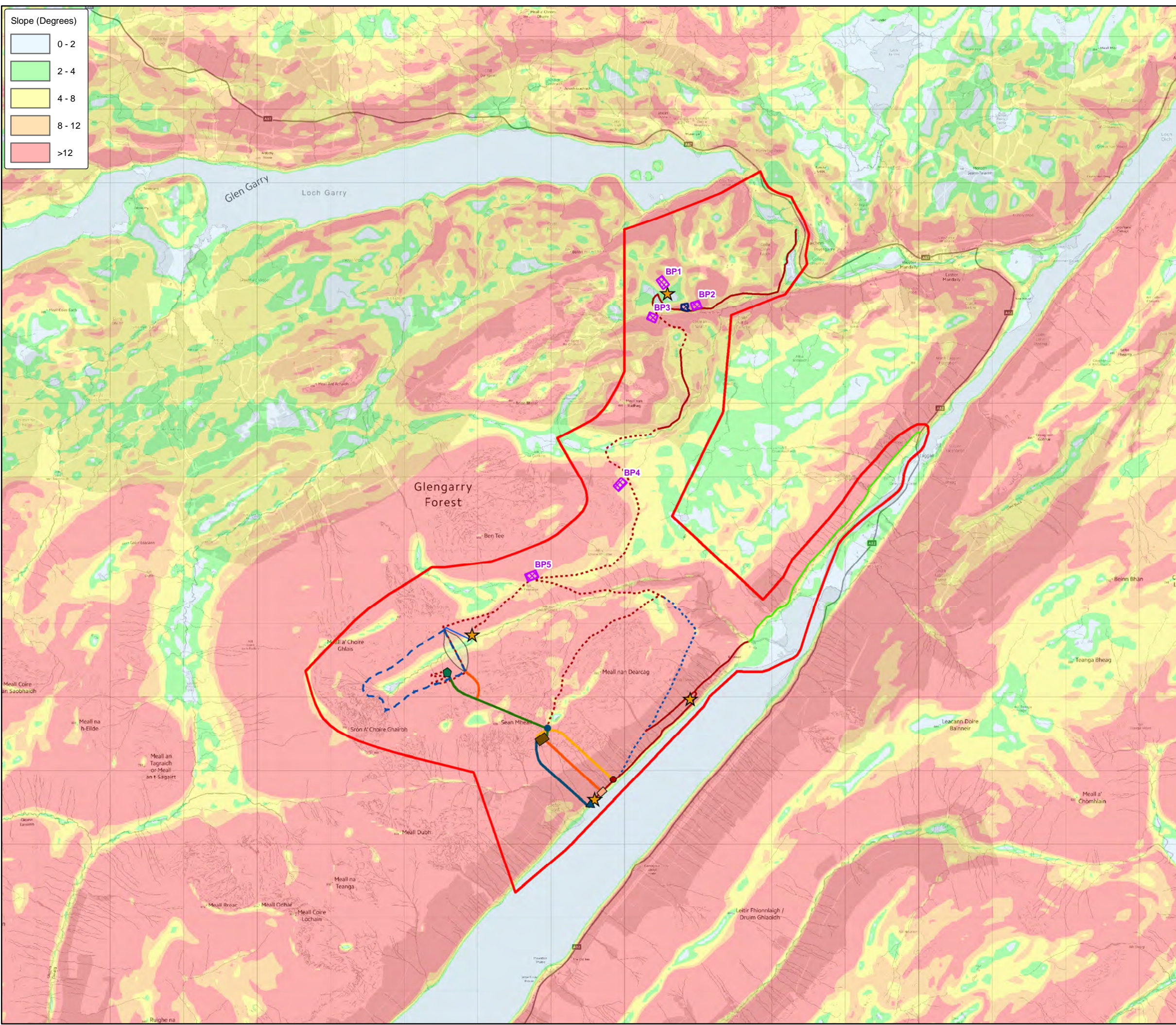
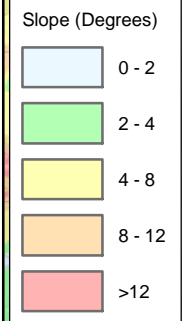


## FIGURES



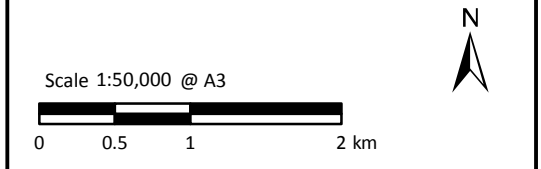
**PMP 1  
PEAT DATA**

**Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan**



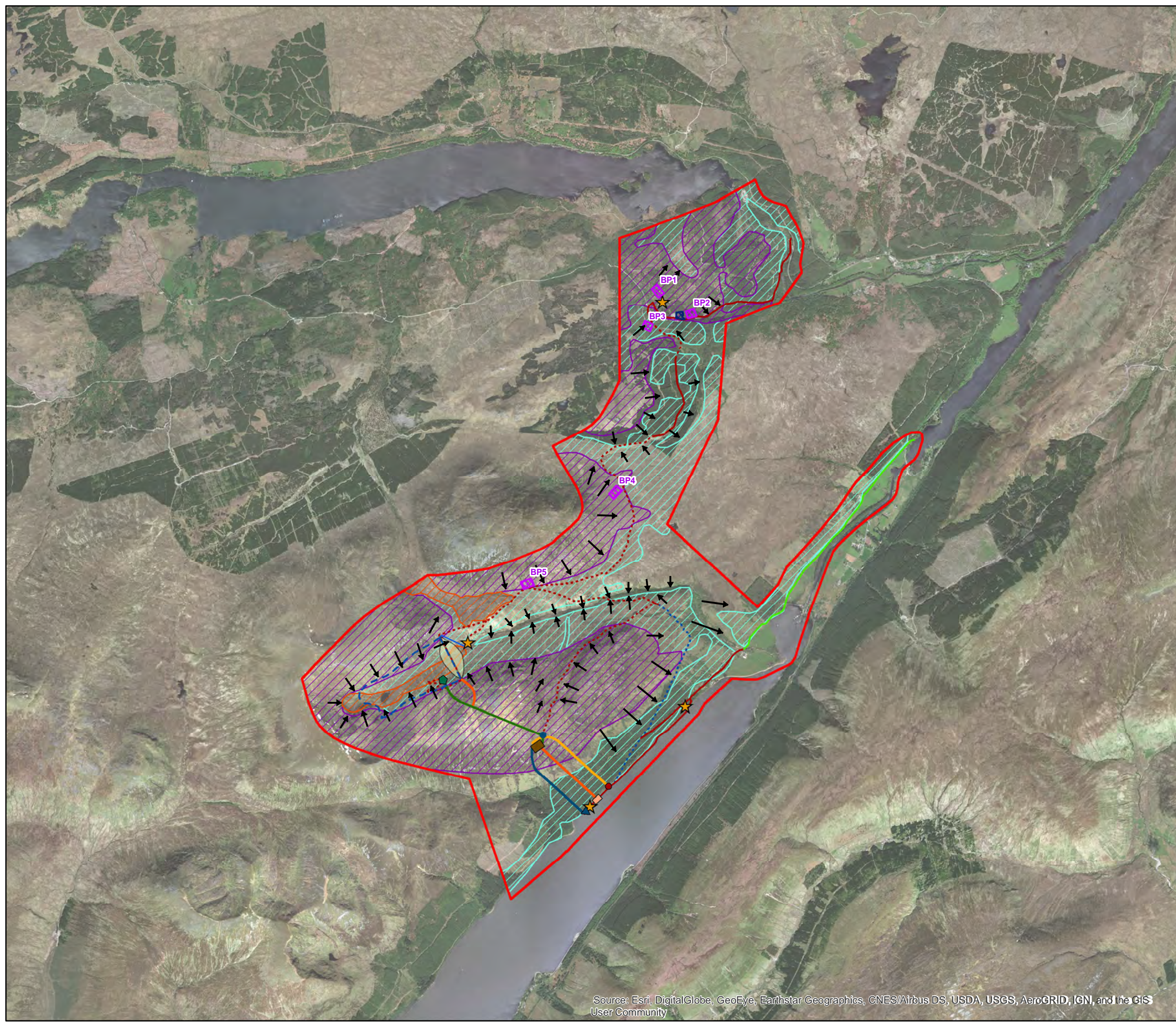
- Key:**
- Site Boundary
  - Upper Reservoir
  - Dam
  - Spillway Channel
  - Intake Tower
  - Headrace Tunnel (underground)
  - Tailrace Tunnel (underground)
  - Access Tunnel (underground)
  - Emergency Access Tunnel (underground)
  - Cavern Power Station (underground)
  - Surge and Ventilation Shafts
  - Emergency Access Tunnel Portal
  - Lower Control Works
  - Jetty and Administration Building
  - Potential Borrow Pit
  - Former Forestry Borrow Pit
  - Indicative Site Establishment Area
  - Existing Road to be upgraded
  - Existing Track to be upgraded
  - Permanent New Access Track
  - Temporary New Access Track

Slope Data OS Terrain 50 © Crown copyright and database right 2017



**PMP 2**  
**SLOPE PLAN**

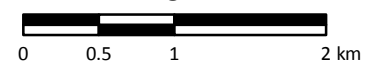
**Revised Coire Glas Pumped Storage Scheme**  
**Peat Management Plan**



**Key:**

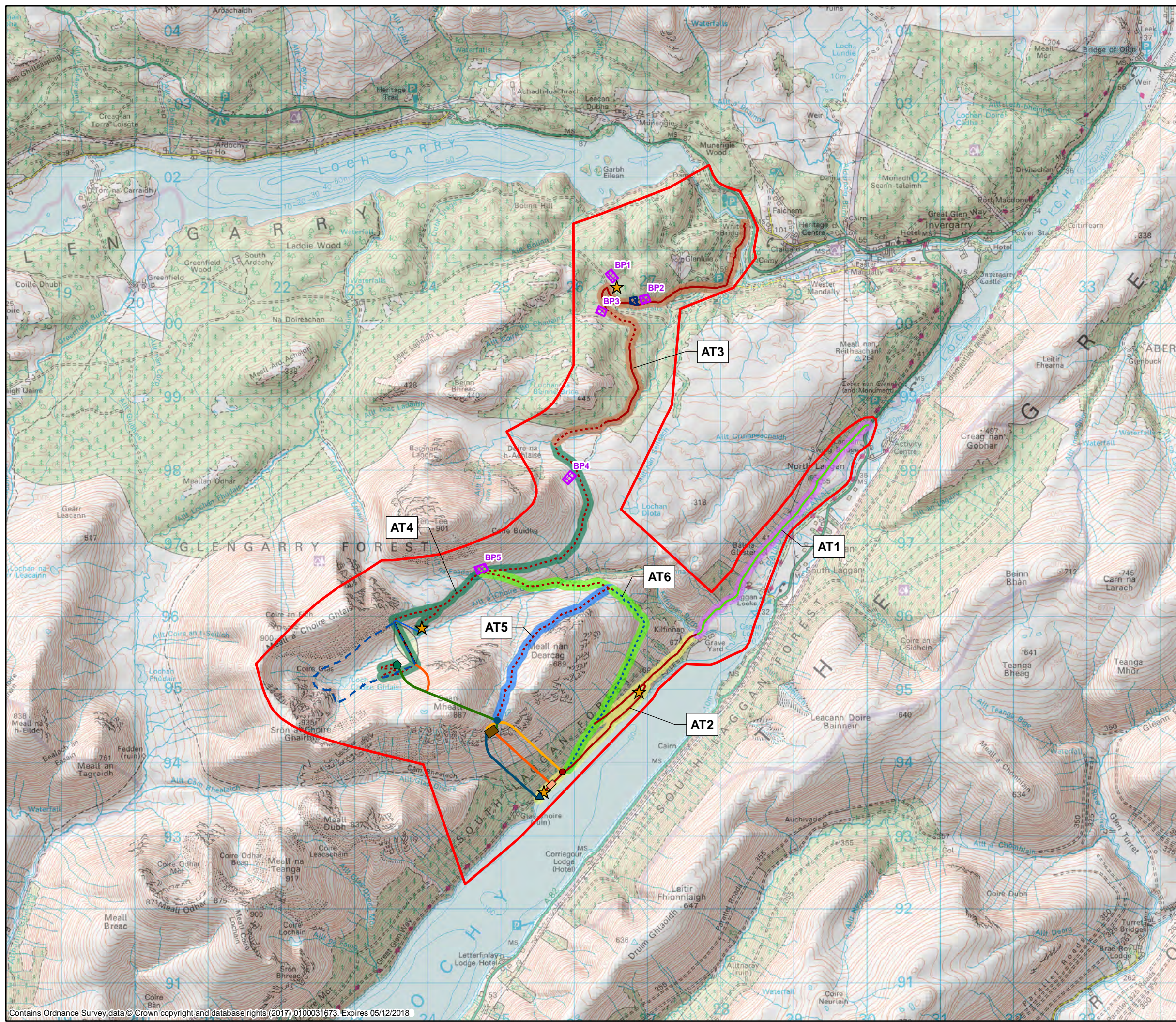
- Site Boundary
- Upper Reservoir
- Dam
- Spillway Channel
- I Intake Tower
- Headrace Tunnel (underground)
- Tailrace Tunnel (underground)
- Access Tunnel (underground)
- Emergency Access Tunnel (underground)
- Cavern Power Station (underground)
- Surge and Ventilation Shafts
- Emergency Access Tunnel Portal
- ▲ Lower Control Works
- Jetty and Administration Building
- Potential Borrow Pit
- Former Forestry Borrow Pit
- ★ Indicative Site Establishment Area
- Existing Road to be upgraded
- Existing Track to be upgraded
- Permanent New Access Track
- Temporary New Access Track
- Direction of Slope
- Bedrock at or Close to Surface
- Haggly Peat
- Hummocky Glacial Deposits

Scale 1:50,000 @ A3
























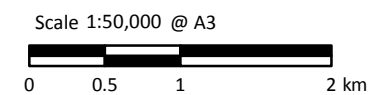
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**PMP 3**  
**GEOMORPHOLOGICAL MAPPING**  
**Revised Coire Glas Pumped Storage Scheme**  
**Peat Management Plan**



**Key:**

-  Site Boundary
-  Upper Reservoir
-  Dam
-  Spillway Channel
-  Intake Tower
-  Headrace Tunnel (underground)
-  Tailrace Tunnel (underground)
-  Access Tunnel (underground)
-  Emergency Access Tunnel (underground)
-  Cavern Power Station (underground)
-  Surge and Ventilation Shafts
-  Emergency Access Tunnel Portal
-  Lower Control Works
-  Jetty and Administration Building
-  Potential Borrow Pit
-  Former Forestry Borrow Pit
-  Indicative Site Establishment Area
-  Existing Road to be upgraded
-  Existing Track to be upgraded
-  Permanent New Access Track
-  Temporary New Access Track

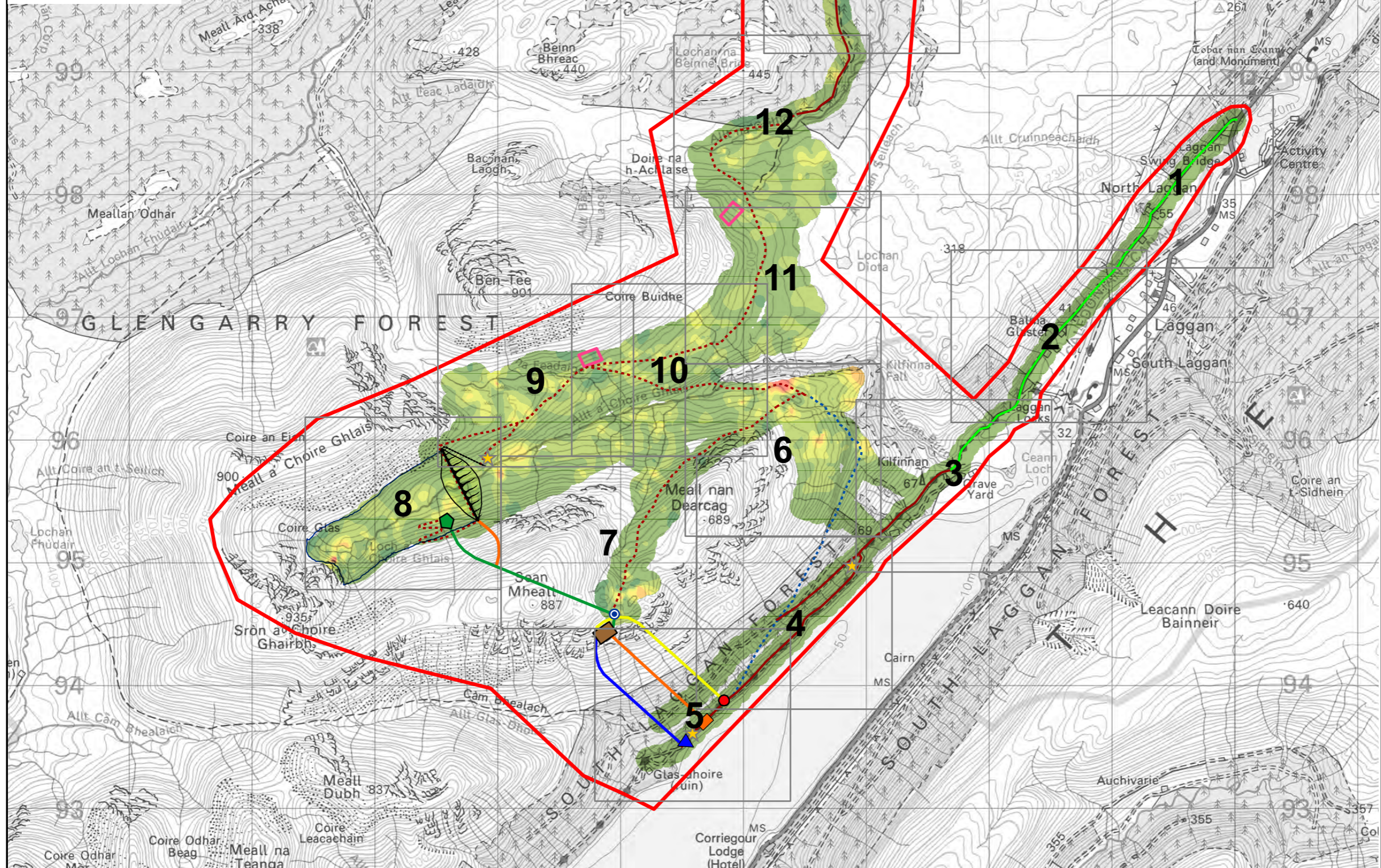
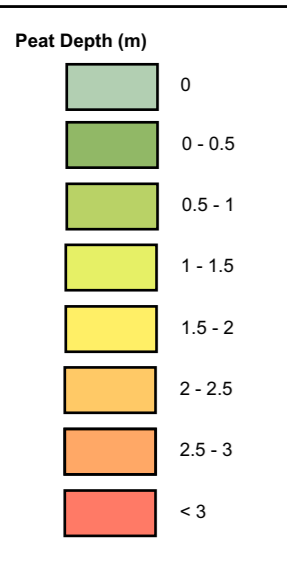


**PMP4  
ACCESS TRACKS**

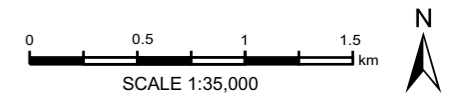
**Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan**

# APPENDICES

# APPENDIX A



- Key:
- Site Boundary
  - Upper Reservoir
  - Dam and Embankment
  - Spillway Channel
  - Intake Tower
  - Headrace Tunnel (underground)
  - Tailrace Tunnel (underground)
  - Access Tunnel (underground)
  - Emergency Access Tunnel (underground)
  - Cavern Power Station (underground)
  - Surge / Ventilation Shafts
  - Emergency Access Tunnel Portal
  - Lower Control Works
  - Jetty & Administration Building
  - Existing Road to be Upgraded
  - Existing Track to be Upgraded
  - Permanent New Access Track
  - Temporary New Access Track
  - Borrow Pit Area
  - Indicative Site Establishment Area







**Appendix A**  
**Overall Peat Probing Data Plan**  
**(with Sheet Numbers)**

Revised Coire Glas Pumped  
 Storage Scheme  
 Peat Management Plan











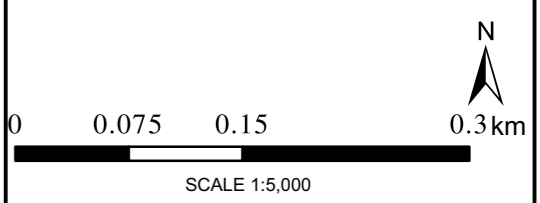


**Key:**

-  Site Boundary
-  Existing Road to be Upgraded
-  10m Contours
-  Peat Probe Location

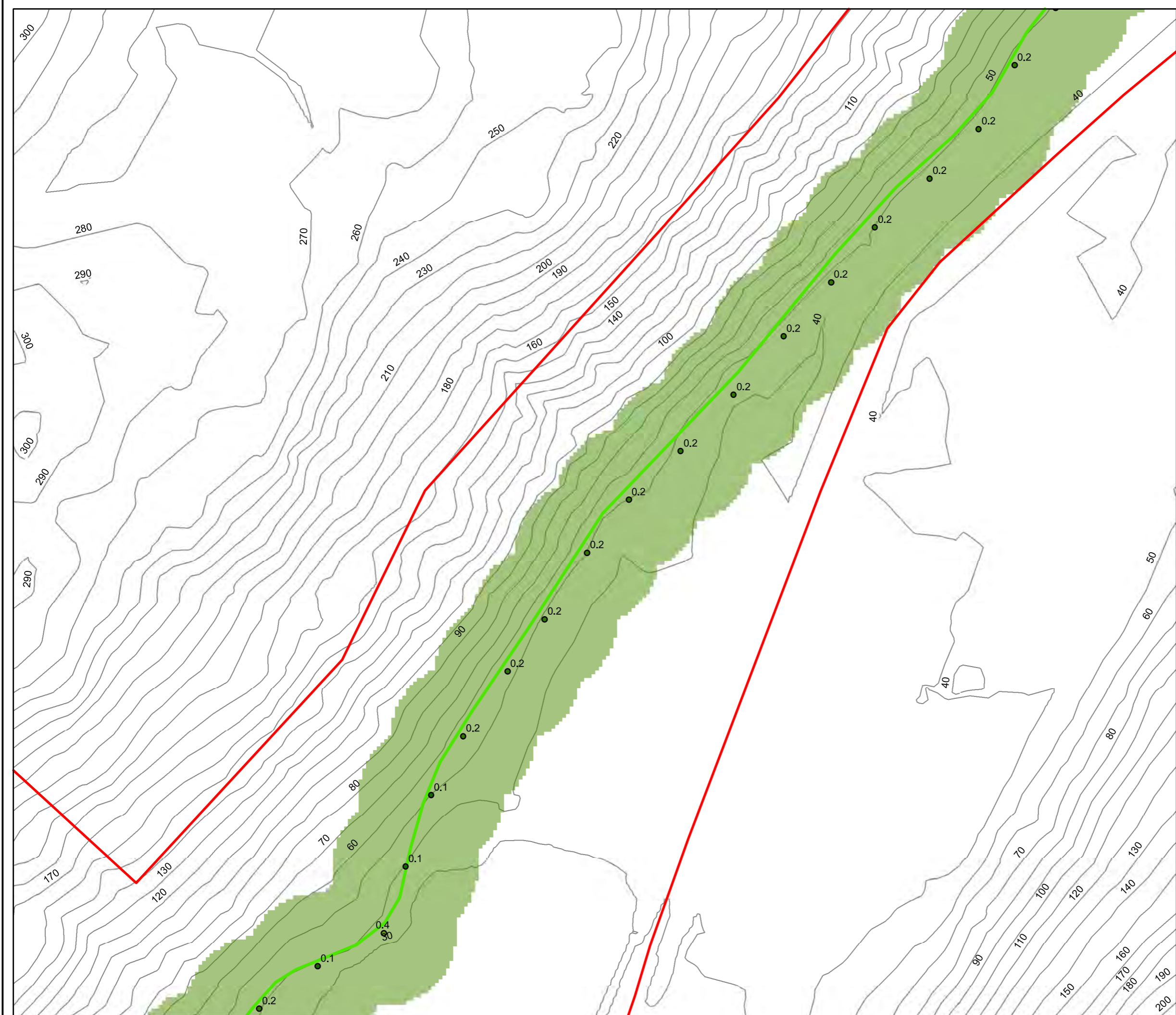
**Peat Depth (m)**

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



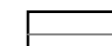



**Appendix A - Sheet 1**  
**Peat Probing Data**




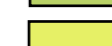




Revised Coire Glas Pumped Storage Scheme  
Peat Management Plan

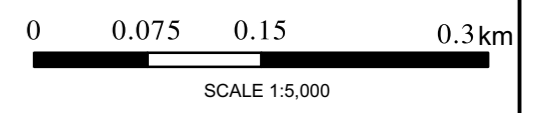


Key:

-  Site Boundary
-  Existing Road to be Upgraded
-  10m Contours
-  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

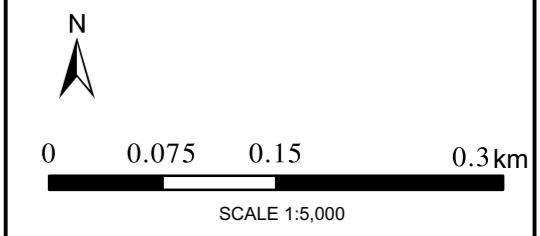


**Appendix A - Sheet 2**  
**Peat Probing Data**

Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

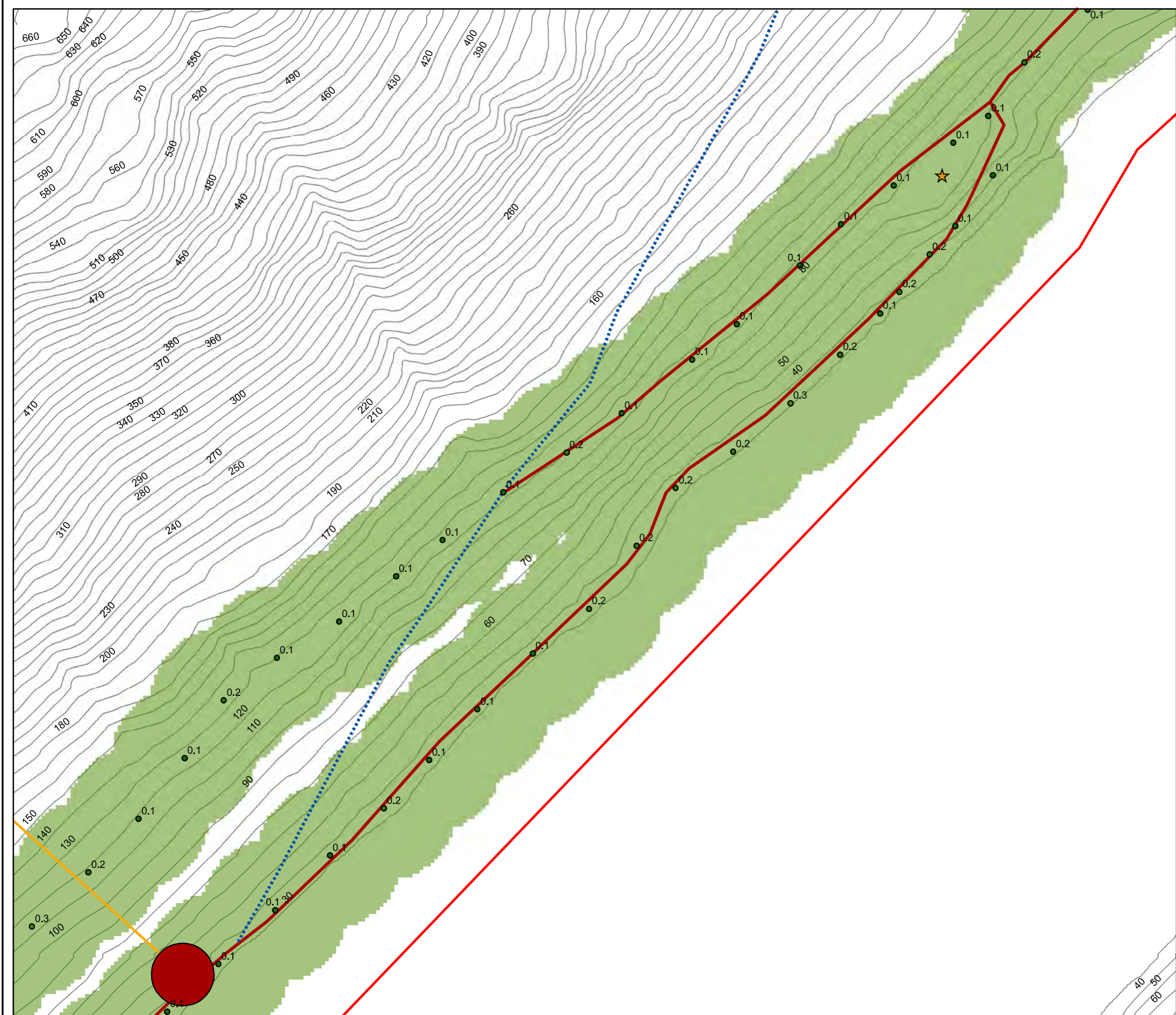


- Key:**
-  Site Boundary
  -  Existing Road to be Upgraded
  -  Existing Track to be Upgraded
  -  Temporary New Access Track
  -  10m Contours
  -  Peat Probe Location





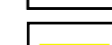
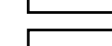
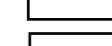


**Appendix A - Sheet 3**  
**Peat Probing Data**





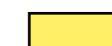



Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

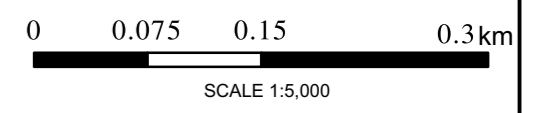


Key:

-  Site Boundary
-  Existing Track to be Upgraded
-  Temporary New Access Track
-  Emergency Access Tunnel Portal
-  Emergency Access Tunnel (underground)
-  10m Contours
-  Peat Probe Location

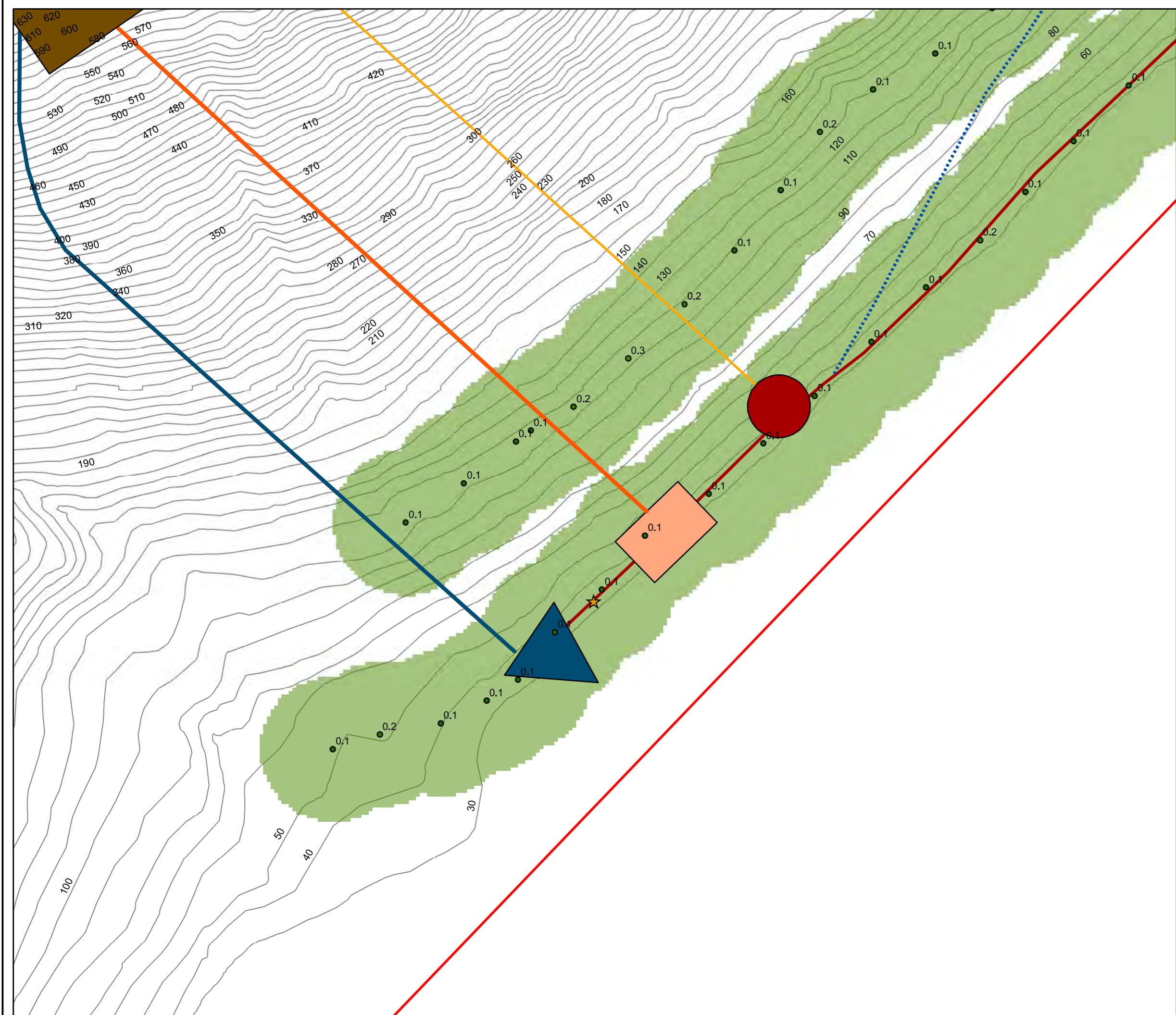
Peat Depth (m)

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



**Appendix A - Sheet 4**  
**Peat Probing Data**

Revised Coire Glas Pumped Storage Scheme  
Peat Management Plan

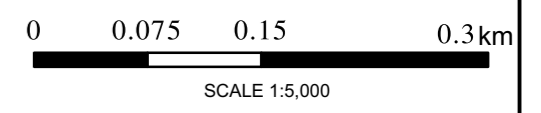


Key:

- Site Boundary
- Existing Track to be Upgraded
- Temporary New Access Track
- Emergency Access Tunnel (underground)
- Tailrace Tunnel (underground)
- Access Tunnel (underground)
- Lower Control Works
- Jetty & Administration Building
- Emergency Access Tunnel Portal
- 10m Contours
- Peat Probe Location

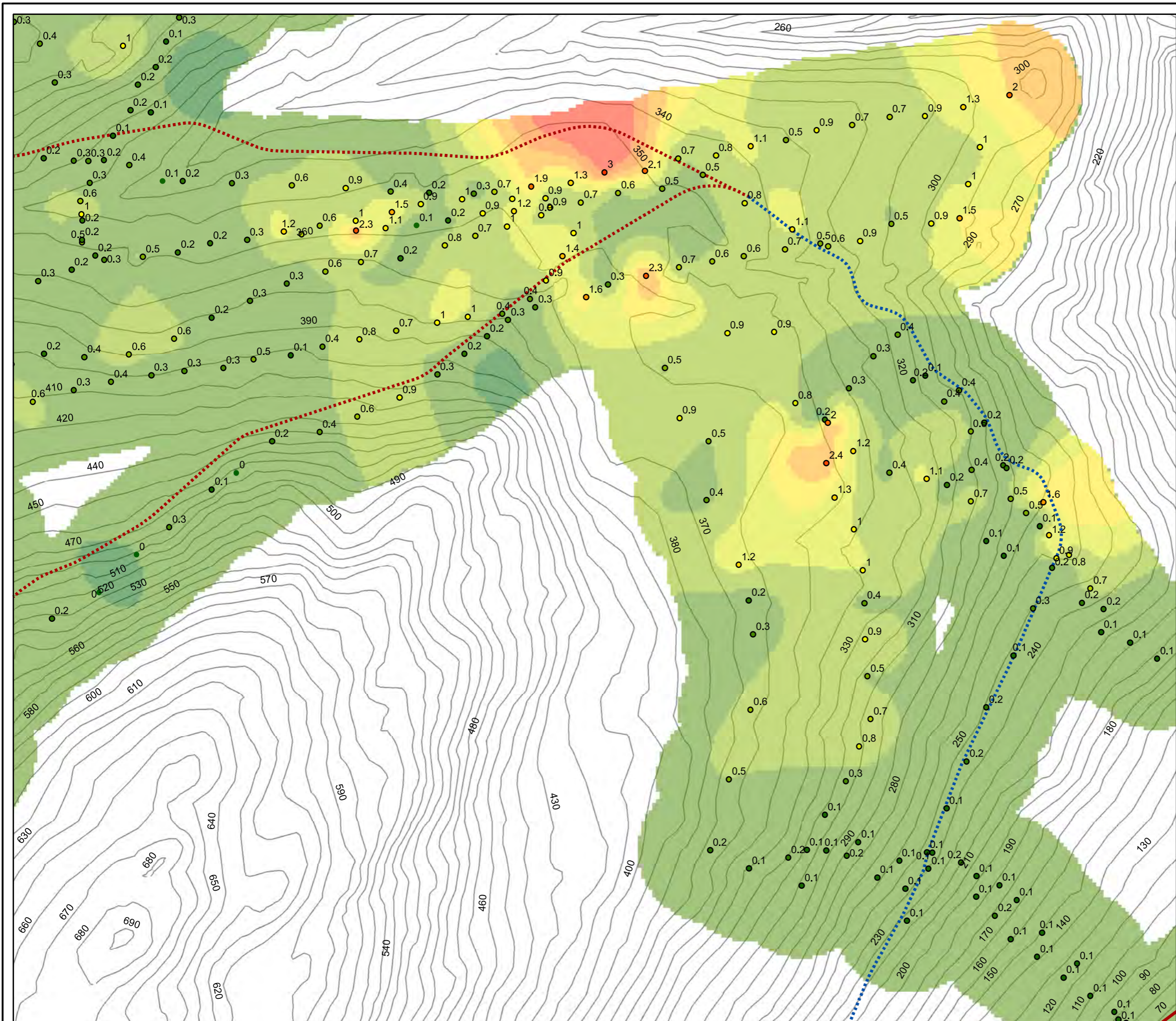
Peat Depth (m)

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



**Appendix A - Sheet 5**  
**Peat Probing Data**

Revised Coire Glas Pumped Storage Scheme  
Peat Management Plan

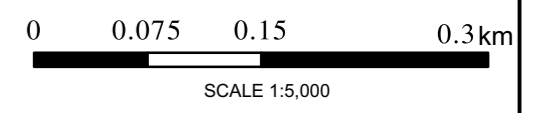


Key:

- Site Boundary
- Permanent New Access Track
- Temporary New Access Track
- 10m Contours
- Peat Probe Location

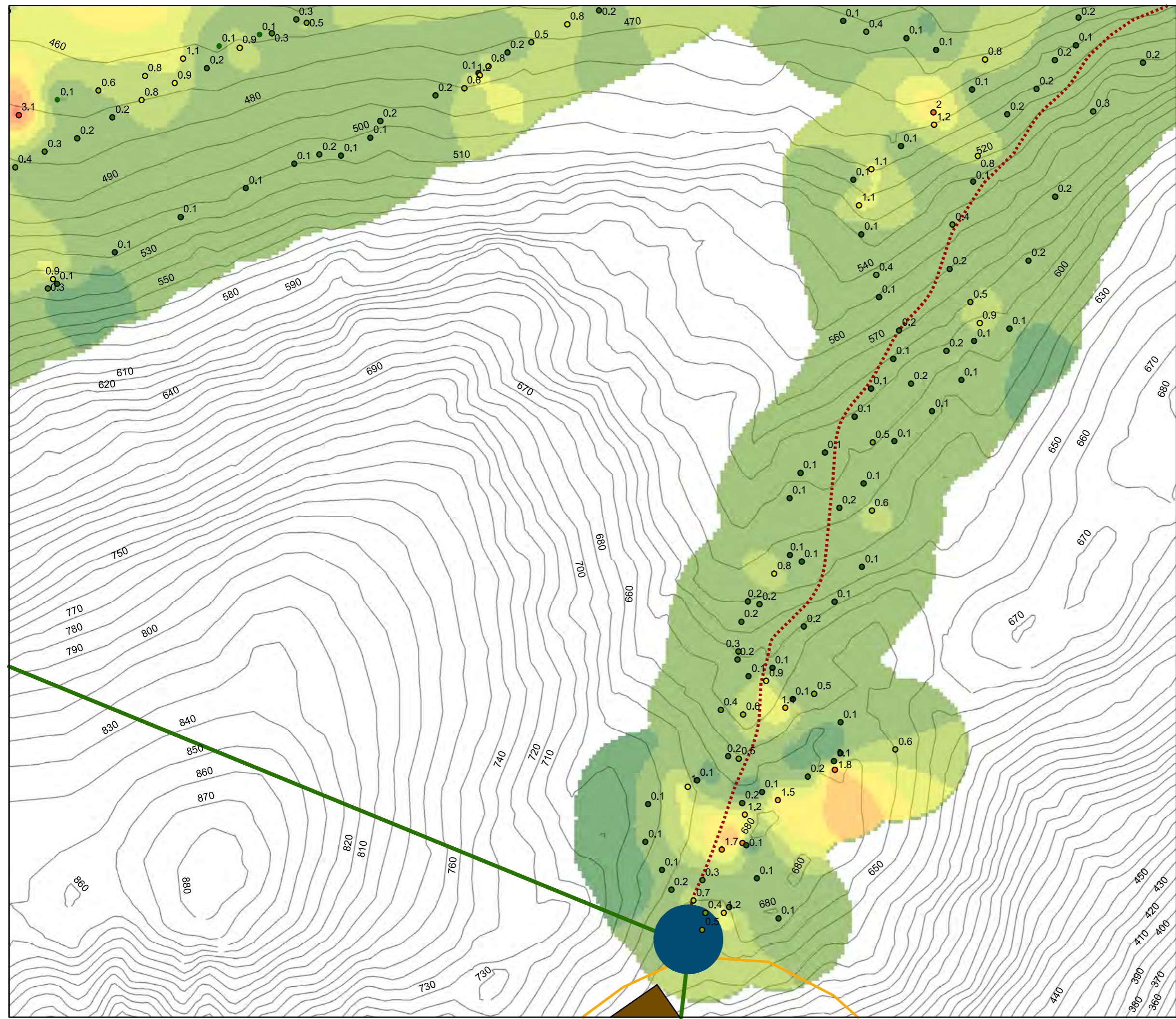
Peat Depth (m)

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



**Appendix A - Sheet 6**  
**Peat Probing Data**

Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

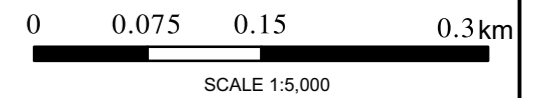


Key:

- Site Boundary
- Permanent New Access Track
- Temporary New Access Track
- Headrace Tunnel (underground)
- Access Tunnel (underground)
- Emergency Access Tunnel (underground)
- Surge / Ventilation Shafts
- Cavern Power Station (underground)
- 10m Contours
- Peat Probe Location

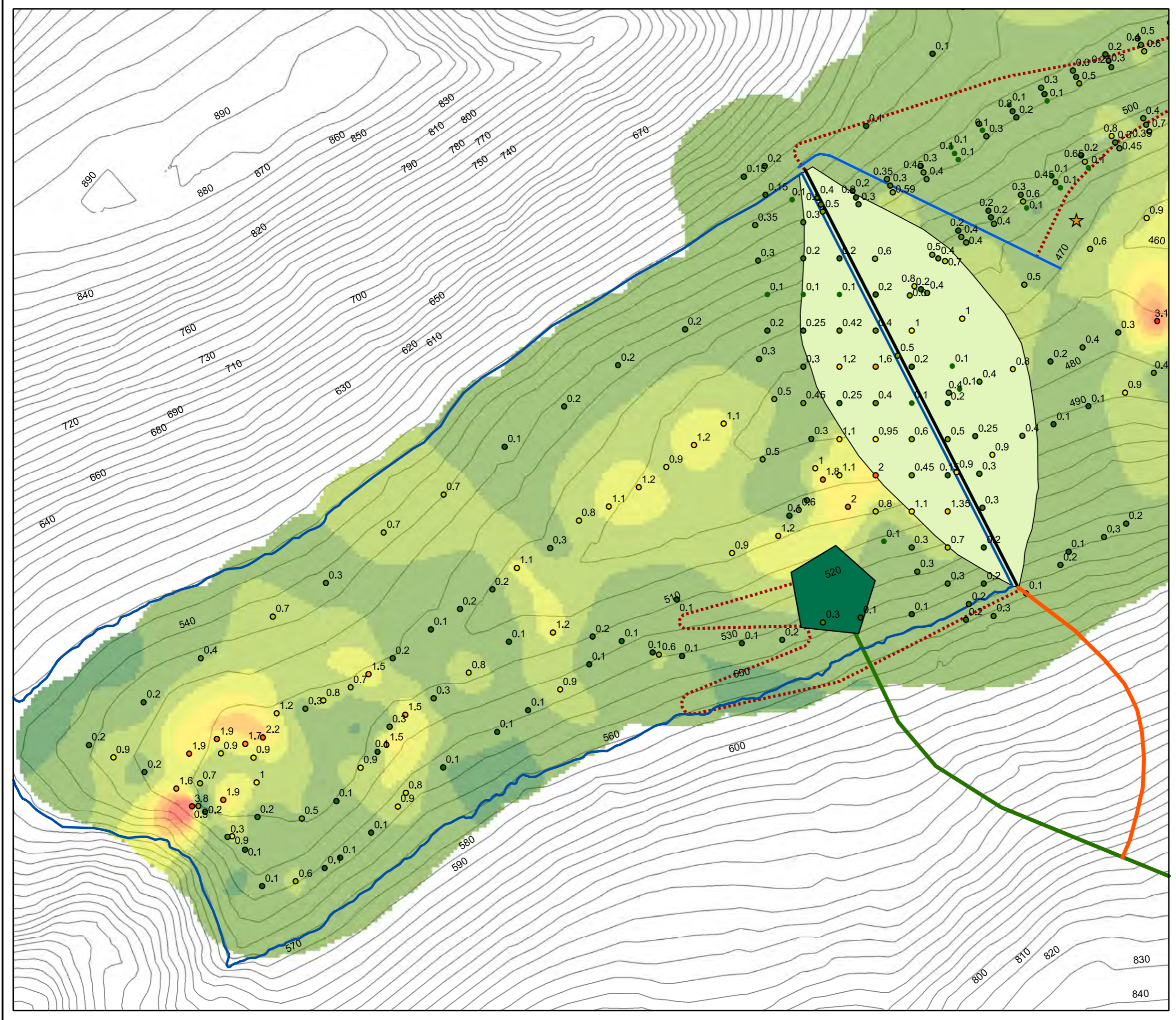
Peat Depth (m)

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

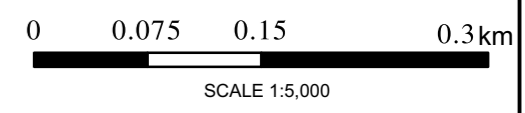
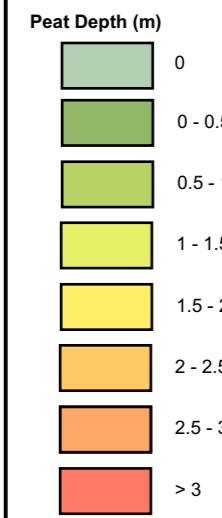


**Appendix A - Sheet 7**  
**Peat Probing Data**

Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan



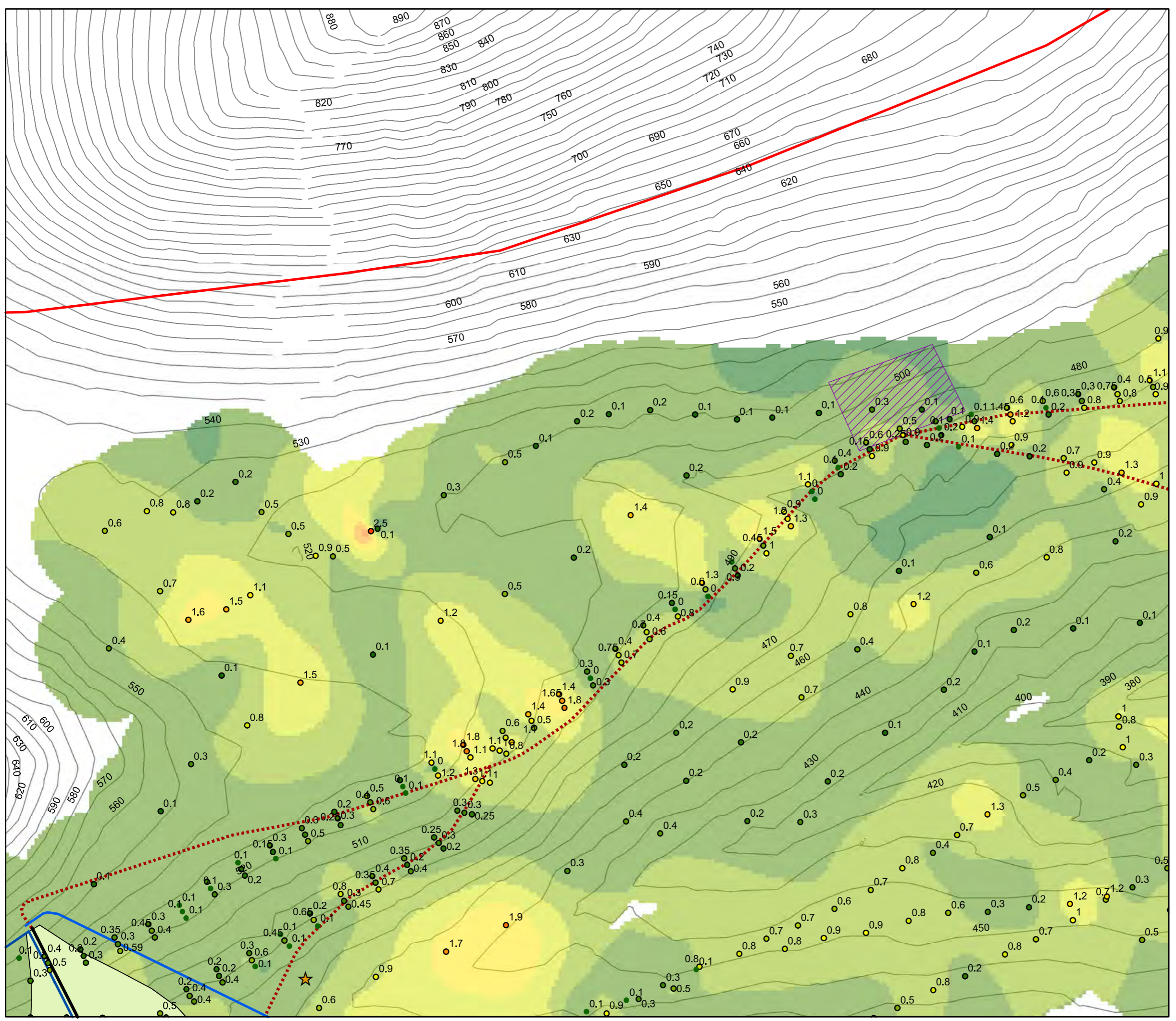
- Key:**
- Site Boundary
  - Permanent New Access Track
  - Headrace Tunnel (underground)
  - Access Tunnel (underground)
  - Upper Reservoir
  - Dam and Embankment
  - Spillway Channel
  - Intake Tower
  - 10m Contours
  - Peat Probe Location



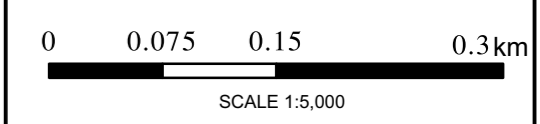
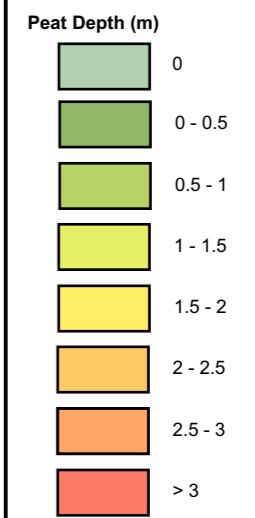
**Appendix A - Sheet 8**  
**Peat Probing Data**

Revised Coire Glas Pumped Storage Scheme  
Peat Management Plan



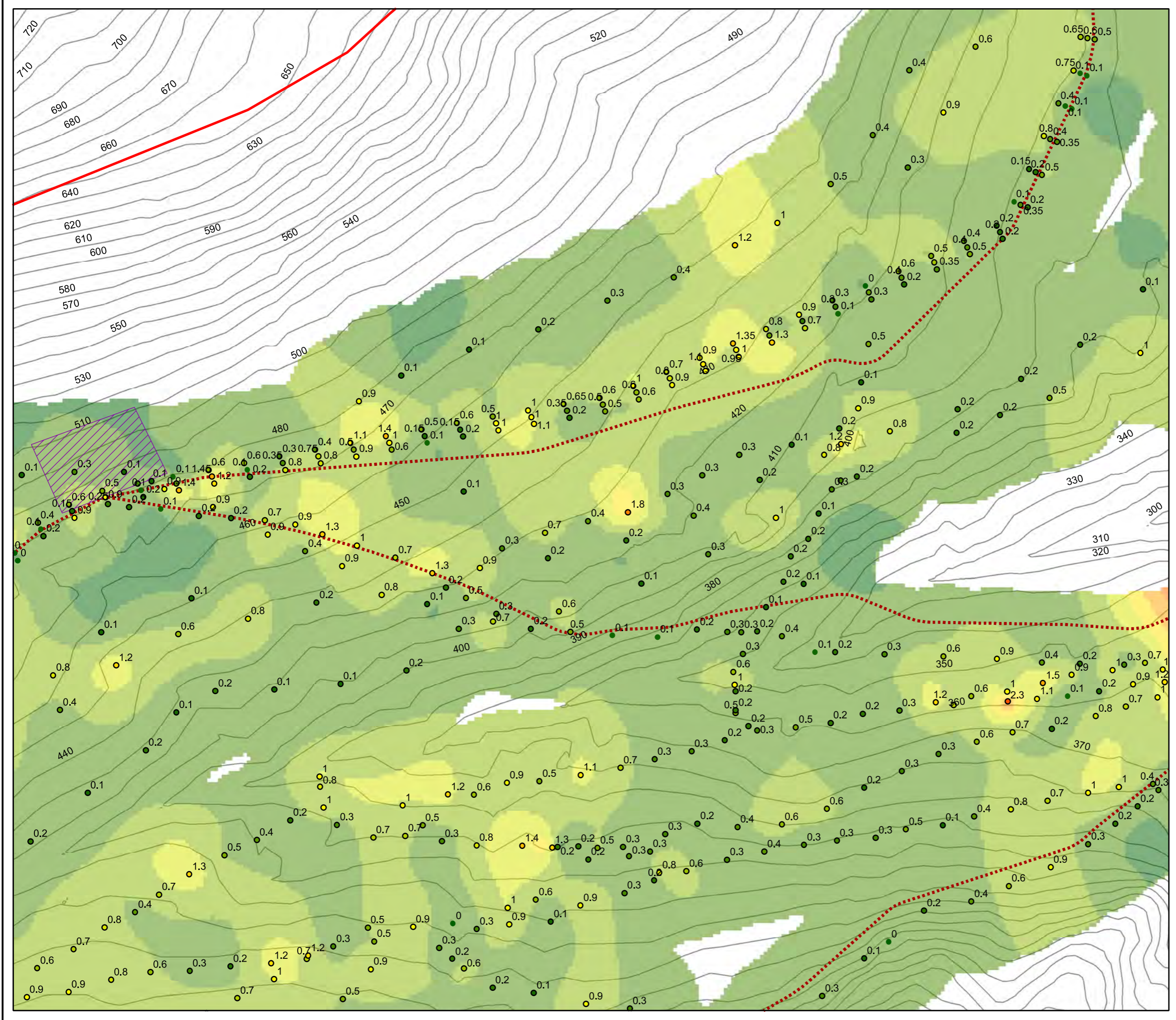


- Key:**
- Site Boundary
  - Permanent New Access Track
  - Upper Reservoir
  - Dam and Embankment
  - Spillway Channel
  - Indicative Borrow Pit Area
  - 10m Contours
  - Peat Probe Location

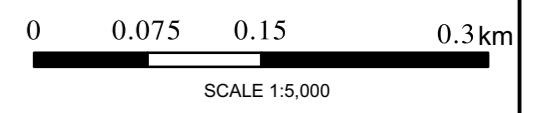
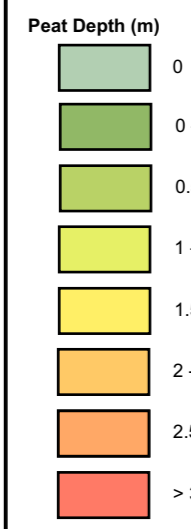


**Appendix A - Sheet 9**  
**Peat Probing Data**

Revised Coire Glas Pumped Storage Scheme  
Peat Management Plan

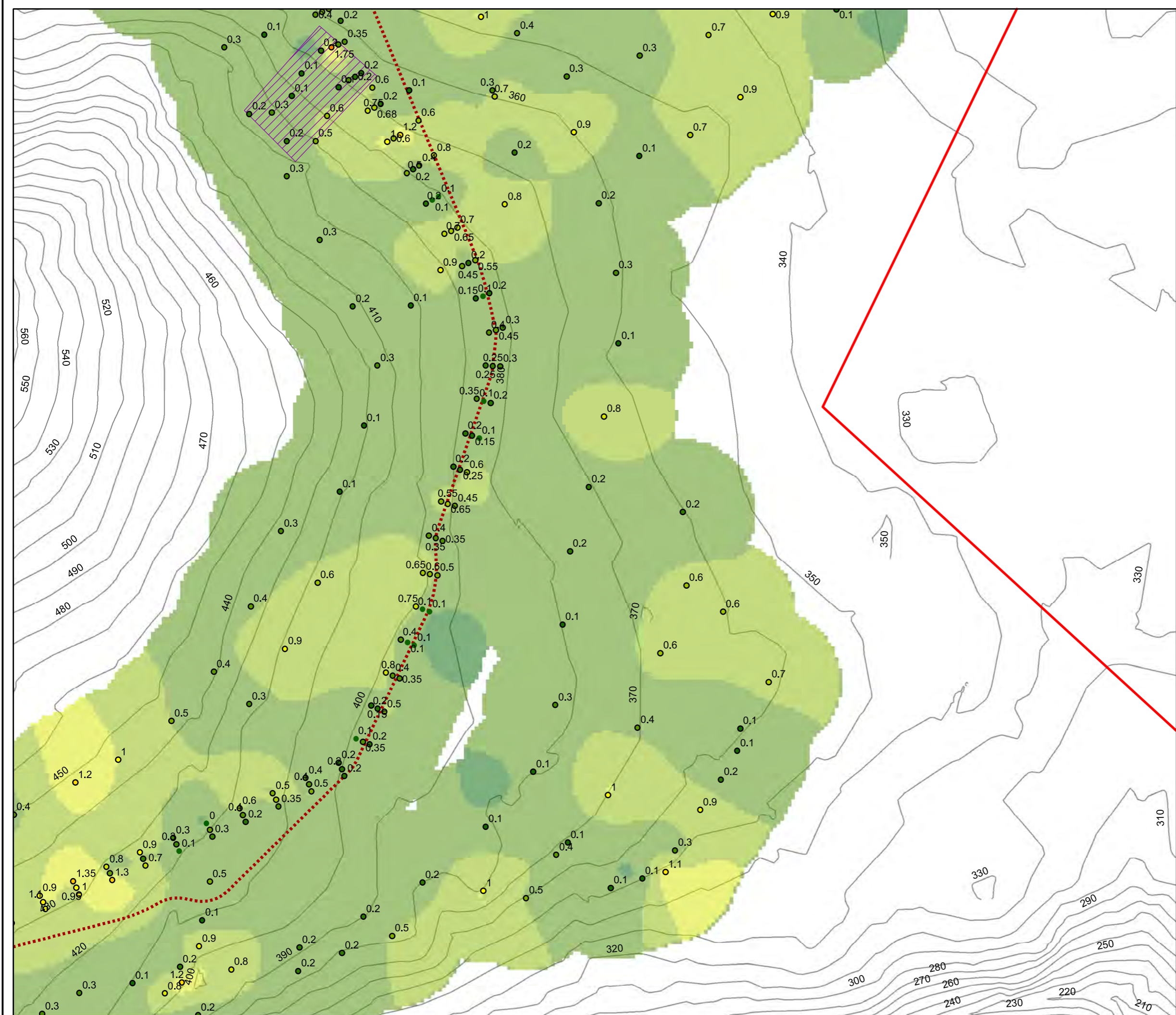


- Key:**
- Site Boundary
  - Permanent New Access Track
  - Indicative Borrow Pit Area
  - 10m Contours
  - Peat Probe Location








**Appendix A - Sheet 10**  
**Peat Probing Data**









Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

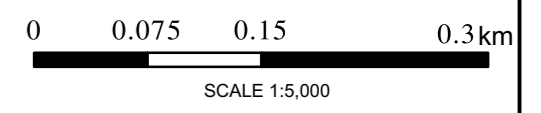


**Key:**

-  Site Boundary
-  Permanent New Access Track
-  Indicative Borrow Pit Area
-  10m Contours
-  Peat Probe Location

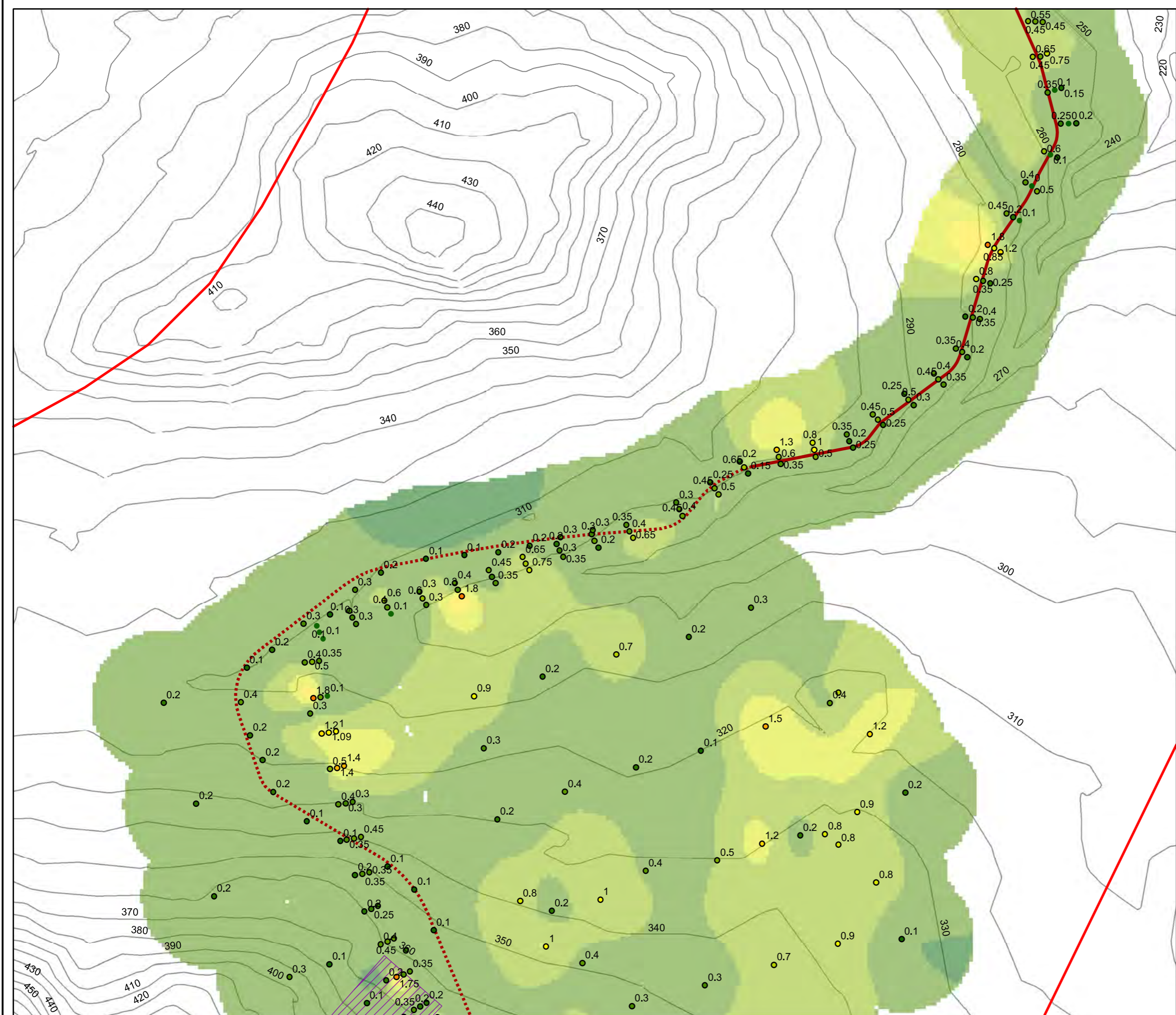
**Peat Depth (m)**

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








**Appendix A - Sheet 11**  
**Peat Probing Data**









Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

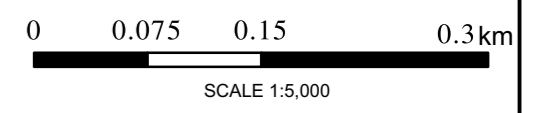


Key:

-  Site Boundary
-  Permanent New Access Track
-  Indicative Borrow Pit Area
-  10m Contours
-  Peat Probe Location

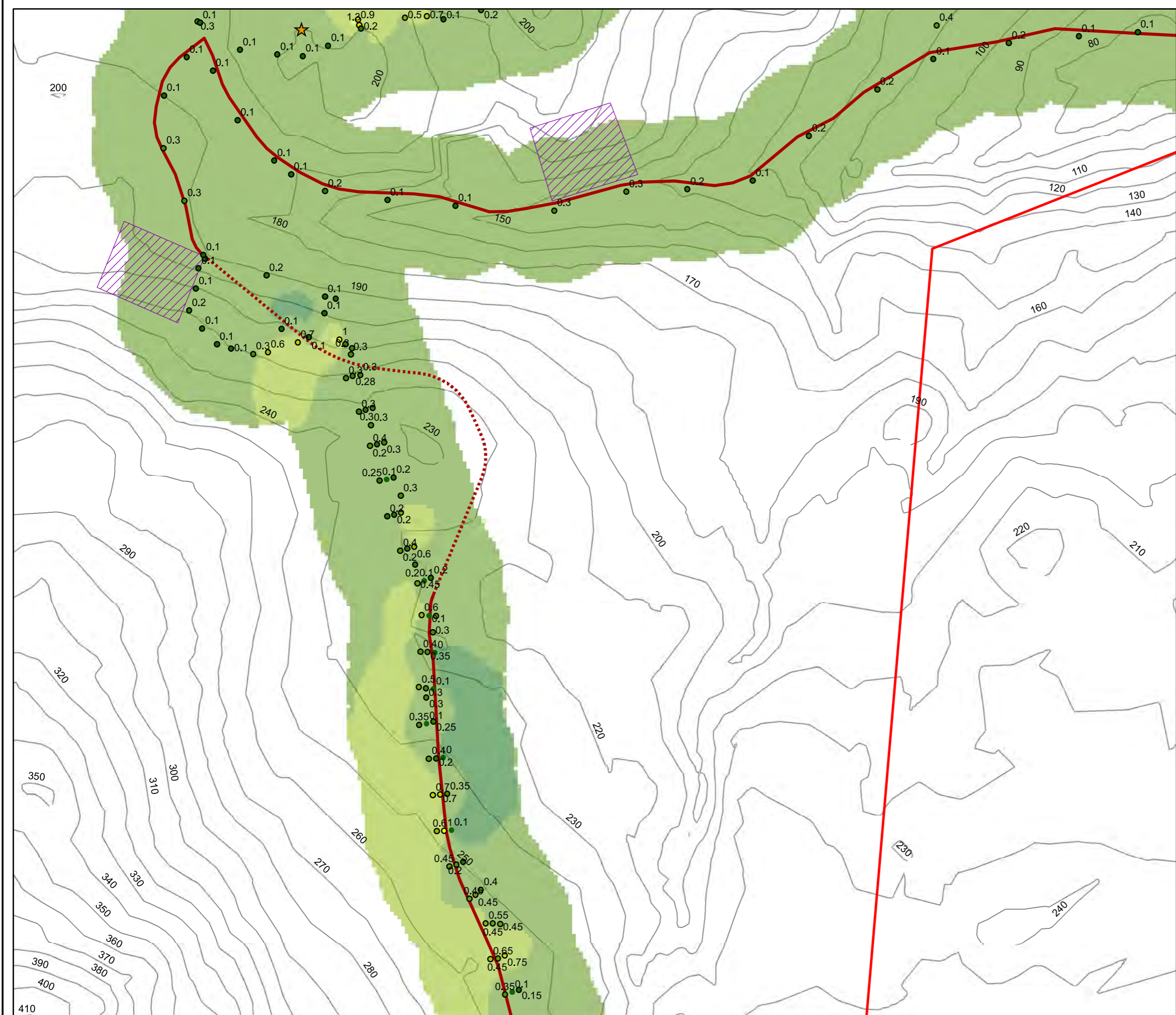
Peat Depth (m)

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



**Appendix A - Sheet 12**  
**Peat Probing Data**

Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

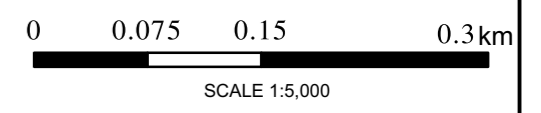


Key:

- Site Boundary
- Existing Track to be Upgraded
- Permanent New Access Track
- Indicative Borrow Pit Area
- Indicative Site Establishment Area
- 10m Contours
- Peat Probe Location

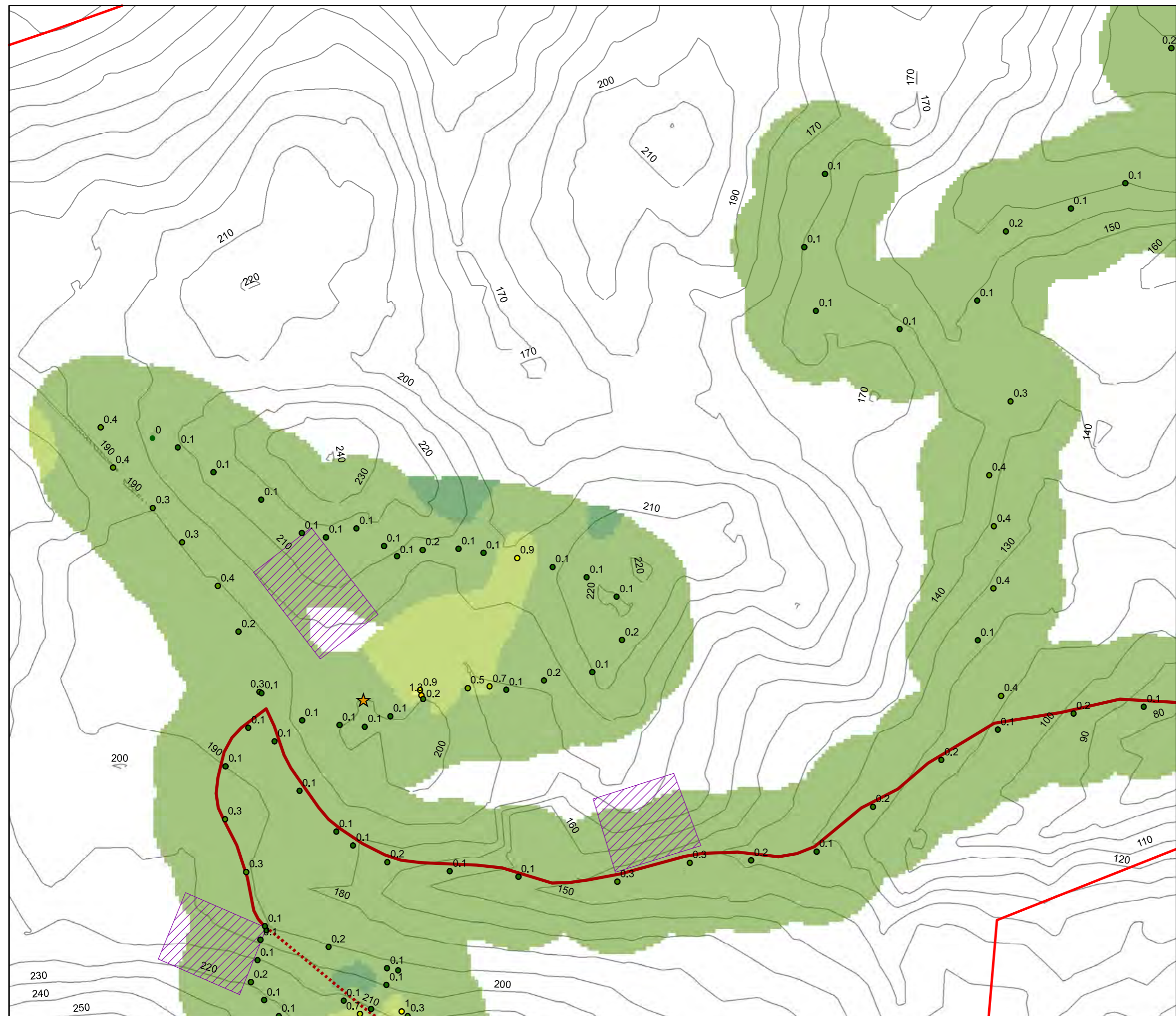
Peat Depth (m)

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



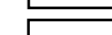


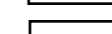
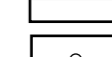


**Appendix A - Sheet 13**  
**Peat Probing Data**




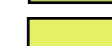




Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

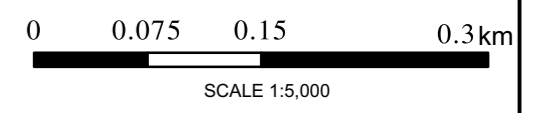


Key:

-  Site Boundary
-  Existing Track to be Upgraded
-  Permanent New Access Track
-  Indicative Borrow Pit Area
-  Indicative Site Establishment Area
-  10m Contours
-  Peat Probe Location

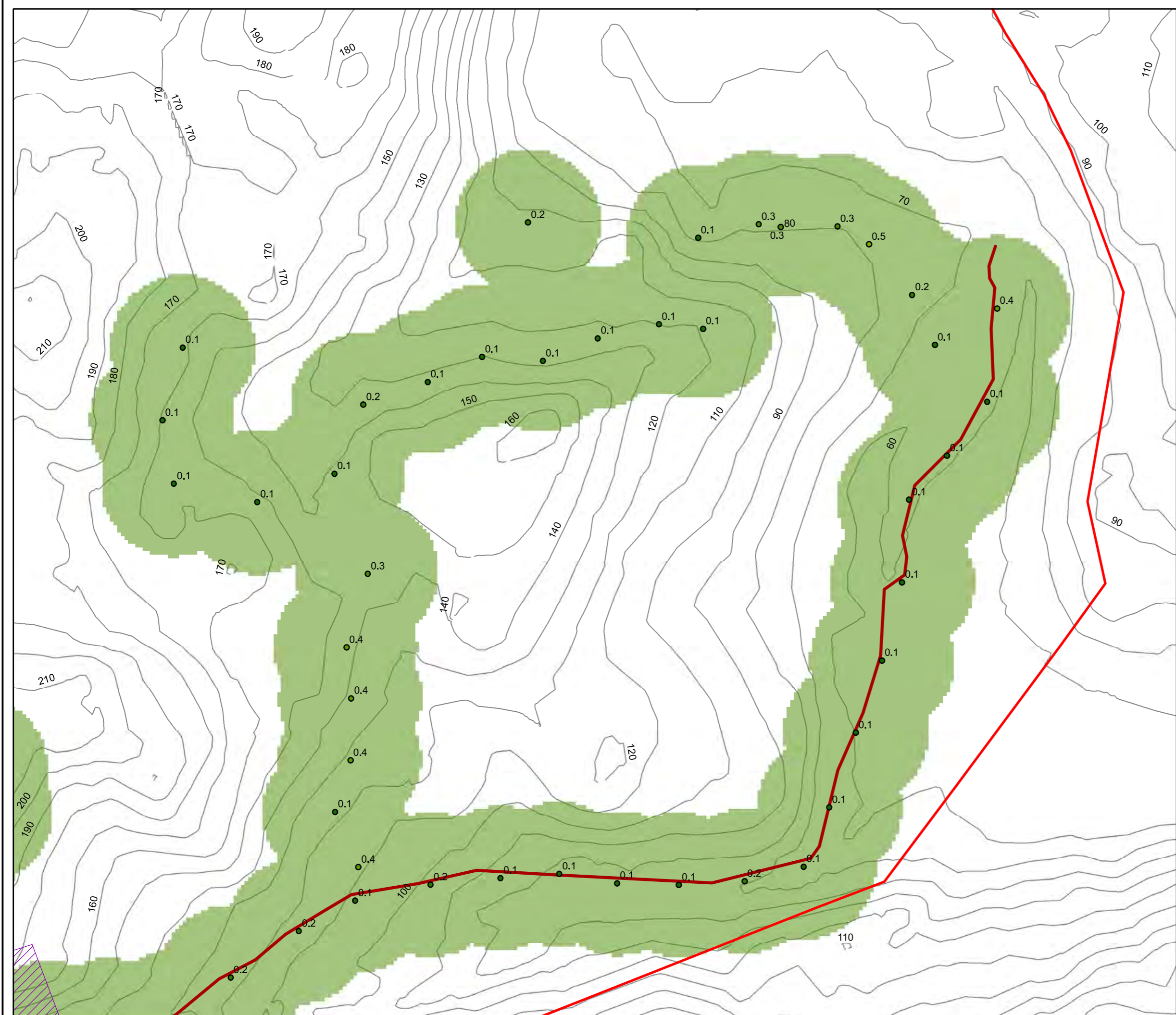
Peat Depth (m)

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




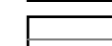
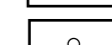


**Appendix A - Sheet 14**  
**Peat Probing Data**


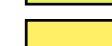
Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

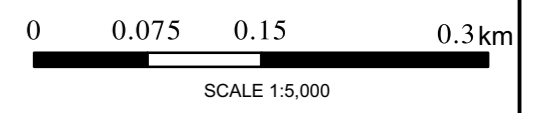


Key:

-  Site Boundary
-  Existing Track to be Upgraded
-  Indicative Borrow Pit Area
-  10m Contours
-  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



**Appendix A - Sheet 15**  
**Peat Probing Data**

Revised Coire Glas Pumped  
Storage Scheme  
Peat Management Plan

## 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

#### STAFFORD

T: +44 (0)1785 241755

#### 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)4 76 70 93 41