TECHNICAL APPENDIX 10.5: GEOLOGY AND SOILS METHOD OF ASSESSMENT

9.1 Introduction

9.1.1 The assessment methodology, including criteria for assessing sensitivity of receptors, magnitude of change and cumulative effects, as well as overall significance criteria, is detailed below.

Criteria for Assessing the Sensitivity of Receptors

9.1.2 Effects on geology and soils resources are described as beneficial, neutral or adverse and are considered with reference to the value or sensitivity of the receptor, as described in **Table 10.5.1**.

Table 10.5.1: Sensitivity of Environmental Receptor

Sensitivity of Receptor	Definition	Typical Criteria
High	International or national level importance. Receptor with a high quality and rarity, regional or national scale and limited potential for substitution/ replacement.	• Average peat depth >1 m within the sub-catchment • Peat is classified as Class 1 or 2 importance as shown on SNH Carbon and Peatland Map (2016) • Peat Landslide Hazard Risk Assessment shows High to Moderate Risk of peat landslides • Internationally important geological designations/features
Medium	Regional, county and district level importance. Receptor with a medium quality and rarity, regional scale and limited potential for substitution/ replacement.	• Average peat depth >0.5 m within the sub catchment • Peat is classified as Class 3 to 5 as shown on SNH Carbon and Peatland Map (2016) • Peat Landslide Hazard Risk Assessment shows Low risk of peat landslides • Regionally important geological designations/features
Low	Local importance Receptor is on-site or on a neighbouring site with a low quality and rarity, local scale. Environmental equilibrium is stable and is resilient to changes that are greater than natural fluctuations, without detriment to its present character.	• No peat present within the sub catchment • No peat shown on SNH Carbon and Peatland Map (2016) • Peat Landslide Hazard Risk Assessment shows no risk of peat landslides • Local/no important geological designations/features

Criteria for Assessing the Magnitude of Change

9.1.3 The size or magnitude of each impact is determined as a predicted deviation from the baseline conditions during construction, operation and decommissioning of the Proposed Development, as described in **Table 10.5.2**.

Table 10.5.2: Magnitude of Impact on a Receptor

Magnitude of Impact	Criteria
Large	Large alteration/ change in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.
Medium	Medium alteration/ change in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.
Small	Small alteration/ change in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.
None	No alteration/ change detectable in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.

Criteria for Assessing Cumulative Effects

9.1.4 The potential for cumulative effects to occur as a result of the Proposed Development is assessed based on:

- the potential hydrological connection and interactions of peatland with other similar developments, which are the subject of a valid planning application;
- the potential for concurrent phases of construction with other similar developments with the potential for hydrological connection and/or peat interaction to the Proposed Development; and
- validated and relevant planning applications with regards to the potential impact of other similar developments on geology and soils.

Criteria for Assessing Significance

9.1.5 **Table 10.5.3** illustrates how residual effects are determined by comparison of the sensitivity of receptors with the magnitude of impact (i.e. predicted change). For the purposes of this assessment significant effects are those classified as **Major** or **Moderate**.

Table 10.5.3: Significance Criteria

		Magnitude of Impact			
		None	Small	Medium	Large
Sensitivity of Receptor	High	None	Minor	Major	Major
	Medium	None	Minor	Moderate	Moderate
	Low	None	Negligible	Minor	Minor