

**Byers Gill Solar  
EN010139**

# 6.4.2.12 Environmental Statement

## Appendix 2.12 Outline Soil Resources Management Plan

Planning Act 2008

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms  
and Procedure) Regulations 2009

Volume 6

February 2024

Revision C02



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# 1. Introduction

## 1.1. Purpose of document

- 1.1.1. This document provides an Outline Soil Resources Management Plan (SRMP) for the construction, operation and decommissioning of Byers Gill Solar (the Proposed Development). It includes the overall approach to managing soil resources affected by the Proposed Development.
- 1.1.2. An Environmental Impact Assessment (EIA) has been undertaken for the Proposed Development and an Environmental Statement (ES) (Volume 6) has been prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations'). In accordance with the requirements of the EIA Regulations, the ES contains the assessment of the likely significant effects on the environment that may be caused during construction, operation and decommissioning of the Proposed Development and describes proposed mitigation measures (Document Reference 6.2).
- 1.1.3. RWE (the Applicant) has prepared this Outline SRMP as part of an Application for a Development Consent Order (DCO) for the construction, operation and decommissioning of the Proposed Development. It demonstrates how mitigation measures included within the ES are secured in the draft DCO, when they will be implemented, as well as setting out the monitoring and recording activities to ensure that these measures are carried out.
- 1.1.4. The SRMP will be produced for the Proposed Development following the appointment of the Principal Contractor (PC) prior to the commencement of construction. The SRMP will be prepared in accordance with the Outline SRMP (requirement 10 of the DCO), which outlines the structure and controls which will be delivered across the construction, operation and decommissioning phases of the Proposed Development.
- 1.1.5. A number of complementary management plans have also been produced to support the construction, operation and decommissioning of the Proposed Development and these are listed in Table 1-1. These should be read in conjunction with this oSRMP. It is noted that the oMMP (ES Appendix 2.10 (Document Reference 6.4.2.10)) is of particular relevance, especially with regards to soil handling.

**Table 1-1 Management plans**

Management Plan	Purpose	Stage	Document reference
Outline Construction Environmental Management Plan (CEMP)	Sets out how negative environmental impacts will be minimised during construction.	<ul style="list-style-type: none"> <li>▪ Construction</li> </ul>	ES Appendix 2.6 (Document Reference 6.4.2.6)

Management Plan	Purpose	Stage	Document reference
Outline Construction Traffic Management Plan (CTMP)	Sets out how construction traffic and staff vehicles will be managed during construction.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 2.8 (Document Reference 6.4.2.8)
Outline Pollution and Spillage Response Plan	Sets out methods to manage pollution and spillage incidents on site during construction.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 2.9 (Document Reference 6.4.2.10)
Outline Materials Management Plan (MMP)	Sets out how excavated materials that will be generated in the course of constructing the Proposed Development will be re-used in a manner that is compatible with the Waste Framework Directive and associated regulations.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 2.10 (Document Reference 6.4.2.10)
Outline Site Waste Management Plan (SWMP)	Sets out how the Proposed Development will manage resources efficiently, and measures to prevent and minimise waste.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 2.11 (Document Reference 6.4.2.11)
Outline Soil Resources Management Plan (SRMP)	Sets out the overall approach to managing soil resources affected by the Proposed Development.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 2.12 (Document Reference 6.4.2.12)
Archaeological Management Strategy	Sets out the management of archaeological remains, both known and currently unknown, during construction.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 8.5 (Document Reference 6.4.8.5)
Outline Battery Fire Safety Management Plan	Sets out the key measures to minimising the chances of a battery fire event and fire spread in the event of a fire. Sets out the proposed operational response to a fire event.	<ul style="list-style-type: none"> <li>Operation</li> </ul>	ES Appendix 2.13 (Document Reference 6.4.2.13)
Landscape and Ecological Management Plan (LEMP)	Sets out the management of the landscape and ecological features of the Proposed Development.	<ul style="list-style-type: none"> <li>Construction</li> <li>Operation</li> <li>Decommissioning</li> </ul>	ES Appendix 2.14 (Document Reference 6.4.2.14)
Outline Public Rights of Way (PRoW) Management Plan	Sets out how PRoWs would be managed to ensure they remain safe to use, and disruption to users of the PRoW is minimised.	<ul style="list-style-type: none"> <li>Construction</li> <li>Operation</li> <li>Decommissioning</li> </ul>	ES Appendix 2.15 (Document Reference 6.4.2.15)
Arboricultural Impact Assessment (AIA)	Sets out the protection measures to be implemented during the construction phase, including activity supervision by a suitably qualified arboriculturist where appropriate.	<ul style="list-style-type: none"> <li>Construction</li> </ul>	ES Appendix 7.5 (Document Reference 6.4.7.5)

Management Plan	Purpose	Stage	Document reference
Outline Decommissioning Environmental Management Plan (DEMP)	Sets out how negative environmental impacts will be minimised decommissioning.	<ul style="list-style-type: none"> <li>▪ Decommissioning</li> </ul>	ES Appendix 2.7 (Document Reference 6.4.2.7)

## 1.2. The Proposed Development

- 1.2.1. The Proposed Development is a renewable energy scheme, covering an area of approximately 490 hectares (ha), and comprising solar photovoltaic (PV) panels, on-site Battery Energy Storage Systems (BESS), associated infrastructure as well as underground cable connections between Panel Areas and to connect to the existing National Grid Substation at Norton. The Proposed Development will have the capacity to generate over 50 Megawatts (MW) of electricity. The Proposed Development is located in the north-east of England.
- 1.2.2. A full description of the Proposed Development and a detailed description of the design and environmental mitigation is provided in ES Chapter 2 The Proposed Development (Document Reference 6.2.2).

## 1.3. Proposed Development location

- 1.3.1. The majority of the Proposed Development, including the Panel Areas, substation and on-site BESS are located within the administrative area of Darlington Borough Council. The eastern part of the cable routes crosses into the administrative area of Stockton-on-Tees Council. The northern extent of the planning boundary (the 'Order Limits') borders Durham County Council's administrative area.
- 1.3.2. The Order Limits and surroundings are comprised of agricultural fields, interspersed with individual trees, hedgerows, farm access tracks, woodlands and local farm holdings. There are several local villages located within close proximity to the Proposed Development, including Brafferton, Newton Ketton, Great Stainton, Bishopton and Old Stillington.
- 1.3.3. The Order Limits for the Proposed Development are shown in ES Figure 1.1 Site Location Plan (Document Reference 6.3.1.1).

## 1.4. Project team roles and responsibilities

- 1.4.1. Key roles and responsibilities in managing impacts upon soil resources will likely include, but are not limited to:
- Site Manager – Overall responsibility for activity onsite and will be based onsite full time.
  - Construction Project Manager - Overall responsibility for ensuring all elements in the DCO, CEMP and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.

- Environmental Manager - Responsible for the overall management of environmental aspects on site, ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Environmental Manager will oversee environmental monitoring on-site and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Environmental Manager will liaise with relevant environmental bodies and other third parties as appropriate.
- Environmental Clerk of Works –Oversee the management of, and provide advice about, environmental and ecological risks during construction including for example, management of protected species, surface water management, pollution, air quality and noise.
- An Agricultural Liaison Officer (AL) who will act as a liaison between the landowners and the PC; and
- A suitably qualified soil practitioner who will undertake such tasks as the on-site assessments of soil suitability for handling, or who will otherwise be able to instruct the Environmental Clerk of Works (or other suitable representative) on how to undertake the necessary tests.

1.4.2. These roles and responsibilities are indicative and will be confirmed in the SRMP. It is noted that ultimate responsibility for the implementation of the SRMP under the DCO rests with the undertaker.

## **1.5. Structure of the Soil Resource Management Plan**

1.5.1. The detailed SRMP will include:

- Details of relevant policies and guidance relating to soil resources and their management;
- Relevant Site background information;
- Descriptions of the soil resources within each Panel Area;
- Appropriate soil handling methods for stripping, stockpiling and reinstatement of soils; and
- Monitoring procedures.

## 2. Relevant policy and guidance

2.1.1. The detailed SRMP will set out policy and guidance for soil management at the site. These will include those listed below (or an updated iteration), but not be limited to:

- National Planning Policy Framework, Conserving and enhancing the natural environment [1];
- Safeguarding our soils: A strategy for England 2011 [2]
- Code of practice for the sustainable use of soils on construction sites [3];
- Good Practice for Handling Soils in Mineral Workings [4];
- Guide to assessing development proposal on agricultural land [5];
- Working with Soil Guidance Note Document 3: Benefitting from Soil Management in Development and Construction [6];
- A New Perspective on Land and Soil in Environmental Assessment [7]; and
- Building on soil sustainability: Principles for soils in planning and construction [8].

## 3. Scope of the SRMP

- 3.1.1. The SRMP will apply to the management of soils during the construction, operation and decommissioning of the Proposed Development.
- 3.1.2. Soil management methodologies to be included within the detailed SRMP, include:
- soil handling methods (stripping, stockpiling and reinstatement) for any soils that will be disturbed temporarily or permanently by the construction of the Proposed Development;
  - monitoring procedures required for all soils (disturbed or those left in situ) during the construction of the Proposed Development, including details of roles and responsibilities;
  - restoration methods for land that is disturbed temporarily during construction but returned to an open, non-developed use for the operation of the Proposed Development;
  - any measures required to ameliorate soils to make them suitable for biodiversity proposals within the Proposed Development;
  - monitoring required during the operation of the Proposed Development; and
  - measures required at decommissioning to return the land to a suitable condition for agricultural or other agreed uses.

### 3.2. Soil and Agricultural Land Classification Surveys

- 3.2.1. Soil and Agricultural Land Classification (ALC) surveys of the agricultural land within the draft Order Limits were undertaken by Reading Agricultural Consultants Ltd between September 2022 and August 2023 to examine soil profiles and determine soil type and understand subsoil structure. This data has established the baseline for assessment within the Order Limits, documented in ES Chapter 9 Land Use and Socioeconomics (Document reference 6.2.9), which has subsequently informed the mitigation and management measures required.
- 3.2.2. In total, 413 soil profiles were examined across all Panel Areas and the cable routes . Four soil pits were also excavated to examine subsoil structures and stone content.
- 3.2.3. The survey data, assessment and findings are set out in the Agricultural Land Classification and Soil Resources report, which forms ES Appendix 9.1 Agricultural Land Classifications and Soil Resources (Document Reference 6.4.9.1).
- 3.2.4. The survey has been carried out at the recommended density of sampling to characterise the soils and there is no requirement in developing the detailed SRMP to undertake any further surveys of soil physical characteristics. There may be a requirement to collect additional nutrient samples, subject to the detailed proposals for biodiversity mitigation and habitat creation and management.

### 3.3. Description of soils within the Order Limits

- 3.3.1. The soils within the Order Limits are mostly:
- dark greyish brown, heavy clay loam or clay topsoil over brownish/greyish clay subsoil;



- dark greyish brown, heavy clay loam or clay topsoil over brownish/reddish clay subsoil; and
- sandy clay loam topsoil over sandy clay loam or sandy loam subsoil.

3.3.2. A summary of soils in each Panel Area and along the cable route is shown below in Table 3-1, with further detail presented in ES Appendix 9.1 Agricultural Land Classifications and Soil Resources (Document Reference 6.4.9.1).

**Table 3-1 Summary of soil types**

<b>Panel Area</b>	<b>Topsoil</b>	<b>Subsoil</b>	<b>ALC Grade</b>
<b>A: Brafferton</b>	<ul style="list-style-type: none"> <li>Very dark greyish brown or dark greyish brown medium clay loam or heavy clay loam in the centre and north.</li> <li>Heavy clay loam or clay in the south-east.</li> <li>30cm average depth.</li> </ul>	<ul style="list-style-type: none"> <li>Dark greyish brown, brown, reddish brown or occasionally grey clay.</li> <li>Occasional thin transitional horizon of heavy clay loam.</li> <li>Mottled, mostly slowly permeable and WC IV; some permeable subsoils and WC III.</li> </ul>	<ul style="list-style-type: none"> <li>18.9ha (16%) Subgrade 3a;</li> <li>95.5ha (84%) Subgrade 3b</li> </ul>
<b>B: Hauxley Farm</b>	<ul style="list-style-type: none"> <li>Dark greyish brown clay or occasionally heavy clay loam.</li> <li>31cm average depth.</li> </ul>	<ul style="list-style-type: none"> <li>Mostly greyish brown and brown clay upper subsoil, occasionally passing to grey clay at depth.</li> <li>Mottled, gleyed and slowly permeable.</li> <li>WC IV.</li> </ul>	<ul style="list-style-type: none"> <li>52.3ha (100%) Subgrade 3b</li> </ul>
<b>C: Byers Gill Wood</b>	<ul style="list-style-type: none"> <li>Dark brown or dark greyish brown clay or heavy clay loam.</li> <li>31cm average depth.</li> </ul>	<ul style="list-style-type: none"> <li>Mostly reddish brown or brown, with occasional grey and greyish brown, clay upper subsoil.</li> <li>Mottled, gleyed and slowly permeable.</li> <li>WC IV.</li> </ul>	<ul style="list-style-type: none"> <li>1ha (1%) Subgrade 3a;</li> <li>78.8ha (99%) Subgrade 3b</li> </ul>
<b>D: Great Stainton</b>	<ul style="list-style-type: none"> <li>Mostly brown or dark greyish brown heavy clay loam or clay.</li> <li>31cm average depth.</li> <li>In north of area, brown or dark greyish brown, sandy clay loam.</li> <li>36cm average depth.</li> </ul>	<ul style="list-style-type: none"> <li>Reddish brown or brown clay upper subsoil.</li> <li>Mottled, gleyed and slowly permeable.</li> <li>WC IV.</li> <li>Some profiles permeable to 45cm-60cm depth and WC III.</li> <li>In north, upper subsoil is brown sandy clay loam or sandy loam.</li> <li>Gleyed but permeable.</li> <li>WC II and III.</li> </ul>	<ul style="list-style-type: none"> <li>3.4ha (4%) Subgrade 3a;</li> <li>72.5ha (96%) Subgrade 3b</li> </ul>
<b>E: West of Bishopton</b>	<ul style="list-style-type: none"> <li>Dark greyish brown clay or occasionally heavy clay loam.</li> <li>29cm average depth.</li> </ul>	<ul style="list-style-type: none"> <li>Reddish brown or brown, occasionally greyish brown, clay.</li> <li>Mottled, gleyed and slowly permeable.</li> <li>WC IV.</li> </ul>	<ul style="list-style-type: none"> <li>26.5ha (100%) Subgrade 3b</li> </ul>
<b>F: North of Bishopton</b>	<ul style="list-style-type: none"> <li>Mainly dark greyish brown clay or heavy clay loam.</li> <li>31cm average depth.</li> <li>Along southern and northern boundaries, dark greyish brown, sandy clay loam</li> <li>32cm average depth.</li> </ul>	<ul style="list-style-type: none"> <li>Mainly reddish brown or brown clay.</li> <li>Mottled, gleyed and slowly permeable.</li> <li>WC IV.</li> <li>Along southern and northern boundaries, brown sandy clay loam or sandy loam.</li> <li>Mostly mottled and gleyed other than in south-east; all permeable</li> <li>WC I and II.</li> </ul>	<ul style="list-style-type: none"> <li>1.8ha (3%) Grade 2;</li> <li>3.7ha (5%) Subgrade 3a;</li> <li>65.9ha (92%) Subgrade 3b</li> </ul>
<b>Cable route options</b>	<ul style="list-style-type: none"> <li>West side of Panel Area C: Dark greyish brown clay topsoil.</li> </ul>	<ul style="list-style-type: none"> <li>West side of Panel Area C: Reddish brown clay subsoil.</li> </ul>	<ul style="list-style-type: none"> <li>0.6ha (2%) Grade 2;</li> <li>0.6ha (2%) Subgrade 3a;</li> </ul>

Panel Area	Topsoil	Subsoil	ALC Grade
	<p>35cm average depth.</p> <ul style="list-style-type: none"> <li>▪ West, south and east of Bishopton: Dark greyish brown clay topsoil. 35cm average depth.</li> <li>▪ At Redmarshall and Carlton, dark greyish brown clay topsoil.</li> </ul>	<p>Mottled, gleyed and slowly permeable. WC IV.</p> <ul style="list-style-type: none"> <li>▪ West of Bishopton: brown or light olive brown clay upper subsoil. Mottled, gleyed and mostly slowly permeable. South of Bishopton: dark grey clay upper subsoil. Mottled, gleyed and slowly permeable. WC III and IV.</li> <li>▪ East of Bishopton: mostly brown or reddish brown clay. Mottled, gleyed and slowly permeable. WC IV (occasional WC III). Also includes permeable sandy clay loam profile, WC II.</li> <li>▪ At Redmarshall and Carlton, greyish brown clay subsoil. Mottled, gleyed and slowly permeable. WC IV.</li> </ul>	<ul style="list-style-type: none"> <li>▪ 34ha (96%) Subgrade 3b</li> </ul>

### **3.4. Characteristics of soil types within the Order Limits**

- 3.4.1. The sensitivity of soils to handling, stockpiling and reuse is determined by their texture, wetness class and local agro-climatic conditions, particularly the number of days when soils are at Field Capacity and can accept no further rainfall.
- 3.4.2. Overall, soils within the draft Order Limits are determined to be predominantly of high sensitivity and low resilience to structural damage.
- 3.4.3. Further detail is set out in the Agricultural Land Classification and Soil Resources report, which forms ES Appendix 9.1 Agricultural Land Classifications and Soil Resources (Document Reference 6.4.9.1).

## 4. Soils for Handling

### 4.1. Soils to be excavated

- 4.1.1. Topsoil (and subsoil) stripping will be required from areas within the Order Limits proposed as haul routes, access tracks, compound locations, the locations of any subsoil stockpiles, and along the cable route.
- 4.1.2. A summary of the likely location, soil type, topsoil/subsoil, area, and volume of soils to be excavated, and where excavated soils will be stored onsite, will be confirmed in the detailed SRMP.
- 4.1.3. The detailed SRMP will also describe where and for how long these soils will be stockpiled; and how and when they will be reused within the Proposed Development.

### 4.2. Soils to remain in situ

- 4.2.1. The detailed SRMP will provide a summary of the likely location, soil type and area of soils to remain in situ, to be determined at the detailed plan stage.
- 4.2.2. This detailed SRMP will provide a clear statement of soils that will not be excavated for the Proposed Development but will be the soils into which the solar PV panel frames will be piled or will form the base for temporary trackways, for example.
- 4.2.3. The detailed SRMP must also set out measures to assess and alleviate any impacts from the piling activities on these soils.

## 5. Soil handling methods

### 5.1. Soil stripping methods and suitability criteria

#### Principles

- 5.1.1. Soil stripping, handling, storage and reinstatement procedures must conform with the relevant guidance set out in Section **Error! Reference source not found.**, particularly the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites and the Good Practice Guide for Handling Soils in Mineral Workings.
- 5.1.2. The main impacts on soils during construction occur as a result of trafficking by vehicles and plant, and handling soils in inappropriate conditions, largely when the ground conditions and soils are too wet. These can both cause damage to soil structure from compaction and smearing, which can be difficult to ameliorate.
- 5.1.3. The following general good practice measures should be adopted and employed by the PC to avoid damage to soil structure:
- Suitably qualified soil scientists should be appointed by the PC to oversee and define all soil management good practice measures set out in this Outline SRMP;
  - Soil resources should be clearly identified to avoid mixing of topsoils with subsoils or any other materials (unless part of an agreed amelioration strategy);
  - No trafficking of vehicles/plant or materials storage should occur on unprotected topsoil or reinstated soil;
  - Disturbance to soils should be minimised at all stages; for example, consideration should be given to the use of trackways or other low-ground pressure systems at temporary works in order to avoid excavation of soils;
  - Multiple handling of soils should be avoided, and soils should be moved directly from the areas being stripped and stockpiled and/or reinstated;
  - Soil handling should only take place in suitable soil moisture and weather conditions;
  - Soils should only be stored in designated stockpiles;
  - Records of soil handling operations and stockpiles should be kept.

#### Soil Moisture Conditions for Handling

- 5.1.4. Handling soils in appropriate moisture conditions will avoid damage to soil structure, particularly from compaction and smearing.
- 5.1.5. The majority of soils within the draft Order Limits are of low resilience to structural damage, such that adherence to the moisture conditions for handling is extremely important.
- 5.1.6. The Institute of Quarrying provides indicative regional summaries of the optimal times for soil handling based on soil moisture deficits, field capacity days and soil textures.

Within this model, the site is on the border of climatic zones 1 and 2, as shown in Plate 5-1, with the indicative months when soils might be in a sufficiently dry condition to move shown in Table 5-1.

**Plate 5-1 Climatic zones for soil handling (from IoQ)**



**Table 5-1 Indicative months when soils are sufficiently dry for handling (from IoQ)**

	Climatic Zone 1	Climatic zone 2
<b>Topsoil (0-30cm)</b> 10-27% clay (mCL, SCL) >27% clay (hCL, C)	Late May – early October Not given	Early May – early November Not given
<b>Upper subsoil (30-60cm)</b> 10-27% clay (mCL, SCL) >27% clay (hCL, C)	Late May – early October Late June – early October	Early May – early November Early June – early November
<b>Lower subsoil (&gt;60cm)</b> 18-27% clay (mCL, SCL) >27% clay (hCL, C)	Late June – early October Mid July – mid September	Early June – early November Early July – mid October

5.1.7. These indicate a relatively late start to the timing of soil handling operations, particularly given the prevalence of clay soils within the draft Order Limits but also a relatively late ending, given that the return to climatically excess rainfall is later in the east of the country. However, it is important to note that soil handling operations should be completed in time to enable a new vegetation cover to become established on reinstated land or on the surface of a stockpile prior to the onset of winter in order to keep the soils in as dry a condition as possible and prevent erosion over winter. This normally means that soil handling operations should be completed by the end of September/mid October.

- 5.1.8. The above gives a broad indication of when soils are likely to be suitable to be moved but the PC must carry out site assessments of soil wetness condition prior to the start of operations to test that they are in a suitably dry condition.
- 5.1.9. The initial testing should be carried out by professional soil surveyors but suitably trained site operatives can carry out and record the testing during operations, with periodic reviews undertaken by the professional soil surveyors.
- 5.1.10. The tests should be undertaken in the field, with samples taken from at least five locations in the soil handling area and at each soil horizon to the full depth of the horizon to be stripped. The tests comprise visual examination of the soil (Table 5-2) and physical assessment of the soil consistency (Table 5-3).
- 5.1.11. Other than for coarse textured soils (which should rely on visual examination alone), it is a straightforward indicator of soils being too wet to be handled and operations should be delayed until a thread cannot be formed.

**Table 5-2 Visual examination test for suitability dry soils**

Visual examination	Action
If the soil is wet, films of water are visible on the surface of soil particles or aggregates (e.g. clods or peds)	No soil handling to take place
If a clod or ped is squeezed in the hand and readily deforms into a cohesive 'ball'	No soil handling to take place
If the sample is moist (i.e. there is a slight dampness when squeezed in the hand) but it does not significantly change colour (darken) on further wetting, and clods break up/crumble readily when squeezed in the hand rather than forming into a ball	Soil handling can take place
If the sample is dry, it looks dry and changes colour (darkens) if water is added, and it is brittle	Soil handling can take place

**Table 5-3 Consistency test for suitably dry soils**

Consistency tests (not applicable to sands and coarse loams)	Action
First test: Attempt to mould soil sample into a ball by hand:	
Impossible because soil is too dry and hard	Soil handling can take place
Impossible because soil is too loose and dry	Soil handling can take place
Impossible because the soil is too loose and wet	No soil handling to take place
Possible - Go to second test	
Second test: Attempt to roll ball into a 3mm diameter thread by hand:	
Impossible because soil crumbles or collapses	Soil handling can take place
Possible	No soil handling to take place



- 5.1.12. The PC must also include a rainfall protocol for stopping and restarting soil handling operations. The following guidelines are commonly used, assuming that the soils are in a suitably dry condition before the rainfall event:
- In light drizzle, soil handling may continue for up to four hours unless the soils are already at/near to their moisture limit.
  - In light rain, soil handling must cease after 15 minutes.
  - In heavy rain and intense showers, soil handling shall cease immediately.
- 5.1.13. Once the rainfall event has passed, the visual examination and consistency tests should be applied to determine if soil handling operations can restart, provided that the ground is free from ponding and ground conditions are safe to do so.

### **Preparatory works**

- 5.1.14. Before commencing any work on site that involves vehicles running over ground, the PC will ensure that the following areas are marked and signposted within the draft Order Limits:
- Any undisturbed areas where no construction activities will take place (areas where soil will not be stripped and trafficked only by agricultural vehicles for planting, cultivation, vegetation maintenance and habitat creation);
  - Tree protection zones;
  - Areas from which soils will be stripped;
  - Locations of topsoil and subsoil stockpiles; and
  - Haul routes.
- 5.1.15. Prior to any soil stripping, any scrub vegetation will be cut and removed (following any seasonal ecological constraints and mitigation requirements); and any grass and agricultural crop will be cut to ground level and removed so that it is not incorporated into the topsoil strip.

### **Topsoil stripping method**

- 5.1.16. Topsoils will be stripped in accordance with best practice as set out in the Institute of Quarrying soil handling guidance, and which will be described further in the detailed SRMP.
- 5.1.17. Likely plant required will include excavators, tracked dozers and dump trucks.
- 5.1.18. The locations and depths of topsoils to be stripped will be confirmed in the detailed SRMP as the information becomes available.

### **Subsoil stripping method**

- 5.1.19. Subsoils will be stripped in accordance with best practice as set out in the Institute of Quarrying soil handling guidance, and which will be described further in the detailed SRMP.
- 5.1.20. Likely plant required will include excavators, tracked dozers and dump trucks.
- 5.1.21. The locations and depths of subsoils to be stripped will be confirmed in the detailed SRMP as the information becomes available.

## **5.2. Stockpiling**

### **Location of stockpiles**

- 5.2.1. The locations of topsoil and subsoil stockpiles will be determined in the detailed SRMP as the information becomes available.

### **Building stockpiles**

- 5.2.2. Stockpiles will be built according to the best practice methodologies as set out in the guidance published by the Institute of Quarrying, and which will be described further in the detailed SRMP.

### **Maintenance of stockpiles**

- 5.2.3. For each stockpile a plan must be kept and maintained detailing:
- Material type (topsoil or subsoil);
  - Date/time when soil was stockpiled and weather conditions;
  - Volume of material;
  - Stockpile location; and
  - Source location of material.

## **5.3. Reinstatement**

### **Preparation of base layers**

- 5.3.1. The base layer will be prepared according to the best practice methodologies as set out in the guidance published by the Institute of Quarrying, and which will be described further in the detailed SRMP.

### **Excavation from stockpile**

- 5.3.2. Soils will be excavated from the relevant stockpiles according to the best practice methodologies as set out in the guidance published by the Institute of Quarrying, and which will be described further in the detailed SRMP.

### **Methods to replace subsoil and topsoil**

- 5.3.3. The likely methods to replace subsoil and topsoil will follow the best practice methodologies as set out in the guidance published by the Institute of Quarrying, and which will be described further in the detailed SRMP.

## 6. Monitoring procedures during construction

- 6.1.1. The detailed SRMP will set out the monitoring measures to be included as a minimum during construction. Monitoring procedures during construction will apply to all soils, for example those disturbed for compounds, access ways, and the cable route, as well as the mostly undisturbed soils in the Panel Areas.

### **Guidelines for monitoring**

- 6.1.2. Guidelines for monitoring the soil resource during construction will be included in the detailed SRMP. Continuous, live monitoring of soil handling/weather conditions, as well as visual monitoring of ground conditions, is likely to be required by the PC.

### **Roles and responsibilities**

- 6.1.3. Monitoring the soil resource during construction will primarily involve the PC who is responsible for ensuring the detailed SRMP is adhered to. Periodic monitoring from a suitably qualified soil practitioner may also be required.

## 7. Soil amelioration for biodiversity mitigation

- 7.1.1. The suitability of in-situ soils for biodiversity mitigation will be assessed at the detailed plan stage following confirmation of the proposals. Liaison with the Ecological Clerk of Works is likely to be required.
- 7.1.2. If the soil resource is unsuitable for the biodiversity requirements, measures to improve the soil amelioration for biodiversity will be determined.

## 8. Monitoring procedures during operation

- 8.1.1. The detailed SRMP will set out monitoring measures to be included as a minimum in the SRMP during operation. These will apply to all soils that have been reinstated (from compounds, temporary access roads etc) and those in the Panel Areas.

### **Guidelines for monitoring**

- 8.1.2. Guidance for monitoring is likely to be based on an initial checklist of visual parameters that can be undertaken by a suitably trained site operative.

### **Roles and responsibilities**

- 8.1.3. Roles and responsibilities for monitoring will primarily involve the PC, and potentially the ALO.

## 9. Decommissioning measures and methods

- 9.1.1. The detailed SRMP will outline the requirements and processes required for the decommissioning of the Proposed Development. Liaison with the landowners and the ALO is likely to be required.

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