Peartree Hill Solar Farm

Outline Soil Management Plan

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Contents

1 Introduction

1.1 Purpose of this document

1.1.1 Peartree Hill Solar Farm (hereafter referred to as the 'Proposed Development') comprises the construction, operation (including maintenance) and decommissioning of a solar photovoltaic (PV) electricity generating and storage facility with an export capacity of up to 320 megawatts (MW) and associated infrastructure, as described within **Environmental Statement (ES) Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1]** and **Schedule 1** of the **Draft Development Consent Order (DCO) [EN010157/APP/3.1]**.

1.1.2 The Proposed Development encompasses an area of approximately 891 hectares (ha) within East Riding of Yorkshire (the 'Site') as shown on the **Location and Land Area Plan [EN010157/APP/2.1]**. The boundary of the Site is hereafter referred as the 'Order Limits'.

1.1.3 The Proposed Development consists of five areas of land (Land Areas B-F – there is no Land Area A), interconnecting underground cables between the Land Areas, a 132kV underground cable route to National Grid Creyke Beck Substation (referred to as the Grid Connection Cable Route), and sections of highway land. These are shown in **ES Volume 3, Figure 1.2: Land Areas and Cable Routes Plan with Field Numbering System [EN010157/APP/6.3]**.

1.1.4 This document provides an Outline Soil Management Plan (Outline SMP) for the construction, operation (including maintenance) and decommissioning of the Proposed Development.

1.1.5 It is proposed that detailed soil/land quality surveys of the grid connection cable route will be undertaken pre-commencement, once the design and land needed for excavation is confirmed, thus avoiding unnecessarily surveying the entire grid connection cable route at this stage. This Outline SMP describes the survey work that will be carried out prior to drafting the Soil Management Plan and the consultation process that will be in-built prior to finalising the Soil Management Plan before works commence.

1.1.6 In accordance with the requirements in **Schedule 2** of the **Draft DCO [EN010157/APP/3.1]** no part of the Proposed Development is to be commenced until a Soil Management Plan has been submitted to and approved by the local planning authority (East Riding of Yorkshire Council). The Soil Management Plan must be in substantial accordance with this Outline SMP and construction of any

part of the Proposed Development must be carried out in accordance with the Soil Management Plan that has been approved for that part.

1.1.7 The objective of the Soil Management Plan is to identify the importance and sensitivity of the soil resource and to provide specific measures for the management of the soil resource to maintain the physical properties of the soil on the Site and to ensure that there is no significant adverse effect on the soil resource as a result of the Proposed Development.

1.1.8 This Outline SMP provides detail on the following during the construction, operation (including maintenance) and decommissioning phases of the Proposed Development:

- A description of the soil types and their resilience to being trafficked;
- Measures for soil handling;
- Description of works and how soil damage will be minimised; and
- Monitoring measures for soil condition and criteria against which compliance will be assessed.

2 Soil resource Land Areas B to F

2.1 Characterisation of land areas

2.1.1 As detailed in **ES Volume 4, Appendix 10.2: Agricultural Land Classification Report [EN010157/APP/6.4]**, the dominant characteristics affecting the agricultural quality of land within Land Areas B to F are soil wetness in the clayey soils, and soil droughtiness in sandy soils. The higher quality land (Grades 2 and 3a) found within Land Areas B to F mostly has medium textured topsoil and upper subsoils which are not particularly prone to winter wetness nor summer droughtiness.

Soil types

2.1.2 Multiple soil types are found within Land Areas B to F, which can loosely be placed into four main groups:

- light soils
- medium soils
- heavy soils
- organic soils

2.1.3 Soils have been sorted into 'Soil Handling Units' (SHU) based on their type. The SHUs refer to the resistance of soils to potential structural damage during management practices.

2.1.4 Light textured soils have been grouped together due to their greater ability to withstand soil handling without soil structural damage being caused. The medium, heavy and organic soils are less resistant to soil structural damage being caused during handling and are represented by different soil handling units as they should be handled and stored separately – see **Table 2-1**.

Table 2-1: Summary of Soil Handling Units - typical profiles

Horizon	Average depth of Horizon (mm)	Texture	Drainage	Stone Content
Soil Handling Unit A – Light soils				
Topsoil	298	sandy loam-loamy sand	Well drained	0-10%
Upper Subsoil	884	sandy loam-coarse sand	Well drained	0-20%

Horizon	Average depth of Horizon (mm)	Texture	Drainage	Stone Content
Lower Subsoil	1180	sandy loam-coarse sand	Well drained	0-20%
Soil Handling Unit B – Medium soils				
Topsoil	297	sandy loam-clay	well-poorly drained	0-10%
Upper Subsoil	890	medium sand-clay	well-poorly drained	0-20%
Lower Subsoil	1179	medium sand-clay	well-poorly drained	0-20%
Soil Handling Unit C – Heavy soils				
Topsoil	298	sandy loam-clay	well-poorly drained	0-10%
Upper Subsoil	884	clay loam-clay	well-poorly drained	0-20%
Lower Subsoil	1180	sandy clay-clay	well-poorly drained	0-20%
Soil Handling Unit D – Organic soils				
Topsoil	307	organic clay	poorly drained	0-10%
Upper Subsoil	869	peaty loam-loamy peat	poorly drained	0-20%
Lower Subsoil	1173	loamy sand-clay	well-poorly drained	0-20%

Propensity to damage

2.1.5 The Institute of Environmental Management and Assessment (IEMA) guide "A New perspective on Land and Soil in Environmental Impact Assessment, 2022" **[Ref. 1]** details that, at locations with fewer than 150 Field Capacity Days (FCD), medium (loamy) and heavy (clayey) soils have a Medium resilience to structural damage during handling (SHU B). Light (sandy) soils have a High resilience to damage (SHU A).

2.1.6 The pattern of soil types across Land Areas B to F is complex. Generally, lighter soils are found towards the north of the Site (Land Area B) and heavier/organic soils in the south.

2.1.7 Approximately 19% of the Land Areas has SHU A topsoil which has a Low susceptibility to damage during handling.

2.1.8 Approximately 81% of the Land Areas has SHU B, C or D topsoil. These have a Medium resilience to damage during handling operations and will be more prone to compaction if trafficked in the wetter mid-winter months than SHU A soils.

2.1.9 Works involving trafficking on the topsoil during the winter months will need to be carried out carefully, otherwise there may be an increased need for amelioration in the spring. If site work during the winter period is unavoidable, the more resilient SHU A soils will be prioritised for working on during this period.

2.1.10 If sustained heavy rainfall (e.g. >10mm in 24 hours) occurs during soil handling operations, soil handling work should be suspended, where reasonably practicable, and not restarted until the ground has had at least a full dry day or agreed moisture criteria (such as 'drier than the plastic limit') can be met. Lighter soil (SHU A) can generally be moved at a higher moisture content without damage than a heavy soil. Soil handling will be supervised by suitably trained personnel during these periods.

Table 2-2: Soil resilience to Structural Damage Classification

Soil Handling Unit	Resilience to Structural Damage During Soil Handling in a Dry Condition	Soil Texture Class
A (Green)	High	Soils with a high sand fraction (sands, loamy sands, sandy loams and sandy silt loams) where the FCDs are fewer than 225 and are in wetness classes WCI to WCII
B, C, D (Orange)	Medium	Clays, silty clays, sandy clays, heavy silty clay loams, heavy clay loams, silty loams and organo-mineral and peaty soils where the FCDs are fewer than 150. Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where FCDs are fewer than 225. Sands, loamy sands, sandy loams and sandy silt loams where the FCDs are 225 or greater or are in wetness classes WCIII and WCIV
N/A (Red)	Low	Soils with high clay and silt fractions (clays, silty clays, sandy clays, heavy silty clay loams and heavy clay loams) and organo-mineral and peaty soils where the Field Capacity Days (FCD) are 150 or greater. Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where the

Soil Handling Unit	Resilience to Structural Damage During Soil Handling in a Dry Condition	Soil Texture Class
		FCDs are 225 or greater. All soils in wetness class (WCV or WCVI).

2.2 Characterisation of grid connection cable route

Soil types

2.2.1 It is evident from Agricultural Land Classification ('ALC') surveys completed for Land Areas B to F that the soils are variable, but largely follow the expectations of the National Soil Map.

2.2.2 The soils are shown on the Soil Survey of England and Wales 1:250,000 map (1983) **[Ref. 2]** as a mixture of associations, but mostly in the Downholland 3, Bishopton 1, Blackwood and Holderness associations. These vary from sandy and coarse loamy (Blackwood) to deep stonelessy clayey soils (Downholland 3).

2.2.3 The variation in each of the blocks is described in **ES Volume 4, Appendix 10.2: Agricultural Land Classification Report [EN010157/APP/6.4]**.

Land quality

2.2.4 As described in **ES Volume 4, Appendix 10.2: Agricultural Land Classification Report [EN010157/APP/6.4]** the land quality is variable over short distances.

2.2.5 With such variability over short distances, for the cable route it will be critical to ensure that topsoil and subsoils removed from any trenching are placed back in the same location.

3 Construction – land areas key principles

3.1.1 Across most of the land within Land Areas B to F, soils will remain in situ throughout the construction, operation (including maintenance) and decommissioning phases of the Proposed Development. Measures detailed in this Outline SMP are designed to minimise the impact of trafficking on the in-situ soil during construction and amelioration measures are intended to restore soils where damage has occurred.

3.1.2 The main potential impacts upon soil will be trafficking by vehicles involved in the installation of solar PV modules and associated infrastructure. This has the potential to compact and damage soils. The main mitigation methods will be to:

- avoid working in unsuitable conditions;
- utilise low ground pressure vehicles (tracked vehicles or vehicles fitted with tyres designed to operate at low inflation pressures) wherever possible; and
- install access tracks early on to avoid unnecessary trafficking on agricultural soils or use track matting where needed in the early stages of construction.

3.1.3 Mitigation methods will minimise impacts upon the soil during installation of the solar PV modules.

3.1.4 Agricultural land is routinely trafficked by farm machinery during farm operations and resultant compaction alleviated using standard farm equipment, such as grassland slitters, spikers or subsoilers followed by discing, harrowing and/or rolling if levelling is required. Similar tractor operated farm cultivation equipment will be used to ameliorate localised damage resulting from the solar installation. However, considerate planning of soil handling within wet weather conditions will be used to reduce the risk of damage and need for amelioration.

3.1.5 All soil trafficking and handling operations will be undertaken under the supervision of an appropriately trained and experienced person, who will advise on and supervise soil handling, including identifying when soils are dry enough to be handled.

3.1.6 Inspections of the soil condition prior to vehicle movements across Land Areas B to F are required, particularly during wet weather conditions. Further detail on this is provided in **Section 3.1** of this Outline SMP.

3.1.7 The key principles for minimising damage to soils are:

- Timing
- Retaining soil profiles
- Avoiding compaction
- Ameliorating compaction
- Storing soils for re-use

3.2 Timing

3.2.1 Timing of soil operations is the most critical management decision to minimise soil damage.

3.2.2 Within Land Areas B to F, the ALC data (see **ES Volume 4, Appendix 10.2: Agricultural Land Classification Report [EN010157/APP/6.4]**) indicates that soils will be at field capacity for a period of approximately 145 days in an average year, typically between early November and mid-April, although this commonly varies by 4 weeks either side of these dates. During this period there is an increased risk of localised damage to soil structure from trafficking and soil handling, particularly SHU B, C and D soils.

3.2.3 As stated in Paragraph 2.1.10, if sustained heavy rainfall (e.g. >10mm in 24 hours) occurs during soil handling operations, soil handling work should be suspended, where reasonably practicable, and not restarted until the ground has had at least a full dry day or agreed moisture criteria (such as 'drier than the plastic limit') can be met. Lighter soil (SHU A) can generally be moved at a higher moisture content without causing damage than a heavy soil.

3.2.4 Soil stripping, storing and restoration operations should only occur when the soils are as dry as reasonably practicable, normally when they are below the plastic limit (or meets **Table 2-1** soil moisture characteristics for SHU A soils). A suitably trained person should test the soil plasticity prior to soil handling operations, following the procedure detailed below in **Tables 3-1, 3-2** and **3-3**.

Table 3-1: Visual Assessment of Soil Moisture

Soil Condition	Procedure
If the soil is wet, films of water are visible on the surface of the soil particles or aggregates and/or when a soil sample is squeezed by hand and readily deforms into a 'cohesive' ball	NO HANDLING
Soil peds readily break up or crumble when squeezed in the hand	HANDLING OK

Soil Condition	Procedure
If the sample is moist (a slight dampness when squeezed by hand) but the soil colour does not change upon further wetting	HANDLING OK IF UNDERTAKEN BY TRACKED EXCAVATOR AND CONSISTENCY TEST IS PASSED
If the sample is dry and darkens if water is added the soil is brittle	HANDLING OK IF CONSISTENCY TEST IS PASSED

Table 3-2: Consistency Test (1)

Attempt to mould a soil sample into a ball by hand

Soil Condition	Procedure
Impossible because the soil is too hard or dry	HANDLING OK
Impossible because the soil is too loose (dry)	HANDLING OK
Impossible because the soil is too loose and wet	NO HANDLING
Possible	GO TO CONSISTENCY TEST (2)

Table 3-3: Consistency Test (2)

Attempt to roll the ball by hand into a thread of 3mm diameter on a flat non-adhesive surface

Soil Condition	Procedures
Impossible the soil crumbles or disintegrates	HANDLING OK
Possible	NO HANDLING

3.2.5 If it is not possible to strip topsoils when they are below the plastic limit, they should be deposited into windrows prior to lifting them into their final bund once they have dried out sufficiently.

3.2.6 Once the visual assessment of soil moisture and consistency tests have been carried out and indicate that soil to be handled or trafficked is in a suitable condition (below the plastic limit for SHU B, C and D soils, or meets **Table 3-1** soil characteristics for SHU A soils), further assessment is not required until there is a significant rain event (>10mm in the previous 24 hours).

3.2.7 Soil handling methods will normally be as specified in the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites **[Ref. 3]**.

3.3 Retaining soil profiles

3.3.1 Cabling installations require trenches to be excavated. These are usually dug to a depth below the topsoil, requiring some subsoil removal.

3.3.2 Topsoil and subsoil should be stored separately and restored in the same order to retain the original soil profile.

3.3.3 It is possible that a second, clearly different subsoil is encountered during trench excavation. This lower subsoil is most frequently of poorer quality for agriculture and should be stockpiled separately and restored below the upper subsoil and topsoil to retain the original profile.

3.4 Avoiding compaction

3.4.1 The most critical factors in avoiding compaction are to, when reasonably practicable:

- Work when soils are dry (see **Section 3.1**)
- Use low ground pressure vehicles/plant
- Avoiding trafficking of soil by using designated haul routes

3.5 Storing soils for re-use

3.5.1 Land Areas B to F should be constructed with the aim of keeping the soils in store for as short a time as possible, whilst minimising damage to the soil or Site. It is acknowledged that a small amount of soil will need to be stored for the life of the solar farm.

3.5.2 As most of the land within Land Areas B to F will not have any soil removed, volumes of soil to be stored will be relatively small. Soil storage will fall into two main categories, short-term storage and long-term storage.

3.5.3 Soils removed during cable trenching, fencing, temporary haul road construction and temporary compound construction will be stored for the short term and no longer than the duration of the construction phase. Soils excavated during cable trenching and fencing works are likely to be stored for shortest period of time.

3.5.4 Soil removed during the construction of infrastructure, such as the on-site substations, Hybrid packs and access tracks will be used/graded across the Site as part of the landscaping and environmental enhancement of the Proposed Development.

3.5.5 Soil storage methods will be as specified as in the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites **[Ref. 3]**.

3.6 Solar PV modules construction methodology

Installation

3.6.1 Installation of the solar PV modules does not require any soil removal.

3.6.2 It is important that trafficking over the soil surface is limited to periods when the soil is suitably dry to minimise rutting. Details of soil suitability testing are set out in **Section 3.1** above.

3.6.3 The solar PV modules installation typically involves three stages:

- Marking and laying out the mounting structures framework. This requires a low ground pressure vehicle and trailer to transport the mounting frames across the Site. Examples of suitable vehicles would include Bobcats or tractors fitted with low ground pressure tyres.
- Pile driving. Support poles will be knocked into the ground with a pile driver to the required depth. Typical pile drivers used in solar installations are tracked and lightweight, resulting in minimal soil damage.
- Construction of mounting structure. The mounting frame is constructed in situ and the panels transported to Land Areas B to F using a low ground pressure vehicle and trailer. The solar PV modules are then bolted on.

3.6.4 Provided that the ground conditions are suitable when travelling across Land Areas B to F, with limited trafficking over soil when wet and, where it cannot be avoided, checking the depth of tracks to ensure they are less than 100mm before proceeding further, installation of solar PV modules will not result in any structural damage or significant compaction of the soil.

Decommissioning

3.6.5 The exact method of uninstalling the solar PV modules and piles during the decommissioning phase of the Proposed Development are not confirmed, as current techniques may be superseded by alternative techniques during the lifetime of the Proposed Development.

3.6.6 The current method of removing piles is to use a pile driver/extractor which vibrates the piles out of the ground, allowing for a clean extraction with minimal soil disturbance.

3.6.7 Details of the methodology used for the removal of the solar PV modules and land piles will be included in the Decommissioning Environmental Management Plan (DEMP) prior to decommissioning.

3.7 Soil management

3.7.1 Where it can be achieved, grass establishment prior to installation of the solar PV modules is advantageous for construction purposes, as it helps minimise rutting caused by vehicles trafficking on the soil surface. Therefore, a grass sward will be established across as much of the land to receive solar PV modules as reasonably practicable in advance of piling works. The decision will be made by the appointed Principal Contractor about which locations are suitable for grass seeding prior to installation and will be influenced by the timing of construction works relative to the agricultural crop harvest dates and the weather and soil conditions.

3.7.2 Seed sowing should ideally be undertaken in August/September during a drier time of year. If this is not possible, seeds should be sown in the spring as soon as the land is dry enough to allow machinery to travel. New seedlings would be vulnerable to trafficking so seed should where reasonably practicable be given a minimum of 6-8 weeks to establish prior to trafficking.

3.7.3 During construction and decommissioning works, wheel ruts should be levelled out using standard farm equipment such as discs, harrow and rollers. Horticultural scale cultivation tools may be best suited to operating between the relatively narrowly spaced rows of solar PV modules.

3.7.4 Amelioration of soil ruts should be undertaken once construction of solar PV modules has been completed and after array removal at decommissioning and soils have dried out. This will likely be between .

3.7.5 Details of amelioration to be undertaken will be identified in the Soil Management Plan.

3.7.6 The cultivation tools will loosen soil compaction and, when used in conjunction with a roller, produce a surface suitable for seeding/re-seeding with grass when required. This will be achieved using standard tractor mounted farm grass seeding tools.

4 Construction – grid connection cable route

4.1 Construction methodology

4.1.1 The works will involve:

- temporary construction compounds. These may be shared with those for the solar PV development;
- the stripping of topsoil across the working width, to be stored temporarily in a bund. In some cases the working width may not need to be stripped;
- the trench will then be dug, with the subsoil placed separately to the topsoil, the details of which will be determined prior to survey works;
- the cable is then laid into the trench, possibly with some material as protection against stones etc.
- following cable installation, the subsoil will then be replaced in the trench;
- subsequently the topsoil will be replaced across the working width, following the soil handling and management principles to be set out in the Soil Management Plan, and the land returned to the landowners for continued farming.

4.1.2 Similar works are expected across arable and grassland areas.

4.1.3 Working widths will vary but will be a maximum of 30m for the grid connection cable route, narrowing for gaps through hedgerows or widening for deeper excavation areas (e.g. for boring under transport routes or watercourses). The details will be developed pre-soil survey, and the soil survey will cover the working corridor.

4.1.4 The corridor widens either side of the River Hull crossing. This is to allow for horizontal directional drilling at the most appropriate location.

4.2 Proposed pre-entry soil survey

4.2.1 As part of the preparation of the Soil Management Plan, a soil survey will be completed along the final alignment of the cable within the grid connection cable route using a soil auger and, as needed, a spade, sampling where possible down

to 1.2m. The soil survey will sample on a regular 100m grid pattern, along the central line of the grid connection cable route.

4.2.2 The survey will identify the soil resource. In particular it will identify and map:

- topsoil texture;
- topsoil depth;
- subsoil texture and depth;
- any limitations from poor drainage including identification of any land drains that will be disrupted and need reinstatement.

4.2.3 This detailed survey will be undertaken across all areas where soils will be disturbed.

4.2.4 The ALC grade along the route will be calculated so as to inform the works and so as to enable the ALC grade to be retained post-installation of the cable.

4.2.5 The detailed pre-entry survey will be written up recording ALC grade, topsoil depth, subsoil conditions and texture to inform the Soil Management Plan.

4.3 Soil suitability testing

4.3.1 Soils are normally fairly resilient if handled at the correct soil moisture state. They are however susceptible to structural damage when saturated. That is because when saturated, the smaller particles can move around more easily and the natural structure of the soil gets disturbed. As the soil dries it gains strength and becomes more resilient to damage.

4.3.2 Operations should therefore aim to strip the topsoil between about April and November in a normal year. Where the soils are loamy sands or sandy loams, the likely suitable period could be extended to March to November. The Soil Management Plan will refine the optimum dates across the site for the soils identified. As each season can vary professional advice should be taken if there is any doubt about whether the soil is adequately dry, prior to stripping commencing. Advice on assessing soil suitability is set out in the Institute of Quarrying notes **[Ref.4].**

4.3.3 If the soil can be rolled into a ball into a ball easily and the soil holds that shape, it is too wet to travel over or move soils.

4.3.4 If the thread breaks or crumbles, or the ball falls apart easily, the soil is likely to be sufficiently and suitably dry for being handled.

4.3.5 As advised in the Institute of Quarrying notes **[Ref. 4]** for sandy soils a thread can often not be produced even in wet weather and therefore reliance will have to be placed on this guidance.

4.3.6 If soil from five locations is examined and films of water are visible on the surface, or when squeezed it readily deforms into a ball, soil handling should not take place.

4.3.7 If when squeezed it is damp but, on adding further water it does not darken, or if the ball breaks up or crumbles readily when squeezed, the soil can be handled.

4.4 Key principles

4.4.1 The installation of the cable requires soils to be disturbed for Horizontal Directional Drilling (HDD) and open-cut trenching. Further details on the design parameters for these activities are detailed in the **Design Parameters Document [EN010157/APP/5.8]**.

4.4.2 For successful restoration to a farming use, the key is to restore the topsoil and upper subsoil to the same profile, without compaction, as they are before construction commences. Plants will root down to approximately 1 – 1.2 metres, but the top 60cm is the most important for plant growth. This is usually a topsoil and upper subsoil layer.

4.4.3 The key principles for successfully avoiding damage to soils are:

- timing of works involving moving soils;
- storing soils;
- retaining soil profiles during restoration;
- avoiding compaction;
- ameliorating compaction.

Timing

4.4.4 The most important management decision/action to avoid adverse effects on soils is the timing of works involving moving soils. If the construction work takes place when soil conditions are sufficiently dry, then damage from vehicle trafficking, moving and trenching will be minimal.

4.4.5 All soils should only be handled in a dry and friable condition, under supervision of suitably trained personnel. This will minimise the need to recondition soils, which requires additional space and time. This is important for land to be restored to agricultural use rapidly. Soil handling methods will be as specified as in the

Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (including accompanying Toolbox Talks) **[Ref. 3]** and the Institute of Quarrying Good Practice Guide for Handling Soils (2021) **[Ref. 4]** which provides good practice guidance for soils in all handling instances.

4.4.6 The soils are in places relatively resilient to vehicle passage for much of the year, but in significant areas the clayey soils should not be worked when wet. Under the ALC Guidelines **[Ref. 5]** the field capacity period, i.e. the days in the year when soils are saturated, is about 140 - 150 days per year.

4.4.7 When suitably dry, the soils are generally resilient, and any damage from vehicle trafficking can generally be made good by mechanical loosening.

4.4.8 The period when soils are least likely to be wet is between March/April and November, but with seasonal variations (the English weather being unpredictable). To the extent that it is feasible, topsoil movement should be targeted for this window. Topsoil stripping could be phased ahead of deeper trenching works.

4.4.9 Handling of the upper subsoils (30-60cm depth) should be carried out when the soils are sufficiently dry. They should be stored separately to the topsoil, and if dug out when wet, allowed to dry in bunds of no more than 1 metre in height prior to storage at any greater depth, as per the Defra Code of Practice **[Ref. 3].**

4.4.10 As a general rule the soil is least likely to be suitable for being handled between the months of November and March inclusive. Inspections of the site will be undertaken and will involve the examination and consistency tests set out in the Institute of Quarrying's Good Practice Guide to Handling Soils (2021) **[Ref. 4].**

4.4.11 A detailed phasing plan including soils should be developed pre-commencement to phase the works so that any movement of the heaviest soils within the site should be targeted to take place, so far as possible, in the driest months of the year (April to October).

4.4.12 Regarding reinstatement of the cable trench, replacement of the upper subsoil and topsoil should be undertaken in reverse order, and so far as is possible carried out when soils are dry, as they will then restore more rapidly and require less restorative mechanical work.

4.4.13 Guidance on stockpiling is set out in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, Defra (2009) **[Ref. 3]**.

4.4.14 In instances where it is not possible to avoid undertaking construction activities when soils are wet and topsoil damage occurs then soils can be recovered by

normal agricultural management, using normal agricultural cultivation equipment (subsoiler, harrows, power harrows etc) once soils have dried adequately for this to take place. There may be localised wet areas in otherwise dry fields, for example, which are difficult to avoid.

4.4.15 Soil suitability testing should be undertaken prior to any movement of soil.

Storing soil and restoring soil

4.4.16 The quantities of soil involved are limited and topsoil bunds would be a maximum of 1m - 2m high. This will not result in the soil becoming anaerobic even in storage in a bund for more than 12 months. These areas will need to be managed during the life of the Proposed Development to prevent the establishment of woody growth or brambles.

4.4.17 The bund should be kept clear of woody vegetation. All storage bunds intended to remain in situ for more than 6 months, or over the winter period, should be grassed over, with weed control and other necessary maintenance carried out.

4.4.18 The bund should not be moved for restoration unless the soil is sufficiently dry. Testing the centre of the bund with a soil auger should take place before the soil is moved.

Drainage

4.4.19 The installation of grid connection cabling will be supervised by an experienced advisor. They will know where to expect land drainage and will be able to identify if drainage pipes are broken as either clay pipe fragments or plastic pipe will be evident in the material dug out.

4.4.20 Those areas affected by cable damage will be repaired in one of two ways:

- either the individual drains will be reconnected with new sections across the pipe, as illustrated below;
- or a collector drain will be laid along the cable trench and will then connect, at a low point, to a new drainage pipe to take water away.

4.5 Management requirements

Timing

4.5.1 The works of soil stripping and trench excavation should be carried out, when soils are sufficiently dry to be handled.

4.5.2 The works of trench infilling and soil restoration should be carried out, when soils are sufficiently dry to be handed.

Suitability tests

4.5.3 The Institute of Quarrying Guide **[Ref. 4].** sets out suitability tests, in addition to the tests set out in **Table 3-1, 3-2** and **3-3**. These involve examination and consistency tests. For soils that are not sandy, soil should be moulded into a ball or thread. If that thread crumbles, then the soil is likely to be suitable. Tests to be used will be confirmed in the **Soil Management Plan**.

Avoiding damage

4.5.4 Trackways required outside the dry period should be created by laying stone onto matting, such as shown below.

Soil storage

4.5.5 Topsoils, upper and lower subsoils should be stored in separate bunds.

4.5.6 Topsoil and subsoil should only be handled when dry. Storage in bunds, such as shown above, will ensure that the soils are kept dry and remain aerobic.

4.5.7 Bunds for the storage of agricultural soils will conform to the following criteria:

- a) topsoils, subsoils and subsoil substitutes shall be stored separately.
- b) where continuous bunds are used dissimilar soils shall be separated by a third material.
- c) topsoil bunds shall not exceed 3m in height and subsoil (or subsoil substitute) bunds shall not exceed 5m in height.
- d) materials shall be stored like upon like, so that topsoil shall be stripped from beneath subsoil bunds and subsoil from beneath overburden bunds.

- e) all storage bunds intended to remain in situ for more than 6 months, or over the winter period, should be grassed over, with weed control and other necessary maintenance carried out.

Depth of soils

4.5.8 The detailed pre-entry soil survey will identify topsoil depth, on a per-field basis. Topsoil will be stripped to the depth identified in the pre-entry survey, incorporated into the Soil Management Plan.

4.5.9 The detailed pre-entry soil survey will identify whether there is a difference in topsoil depth between fields across the route, and this will be mapped in the Soil Management Plan so that it is easy to follow.

4.5.10 The land will be restored to the same ALC grade.

Restoration

4.5.11 The lower and upper subsoils should be replaced in reverse order, to restore the current profile. Topsoil should then be replaced to the depth removed, and as close as possible to the original position the soil came from.

4.5.12 The soil will then be cultivated.

Supervision

4.5.13 Prior to first entry the grid connection cable route will be surveyed by a qualified soil surveyor to confirm that all soil is in a suitable state for works to start.

4.5.14 For any work between November and March inclusive, if this cannot be avoided, a soil surveyor shall be engaged to assess soil suitability for being handled and determine whether works can proceed. The soil surveyor should advise on handling so as to minimise the risk of damage and maximise the potential for swift and successful restoration. The Soil Surveyor will inform when soils are not suitable for being handled and work will stop. Figham Pastures Local Wildlife Site (LWS) – Coastal floodplain grazing marsh, a priority habitat, is present at Figham Pastures Local Wildlife Site (LWS). The Proposed Development includes HDD drilling under watercourses present as well as open-cut trench cutting to lay the transmission cable within Figham Pastures LWS. The underlying grassland turf will be replaced within 48 hours of the trench being dug. Details on turf translocation will be included in the Landscape and Ecological Management Plan and the Soil Management Plan, to ensure that the impact is minimal, with the trench width kept to a maximum of 1.5m.

5 Infrastructure and access tracks within the Land Areas

5.1.1 Infrastructure, comprising the two on-site substations and Hybrid packs along with associated access tracks and supporting equipment will be installed as part of the Proposed Development.

5.2 Construction methodology

5.2.1 Specific construction techniques will vary depending on the specific requirements of each component. However, this will usually involve the removal of soil prior to the construction of a hard surface; typically asphalt, concrete or compressed aggregate, to remain in situ for the duration of the Proposed Development.

5.3 Soil management

Soil stripping

5.3.1 Prior to construction of a hard surface, topsoil will be stripped and stored for the duration of the Proposed Development.

5.3.2 There may be a requirement for subsoil to also be stripped prior to surfacing. These soils will be stored separately from topsoil.

5.3.3 Existing utilities will be clearly marked and protected by 'no dig' areas. Any interface with utilities will be in accordance with the **Draft DCO [EN010157/APP/3.1]** and protections offered therein.

5.3.4 Any hedges, trees and fencing that are to be removed prior to stripping the topsoil will be removed from the working area. It is acknowledged that it may be necessary for the Applicant to fell or lop any trees to prevent them from obstructing or interfering with the Proposed Development, as per Article 44 of the **Draft DCO [EN010157/APP/3.1]**). **Tree Preservation Order and Hedgerow Plans [EN010157/APP/2.8]** and a **Tree Removal Plan** (Appendix 3 to **ES Volume 4, Appendix 7.11: Arboricultural Impact Assessment [EN010157/APP/6.4]**) have been produced, which provide further information on this matter.

5.3.5 Prior to any soil handling works, tree root protection zones will be marked out and fenced off. It is acknowledged that it may be necessary for the Applicant to cut

back some roots to prevent them from obstructing or interfering with the Proposed Development.

5.3.6 Any vegetative growth higher than 100mm will be cut or sprayed off with a systemic herbicide and removed from Site prior to topsoil stripping. If species of invasive vegetation, such as Japanese Knotweed are encountered, they will be treated according to the particular requirements for the species encountered.

5.3.7 Typical topsoil depths within Land Areas B to F to be stripped are given in **Table 2-1**. However, this will only be used as a guide and topsoil will be stripped as deep as the base of the visibly darker topsoil layer.

5.3.8 Soil stripping for Land Areas B to F will only occur when the soils are as dry as reasonably practicable, normally when they are below the plastic limit (or meet **Table 3-1** soil characteristics for SHU A soils). A suitably trained person will test the soil plasticity prior to commencing work, following the procedure detailed in **Tables 2-2, 3-1** and **3-2**.

5.3.9 If it is not possible to strip topsoils when they are below the plastic limit (or meet **Table 3-1** soil characteristics for SHU A soils), they will be loose tipped into windrows prior to lifting them into their final stockpile once they have dried out sufficiently.

Soil storage

5.3.10 Stripped soil will be stored in designated bunds at locations to be specified in the Soil Management Plan. It is expected that, in most locations, the excavated soil will be stored on the margin of the working area and that the use of dumper trucks will be unnecessary to move soils.

5.3.11 A map detailing the different soil units of land to be stripped is given at **Appendix A** of this Outline SMP. Topsoil and subsoil will be stored in separate bunds according to their SHU.

5.3.12 Efforts will be made where reasonably practicable to minimise the potential for stockpiled soil to become anaerobic during the extensive storage period. Topsoil will be stored in bunds no taller than 2m high and lightly formed to consolidate the surface and shed water. Any stripped subsoil will be stored in bunds up to 3m high. Stockpiles soil should be protected, where reasonably practicable, to avoid compaction, erosion and cause pollution to surrounding watercourses; and must not increase flood risk to the surrounding area. Gaps shall be left where necessary to allow for surface water drainage and avoid the catchment (ponding) of water behind stockpiles.

5.3.13 Topsoil will be stored on topsoil and subsoil stored on subsoil (i.e., the topsoil will be removed from areas to be used for subsoil storage bunds).

5.3.14 A record of all soils which are placed in store will be kept.

5.3.15 All bunds which will be in place for more than 6 months will be sown with a low maintenance grass seed mix at a rate of 5g/m^2.

5.3.16 All bunds will be labelled with their historic land use, volume and soil type (e.g. pasture, *** m^3; Unit 1 topsoil).

5.3.17 All soil bunds will be inspected annually in the spring to ensure that the grass cover is intact and to decide if an herbicide is required to control invasive weeds. The species present will determine the most appropriate herbicide or cutting regime.

Decommissioning

5.3.18 Hard surfaces will generally be removed as part of decommissioning, with the potential exception of the on-site substations, access tracks and passing places which may be left in-situ subject to agreement with the relevant stakeholders

5.3.19 Any concrete foundations/plinths or asphalt that are not left in-situ will need to be broken up. This will most likely involve breaking with a pneumatic drill or back-actor bucket to crack the base, after which it can be dug up and loaded onto trailers and removed.

5.3.20 Compressed aggregate will be removed using an excavator, along with any membrane placed on the subsoil surface.

5.3.21 The cleared surface will be soil sampled in any areas at risk of having been contaminated. Samples will be collected and submitted to United Kingdom Accreditation Service (UKAS) and the Environment Agency's Monitoring Certification Scheme (MCERTS) accredited laboratories for a range of commonly occurring pollutants such as metals, oils and polycyclic aromatic hydrocarbons (PAHs). Results will be assessed by a land contamination specialist and any required remediation advice will be followed. Any remediation of contamination that is determined to be necessary prior to decommissioning works commencing for the Proposed Development would be carried out in accordance with the Environment Agency's Land Contamination Risk Management guidance **[Ref. 6]**. A remediation strategy would be prepared, and the Environment Agency will be Consulted on the contents of the strategy.

5.3.22 It is likely that the soil beneath the hard surface will require subsoiling to remove compaction. A soil scientist or suitably trained person will assess the depth and severity of compaction to inform the type and depth of subsoiling operation required.

5.3.23 Subsoiling will be undertaken using tractor mounted farm equipment.

5.3.24 Subsoiling will only be undertaken when soils are dry, as plastic soils would smear and likely exacerbate the compaction.

5.3.25 At least two passes of the subsoiler will be made across each Land Area, at an angle of 45 to 60 degrees to each other in order to fully break up the soil compaction to the required depth.

5.3.26 Approximately a month prior to restoration, soil stockpiles should be strimmed, cuttings removed and remaining vegetation sprayed with a systemic herbicide as advised by a suitably qualified person.

5.3.27 As with all soil handling operations, stockpiled soils will only be handled when in a suitable dry and friable condition, to be decided by a suitably trained person. This would usually be between April and October.

5.3.28 Soils will be transported to site and tipped using a dumper, with an excavator used to position the soil across the area to be restored.

5.3.29 Topsoil depth will be checked during restoration. As newly restored soils slump over time, an allowance for this will be made, establishing approximately 10-20% deeper loose topsoil than the final target depth detailed in the Soil Management Plan.

5.3.30 The excavator will ‘work its way backwards’ from the far end of the restoration area, so as not to operate on the newly placed soil. No vehicles should traffic over restored topsoil.

5.3.31 Reinstatement of soil will be monitored by a suitably qualified person and records of operations kept, with photographic evidence.

Aftercare

5.3.32 On completion of the restoration works the soils will be in a fragile condition and all works will be geared towards stabilising the soil structure and establishing a strongly growing crop to ensure the best chance of a successful and sustainable restoration.

5.3.33 The condition of field drainage should be assessed and reviewed for any remedial action for a period of up to two years post-construction of that part of the Proposed Development.

6 Trenching works within the Land Areas

6.1.1 Trenching for cable laying will likely be undertaken using a mini-digger or trenching machine.

6.1.2 It is anticipated that trenches will be dug to a maximum depth of 1.6m, where soil depth permits, but do vary depending on cable type.

6.2 Soil management

6.2.1 Any vegetative growth higher than 100mm will be cut or sprayed off with a systemic herbicide prior to trenching. If species of invasive vegetation, such as Japanese Knotweed are encountered, they will be treated according to the particular requirements for the species encountered.

6.2.2 Trenching operations will only occur when the topsoil is suitably dry i.e. below the plastic limit for SHU B, C or D soils or by visual soil moisture assessment for SHU A soils. A suitably trained person will test the soil plasticity or visually assess soil moisture content for soils prior to commencing work.

6.2.3 Topsoil with be removed by excavating soils as deep as the base of the visibly darker topsoil layer and placed to one side of the trench. If it is not possible to visually identify the change from topsoil to subsoil, soil will be removed to the depth of topsoil detailed for the SHU in **Table 2-1**.

6.2.4 Following topsoil removal, subsoil is then removed down to the required trench depth and placed on the other side of the trench to the topsoil.

6.2.5 If a clear colour change is identified within the subsoil, the upper and lower subsoils should be stored side by side so that they can be replaced in the ‘same order’ as excavated.

6.2.6 The location of any land drains damaged during the trenching operation will be marked and a log kept. Once the cable has been laid, any damaged land drains will be repaired to maintain the integrity of the drainage system. Due to the narrowness of the cabling trenches, there is no need to support repair joints with lintels, but solid/rigid pipe will be used to repair the drain which extends a minimum of 0.5m onto undisturbed soil either side of the trench.

6.2.7 Once the cable has been placed, subsoils are returned to the trench, with lower subsoil placed below upper subsoil if stripped and stored separately. Subsoils will be lightly consolidated with the excavator bucket, using increased force if particularly blocky in order to reduce the amount of air gaps.

6.2.8 If it is not possible to consolidate the subsoil such that there is space for the topsoil to be restored, the topsoil will be left alongside the trench and only replaced once the subsoil has naturally settled.

6.2.9 The topsoil will be replaced with only minimal consolidation, ideally leaving a linear bund approximately 50 to 100mm high along the cable route which will settle over time.

6.2.10 Following soil replacement in cable trenches it is not anticipated that grass seeding will be required. However, seed will be spread by hand over any areas requiring re-seeding.

7 Fencing around the Land Areas

7.1.1 Fencing will be installed around the perimeters of the solar PV module fields.

7.1.2 This will likely be wire-mesh or deer fencing, comprising wooden or metal posts and wire mesh.

7.1.3 Palisade fencing would be installed around the perimeter of the on-site substations and would be made of steel rails attached to horizontal-running rails connected to vertical steel joints.

7.1.4 Pole mounted closed-circuit television (CCTV) systems will also be installed around the perimeter of the solar PV module fields and on-site substations.

7.2 Construction methodology

Installation

7.2.1 Wooden fence posts will be knocked into the ground using a post knocker mounted on a tractor equipped with low ground pressure tyres. Large corner and gate posts will typically be installed using a tractor mounted auger type post hole digger.

7.2.2 Palisade fencing is installed using one of two main methods.

7.2.3 Firstly, post holes will be dug. Secondly, a baseplate can be bolted to a concrete slab and the metal posts welded to the baseplate.

7.2.4 CCTV poles will be installed using the same methods detailed in Paragraph 6.1.1.

Decommissioning

7.2.5 Any fencing and CCTV equipment for the Land Areas containing solar PV modules to be removed at decommissioning will be removed using tractor mounted equipment and excavators.

7.3 Soil management

7.3.1 Fencing will be installed and removed at any time that conditions allow vehicles to traverse the land, with limited trafficking over soil when wet and, where it

cannot be avoided, checking the depth of tracks to ensure they are less than 100mm before proceeding further.

7.3.2 Any soil rutting resulting from fencing works will be made good using the methods detailed in **Section 3.6**.

8 Temporary access tracks and construction compounds within Land Areas

8.1.1 The proposed location of temporary access tracks and construction compounds are intended for short-term activity only and will be removed and land restored by the end of the construction phase of the Proposed Development.

8.2 Construction methodology

8.2.1 Temporary construction compounds and access tracks will usually be constructed of compressed aggregate on top of a permeable membrane, which is used to prevent mixing of aggregate and the soil.

8.2.2 Topsoil will be stripped to the required depth using an excavator.

8.2.3 Aggregate will be transported to the Site and tipped by dumper and spread over the membrane using an excavator. This will then be rolled level using a vibration roller.

8.2.4 An excavator will remove the aggregate at the end of temporary use (i.e. the period of time it is required to be used temporarily for construction of the Proposed Development), and farm cultivation equipment used to loosen the soil surface and alleviate compaction prior to topsoil placing.

8.2.5 Topsoil will be reinstated using an excavator.

8.3 Soil management

8.3.1 Prior to laying aggregate, topsoil will be stripped and stored in a low bund adjacent to the track or compound.

8.3.2 As soil will be stored in a linear bund alongside temporary access tracks, there will be no requirement to separately stockpile soils belonging to different soil units. Soil will be replaced in its original location.

8.3.3 If the Soil Management Plan details two different SHUs within a temporary compound area, these will be stripped and stored adjacent to the compound in separate labelled bunds and restored to their original location.

8.3.4 Any hedges, trees and fencing that are to be removed, will be removed from the working area prior to stripping the topsoil.

8.3.5 Prior to any soil handling works, tree root protection zones will be marked out and fenced off. It is acknowledged that it may be necessary for the Applicant to cut back some roots to prevent them from obstructing or interfering with the Proposed Development.

8.3.6 Typical topsoil depths within each area to be stripped will be included in **Table 2-1**. However, these data should only be used as a guide and topsoil will be stripped as deep as the base of the visibly darker topsoil layer.

8.3.7 Soil stripping will only occur when the soils are as dry as reasonably practicable, normally when they are below the plastic limit for SHU B, C or D soils or visually assessed to be suitably dry for SHU A soils. A suitably trained person will test the soil plasticity or visually assess soil moisture prior to commencing work.

8.3.8 If it is not possible to strip topsoils when they are below the plastic limit or suitably dry by visual assessment, they will be loose tipped into windrows with the surface lightly consolidated to shed water so that once they have dried out sufficiently the topsoils can be transferred to bunds for longer term storage.

8.3.9 All bunds which will be in place for more than 6 months will be sown with a low maintenance grass seed mix at a rate of 5g/m^2.

8.3.10 All soil bunds will be inspected in the spring to ensure that the grass cover is intact and to decide if an herbicide is required to control invasive weeds. The species present will determine the most appropriate herbicide or cutting regime.

8.3.11 At the end of the temporary use period (i.e. the period of time it is required to be used temporarily for construction of the Proposed Development), compressed aggregate will be removed using an excavator, along with any membrane placed on the subsoil surface.

8.3.12 Aggregate removal will be undertaken with the excavator working on the aggregate and not the newly exposed soil surface, to minimise soil compaction.

8.3.13 The cleared surface will be soil sampled in any areas at risk of having been contaminated. Samples will be collected and submitted to UKAS and MCERTS accredited laboratories for a range of commonly occurring pollutants such as metals, oils and PAHs. Results will be assessed by a land contamination expert and any required remediation advise will be followed.

8.3.14 It is likely that the soil which was beneath the stoned surface will require subsoiling to remove compaction. A soil scientist or suitably trained person will assess the depth and severity of compaction to inform the type and depth of subsoiling operation.

8.3.15 Subsoiling will be undertaken using tractor mounted farm equipment.

8.3.16 Subsoiling will only be undertaken when soils are dry, as plastic soils would smear and likely exacerbate the compaction.

8.3.17 At least two passes of the subsoiler will be made across each compound area, at an angle of 45 to 60 degrees to each other in order to fully break up the soil to the required depth.

8.3.18 Several passes of the subsoiler will be made up along the length of the narrow access tracks, as there will be insufficient space to make a second pass at an angle to the first. Prior to topsoil placement, the soil should be inspected by a suitably trained person to ensure that compaction has been successfully removed.

8.3.19 If stockpiles are densely vegetated, approximately a month prior to restoration, soil stockpiles should be strimmed, cuttings removed and remaining vegetation sprayed with a systemic herbicide.

8.3.20 As with all soil handling operations, stockpiled soils will only be handled when in a suitable dry and friable condition, to be decided by a suitably trained person. This would usually be between April and October.

8.3.21 Soils will be placed and spread across the area to be restored using an excavator, which will 'work its way backwards' from the far end of the restoration area, so as not to track over the newly placed soil.

8.3.22 Topsoil depth will be checked during restoration. As newly restored soils slump over time, an allowance for this will be made, establishing approximately 10-20% deeper loose topsoil than the final target depth.

8.3.23 Reinstatement of soil will be monitored by a suitably qualified person and records of operations kept, with photographic evidence.

8.3.24 On completion of the restoration works the soils will be in a fragile condition. A strongly growing crop will be established to help stabilise the soil structure and ensure the best chance of a successful and sustainable restoration.

9 Monitoring and aftercare within the Land Areas

9.1.1 Soil conditions will be monitored by an appropriately trained person prior to soil handling operations, as detailed in **Section 3**. Soil plasticity testing and soil moisture assessment for SHU B, C and D soils will be undertaken by an appropriately trained person. Records of plasticity test results and soil moisture assessments will be taken and retained.

9.1.2 With landowner agreement, the grassland under the solar PV modules can be managed by sheep grazing. Areas of grassland not grazed will be managed in line with measures contained in the **Outline Landscape and Ecological Management Plan [EN010157/APP/7.5]**.

9.1.3 No significant adverse effects on land or soil are anticipated during the operation phase, so there is no requirement for annual monitoring or reviews.

10 Grid connection cable route: proposed contents of the soil management plan

10.1.1 The Soil Management Plan will include the following in relation to the grid connection cable route:

- the assessment of agricultural land and soil resource of the site which will have been undertaken to inform the Soil Management Plan;
- soil handling methodology, tailored to the soil type;
- mitigation including reference to the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) **[Ref. 3]** and the Institute of Quarrying Good Practice Guide for Handling Soils in Mineral Workings (2021) as may be subsequently updated; **[Ref. 4]**;
- the type and volume of each soil type to be stripped and stockpiled. For areas of temporary development (i.e. the working width of the cable trench), the ALC grade determined from the soil survey will be used to inform the restoration criteria;
- works to identify and maintain any under field drainage that might be adversely affected by the cable trench;
- the methods to restore appropriate affected areas to agricultural use after works including excavations and restoration have finished;
- an aftercare programme which will enable a satisfactory standard of agricultural use to be reached after works have been completed, with regards to cultivating, reseeding, draining or irrigating, applying fertiliser, or cutting and grazing the site.

10.1.2 Where topsoil is proposed to be stripped, typically for construction compounds; access tracks and laying cabling, the soil handling methodology (movement, storage & replacement) and soil protection proposals will be included to ensure that appropriate mitigation is in place to allow for the restoration of the land to the baseline ALC Grade.

10.1.3 The Applicant commits to restoring the land to the same ALC grade after installation of the cable and restoration of the works.

11 References

- **Ref. 1:** Institute of Environmental Management and Assessment. A New perspective on Land and Soil in Environmental Impact Assessment. Available online. https://www.iema.net/resources/blogs/2022/02/17/iema-launch-of-new-eia-guidance-on-land-and-soils-february-2022/
- **Ref. 2:** Soil Survey of England and Wales 1:250,000 map (1983). Available online. Published soil maps (Great Britain) | UK Soil Observatory | UK Research and Innovation
- **Ref. 3:** Department for Environment, Food & Rural Affairs (2011, updated 2018) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. Available online. https://assets.publishing.service.gov.uk/media/5b2264ff40f0b634cfb50650/pb13298-code-of-practice-090910.pdf
- **Ref. 4:** The Institute of Quarrying. Good Practice Guide for Handling Soils in Mineral Workings. 2021. Available online. IQ Soil Guidance Part 1.pdf
- **Ref. 5:** Ministry of Agriculture, Fisheries and Food (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land. Available online: Agricultural Land Classification of England and Wales: Revised criteria for grading the quality of agricultural land - ALC011
- **Ref. 6:** Environment Agency (2020, updated 2025). Land contamination risk management (LCRM) guidance. Available online: https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

Appendix A: Map of soil handling units

502000E 504000E 506000E 508000E 510000E 512000E 514000E 516000E

444000N 442000N 440000N 438000N 436000N 434000N

300 0 300 600 Meters

Key

Soil Types
- Light
- Medium
- Heavy
- Organic

Notes:

P03	07/11/2025	SL	XX	XX	XX
App	Date	By	Chkd	Appd	Authd

Client: RWE

Designer: RSK

Project Name: Peartree Hill

Drawing Title: Map of soil handling units

Sheet 1 of 1

Scale at A1: 1:20000

Coordinate System: British National Grid

Status: DCO Application

PINS Number: EN010157/APP/7.8

Rev: P03

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