

**Tillbridge Solar Project
EN010142**

**Volume 7
Framework Soil Management Plan**
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1. Introduction

1.1 Background

- 1.1.1 Tillbridge Solar Ltd (hereafter referred to as ‘the Applicant’) is seeking consent for the construction, operation and decommissioning of the Tillbridge Solar Project (hereafter referred to as the ‘Scheme’). This will require an application for a Development Consent Order (DCO), which will be submitted to the Planning Inspectorate, with the decision of whether to grant a DCO being made by the Secretary of State pursuant to the Planning Act 2008 (Ref 1).
- 1.1.2 This Framework Soil Management Plan (SMP) has been prepared to support the DCO Application and presents a framework for soil management during the construction, operation and decommissioning phases of the Scheme, with the aim to provide a clear and consistent approach to soil management during these phases.
- 1.1.3 Should the Scheme be consented, a detailed SMP will be produced for the Scheme following the appointment of a Principal Contractor in accordance with a Requirement of the DCO and prior to commencement of construction. The detailed SMP will be required to be in accordance with the measures included in the Framework SMP.
- 1.1.4 This document was updated to take into account comments raised by Natural England at Deadline 1 and at Deadline 6. The document references have not been updated from the original submission. For the most up-to-date documents, the reader should access these through the **Guide to the Application [EN010142/APP/1.2(Rev08)]** and Schedule 13 of the **draft DCO [EN010142/APP/3.1(Rev07)]**.

1.2 Scheme Description

- 1.2.1 The Tillbridge Solar Project (the Scheme) will comprise the construction, operation (including maintenance), and decommissioning of ground-mounted solar photovoltaic (PV) arrays. The Scheme will also include associated development to support the solar PV arrays.
- 1.2.2 The Scheme is made up of the Principal Site, the Cable Route Corridor and works to the existing National Grid Cottam Substation. The Principal Site comprises the solar PV arrays, electrical substations, grid balancing infrastructure, cabling and areas for landscaping and ecological enhancement.
- 1.2.3 The associated development element of the Scheme includes but is not limited to access provision; a Battery Energy Storage System (BESS), to support the operation of the ground mounted solar PV arrays; the development of on-site substations; underground cabling between the different areas of solar PV arrays; and areas of landscaping and biodiversity enhancement.

- 1.2.4 The Scheme also includes a 400kV underground Cable Route Corridor of approximately 18.5km in length connecting the Principal Site to the National Electricity Transmission System (NETS) at the existing National Grid Cottam Substation. The Scheme will export and import electricity to the NETS.
- 1.2.5 A full description of the Scheme is included in **Chapter 3: Scheme Description** of the Environmental Statement [EN010142/APP/6.1]. An overview of the Scheme and its environmental impacts is provided in the **Environmental Statement Non-Technical Summary** [EN010142/APP/6.4].
- 1.2.6 The Scheme comprises two distinct elements:
- 'the Principal Site', which is the location where ground mounted solar photovoltaic (PV) panels, electrical substations and energy storage facilities will be installed; and
 - 'the Cable Route Corridor', which will comprise the underground electrical infrastructure required to connect the Principal Site to national transmission system.

The Principal Site

- 1.2.7 The Principal Site is located to the south of Harpswell Lane (A631), to the west of Middle Street (B1398) and largely to the north of Kexby Road and to the east of Springthorpe. The Principal Site covers an area of approximately 1,345ha and is located entirely within the administrative area of West Lindsey District Council.

The Cable Route Corridor

- 1.2.8 The Principal Site will be connected to National Grid Cottam Substation located at the decommissioned Cottam Power Station in Cottam on the Nottinghamshire border by a buried high voltage cable installed within the Cable Route Corridor. The Cable Route Corridor is located within the administrative area of West Lindsey District Council and Bassetlaw District Council.

1.3 Purpose of the Framework SMP

- 1.3.1 This Framework SMP covers the main construction, operation and decommissioning activities envisaged at the time of preparing the Environmental Statement (ES).
- 1.3.2 The aim of the Framework SMP is the preservation of the soil resource during construction, operation and decommissioning, avoiding both the loss of soil material from the Scheme and the loss of soil functional capacity for supporting agricultural production.

2. Soil Management and Programme

2.1 Introduction

- 2.1.1 This section sets out the Scheme components and general arrangements for the Scheme.

2.2 Scheme Components

- 2.2.1 The most extensive component of the Scheme are the Solar PV panels on mounts, the mounts will be secured by driving legs into the ground as piles.
- 2.2.2 The Scheme will consist of the following infrastructure which is less extensive across the Order limits:
- a. Solar Stations (invertor, transformer and switchgear);
 - b. BESS;
 - c. Battery DC/DC convertors;
 - d. On-site cabling;
 - e. On-site substations;
 - f. Solar farm control centre;
 - g. Equipment storage;
 - h. Fencing, security and lighting;
 - i. Site access and access tracks;
 - j. Surface water drainage; and
 - k. Electricity connection to National Grid via Cable Route Corridor. The Tillbridge circuit will be connected to an existing free bay at National Grid Cottam Substation.

2.3 Roles and Responsibilities

- 2.3.1 Key roles and responsibilities during the construction phase in managing environmental impacts will likely include, but are not limited to:
- a. **Site Manager** – Overall responsibility for activity onsite and will be based onsite full time.
 - b. **Construction Project Manager** – Overall responsibility for ensuring all elements in the DCO, SMP and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.
 - c. **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.

- 2.3.2 These roles and responsibilities are indicative and will be confirmed in the detailed SMP. These roles should have the assistance of a suitably qualified soil scientist to advise on assessment of soil consistence following rainfall. The soil scientist should also undertake periodic visits to the site during construction and decommissioning activity to inspect for signs of any issues such as soil degradation or erosion.

2.4 Construction Programme

- 2.4.1 The current expectation is that construction of the Scheme will take a minimum of 24 months and a maximum of 26 months.
- 2.4.2 Allowing sufficient time to receive consent and to discharge the DCO Requirements, it is anticipated that the earliest that Site preparation and enabling works on-site for the Scheme would start is late 2025, with an expected operational start in 2028.

2.5 Operation Programme

- 2.5.1 It is currently anticipated that the earliest the Scheme will commence commercial operation will be in early 2028. Depending on the final construction programme and commencement of construction, operation may overlap with the construction phase. It is a possibility that, once the grid connection has been constructed and parts of the Scheme have been connected to the National Grid, these areas could begin operation while other parts are still being constructed and connected. The Applicant is seeking a time limited consent with respect to the operation of the Scheme; the operational life of the Scheme will be 60 years which will start from the date of the final commissioning phase.

2.6 Decommissioning Programme

- 2.6.1 The operational life of the Scheme is to be 60 years and decommissioning is therefore estimated to be no earlier than 2088. Some parts of the Scheme may be decommissioned earlier if the landowner requires it. Decommissioning will take between 12 and 24 months and will be undertaken in phases. A 24-month decommissioning period has been assumed for the purposes of a worst-case assessment.

2.7 Implementation of the SMP

- 2.7.1 The measures included in this Framework SMP are based on the potential environmental impacts that have been identified in **Chapter 15: Soils and Agriculture** of the ES [EN010142/APP/6.1].
- 2.7.2 The Framework SMP is designed with the objective of achieving compliance with the relevant environmental legislation and securing the environmental mitigation measures set out within **Chapter 15: Soils and Agriculture** of the ES [EN010142/APP/6.1].
- 2.7.3 A range of 'standard' or good industry and best practice mitigation management measures have been accounted for in the environmental assessments presented within the ES and these will be implemented during construction of the Scheme, in relation to soils. This Framework SMP

demonstrates how these commitments in the ES will be implemented. It also sets out the monitoring and auditing activities designed to demonstrate that such environmental mitigation measures are carried out and that they are effective.

- 2.7.4 The appointed Principal Contractor during construction or the Operator during operation will be responsible for implementing the environmental mitigation measures documented in the Framework SMP, subject to grant of the DCO and as a contractual responsibility to the Applicant, as the Applicant will ultimately be responsible for compliance with the requirements of the DCO.
- 2.7.5 Depending on the final construction programme, there may be more than one detailed SMP prepared for the Scheme during construction; for example where different contractors are involved in different aspects of the Scheme. This will be determined by the appointed Principal Contractor once the detailed construction programme is known.

3. Baseline Soil Data

3.1 Survey Data

- 3.1.1 The detailed Agricultural Land Classification (ALC) assessment of the Scheme, included in **Appendix 15-2: Agricultural Land Classification Baseline Report** of the ES [EN010142/APP/6.2] provides the information on soil physical characteristics that will assist in the development of the detailed SMP.
- 3.1.2 The Cable Route Corridor will include a buried cable linking the Principal Site to the National Grid Cottam Substation. Before construction work commences, additional soil surveys should be undertaken along the Cable Route Corridor, to provide similarly detailed data on soil physical characteristics within the Cable Route Corridor for the detailed SMP, this will be secured by a requirement of the DCO.
- 3.1.3 A detailed ALC survey, as undertaken for the Principal Site, would not be appropriate for the entire Cable Route Corridor as the 100m spacing of sample points would greatly exceed the width of the narrow trench excavation. However, a specific sampling of soil within the proposed Cable Route Corridor will be undertaken as part of the detailed SMP. This will enable effective segregation of topsoil and subsoil horizons during excavation and infilling of the cable trench. This approach is preceded in the Sunnica Energy Farm, among other solar projects.

3.2 Baseline Condition

- 3.2.1 A survey of the soils across the Principal Site is presented **Appendix 15-2: Agricultural Land Classification Baseline Report** of the ES [EN010142/APP/6.2].
- 3.2.2 The Principal Site is predominantly arable land, subject each year to a succession of cultivation passes and trafficking by high axle load vehicles such as grain trailers and combine harvesters. Topsoils are heavy to medium

textured for the majority of the area, their clay content making the soil vulnerable to persistent structural degradation if disturbed in a plastic consistence. This can be alleviated in a topsoil through appropriate cultivation when friable. Subsoil compaction rapidly becomes more difficult to remedy through cultivation with increasing depth.

- 3.2.3 Prior to beginning work of the solar panel deployment and development of the associated infrastructure, a vegetated cover should be established to eliminate areas of bare soil. The seed mixes for this sward should be selected for zones of the Principal Site with reference to the biodiversity management plan for the Principal Site as outlined in the **Framework Landscape and Ecology Management Plan** submitted alongside the DCO application [EN010142/APP/7.17]. As well as providing a physical protection of the soil surface from raindrop impact and vehicle/livestock traffic, the year-round vegetated cover speeds drying of the soil following rainfall.

4. General Principles

4.1 Design Principles

- 4.1.1 The following infrastructure on the Principal Site will not be located on Grade 3a or 2 ALC land:
- a. BESS and Solar Stations;
 - b. Solar Farm Control Centre; and
 - c. On-site Substations.

4.2 Construction and Decommissioning

- 4.2.1 Key threats to the soil resource at construction and decommissioning sites are trafficking of vehicles/plant and poor handling, which can cause damage to soil structure through compaction and smearing. These effects compromise the ability of the soil to perform functions, such as providing adequate water, air and nutrients to plant roots. The risk of compaction and smearing increases with soil wetness.
- 4.2.2 To minimise the risk of damage to soil structure, the detailed SMP will include measures to:
- a. Prepare a plan of topsoil units within the Principal Site and the Cable Route Corridor, that should not be combined or exchanged in soil handling operations;
 - b. Minimise trafficking of vehicles/plant over in situ or banded soils to occur outside demarcated working areas;
 - c. Minimise trafficking of vehicles/plant on reinstate soil (topsoil or subsoil);
 - d. Establish and maintain a grass sward over the Solar PV area before trafficking over by construction plant and delivery vehicles;
 - e. Avoid soil handling when its moisture content is above the plastic limit (the moisture content at which soil begins to behave as a plastic material and the soil is deemed too wet to handle without causing damage to the

soil structure). This is more likely to be the case between November and March, which should be considered when scheduling the construction works. Where this is not possible, soil consistence should limit soil handling activity. Soil should be handled (or trafficked) only when in a dry and friable condition. The consistency of the soil can be determined in the field by a soil specialist and/or the Environmental Manager (who will be subject to specialist soil training) prior to any soil handling activity. A field suitable method for assessing whether soils are in a dry and friable condition based on plastic limits is set out in Part One (Supplementary Note 4 – Table 4.2) of the Institute of Quarrying's Good Practice Guide for Handling Soils in Mineral Working (Ref 2), and this approach together with the associated rainfall protocols will be adopted. Representative soil samples can also be taken to have the moisture content for the plastic limit assessed by a soil laboratory prior to work commencing, with moisture probes at representative locations collecting continuous data on soil moisture content, providing early warning of soil material approaching the plastic limit. Defra's Code of Construction Practice (Ref 3) should be followed at all times in this regard;

- f. Soil handling should be by excavator and dump truck as per sheets A to D of the Institute of Quarrying Good Practice Guide for Handling Soils in Mineral Workings (Ref 2);
- g. Avoid handling of soils to be carried out during periods of prolonged, heavy rainfall;
- h. Minimise mixing of topsoil with subsoil, or of soil with other materials;
- i. Ensure soil is only stored in designated soil storage areas;
- j. Ensure plant and machinery only work when ground or soil surface conditions enable their maximum operating efficiency (i.e. when machinery is not at risk of being bogged down or skidding causing compaction or smearing);
- k. Maintain all plant and machinery in good working condition to ensure that the soil is stripped correctly, for example to ensure that the depth of the strip can be accurately controlled, and to minimise the risk of contamination through spillages; and
- l. Keep daily records of operations undertaken, and site and soil conditions during soil handling activities;
- m. Use low ground pressure (LGP models) and tracked vehicles where possible when working directly on bare or vegetated soils to minimise the extent and/or intensity of the soil loosening/decompaction required after reinstatement;
- n. Develop a decompaction strategy following detailed design of the Scheme. The purpose of the decompaction strategy will be to set out the decompaction work necessary to address any subsoil compaction that has arisen due to of the Scheme's construction, operation and decommissioning. The decompaction strategy should not attempt to rectify any existing or unrelated subsoil compaction caused by standard arable land management practices; and

- o. Include a target specification for the restored soils which will be established according to location and soil types, end use and the existing baseline ALC grade.
- 4.2.3 The Plastic Limit can be assessed in the field and a methodology is given in Supplementary Note 4 of the Good Practice Guide for Handling Soils in Mineral Workings (Ref 2). Soil is in a plastic condition when it is moist enough to be rolled between hand and a smooth surface (metal plate or ceramic tile) into a roll of 3.2mm (1/8 inch) thickness. If the soil roll crumbles before reaching this thickness it is not plastic. Once a plastic consistency has been reached following rainfall, soil handling work and trafficking over unprotected soil should be suspended until the soil has dried sufficiently to no longer be plastic.
- 4.2.4 The majority of the proposed Solar PV development will comprise rows of solar panels mounted over previous arable land. There will be no requirement to move or seal soil below foundations for this land. Therefore, the risks to the soil resource are minimal compared to minerals extraction or built development of a similar scale. Elements of the Scheme that will require the stripping and storage of topsoil within the Principal Site include the access tracks and infrastructure requiring a foundation (such as substations, Solar Stations and BESS Stations). Soil excavated for cable trenches within the Principal Site and along the Cable Route Corridor will be quickly returned to the backfilled trench and will not need to be placed in storage bunds for the duration of the development.

Soil Storage Bunds

- 4.2.5 The building and storage of soil storage bunds across the Scheme should follow the guidance given in Sheets B and C of the Institute of Quarrying Good Practice Guide for Handling Soils in Mineral Workings (Ref 2). Soil stripping and storage will be mostly confined to topsoil with very little excavation of subsoil. Where there is any requirement to store subsoil, this will be in bunds separate to the units of topsoil material.
- 4.2.6 Based upon the existing soils data from the ALC survey (**Appendix 15-2: Agricultural Land Classification Baseline Report** of the ES [EN010142/APP/6.2]) with additional survey for the Cable Route Corridor, the separation of topsoil into separate units for stripping, storage and eventual restoration, will be determined by a suitably qualified Soil Scientist. A map of topsoil units will be prepared as a requirement of the SMP and retained to ensure topsoil units are restored to their original location. Mapped soil units will be taken from the ALC survey data for the Principal Site. The resolution of ALC detailed field survey (one sample point per hectare) can be too low to adequately identify variation in soil characteristics for the narrow corridor of a grid connection trench. For this reason, a dedicated soil survey of the Cable Route Corridor will be a requirement of the detailed SMP.
- 4.2.7 The detailed SMP will require the recording of material source area, location and maximum dimensions of the soil storage bunds, creating a log of the volume of each soil unit stored.
- 4.2.8 Additionally, bunds for the storage of agricultural soils shall 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 barrier material;
- c. Topsoil bunds shall not exceed 3 m in height and subsoil (or subsoil substitute) bunds shall not exceed 5 m in height; and
- d. Materials shall be stored like upon like materials, so that topsoil shall be stripped from beneath subsoil bunds and subsoil from beneath overburden bunds.

4.3 Operation

- 4.3.1 During operation, occasional vehicle movements within the sites will be necessary for maintenance and supervision of any grazing livestock.
- 4.3.2 All vehicle movements should be confined to access tracks unless there is a specific need to take a vehicle onto the grassed surface. All use of plant and transport vehicles within the site for maintenance during the operational phase should comply with the same guidance for construction and decommissioning given above in Section 4.2.
- 4.3.3 Vehicle movements for mowing and/or supervision of livestock will be confined to periods of higher grass growth and naturally dryer soil conditions. Where the site does have wet conditions and plastic soils during the growing season, mowing operations and/or livestock grazing should be postponed until field tests demonstrate that topsoil within the site has dried to a friable consistence.

5. Requirements of the SMP

5.1 Supervision

- 5.1.1 Throughout the construction, operation and decommissioning phases, regular inspections should be made by a suitably experienced soil scientist. Inspections will check for compliance with the agreed SMP, such as the depth of material stripped for areas of track, confirmation of soil handling and trafficking over land being stopped when soil has wetted to a plastic consistence, and condition of soil material in storage bunds.
- 5.1.2 Specific site inspections should take place prior to and post decommissioning work to identify any areas of specific remediation work required, and that any such remediation work has been completed successfully. An example would be looking for any areas of subsoil compaction that have developed where service vehicles have been used off the access track routes, specifying appropriate subsoil cultivation and assessing the effectiveness of that cultivation.
- 5.1.3 Periodic site inspection of the Principal Site can also be used in conjunction with the landowners, to identify any emerging issues such as loss of gravel hardcore from access tracks to adjacent land or unnecessary vehicle movements off the access tracks.

5.2 Cable Route Corridor

- 5.2.1 A suitably experienced soil scientist should carry out a soil resource investigation of the cable route corridors ahead of construction work commencing to inform the specification for separation of soil horizons during excavation and backfilling, appropriate plant to minimise degradation of handled and trafficked soil, and plastic limits for suspension and recommencement of work following rainfall. As above, the soil scientist should visit the working site and inspect the completed work to check for compliance and any emerging issues.

5.3 Infrastructure Requiring a Foundation and Tracks

- 5.3.1 Topsoil should be stripped separately from the underlying subsoil to avoid the topsoil being covered by tracks, hardstanding and structures. For the access tracks the topsoil can be thinly spread to the side of the track from where it can be recovered when the track is decommissioned. For the infrastructure areas, such as the Solar Farm Control Centre, the topsoil should be stored in a bund not exceeding 3m high.
- 5.3.2 Track and compound hardstanding surfaces should be laid over the subsoil with a separating geotextile membrane. Drains can be laid below the track and hard standing where appropriate, for instance if there is the need to intercept a spring line.
- 5.3.3 Topsoil should be stripped from the footprint of the switchgear and associated buildings and stored in a bund.
- 5.3.4 Where subsoil needs to be stripped to achieve a desired level, it should be handled and stored separately to topsoil in bunds of up to 5m height. Stripped subsoil can be used to build up levels within the site but should not be spread without topsoil having been stripped from the receiving area first.
- 5.3.5 Soil handling work should not commence until the soil has dried to below the plastic limit. Work should be suspended for rainfall. If the rainfall is sufficient to wet the soil at the surface to a plastic consistence, then work should not restart until it has dried sufficiently to return to a friable consistence.

5.4 Cable Trenches and Fence Posts

- 5.4.1 Excavation of cable trenches should separate topsoil and subsoil, and replace these in order when backfilling the trench. Where there is excess soil material to backfill, the level should be maintained by removing subsoil to storage and returning all of the topsoil. On completion of the cable trench work there should be no degradation of the pre-work ALC grades, as informed by the proposed detailed ALC survey of the Cable Route Corridor.
- 5.4.2 Where soil material is excavated for post holes, topsoil should be spread thinly to the side of the excavation, with subsoil removed to a storage bund or reused for building up levels.
- 5.4.3 Where trenchless crossing techniques (such as Horizontal Directional Drilling) are used, soil survey will need to include the surface area occupied

and excavated by construction plant. The subterranean route of directional digging work will not require soil survey as the zone of disturbance will be below that of crop rooting. Directional digging will also be confined to passing below existing buildings, infrastructure, watercourses, trees and woodland where required, and not used in preference to an excavated trench within a field.

5.5 Solar PV Panels

- 5.5.1 Prior to starting work a green cover should be established. Plant working on the Site should be low ground pressure vehicles, for instance using agricultural tractors and trailers to move materials off the access track routes rather than road going Heavy Goods Vehicles (HGVs).
- 5.5.2 Trafficking of plant and vehicles off the access tracks should not commence until the soil has dried to below the plastic limit. Work should be suspended for rainfall. If the rainfall is sufficient to wet the soil to a plastic consistence, then work should not restart until it has dried sufficiently to return to a friable consistence. Where wheel ruts or other signs of surface compaction do arise, these should be remediated by using an excavator to lift and loose tip the topsoil before reseeding. This should take place at the completion of the construction works once all plant and vehicle passes have been completed.

5.6 Operation

- 5.6.1 Little or no movement of soil material will occur during the operational life of the Scheme. Some maintenance activities may take place such as the replacement/resetting of a fence post. Where such activity does occur, it should comply with the direction given in the construction and decommissioning guidance.
- 5.6.2 The grassed soil surface will be trafficked during the operational phase of the Scheme. Sheep or other small livestock may be used for intermittent grazing of the Principal Site and vehicles will be used for inspection and maintenance activities. As for construction and decommissioning, vehicles should avoid leaving the access tracks within the Principal Site while the soil surface is wet following rainfall.
- 5.6.3 If grazing is utilised, grazing livestock will be encouraged to move across the Principal Site to manage grass growth. The programme of movement should take into account areas of prolonged wetness following rainfall, prioritising grazing of these areas in summer rather than spring and autumn. Mobile feed and water troughs can be relocated to avoid loss of vegetation and build-up of compaction for the surrounding area.
- 5.6.4 It should be noted that the effects of vehicles and livestock in the Principal Site will be low compared to routine agricultural land management. The Principal Site will be managed as low input grassland and will carry less weight of stock than is standard for area fertilised field. Vehicles used within the Principal Site for inspection and maintenance will be considerably smaller and lighter than those used for arable cultivation where heavy ballast is required for tractors to be able to draw a plough.

- 5.6.5 Agreed soil management guidance for the operational phase of the development can be agreed as part of the detailed SMP alongside construction and decommissioning work, or embedded within the detailed Operational Environmental Management Plan (OEMP).
- 5.6.6 An extended period of time under grass is expected to result in a benefit to soil health, specifically soil organic matter (SOM) across the solar PV area in the Principal Site. There is little evidence available demonstrating any impact on soil health specific to solar panels over a 40-60 year timescale, however in comparison to the effect of reverting arable land to grass, any detectable effect of solar panels is anticipated to be marginal. The detailed SMP should set out a programme of soil health monitoring to be undertaken throughout the operation of the Scheme to understand the full impact of solar development on soil health.

5.7 Decommissioning

- 5.7.1 As for the solar PV deployment, removal of the solar panels and associated facilities will involve trafficking of vehicles over the grassed soil surface. Such work should only take place when the topsoil is below (drier than) the plastic limit.
- 5.7.2 Decommissioning will aim to restore all agricultural land without any degradation of the current ALC Grade, as informed by the detailed ALC survey. Following removal of hard standing such as infrastructure requiring a foundation and access tracks, the newly exposed subsoil should be loosened then lightly consolidated by a toothed excavator bucket to a depth of 30cm prior to the replacement of topsoil. For areas in which infrastructure requiring a foundation and tracks have been located, a grass cover should then be established, and the land maintained under grass (grazed or mowed) for three years prior to any return to arable production. An aftercare period will not be necessary for the majority area where soil has remained in situ as the extended period of time under grass should leave the soil profile in better structural condition than that found under the current arable production.
- 5.7.3 Any minor variability from the current ALC grading identified in any post restoration surveys should be acknowledged and an assessment could be made as to whether this could be justified (on a case-by-case basis) as a result of professional judgement. Natural England are satisfied and confident that if the measures prescribed in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Ref 3) and the Good Practice Guide for Handling Soils in Mineral Workings 2021 (Ref 2) are followed that successful restoration should be achieved.
- 5.7.4 On completion of decommissioning works the Principal Site should be inspected by a soil scientist to check for the presence of subsoil compaction, with particular focus on areas such as haul routes over in situ soil and the locations of livestock troughs and handling pens. The landowners should be encouraged to inspect the land themselves prior to the soil scientist visit to identify any areas where they have heightened concern.
- 5.7.5 Where problematic compaction is found the area should be subsoiled prior to any reestablishment of arable production.

6. References

- Ref 1 HMSO (2008). The Planning Act 2008.
- Ref 2 The Institute of Quarrying (2021). Good Practice Guide for Handling Soils in Mineral Workings.
- Ref 3 Department for Environment, Food and Rural Affairs (2008). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.