Triton Knoll Offshore Wind Farm Limited
Triton Knoll Electrical System

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Appendix 14: Outline Soil Management Plan (C)

Date: 1st February 2016

Appendix 14 of the Applicant's Response to Deadline 5

RWE The energy to lead

Statkraft

TRITON KNOLL

Triton Knoll Offshore Wind Farm Limited
Triton Knoll Electrical System

Outline Soil Management Plan (Revision C)

February 2016

Document Reference: 8.7.5

Appendix Five to the Outline Code of Construction Practice

APFP Regulation 5(2)(q)

Triton Knoll Offshore Wind Farm Limited

Triton Knoll Electrical System

Outline Soil Management Plan (Revision C)

Document Reference: 8.7.5

February 2016

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Date of Approval	February 2016
Revision	C

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TABLE OF CONTENTS

1 INTRODUCTION

Overview

1.1 Triton Knoll Offshore Wind Farm Limited (TKOWFL) is submitting an application to the Planning Inspectorate (PINS), on behalf of the Secretary of State for Energy and Climate Change, for a Development Consent Order (DCO) for the Triton Knoll Electrical System (the proposed development) under the Planning Act 2008. The Triton Knoll Electrical System (TKES) would connect the consented Triton Knoll Offshore Wind Farm (TKOWF) offshore array to the existing National Grid substation at Bicker Fen, Boston.

1.2 The TKOWF is located approximately 33km (20.5 miles) east of the Lincolnshire coast. The Secretary of State granted a DCO for the TKOWF offshore array on 12th July 2013.

1.3 All terms, acronyms and abbreviations used within this Outline Soil Management Plan (SMP) are explained on first use, and / or set out in full within the Glossary appearing in the Environmental Statement - Application Document 6.2.

The Applicant

1.4 TKOWFL is a joint venture between two leading international energy companies; RWE Innogy UK Limited and Statkraft UK Limited. RWE Innogy UK is the UK subsidiary of the German renewable energy company RWE Innogy (part of RWE AG), a company with a strong and diversified position in renewable energy development. Statkraft UK Limited is the UK subsidiary of Statkraft Group, Europe's largest generator of renewable energy and the leading power company in Norway.

Project Overview

1.5 The components of the TKES, which are needed to connect TKOWF to the National Grid, comprise:

- Up to six offshore export cable circuits – to transmit the high voltage alternating current (HVAC) electricity from the offshore substations to the transition joint bays at the landfall;
- Landfall infrastructure just north of Anderby Creek, Lincolnshire – including transition joint bays which house the connection between the offshore cables and the onshore cables;

- Up to six onshore export cable circuits (up to 220 kV) – to transmit the HVAC electricity from the transition joint bays at the landfall to the proposed Triton Knoll Substation via the Intermediate Electrical Compound;
- An Intermediate Electrical Compound near to Orby Marsh – to provide compensation for reactive power to allow more efficient transmission to minimise losses;
- A substation near the existing Bicker Fen National Grid Substation – to step-up the voltage to the voltage used by the National Grid and provide additional compensation for reactive power built up over the export transmission;
- Up to four onshore export cable circuits (400 kV) – to transmit the electricity from the proposed Triton Knoll Substation to the existing National Grid substation at Bicker Fen, Boston; and
- Unlicensed Works within the existing National Grid substation comprising up to two bays each accommodating electrical equipment.

1.6 The Order Limits for the Triton Knoll Electrical System are shown on the Order Limits Plans – Application Document 2.1.

1.7 Any works at the National Grid substation near Bicker Fen required to connect the power produced by TKOWF will be consented, constructed and operated by National Grid (the 'Enabling Works'). National Grid has not yet completed the engineering studies necessary to define the Enabling Works required at their existing Bicker Fen substation.

Purpose of this Outline Soil Management Pan

1.8 This Outline SMP (Application Document 8.7.5) forms part of the application for a DCO for the TKES. Its purpose is to provide details of mitigation measures and best practice handling techniques to safeguard soil resources by ensuring their protection, conservation and appropriate reinstatement.

1.9 Requirement 14 of the draft DCO requires the CoCP and its supporting appendices to be submitted for each stage of the works permitted by the Order. This Outline SMP will therefore be adapted and submitted separately for each stage of works as part of the CoCP for that stage. For certain stages of works it may be the case that a particular environmental plan is not required for that specific stage of works, and in those cases the undertaker will agree with the relevant planning authority which of the appendices to the CoCP are (not) required for such works. It may therefore be that this Outline SMP is not provided for a particular stage of works.

Scope of this Outline Soil Management Plan

1.10 This Outline SMP relates to the onshore elements of the TKES for the proposed TKOWF, landward of Mean Low Water (MLW). This document does not relate to offshore works seaward of MLW, or any works above MLW that are principally marine activities.

2 THE ALO ROLE AND PRE-CONSTRUCTION SURVEYS

Responsibilities of the Agricultural Liaison Officer

2.1 Engagement with landowners and occupiers of agricultural land is an important part of the management of the construction and operation of the proposed development. Engagement requirements will vary over the life of the project but will be provided by at least one suitably qualified Agricultural Liaison Officer (ALO), more will be appointed if required, working together in a team managed by the Applicant.

2.2 The Agricultural Liaison Officer's prime responsibility shall be as the point of contact with the landowners / occupiers along the cable route and to work with the Applicant and the landowners/occupiers to manage the construction and operation of the proposed development.

2.3 The ALO will ensure that good communications are maintained with landowners and tenants affected by the works. Agricultural Liaison Officers will have the following skills and experience, as appropriate to their role and as necessary during the particular phase of the project:

- Knowledge and experience of working in a similar role.
- Experience of contact with land owners.
- Knowledge of compulsory acquisition process if required.
- Knowledge of Local Authority planning process and requirements.

2.4 The Applicant will update stakeholders of the status of the ALO on a quarterly basis through the procedures established in the Communication Plan secured as part of the Code of Construction practice.

Commencement of the ALO

2.5 The ALO role will be undertaken prior to the determination of the TKES DCO application by the Applicant's project team. Formal appointment of the ALO will take place prior to the commencement of pre-construction activities and detailed design planning, to ensure that landowners and occupiers are fully engaged in these processes well in advance. The ALO will be briefed by the Applicant's project team and have access to all relevant background information.

Engagement of the ALO

2.6 An ALO will meet with the Land Interest Group, or equivalent, every three months, and more frequently if required, to discuss matters arising during the pre-construction and construction of the proposed development.

2.7 A member of the ALO team will be available at all times during working hours or as appropriate, depending on program activities, such as during 24 hour construction activities, to give advice to landowners, the Applicant's project team manager and surveyors should they require it. This resource will not be limited, and may be contracted to a group or company to achieve continuity throughout.

2.8 A nominated ALO will be the primary contact for the landowners and occupiers in relation to consultation and discussions regarding the management of restrictive covenants for the lifetime of the project. Information in relation to the process of management of restrictive covenants will be issued to landowners and occupiers every year. Landowners may request necessary consent for activities captured by the restrictive covenant by telephone, email or in writing. Consent, including any restrictions on working practices, will be provided by the cable operator in writing as soon as practicable and representatives of the cable operator may need to be present on site to monitor works.

2.9 The ALO will be responsible for providing the following plans to landowners and tenants as relevant to their landholding:

- Prior to the start of the construction works on their landholding, cable installation plans showing the proposed locations of the cable trenches, soil storage areas, temporary haul road, joint bays and link boxes within the Order limits: and
- Following the installation of the cable circuits on their landholding, "as built" plans showing the location of cable ducts, joint bays, link boxes and cable safety zones and within the Order land the extent of the easement and restrictive covenant over their land.
- The as built plans will not necessarily accord with the cable installation plans as it may be necessary for changes to be made to the cable installation plans to accommodate unforeseen site or engineering constraints. In the event that changes are needed to the cable installation plans the ALO will provide revised plans to the landowners and tenants.

Pre-Construction Surveys

2.10 The ALO will ensure that information on existing agricultural management and soil/land conditions is obtained, recorded and verified by way of a detailed pre-construction condition survey.

2.11 A topographic survey will be undertaken where existing surface features exist.

2.12 Soil sampling will be undertaken along the cable route to identify and describe the physical and nutrient characteristics of the existing soil profiles.

2.13 A risk assessment will be undertaken to identify the risk of translocation of soil diseases etc. i.e. arable land soil/blights and appropriate action taken.

2.14 The condition survey will identify for each soil horizon (topsoil, upper subsoil and lower subsoil), the depth, texture, colour, mottling, stone content, consistency and structure. Soils should be described according to the methods and terminology contained in the Soil Survey Field Handbook. Topsoil samples will also be taken for laboratory analysis of pH, organic matter content and major nutrients (phosphorus, potassium, nitrogen and magnesium).

2.15 A drainage survey will be undertaken to establish the exact nature of the as known existing field drainage system and drainage outfalls including any associated farm drainage that may be affected by the scheme. The drainage survey will identify the provision of any temporary drainage requirements and/or diversions as well as confirm the required cable burial depth. The drainage survey will make use of existing drainage patterns to ensure the full implications of the scheme are understood.

2.16 As part of the condition survey the following will also be recorded:

- existing crop regimes;
- the position and condition of field boundaries;
- the condition of existing access arrangements;
- the location of private water supplies (as far as reasonable investigations allow);
- the type of agriculture taking place;
- the yield of crops;
- the quality of grazing land; and
- the existing weed burden.

2.17 Liaison with affected landowners and tenants will be undertaken to identify potential constraints and barriers to construction and identify the provision of any temporary drainage requirements and/or diversions.

2.18 Such aspects will be recorded and entered into a written pre-entry record of condition, which includes photographs and sections dealing with soils and drainage, for each affected landowner. The pre-entry record of condition will be provided to the landowner and occupier and any identified reasonable omissions will be corrected.

2.19 Information collected during pre-construction surveys will be stored in the Triton Knoll document management system to facilitate ongoing use and access during construction and operation phases. The information stored in the Triton Knoll document management system will be updated when appropriate.

2.20 The commencement of construction will reflect ALO agreements made with affected parties to minimise disruption, where possible, to existing farming regimes and timings of activities (e.g. cropping).

2.21 The ALO will undertake site inspections during construction to monitor working practices and ensure landowners' and farmers' reasonable requirements are fulfilled. The ALO will also be responsible for agreeing reinstatement measures following completion of the works.

2.22 Prior to construction, a thermal resistivity survey will be undertaken along the cable route to determine surface temperature and soil thermal resistivity.

2.23 The findings of the survey will be used by the TKOWFL engineering team to ensure that the soil that will surround the cable has appropriate physical properties. Any areas where alternative fill material may be necessary will be identified at this stage.

2.24 The ALO will be responsible for ensuring that the location, orientation and grouping of link boxes are informed, subject to overriding constraints, through discussions with the landowner.

3 GENERAL CONSTRUCTION METHODOLOGY

Cable route

Overview

3.1 Up to six onshore cable circuits will be required to transmit the power from the transition joint bays at the landfall to the Substation via the Intermediate Electrical Compound. The voltage will be determined by detailed studies, but is likely to be between 132 kV to 220 kV. Depending on the final design of the Substation, up to four export circuits will be required to transmit the power from the Substation to the grid interface point at the National Grid substation at Bicker Fen. The voltage would be 400 kV as required by National Grid.

3.2 The cable route will be constructed in stages. Up to six individual trenches for the 220 kV cable, and up to four individual trenches for the 400 kV cable will be excavated, the cable ducts will be laid, the trenches backfilled and the reinstatement process commenced. At regular intervals (approximately 600 m – 1,000 m) along the route, cable joint pits will be excavated to enable the cable installation and connection process.

Construction & installation

3.3 It is expected the sequence of works for cable installation will be as follows:

- Site investigation;
- Archaeological investigation and evaluation;
- Preconstruction ecological surveys;
- Enabling works (access, earthworks, utility diversions, archaeological, ecological mitigation works as necessary);
- Site establishment (offices, welfare facilities, security and fencing, wheel wash, lighting, signage);
- Installation of temporary site drainage;
- Topsoil removal (to edge of working area);
- Haul road installation in required sections of the route;
- Trenchless duct installation below large obstacles (major roads, railways, rivers);
- Trench excavation;
- Duct installation;
- Trench backfilling;

- Jointing pit excavation;
- Cable installation (pulled through ducts from each joint pit);
- Cable jointing;
- Cable testing ;
- Jointing pit ground re-instatement;
- Remove haul road;
- Existing field drainage repairs (where disruption occurs);
- Replacement of topsoil;
- Landscaping and hedge re-planting; and
- Demobilisation and fence removal (farming practices resume).

Timescales & seasonal timing considerations

3.4 The duration of the excavation, cable installation and backfilling works will depend on localised ground conditions e.g. rock content, dewatering content. For a cable route of this length (circa 60 km including the 400 kV section) cable installation is expected to take up to 42 months. Working parties will move along the length of the cable route so that at any single location there will be times when no work is being carried out.

3.5 The majority of the work would be carried out across 12-hour day shifts. However, trenchless operations could take place across back-to-back 24 hour periods. Illumination would be required during night-time and in low-light conditions, and will be controlled by the Outline Artificial Light Emissions Plan (Application Document 8.7.6). Normal working operations will not take place on a Sunday.

Working width

3.6 The working width will generally be no wider than 60 m, with the six individual trenches placed at a minimum of 3.5 m centres within the cable easement (for 220 kV cable), and the four individual trenches placed at a minimum of 5 m centres within the cable easement (for 400 kV cable). The nominal width of each cable trench will be 1.0 m – 2 m allowing for safe working, the trench sides may be stepped or battered to reduce the likelihood of collapse.

3.7 The working width will incorporate adequate space for the storage of excavated material, generally comprising a subsoil storage area and a topsoil storage area. For the majority of the cable route, one temporary haul road (6.5 m wide) will be formed to allow the safe passage of construction

personnel and machinery within the working width. Up to two haul roads will be formed for the cable route section between the Intermediate Electrical Compound and the A158, to take extra traffic associated with the construction of the Intermediate Electrical Compound.

Topsoil stripping

3.8 Once the working width has been cleared of vegetation, existing topsoil will be stripped (with the exception of an area to be used for topsoil storage). The precise method of stripping and the depth to which the soil will be stripped will be determined during the detailed design phase following the information gained from the soil surveys. The detailed design stage will include soil and geotechnical surveys to be undertaken along the cable route; the findings of which will determine the depth to subsoil.

3.9 Machinery with low ground pressure will be used to minimise soil compaction where the soil textures and conditions indicate that compaction is possible.

3.10 Stripped topsoil will be stored to the side/s of the working width in a manner that provides sufficient separation from subsoil and vehicles. Typically, this will be stored as an earth bund of a maximum height of 2 m to avoid compaction from the weight of the soil. Storage time will be kept to the practicable minimum to prevent the soil deteriorating in quality. Topsoil will be stored on a section of working width that is not stripped. Subsoil will be stored on a section of working width that has been stripped of topsoil. Topsoil stripped from different fields will be stored separately, as will soil from hedgerow banks or woodland strips, to reduce the potential for crop contamination during reinstatement.

3.11 Soil storage areas will be maintained in line with Defra best practice guidelines (Defra, 2009). Examples of soils protection measures include:

- Covering of stored soil to prevent weed growth;
- Sowing of ground cover e.g. dense grass swards
- Regular strimming of weed growth to prevent seeding;
- Herbicide applications (pre- or post-emergence); and
- Mechanical control of weed seedlings.

Haul Roads

3.12 A temporary haul road, typically 6 m in width, will be constructed within the cable corridor working width on land that has been stripped of topsoil. It is assumed that there will be a requirement to import aggregates to create a

stable surface for construction traffic movements. Other options such as bog-matting and geotextiles will also be considered.

Installation and backfilling

3.13 Following trench excavation, a thin layer of stabilised cement bound sand (typically 75 mm to 100 mm) will be packed around the ducts in order to aid heat dissipation. Subsoil and topsoil previously removed will then be backfilled.

3.14 Generally, any surplus soil material from trench excavation will be spread across the working width prior to topsoil reinstatement on a field-by-field basis, provided this will not impede achievement of restoration objectives, and provided the materials are compatible, in consultation with the landowner.

3.15 Offsite disposal of surplus soil material shall only be considered where use on-site is not feasible. The landowner/occupier will be consulted before any off-site disposal is planned. In such instances disposal will be undertaken in accordance with the Waste Management Regulations.

Reinstatement

3.16 Disturbed ground will be reinstated with the stored subsoil following trenching. If necessary, the subsoil will be ripped prior to reinstatement to aid natural structure and drainage.

3.17 Topsoil will be replaced above the installed trenches once the High Voltage testing has been successfully completed, in order to return the land to its previous condition as soon as possible. Topsoil will be spread in such a way as to ensure that it does not become compacted.

As Built Plans

3.18 During construction, accurate records using GPRS co-ordinates will be taken of the location of all installed infrastructure, including records of existing and remedial drainage, and of the cable safety zones. Once installation is complete, as-built plans will be produced and provided to the landowners and tenants in respect of their landholdings. The as-built plans will also record the corresponding extent of the easement and the restrictive covenant over that part of their landholding that is required for the authorised project.

Intermediate Electrical Compound

3.19 Construction of the Intermediate Electrical Compound will temporarily affect approximately 8.4 ha of agricultural land. Of this, up to 6.2 ha will be required

to accommodate the permanent footprint of the Intermediate Electrical Compound (Intermediate Electrical Compound Accommodating all the Above-Ground Electrical Infrastructure, landscaping areas and Indicative Access Road). Construction of the Intermediate Electrical Compound will be facilitated via a double width (12 m) haul road within the cable corridor from the A158 north to the Intermediate Electrical Compound. A 6 m access track from Marsh Lane will be maintained for operational purposes.

Construction & installation

3.20 It is expected the sequence of works for construction of the Intermediate Electrical Compound will be as follows:

- Site investigation
- Site access and set-up
- Site enabling works and diversions
- Strip topsoil
- Bulk earthworks (end of enabling works)
- Underground site utilities
- Building foundations
- Equipment pads
- Install heavy equipment
- Building superstructure
- Gantries
- Busbar connections

Timescales

3.21 Construction of the Intermediate Electrical Compound is expected to comprise up to 46 months construction work over a 54 month period.

Topsoil stripping and earthworks

3.22 Once the Intermediate Electrical Compound has been cleared of vegetation, existing topsoil will be stripped. Stripped topsoil will be stored within the temporary compound.

Reinstatement

3.23 Stripped topsoil will be re-used in landscaping and excavated material will be used in landscaping screening bunds where possible.

Substation

3.24 Construction of the Substation will temporarily affect approximately 44.8 ha of agricultural land. Of this, up to 23.9 ha will be required to accommodate land associated with the Substation (Substation Compound Accommodating all the Above-Ground Electrical Infrastructure, indicative landscaping and Indicative and Permanent Access Road). A new access road (approx 5 km in length) will be required from the A17 to the Substation site. This will be a tarmacadam road constructed on a stone foundation. The road will be used as the permanent road to the Substation. In addition, a temporary road of up to 6 m width will be laid adjacent to the path of the permanent road and will be formed of stone; this will be removed once the permanent road has been completed and will provide temporary access to the Substation site during the early stages of construction.

Construction & installation

3.25 Construction of the new access roads will be required for site access before construction of the Substation commences. It is expected the sequence of works for construction of the Substation will be as follows:

- Site investigation
- Site access and set-up
- Site enabling works and diversions
- Strip topsoil
- Bulk earthworks (end of enabling works)
- Underground site utilities
- Building foundations
- Equipment pads
- Install heavy equipment
- Building superstructure
- Gantries
- Busbar connections

Timescales

3.26 Construction of the Substation is expected to comprise up to 65 months construction work over a 71 month period.

Topsoil stripping and earthworks

3.27 Once the Substation compound has been cleared of vegetation, existing topsoil will be stripped. Stripped topsoil will be stored within the temporary Substation compounds.

Reinstatement

3.28 Given the volume of soil being stripped from the Substation compound area, there may be a requirement to remove soil off-site. Where possible, stripped topsoil will be re-used in landscaping and excavated material will be used in landscaping screening bunds.

4 AGRICULTURAL LAND DRAINAGE

4.1 Existing land drains, where encountered during construction, will be appropriately marked. Temporary drainage will be installed within the cable corridor working width to intercept existing field drains and ditches in order to maintain the integrity of the existing field-drainage system during construction. Such measures will also assist in reducing the potential for wet areas to form during the works, thereby reducing the impact on soil structure and fertility. Where necessary, existing land drains will be replaced during construction to ensure continued agricultural use.

4.2 Particular care will be taken to ensure that the existing land drainage system is not compromised as a result of construction. Land drainage systems will be maintained during construction and reinstated on completion. Temporary cut-off drains will be installed parallel to the trench-line, before the start of construction, to intercept groundwater before it reaches the trench.

4.3 Drainage systems will be reinstated to the Landowner's reasonable satisfaction (and to the reasonable satisfaction of the Occupier, if applicable, and where this does not conflict with the Landowner's reasonable satisfaction), ensuring that the drainage system is put back in a condition that is at least as effective as the previous condition, and that the restoration follows best practice for field drainage installations, and takes into account site specific conditions.

4.4 The landowner will be consulted prior to the installation of the cable ducts, on the design, including layout, falls, pipe sizes, pipe types and outfall, of any land drainage works required during construction, and on the design and timing of any land drainage works required for the subsequent restoration of the land. This process will take due regard of any local knowledge appropriate to individual circumstances.

4.5 The services of a suitably qualified drainage consultant (either internal or consultant) will be employed by the Applicant to act as an independent drainage expert during the detailed design process, prior to the commencement of construction.

4.6 A dispute resolution process will be established including an independent expert for drainage design and implementation.

4.7 Landowners will be provided with the opportunity to inspect land drainage works as they progress. Records of existing and remedial drainage will be made by the Applicant and copies provided to the Landowner (and the Occupier, if applicable) after installation of the cables.

4.8 During construction all reasonable care will be taken to minimise physical damage to the landowners land and adjacent land resulting from the pumping of water from the construction trenches (if required), in wet conditions. Any water will be pumped into existing and appropriate drainage channels.

4.9 The location of drains cut or disturbed by the construction works will be photographed, given a unique number and logged using GPRS coordinates.

4.10 The Applicant will compensate the Occupier on a proven business loss basis for any damages or losses caused as a direct result of the use of, or access to or from, the Easement Strip, subject to receipt and approval of a claim submitted in a format as requested by the Applicant.

4.11 All drainage works can be carried out within the Order Limits, however where it is reasonable for the reinstatement of drainage to take place outside of the order limits it will be done subject to the agreement of the landowner.

4.12 Where reinstatement of drainage outside of the Order Limits offers a more economic method of achieving requirements set out in 4.3, it will be done subject to the agreement of the landowner.

5 SOIL MANAGEMENT

General

5.1 All soil handling, storage, replacement and management will be undertaken in accordance with best practice (DEFRA, 2009). Mitigation measures will comprise the following:

- Topsoil from areas currently in agricultural use to be stripped before the start of general construction works, with priority focussed on those areas of highest grade Best and Most Versatile (BMW) land;
- Soils shall be categorised on the basis of their origin, and type/texture, and stockpiled/stored accordingly; topsoils shall be stored separately from subsoils;
- Transportation of soils to be kept to the absolute minimum to reduce the risk of contamination between fields;
- Soils suitable for reuse as part of wider mitigation (e.g. planting areas) to be reused in a broadly similar location to their origin, and stored for the shortest amount of time permissible; and
- Any surplus soils to be disposed of in an appropriate manner off-site.

Construction Mitigation

5.2 Before commencing work on site, where soils are to be disturbed, the Contractor will be required to ensure that the construction plant being proposed is appropriate to the size of the site, the volume of soil and haul distances. The selection of appropriate equipment and work practices is important as mishandling of soil can have an adverse effect on its fertility, permeability, ecological diversity, and the performance and visual quality of vegetated areas. Mishandling can also increase the risk of flooding and off-site discharges. Multiple handling of soil materials will be minimised.

Compaction

5.3 Plant and traffic movements will be confined to designated routes to minimise the potential for soil disturbance, compaction and indirect contamination. Tracked equipment will be used wherever possible to reduce compaction.

Stripping

Topsoil

5.4 Topsoil stripping will be undertaken along the working width for the cable route and at the Intermediate Electrical Compound and Substation sites. Stripping will generally be undertaken by an excavator positioned on the surface of the topsoil, and to the maximum topsoil depth without disturbing or removing the subsoil. Topsoils will be stripped directly to store when in a dry and friable condition. Field tests will be provided to the contractors to determine when soils are in a suitable moisture condition for handling. Multiple handling of topsoil will be avoided.

Subsoil

5.5 Following the topsoil strip, subsoil will be excavated to the required depth from the trenches. Stripping will be undertaken by an excavator positioned on the surface of the subsoil. Subsoils will be stripped directly to store when in a dry and friable condition. Field tests will be provided to the contractors to determine when soils are in a suitable moisture condition for stripping. Multiple handling of subsoil will be avoided.

Storage

Locating soil stores

5.6 The stripped topsoil and excavation subsoil will be stored within the working width. Topsoil may be stored on the existing surface but subsoil will be stored on land that has been stripped of topsoil. The ground where the soil stores will be placed will be free from vegetation and waste, and positioned away from tree crowns, watercourses and ditches. To ensure soil stores are located away from runoff, cut off ditches will be used to divert water to a suitable drainage system.

Timing of soil storage

5.7 Effective programming will ensure soil is stored for the minimum time possible. Where soil is to be stored for over 6 months it will be seeded with a rapid-growing grass to minimise erosion..

Formation of soil stores

5.8 Topsoil and subsoil will be stored separately and once stored, appropriately demarcated with signage to clearly identify the type of soil contained within each store.

Reinstatement

5.9 Following installation of the cable, all areas of disturbed ground will be restored to their original levels and profiles using the stored subsoil followed by the topsoil.

5.10 Subsoils will be placed and 'naturally' consolidated (to the same as the surroundings) within the trench excavations and in reverse order to its removal. Where there is excess soil within an area, soils will be spread over the working width and in agreement with the landowner. Agricultural fields will be restored to their previous condition. Topsoil will be prepared and seeded using an appropriate seed mix or returned to arable cultivation.

Soils Aftercare

5.11 At the end of construction soils will be returned in a condition at least equivalent to those recorded in the pre-entry record of condition. It is therefore not anticipated that an aftercare plan over and above the landowners usual working of the soil will be required. However if there is a loss in crop yield in the areas affected by construction once the land has been reinstated the landowner is protected by the compensation mechanism included in paragraph 4.10 and an investigation will be undertaken into the condition of the soil and appropriate action undertaken to put right any issue. If this is required it will take the form of a post-construction survey of the soils using the same approach as the pre-construction surveys and will include a control sample.

6 REFERENCES

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