Please see Annex SW4 for supporting information, and the “Introduction” for Health and Safety considerations and advice on the use of the guidance.

1. Is information relating to the soil resources readily available on site
   a. are the pre-working details of the ALC and Soil Physical Characteristics Report available
   b. has the soil strategy been revised since the planning application
   c. do any planning conditions relating to soil matters refer to other documents – if so, are these available on site
   d. are the site personnel aware of the existence of all the above information and where to find it

2. Who is to undertake the soil stripping
   a. is the soil stripping to be undertaken by a subcontractor
   b. has the overall soil information been translated into instructions for the site personnel for this phase of work

3. When is the soil stripping to commence
   a. what are the current soil conditions
   b. what is the current ground condition
   c. what are the expected weather conditions
   d. is it within the correct season
   e. are there clear details as to the expected start date and duration of this phase of works
   f. has the MPA been informed

4. Are the soil handling criteria agreed
   a. are stripping units known
   b. are the target depths of each unit agreed
   c. has the Lower Plastic Limit been determined for each soil type
   d. has the moisture content been ascertained for the particular soil to be moved

5. Are other aspects of the site development ready
   a. have statutory undertakers or other service providers confirmed that their infrastructure on site will not be damaged by the soil stripping proposals
   b. have all commitments to archaeology / ecology or landowners been fulfilled
   c. have haul roads been determined
   d. is the area required for soil storage available
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**COMMENTS**

For more detailed information see:
- Guidance on Good Practice for the Reclamation of Mineral Workings to Agriculture (DoE 1996)

**Cross references:**
- AP 8
1. Is information relating to the soil resources readily available on site

   a. are the pre-working details of the ALC and Soil Physical Characteristics Report available
      The pre-working details of the ALC and any other relevant documents should be available on site for reference by site personnel.

   b. has the soil strategy been revised since the planning application
      The original soil strategy may have been revised following changes, for example, to the phasing or working areas as part of the discussions since the planning application was submitted. Careful examination is required to ensure that the originally intended goals and the methods by which these will be achieved are still valid.

   c. do any planning conditions relating to soil matters refer to other documents – if so, are these available on site
      The planning conditions relating to soil matters may refer to other documents that should be examined by the site personnel.

   d. are the site personnel aware of the existence of all the above information and where to find it
      The operator should prepare a method statement to translate the working arrangements approved by the MPA into practical instructions, which can be used by those involved in the day-to-day working of the site. The operation should follow a detailed stripping plan showing soil units to be stripped, haul routes and the phasing of vehicle movements. The soil units should be defined on the site with information to distinguish types, layers and ranges of thickness. Detailed daily records should be kept of operations undertaken, site and soil conditions.

2. Who is to undertake the soil stripping

   a. is the soil stripping to be undertaken by a subcontractor
      If the soil stripping is to be undertaken by a subcontractor, then all the information, commitments and restrictions have to be incorporated in to the subcontractor’s tender document to ensure that these matters have been adequately covered. Some restrictions on the use of equipment, techniques or working periods could incur additional expense for the subcontractor.

   b. has the overall soil information been translated into instructions for the site personnel for this phase of work
      Ideally, the operator should employ a suitably qualified soil scientist to act as consultant/adviser on the site (such as IPSS and BIAC - see Introduction). Without such expertise, the success of the scheme depends on how well the overall soil information has been translated into instructions for site personnel. The soil stripping strategy is an essential tool for keeping on-site staff informed.
3. When is the soil stripping to commence

a. what are the current soil conditions
Operators need to be sure that the whole profile is suitably dry and friable to enable each layer to be identified and cleanly removed. If the lower layers are wet then rutting may occur, which can result in soil mixing and smearing, damaging the structure. The wetter the soil, the greater the risk of wheel slippage with machinery such as motor-scrapers, which can significantly increase damage to the soil structure due to smearing.

b. what is the current ground condition
The maintenance of a transpiring crop is important and an appropriate cropping regime should be established for the year of soil stripping. Soil will be drier when stripped from under grass, or immediately after the harvest of an arable crop, than when stripped from bare land. Arrangements should be made to ensure the crop is removed prior to soil stripping operations. In the event of livestock being present, they should be relocated and the boundaries checked to ensure they are stock-proof. Wet areas should be allowed to dry out before soil stripping commences.

c. what are the expected weather conditions
It would be inadvisable to commence major soil stripping operations without considering the weather forecast. If rain is expected, then areas of soil that are most easily damaged when wet should be identified as priorities for initial stripping. If rainfall does commence after topsoil (and vegetation) has been removed, then it will probably result in the subsoil being in an unsuitable condition to strip when rain stops. In extreme situations, the removal of vegetation in summer periods, followed by heavy rainfall, can result in flash floods unless adequate water control systems have been established.

d. is it within the correct season
In general, the mineral operator should plan operations so that soil stripping is normally scheduled between the drier months of April to September inclusive. The risks to soil damage are further influenced by the types of soil and the machinery intended to be utilised. The earlier or later in the year that soil is stripped or moved, the greater is the risk of causing damage. If soil is not to be significantly trafficked by earthmoving equipment, or if it is sandy and free-draining, there may be opportunities for moving it during dry periods of the winter. However, this should only be undertaken in exceptional circumstance to address specific problems which may arise on sites if the soil is not moved.

e. are there clear details as to the expected start date and duration of this phase of works
The notification for soil stripping should state when the works are intended to start, the extent in area and the time required for this phase of operations. Further phases should be separately considered.
f. has the MPA been informed
   The MPA should be informed, as these operations may constitute the commencement of the planning permission and a formal record may be required. Several working days notice is required in order to ensure the documentation and approvals are all finalised.

4. Are the soil handling criteria agreed

   a. are stripping units known
      If different soil units have been identified, then they may need to be stripped and stored separately. The extent of the differing soil units within the field may be marked by pegs prior to stripping. However, an exact indication of soil boundaries may not be possible before stripping commences. Ideally, a soil scientist should be available on site to advise earth moving contractors of the areas of different soil types.

   b. are the target depths of each unit agreed
      Topsoil and subsoil should only be stripped to the depths agreed in the planning consent. Agricultural topsoil is the dark surface layer that normally varies in depth from 20 to 40cm (but may be less). Subsoil is the underlying, usually lighter-coloured soil material, that should be removed to at least 1.2 metres below the original ground surface, unless rock or other materials make this impossible or undesirable. If the upper layers of the subsoil are of significantly better quality than the lower layers, they should also be stripped separately.

   c. has the Lower Plastic Limit been determined for each soil type
      It is advisable that the moisture content of each soil layer should be 3 to 5% drier than the Lower Plastic Limit, especially when motor-scrapers are used. The prior laboratory determination of the Lower Plastic Limit for representative samples of each soil type on the site should have been undertaken. (See AP8 1g)

   d. has the moisture content been ascertained for the particular soil to be moved
      A check should be made to confirm that the soil to be stripped is drier (3 to 5%, see above) than it’s Lower Plastic Limit before stripping commences. (See AP8 1g)

5. Are other aspects of the site development ready

   a. have statutory undertakers or other service providers confirmed that their infrastructure on site will not be damaged by the soil stripping proposals
      Underground or overhead service supplies should be checked to ensure that the operations can commence safely and that the equipment can enter the site in terms of height / weight clearances.
Site Working | Considerations Prior to Soil Stripping

b. have all commitments to archaeology / ecology or landowners been fulfilled
The soil stripping plans should have regard to any special measures agreed to ensure adequate access for archaeological investigations and to ensure that any areas identified of particular ecological interest have been dealt with. The mineral operator may have made agreements with the landowner or tenant to only strip certain areas and leave other areas until after harvest. It should be checked that such agreements do not compromise the overall soil stripping programme by delaying areas until potentially unsuitable periods.

c. have haul roads been determined
The working proposals should indicate the steps the operator intends to undertake to gain initial access to the site. At this stage, the site access and plant yards may not have been formed. Temporary access points and haul roads should be clearly identified and areas particularly sensitive to damage should be fenced or physically protected.

d. is the area required for soil storage available
At the start of operations, not all of the site may be available due to engineering or land access arrangements. The initial soil stripping should not deviate from the agreed programme, for example by temporary storage of soil close to the mineral working. The soil storage areas should be visited prior to any soil stripping to ensure the excess vegetation is removed and the ground conditions suitable before stripping commences elsewhere on the site. There may be a need for ground preparation in the storage areas, dependant upon the type of materials to be stored, for example stripping topsoil from areas to be used for subsoil storage.

6. Is the site already operating

a. is the site being developed in accordance with the agreed proposals
Site operations may have been ongoing for several phases over several years and the current soil stripping operation is a separate and distinct phase. In these circumstances, it is appropriate to check that the site is still on target and that the original working proposals have not altered.

b. is the area proposed to be stripped sufficient for the annual mineral output
Keeping the soil stripping area to the minimum necessary to ensure an annual production of mineral is ideal. This should ensure that no more soil than is necessary is placed into store and that other areas of the site can remain under vegetation for longer periods. Large stripped areas do present water control problems. However, if an insufficient area is stripped, then mineral extraction may be hindered later in the year by the unstripped soil. Pressure to agree exceptional soil handling proposals may then be presented that are unlikely to be ideal. Care should therefore be taken to ensure that only sufficient land is stripped to allow mineral extraction to take place for the forthcoming year.
### c. is the rate of infilling matching the intended rate of restoration
Soil can only be replaced when there is a sufficient area infilled to receive it. Delays to restoration can occur if the site is dependant upon imported inert fill to achieve restoration levels, or if the rate of silt in the lagoons changes due to differing mineral quality, specifications or marketing influences. The amount of discard or waste material may not be as high as originally expected, or else the quantity of mineral higher than expected. All these factors can lead to the carefully synchronised working plan submitted at the time of planning application becoming outdated. A common result is that additional soil storage space is requested or full agricultural restoration delayed by a number of years.

### 7. Is communication working

- **a. does everyone understand the proposals**
  Achieving all the conditions to undertake successful soil movement requires good weather and close supervision and monitoring of conditions by quarry managers or their consultants. If everyone understands the scheme, then there is less likelihood of mistakes occurring.

- **b. what contingency plans exist for wet or dry periods**
  The operator should state any contingency plans to determine the suitability of continued soil movement when the weather changes. The operator must understand the potential implications on the working proposals of only undertaking soil movements under suitable conditions. The haul routes and soil storage areas must be defined, and should be stripped first in a similar manner. Where the stripping operation is likely to be interrupted by rain or there is likely to be over-night rain, remove any exposed subsoil down to the basal layer before suspending operations. Make provisions to protect the base of the current or the next strip from ponding/run-off by sumps and grips, and also clean and level the basal layer. At the start of each day, ensure there is no ponding in the current strip or operating areas, and the basal layer is level with no ruts. Measures will be required to protect the face of the soil layer from ponding of water and maintain the basal layer in a condition capable of supporting dump trucks. Any area to be stripped is to be protected from in-flow of water, ponding etc. Wet sites with standing water should be drained in advance. In continuing poor conditions, equipment should be redeployed or operations halted. The definition of rainfall levels, relative to suitability for handling soil, are set out in ‘Guidance on Good Practice for the Reclamation of Mineral Workings to Agriculture’ (DoE 1996).

- **c. are signs required for vehicle routeing within the site and to identify different soil storage bunds**
  Signs relating to the new access or temporary roads will be required to prevent unsuitable arrangements evolving. Signs within the site should ensure vehicles keep to pre-determined routes. When soil is being stripped and placed into store, it may be advisable to ensure signs exist to direct staff to the correct soil bunds.