

**WVDEP**  
**Division of Mining & Reclamation**  
**Guidance for Review of Topsoil Substitute Information**

The use of topsoil substitute material, as it pertains to forestland and wildlife post-mining land uses, may be approved by the Secretary provided the applicant demonstrates the following: the volume of topsoil on the permit area is insufficient to meet the depth requirements of 7.6.c.1 (48 inches), the substitute material consists of at least 75% sandstone, has a composite phase pH between 5.0 and 7.5, has a soluble salt level of less than 1.0 mmhos/cm and is in accordance with §14.3.

§14.3 states that topsoil shall be removed from the area to be disturbed in a separate layer, and if not immediately redistributed, it shall be segregated and stockpiled in a separate stable location. §14.3.c further states that the determination of topsoil substitute capability shall be based on the results of a chemical and physical analysis of overburden and topsoil. This analysis will include the minimum depth, thickness, and areal extent of the substitute material. This certification must be made by a qualified laboratory and state that the proposed substitute material is equally suitable for sustaining vegetation as the existing topsoil (§14.3.c.1), the resulting soil medium is the best reasonably available in the permit area to support vegetation (§14.3.c.2), and the analyses were conducted using standard testing procedures (§14.3.c.3).

To ensure that these regulations are adequately addressed in the Surface Mine Application (SMA), the SMA discusses topsoil substitutes in several sections. **Section I-13** is where the topsoil substitute analysis report is provided. This is where the chemical and physical comparison of the native soil to the topsoil substitute material is detailed and the statements of §14.3.c.1, §14.3.c.2, and §14.3.c.3 are presented. In reviewing this report, it is important to remember the volume and chemical requirements detailed in §7.6.c and §7.6.c.1 specify at least 48 inches of material. Additionally, this material needs to consist of at least 75% sandstone, have a composite phase pH between 5.0 and 7.5, and have a soluble salt level of less than 1.0 mmhos/cm.

The geologic cross section, **Section I-7**, shows the depth, thickness, and areal extent of the substitute material.

Volumetric calculations that verify the necessary quantity of the substitute material is available through the mining phases in **Section N-1B**.

The planting plans provided in **Section O-9** of the SMA discuss, in part, a prediction of the mine soil character based on overburden analysis, soil analysis, and other available information (**Section O-9A**). This narrative needs to discuss the use of substitute material as a growth medium for the proposed post-mining vegetation.

When issuing topsoil substitute waiver approvals, ensure the following items are addressed:

1. Is the topsoil substitute waiver information provided in **Section I-13**?
  - a. Does it have adequate chemical and physical comparison to native soils?
    - i. Percentage of sandstone?
    - ii. Color of sandstone?
    - iii. pH range?
    - iv. Soluble salts less than 1 mmhos/cm?
  - b. Does the narrative clearly state that the material is equally suitable for sustaining vegetation as the existing topsoil (§14.3.c.1), the resulting soil medium is the best reasonably available in the permit area to support vegetation (§14.3.c.2), and the analyses were conducted using standard testing procedures (§14.3.c.3)?
  - c. Is the report signed by a Certified Soil Scientist who works for an approved laboratory?
2. Does the Geologic Cross Section (**Section I-7**) show the topsoil substitute horizons?
3. Does the mine plan in **Section N-1B** discuss the use of topsoil substitutes, and if so, are the aspects of §3.4.d.18, §3.6.b.2, and §3.6.d adequately addressed?
  - a. Is the best, most reasonably available substitute material identified for each mining phase?
  - b. Are volume calculations provided by mining phase to prove enough substitute material is available?
  - c. Is there language that states the existing topsoil material will be reserved and added to the topsoil substitute material
  - d. Do the phase maps show the proposed location of topsoil substitute material storage?
4. Does the planting plan (**Section O-9**) reference the use of topsoil substitute?