


Technical Reclamation Memorandum

TRM # 14

Date: February 22, 1984

From: Robert E. Nickel, Director
Division of Permits 



Kentucky Department for
Surface Mining Reclamation
and Enforcement

Subject: Compaction and Erodibility Tests
for Topsoil Substitution

The permanent program regulations require an applicant to make determinations of compaction and erodibility potential, pH, net acidity or alkalinity, phosphorous, potassium, and texture class to provide data for demonstrating that selected overburden strata can be used as a topsoil substitute. Compaction and erodibility parameters are difficult to evaluate in a manner which provides meaningful data for making decisions on the appropriateness of topsoil substitution for individual situations. The Division of Permits has determined that compaction and erodibility are closely related to soil texture and that potential topsoil substitutes which have acceptable textural ranges will also have acceptable compaction and erodibility characteristics.

Applicants who propose to use topsoil substitution are no longer required to submit information on compaction and erodibility. However, information on pH, net acidity or alkalinity, phosphorous, potassium, and texture class must still be furnished. If the information submitted on texture for the proposed topsoil substitute material indicates that the topsoil substitute will have a textural range which is equal to or more suitable than available topsoil for sustaining vegetation, the substitute material may be used provided (1) other parameters (pH, acidity, alkalinity, and nutrients) are also acceptable, and (2) the proposed substitute material is the best available to support vegetation.

The U.S. Department of Agriculture (USDA) texture classification (as obtained from the standard USDA textural triangle) and the percent sand, silt, and clay should be furnished for potential topsoil substitute strata. The textural classification and percent sand, silt, and clay can be determined from composite samples representative of all strata which are proposed for use as a topsoil substitute within a given area. The permit application should clearly indicate which geologic strata the operation proposes to use as a topsoil substitute and which strata are included in the textural classification.

If the texture of the strata proposed for use as a topsoil substitute is within the textural range of natural soils and other parameters required by the regulations are also acceptable, the material will be acceptable as a topsoil substitute. Questions concerning use of the above procedures can be addressed to Ken Myers or Ed Abell at (502)564-2320.