

## SOIL CONSERVATION SERVICE

## KENTUCKY

LAND RECONSTRUCTION (Ac)  
(Abandoned Mine Land)

543

## STANDARD

## -Definition -

Restoring land and water areas adversely affected by past mining practices and increasing the productivity of the areas for a beneficial use.

## - Scope -

This standard applies to the reconstruction, grading, and reshaping of land disturbed or adversely affected by past mining of all minerals and commodities.

## - Purpose -

To stabilize mined areas so that they can be used to support desirable vegetation; reduce erosion and sedimentation; enhance water quality or quantity; maintain and improve the visual quality of the landscape; and protect public health, safety and general welfare.

## - Conditions Where Practice Applies -

Abandoned mined land that degrades the quality of the environment, prevents or interferes with the beneficial use of land or water resources, or endangers the health or safety of individuals. Unreclaimed coal mined lands that existed before August 3, 1977, and for which there is no continuing reclamation responsibility, nor is under lease to be re-mined.

## - Planning Considerations -

Evaluate site characteristics including disturbed and undisturbed soil material, and subsurface geologic and hydrologic conditions to determine if they are compatible with the proposed reclamation. Site characteristics to be investigated include but are not limited to: percent and length of slope, amount of coarse fragments in the soil, soil pH, occurrence of toxic substances, depth to water table, potential for soil slippage, mine drainage and water quality, and extent and kind of existing vegetative cover. In the planning process also consider measures for placement of soils, location of access roads, potential for water disposal and impoundments, measures to enhance visual resources, provisions for controlling erosion and sedimentation, practices for eliminating public health or safety hazards, and suitability of the reclaimed land for its intended use.

- Design Criteria -

Land Grading

Limit grading on abandoned mined sites to that necessary to reduce erosion to acceptable limits; to cover coal seams, auger holes, mine openings, toxic material and gullies; or to eliminate highwalls, slides and other safety hazards. On area where it has been determined that existing vegetation or reinforcement of existing vegetation will provide adequate protection against erosion, no grading should be necessary. Areas to be graded shall be cleared of trees, logs, brush, rubbish and other materials that will prevent proper application of the practice, and these materials are to be disposed of in accordance with state laws so there is no interference with water disposal practices or the operations required for the planned land use.

Unsuitable and toxic soil materials are to be buried so they present little hazard to water quality or plant growth. Boulders, other rocks and similar materials shall be buried or otherwise placed where they present minimum interference with water disposal practices, stabilization and planned land use. These materials must be disposed of in a manner that minimizes the potential for seepage that can pollute surface and ground water. Materials containing heavy metals or toxic substances must be buried to a depth below the root zone of the major crop or vegetation planned, and above the ground water level where feasible. If suitable material is not available for burying and isolating these substances from the hydrologic environment, soil amendments may be used.

Final slopes must permit application of needed conservation and management practices that will control soil losses to allowable levels. An allowance for anticipated settlement shall be made in the final grading of fill areas if the settlement interferes with planned use, surface drainage or water disposal.

Soil Reconstruction

Where feasible the best soil materials for supporting plant growth should be salvaged, stockpiled and protected for final cover material. The salvaged and other suitable materials must be spread over the finished surface to a depth adequate for the planned vegetation. Efforts should be made to construct the soil with the materials available on the site. The constructed soils should meet the requirement for the specified land use on at least 80% of the area with the remainder in such conditions that it will support vegetation adequate for erosion control.

Borrow Areas

Off-site borrow should be utilized only when no on-site materials are suitable to achieve an adequate level of reclamation. Where material is taken from other land, the borrow area shall be graded to drain and revegetated to control erosion. If material is taken from adjacent farmland, the topsoil from the borrow area must be stockpiled separately and returned to the borrow area after the required material is removed and the land restored to its planned land use. Where the borrow area is prime farmland, both the A horizon and B horizon (or B and C) will be removed, stockpiled separately and returned to the borrow area in natural sequence. Combined thickness of the A and B

horizons replaced shall be sufficient to restore the original soil productive capacity. In no case will any land be destroyed or left unprotected as a result of borrowing soil materials to reclaim mined land.

#### Highwalls

Areas with highwalls shall be treated as necessary to reduce potential safety hazards, erosion and water pollution problems. Consider such reclamation techniques as reducing the highwall, backfilling and grading the highwall to a safe and stable slope, or providing an appropriate physical barrier to limit accessibility.

#### Land Slides

Land slides and other unstable conditions must be treated to reduce their detrimental effects. Stabilization of slides or slide prone areas may be obtained by use of mechanical strengthening, changing the shape and/or angle of slope, and dewatering or removing the slide material.

#### Visual Resources

Reclamation in areas of public visibility or those offering direct or indirect human benefits, shall be evaluated and include landscape resource management planning and design as needed.

Visual degraders to be addressed include highwalls; bare, eroding soils; discolored water; haul roads; gob piles; deep mine openings; abandoned structures; slurry ponds; garbage and refuse dumps; open pits, etc.

In all cases, the appearance of the reclaimed site must be compatible with the adjacent landscape. Solutions to aesthetic problems may include shaping disturbed areas, gob piles, highwalls, etc., to blend with the landscape or reducing and reshaping outslopes, restoring a stream channel, disposing of abandoned mining and processing equipment and debris, and use of trees and shrubs for screening.

#### Maintenance

An operations and maintenance plan shall be prepared and should provide specific details as to maintenance of practices identified in the reclamation plan. The plan should address the following: filling of areas where settlement is adversely affecting drainage and land use; prompt repair and revegetation of bare spots and eroding areas; removal of soils that will not support adequate vegetation, and replacement with suitable soil material or treatment with soil amendments; maintaining access roads; keeping drainage structures and channels clean and functional; fertilization; liming; weed control; proper grazing; and vehicular traffic control.

### PLANS AND SPECIFICATIONS

Plans and specifications for reconstructing abandoned mine land shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.