

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

LAND RECONSTRUCTION, ABANDONED MINED LAND

(ac.)
CODE 543

DEFINITION

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

PURPOSE

Stabilize mined areas to support desirable vegetation.

Reduce erosion and sedimentation.

Enhance water quality or quantity.

Maintain or improve landscape visual quality.

Protect health, safety, and general welfare.

Reduce airborne particulate matter.

Improve soil quality and sequester carbon.

CONDITIONS WHERE PRACTICE APPLIES

On abandoned mined land that prevents or interferes with beneficial use of land, degrades quality of land, water, or air resources or the environment, or endangers health or safety of individuals.

The standard applies to the construction, grading, and reshaping of land that has been disturbed or adversely affected by past mining of minerals or commodities.

CRITERIA

Land reconstruction on abandoned mined lands shall include the components necessary to reclaim and stabilize the area and prevent further degradation of air, water, soil, and plant resources. South Dakota (SD) Natural Resources Conservation Service (NRCS) conservation practices such as terraces, grade stabilization structures and critical area treatment shall be included as appropriate.

Laws and regulations. This practice must conform to all federal, state, and local laws and regulations. Laws and regulations of particular concern include those involving water and drainage rights, land use, pollution control, property easements, wetlands, mining and reclamation, endangered species, and preservation of cultural resources.

Dust control. The generation of particulate matter and fugitive dust shall be controlled when moving soil and other materials by controlling vehicular and pedestrian traffic; and/or modifying soil moisture content. Temporary vegetation shall be established, as needed, on disturbed soils.

Earth moving activities shall be restricted or stopped when wind direction and velocity could allow particulate matter and dust to impair visibility on public roads.

Site preparation. Areas to be graded shall be cleared of trees, logs, brush, rubbish, and other undesirable materials that can prevent proper application of the practice. These materials shall be disposed of in a manner that will not interfere with water management practices, stabilization operations, or operations associated with planned use of the land.

Unsuitable soil material must be removed and buried so that it does not adversely affect water quality or plant growth. These materials must be disposed of in a manner that minimizes seepage, which can pollute surface and groundwater. Materials containing heavy metals must be buried to a depth below the root zone, or suitable kinds and amounts of soil amendments must be added.

Before soil is placed against overhanging rocks and walls that are to be covered, all slopes shall be flattened to one-half horizontal to one vertical slope (or flatter as needed for stability). Unless otherwise specified, fill

Conservation practice standards are reviewed periodically and updated if needed. The current version of this standard is posted on our eFOTG web site available at www.sd.nrcs.usda.gov or may be obtained at your local Natural Resources Conservation Service.

material shall be spread in successive layers not more than two feet thick.

Removal and placement of material for final cover. Topsoil on the site that is suitable for the final purpose shall be salvaged, stockpiled, and replaced as final cover.

The reconstructed soil must meet requirements for the specified land use on at least 80 percent of the area. The rest of the area must also be stabilized.

Spread materials as specified in the reclamation plan. Final slopes must permit application of planned conservation and management practices. Design final grading to accommodate expected settlement and prevent interference with water management and planned uses of the land.

Use temporary seeding, mulching, water management, and similar measures as needed to control erosion.

Water management. Water management shall be included in the design as needed to control erosion during and after stabilization. Water management practices suitable for intensively farmed cropland are usually required for mined land reclamation and may be used to supplement local experience.

If any practices are to be removed after vegetation is established, provisions must be made to promptly stabilize disturbed areas.

Establishment of vegetation. Uncropped areas shall be vegetated following SD NRCS practice standard Critical Area Planting (342).

Restoration of borrow area. Borrow areas must be graded and shaped to insure proper drainage and must be revegetated to control erosion. Where appropriate, topsoil from borrow areas must be stockpiled separately and replaced after borrowing.

On prime farmland, A and B horizons (or the B and C horizons if applicable) must be removed and stockpiled separately by horizon and then replaced in natural sequence. On prime farmland, treatment of borrow areas shall meet SD NRCS practice standard Land Reconstruction, Currently Mined Land (544).

ADDITIONAL CRITERIA TO MAINTAIN OR IMPROVE THE VISUAL QUALITY OF THE LANDSCAPE

The appearance of the reclaimed site must be compatible with the adjacent landscape. Designs shall consider the visual quality of areas of high public visibility or importance.

Disturbed areas shall be shaped to blend with the adjacent landscape as much as possible.

ADDITIONAL CRITERIA TO PROTECT PUBLIC HEALTH, SAFETY, AND GENERAL WELFARE

Designs must reduce potential safety hazards, and erosion and pollution problems.

CONSIDERATIONS

Consider establishing plant species that will produce the greatest quantity of above and below ground biomass on the site.

Consider developing a detailed soil survey of areas to be disturbed to identify the types and extent of soil materials.

Consider the need for access roads for reclamation, operation, and maintenance.

Reclamation has great potential for increasing or improving wildlife habitat. Avoid vegetative monocultures.

Consider impacts on cultural resources. This practice must comply with General Manual 420, Part 401.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice must meet this standard and describe requirements for achieving its purpose. A reclamation plan must be developed for each site. The plan shall specify the required procedures for reclamation and reconstruction activities.

Plans shall include provisions for managing toxic materials that may be encountered in installing this practice.

OPERATION AND MAINTENANCE (O&M)

An O&M plan shall be prepared for use by the owner/operator that provides specific details concerning operation and maintenance of installed conservation practices. The O&M plan shall specify procedures for:

Filling areas where settlement may adversely affect water management or land use.

Repairing and revegetating bare spots, eroded areas, areas of excessive settlement, and other areas on which the initial attempt to establish vegetation was not successful.

Adding soil amendments to soils that cannot support adequate vegetation or replacing soils with suitable soil material.

Maintaining access roads.

Keeping water management structures and channels clean and functional.

Controlling noxious weeds.

Using proper grazing practices.

Controlling vehicular traffic.

REFERENCES

Soil Survey Division Staff. 1993. Soil survey manual. Pp. 90-92. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Science of American Proceedings. 1956. Volume 20, Number 20, Pp. 288-292, "Influence of Moisture on Erodibility of Soil by Wind."