

405 KAR 30:290. Topsoil.

RELATES TO: KRS 350.600

STATUTORY AUTHORITY: KRS 224.033, 350.028, 350.050, 350.600

NECESSITY, FUNCTION, AND CONFORMITY: KRS 350.600 requires the Environmental and Public Protection Cabinet to develop administrative regulations for oil shale operations to minimize and prevent their adverse effects on the citizens and environment of the Commonwealth. This administrative regulation sets forth requirements for the removal, storage and redistribution of topsoil, and requirements for substitution of other materials for topsoil.

Section 1. General.

(1) The applicant shall before making a permit application investigate the proposed permit area to determine whether lands within the area may be prime farmland according to 405 KAR 30:280, Section 2.

(2) The applicant shall before making a permit application have soil survey data prepared for the proposed permit area if survey data is not available from the U.S. Soil Conservation Service. The soil survey data shall include:

(a) Location of permit boundaries, flood frequency data, water table, erosion characteristics, permeability, and other information needed to characterize existing topsoil conditions.

(b) A description of the existing soil profile showing the depth and thickness of each of the soil horizons to be removed, stored, and replaced in accordance with Sections 2, 3, and 4 of this administrative regulation.

(c) A detailed soil description of the representative soil of each soil mapping unit in the permit area.

(3) Topsoil removal shall be as specified in Section 2 of this administrative regulation, storage as specified in Section 3 of this administrative regulation, and replacement as specified in Section 4 of this administrative regulation.

(4) For surface areas which are without suitable topsoil, the cabinet shall approve and/or specify, on a site-specific basis, alternative practices designed to utilize those available materials which are most suitable for supporting successful revegetation. The cabinet requires the application of nutrients and soil amendments as necessary for supporting successful revegetation.

(5) Topsoil handling and restoration plan. The applicant shall submit to the cabinet a plan for the handling and restoration of topsoil material within the proposed permit boundaries. This plan shall be used by the cabinet in judging the technological capability of the applicant to restore topsoil material. The plan shall include the following and any other data required by the cabinet:

(a) Information contained in the soil survey as required in Section 1(2) of this administrative regulation;

(b) A description of amount and source of proposed soil amendments, overburden materials or topsoil borrow areas proposed as substitutes for existing topsoil;

(c) The location of areas to be used for the separate stockpiling of the soil horizons and plans for soil stabilization during stockpiling;

(d) The proposed method and type of equipment to be used for removal, storage, and replacement of the soil;

(e) Plans for reclaiming the final graded mine land and the conservation practices to control erosion and sedimentation during the first twelve (12) months after regrading is completed. Proper adjustments for seasons must be made so that final graded land is not exposed to erosion during seasons when vegetation or conservation practices cannot be established due to weather conditions; and

(f) Before any permit is issued the cabinet may consult with the United States Soil Conservation Service and Kentucky Division of Conservation or other agencies to provide a review of the proposed method of soil reconstruction and comment on possible revisions that will result in a more complete and adequate restoration.

Section 2. Removal.

(1) Topsoil shall be removed from areas to be disturbed, after vegetative cover that would interfere with the use of the topsoil is cleared from those areas, but before any drilling, blasting, mining, or other surface disturbance of those areas. The minimum depth of topsoil and subsoil material or topsoil substitute material to be restored on nonprime farmland areas shall be twenty-four (24) inches, in accordance with Section 4 of this administrative regulation.

(2) All topsoil and subsoil material shall be removed in a separate layer from the areas to be disturbed, unless use of substitute or supplemental materials is approved by the cabinet in accordance with subsection (6) of this section. If use of substitute or supplemental materials is approved, all materials to be redistributed shall be removed.

(3) A soil survey providing an inventory of the topsoil on the permit area will assist in determining the type of removal and handling required for the topsoil material.

(4) The A horizon as identified by the soil survey shall be removed as provided in this section and then replaced on disturbed areas as the surface soil layer.

(a) If the A horizon is less than six (6) inches, a six (6) inch layer that includes the A horizon and the necessary subsoil or unconsolidated material immediately below the A horizon as required to meet the twenty-four (24) inch minimum (or all unconsolidated material if the total available is less than six (6) inches and the necessary substitute material to meet the twenty-four (24) inch minimum), shall be removed and the mixture segregated and redistributed as the surface soil layer at a total minimum depth of twenty-four (24) inches.

(b) If the A horizon is more than six (6) inches, all of the A horizon and necessary subsoil shall be removed separately and restored to meet the twenty-four (24) inch minimum depth.

(5) The cabinet shall require that a portion or all of the subsoil (B and C horizons) or other underlying layers demonstrated to have comparable quality for root development be segregated and replaced as necessary to obtain the minimum twenty-four (24) inch requirement or to obtain productivity consistent with the approved postmining land use.

(6)

(a) Selected overburden materials or soil amendment may be substituted for or used as a supplement to, topsoil, if the cabinet determines that the substitute material would be equal to or more suitable for sustaining vegetation than is the available topsoil or subsoil and the substitute material is the best available material in the permit area to support revegetation. This determination shall be based on:

1. The results of chemical and physical analyses of overburden and topsoil. These analyses shall include determinations of active soil pH, lime requirements from a SMP buffer or other potential acidity test, phosphorus, potassium, texture class, and other analyses as required by the cabinet. The cabinet may also require field-site trials, greenhouse tests or other demonstrations by the applicant to establish the feasibility of using these overburden materials.

2. Results of analyses, trials, and tests shall be submitted to the cabinet. Certification of trials and tests shall be made by a laboratory approved by the cabinet, stating that: the proposed substitute material is equal to or more suitable for sustaining the vegetation than is the available topsoil; the substitute material is the best available material to support the vegetation; and the trials and tests were conducted using approved standard testing procedures.

3. Consultation. Before any permit is approved for substitute materials, the cabinet shall consult with the United States Soil Conservation Service and the Kentucky Division of Conservation or other appropriate agencies to provide a review of the proposed substitute material and comment on possible revisions that will result in a more favorable substitute material within the permit area to support revegetation.
- (b) Substituted or supplemental overburden material shall be removed, segregated, and replaced in compliance with the requirements for topsoil under this section.
- (7) Where the removal of vegetative material, topsoil, or other materials may result in erosion which may cause air or water pollution:
- (a) The size of the area from which topsoil is removed at any one time shall be limited;
- (b) The soil horizons or substitute material shall be redistributed during favorable conditions in which temporary or permanent vegetative cover can be established to minimize erosion and protect the physical and chemical properties of the material; and
- (c) Such other measures shall be taken as the cabinet may approve or require to control erosion.

Section 3. Storage.

- (1) Topsoil and other materials removed under Section 2 of this administrative regulation shall be stockpiled only when it is impractical to promptly redistribute such materials on regraded areas.
- (2) Stockpiled materials shall be selectively placed on a stable area within the permit area, not disturbed, and protected from wind and water erosion, unnecessary compaction, and contaminants which lessen the capability of the materials to support vegetation when redistributed.
- (a) Protection measures shall be accomplished by:
1. An effective cover of nonnoxious, quick-growing annual and perennial plants, seeded or planted during the first normal period after removal for favorable planting conditions; or
2. Other methods demonstrated to and approved by the cabinet to provide equal protection.
- (b) Unless approved by the cabinet, stockpiled topsoil and other materials shall not be moved until required for redistribution on a regraded area.

Section 4. Redistribution.

- (1) After final grading and before the replacement of topsoil and other materials segregated in accordance with Section 2 of this administrative regulation, regraded land shall be scarified or otherwise treated as required by the cabinet to eliminate slippage surfaces and to promote root penetration. If the permittee shows, through appropriate tests, and the cabinet approves, that no harm will be caused to the topsoil and vegetation, scarification may be conducted after topsoiling.
- (2) Topsoil and other materials shall be redistributed in a manner that:
- (a) Soil replacement starts with those soil horizons in the reverse order in which they were removed or substitute and overburden materials replaced first with topsoil material last. The minimum depth of material to be redistributed is twenty-four (24) inches, in accordance with Section 2 of this administrative regulation.
- (b) Achieves an approximate uniform stable thickness consistent with the approved postmining land uses, contours, and surface water drainage system;
- (c) Prevents excess compaction of the topsoil; and
- (d) Protects the topsoil from wind and water erosion before and after it is seeded and planted.

Section 5. Nutrients and Soil Amendments. Nutrients and soil amendments in the amounts determined by soils tests shall be applied to the redistributed surface soil layer, so that it

supports the approved postmining land use and meets the revegetation requirements of 405 KAR 30:400. All soil tests shall be performed by a qualified laboratory using standard methods approved by the cabinet.
(8 Ky.R. 122; 483; eff. 3-1-1982; TAm eff. 8-9-2007; Crt eff. 7-3-2018.)