

Grading & Compaction



A Regulatory Perspective

West Virginia Surface Mining Reclamation Regulations

Title 38 – Series 2

7.6.c. Soil placement, Substitute material and Grading

7.6.c.1. Except for valley fill faces, soil or soil substitutes shall be redistributed in a uniform thickness of at least four feet across the mine area.

7.6.c.3. Soil shall be placed in a **loose** and **non-compacted** manner while achieving a static safety factor of 1.3 or greater. Grading and tracking shall be minimized to reduce compaction. Final grading and tracking shall be prohibited on all areas that are equal to or less than a 30 percent slope. Organic debris such as forest litter, tree tops, roots, and root balls may be left on and in the soil.

Forestry Reclamation Approach

- Step 2: **Loosely** grade the topsoil or topsoil substitutes established in step one to create a **non-compacted** growth medium.

Permit Requirement

Section O-9.C.

Method of Mechanical Seed Bed Preparation

Surface grading will be minimized, creating a rough and uncompacted surface and still achieve slope stability. Backfilled spoils shall be handled and placed in a **loose** and **non-compacted** manner. One or two passes of the dozer is all that will take place for grading of the top layer of soil material. The dozer operator does not need to overlap tracks when grading. If it is determined that excessive compaction has occurred, the compacted ground will be ripped to a depth of three to four feet. This process will greatly improve the site index of flat, compacted areas by fracturing the ground and create a more productive site for increased tree survival and growth. (June 2008)

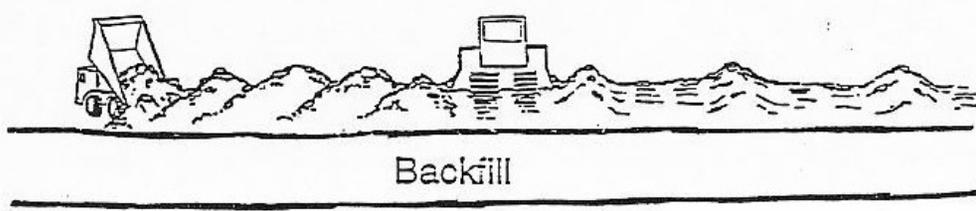
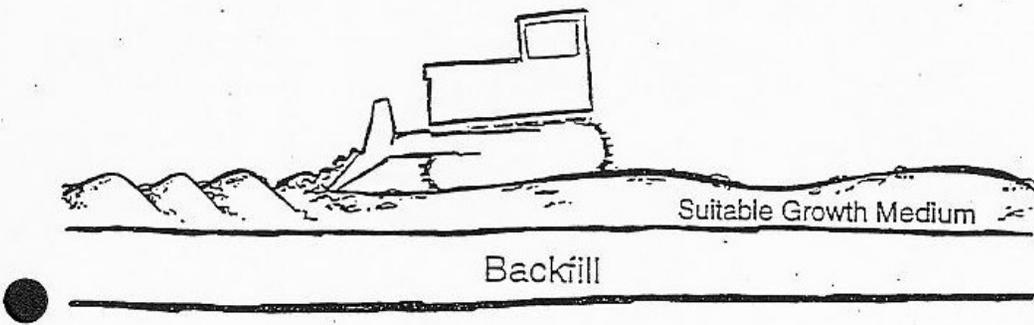
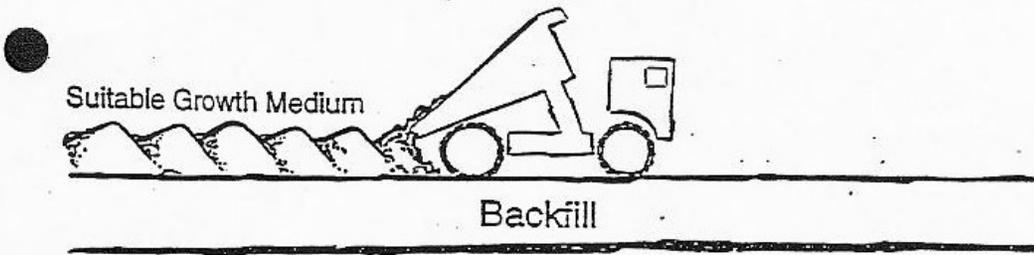
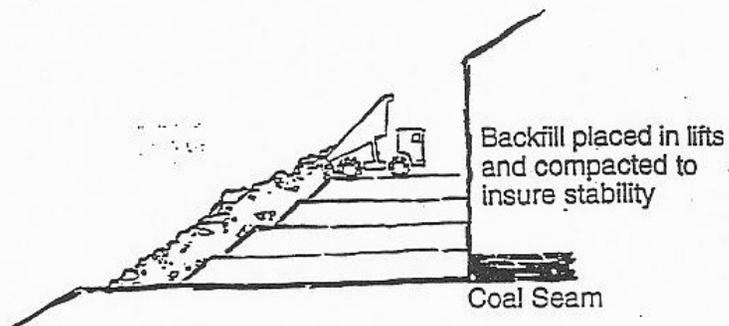


Diagram 1. Area Mining or Mountaintop Removal methods

illustrations not to scale



Recommend no more than two passes with equipment to remove excessively large rocks and shape to final backfill configuration

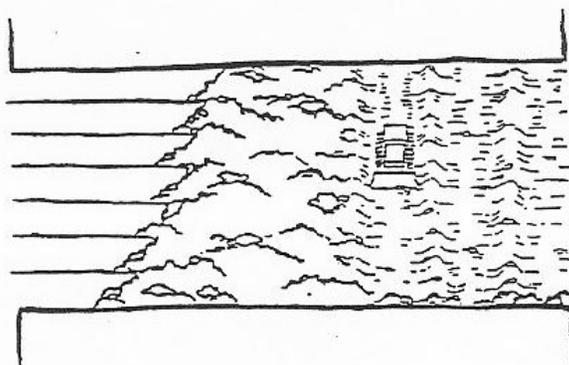
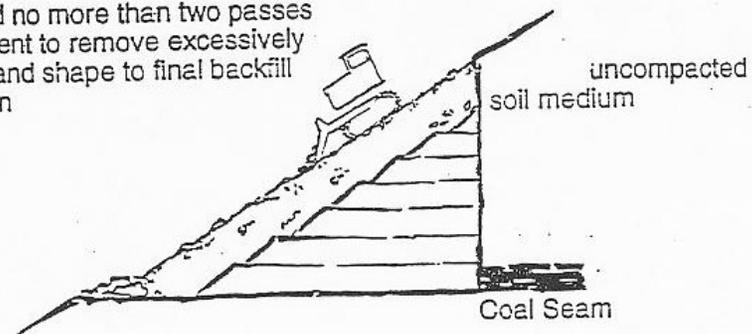


Diagram 3. Contour Mining or Other Sloped Areas

West Virginia Mining Permits Approved in 2007

- 67 Permits covering 10,032 acres issued
- 46 Forestland (38 with FRA)
- 13 Wildlife Habitat (9 with FRA)
- 8,744 acres out of 10,032 FRA (87%)

Level 1. Tracking in on level ground



Level 2. Tracking in on 30% slope



Level 3. Multiple passes on level ground



Level 4. 2 passes with reduced vegetation



Level 5. 1-2 pass loose grading



Level 6. Single pass grading with hummocky surface



Level 7. Single pass grading with very hummocky surface



Level 8. Rough grading with large boulders



Level 9. End dumped with no grading



Level 10. End dumped boulders with no grading







Questions?

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