

## Case Study to Assess the Costs of the Appalachian Regional Reforestation Initiative's (ARRI) Forest Reclamation Approach<sup>1</sup>

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**Abstract:** Conventional methods of reclamation in the Appalachian region have been shown to inhibit the growth of forest trees on post surface-mined land. Unsuitable topsoil substitutes, high rates of soil compaction, as well as the use of fast-growing groundcovers create unfavorable conditions for tree growth. The ARRI has developed a process known as the Forestry Reclamation Approach (FRA) to address these problems and promote the restoration of healthy forests. The FRA emphasizes the placement of at least four feet of uncompacted rooting medium, slow-growing groundcovers, and the use of professional tree-planting techniques. Despite the obvious ecological advantages of the FRA, there is no single source presenting a complete economic analysis of the technique compared to conventional reclamation practices. A case study is currently being conducted to compare costs of the two reclamation approaches in Pennsylvania, where mining occurs mainly on previously-forested land. Real-time cost analyses on several active mines will assess appropriate spoil materials, grading, and seeding/planting. Active mine data from Pennsylvania will be paired with a compilation of regional industry data from representative Southern, Central, and Northern mining operations. Data will illustrate material handling, grading, soil amendment requirements, groundcover establishment, tree planting, and maintenance of sediment control structures. Preliminary results will be presented and implications discussed. The importance of this work is to show landowners and operators that they have options, other than conventional reclamation, that result in productive long-term benefits and the restoration of sustainable native forests.

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