

Innovation of Filling Reclamation with Multi-Layered Soil

Profile¹

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Abstract: Filling reclamation is an effective way to increase the amount of farmland. The existing reclamation technology adopts one-time filling measures, which leads to classic two-layer soil profile pattern with “soil layer + filling material layer.” As covering soil is insufficient, the productivity of reclaimed farmland is usually low. This paper put forward a multi-layered soil profile pattern with inter-layers of filling materials. Taking filling reclamation of subsidence land with Yellow River Sediments as an example, this study analyzes the principles and methods of inter-layers reclamation. The results show that: (1) Adding a soil layer as inter-layer in filling material layer could improve the moisture and nutrition situations of filling material, overcome the disadvantages of two-layer soil profile pattern with “soil layer+ filling material layer”, and increase the quality of reclaimed farmland. (2) An alternate multilayered multi-filling method for soil reconstruction with reclaimed mining subsidence was proposed. The continuous construction technology of multilayered soil profile reconstruction is realized through alternate filling process, multiple filling, and soil backfilling. (3) Practices were carried out in Qiuji mine of Shandong province. Multi-layered soil profile pattern has certain influence on wheat output. The wheat outputs of some profile patterns are higher than that of the control group.

Additional Key Words: filling reclamation; mining subsidence land; soil reconstruction; soil water; filling technique; soil profile.

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1. Oral paper presented at the 2018 National Meeting of the American Society of Mining and Reclamation, St. Louis, MO: The Gateway to Land Reclamation, June 2 - 7, 2018. Published by ASMR; 1305 Weathervane Dr., Champaign, IL61821.
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