

## THE STUDY OF LONGWALL TOP COAL CAVING METHOD AT THAR COAL, PAKISTAN

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**R**esearch studies have shown that there is an extensive quantity of lignite coal reserves in the form of thick coal seams at Thar Coal, Pakistan. The Top Coal Caving methodology is the most efficient and effective for the extraction of these thick coal seams. The Longwall Top Coal Caving (LTCC) is an underground mining method that is gradually developed and accepted in the recent years. This method has turned into the key method for thick coal seams and getting better results in China. However, recent attention by many researchers has resulted in improvement of this LTCC method in different corners of the world. In this research study, 6 m thick coal seam is modelled successfully and the mechanism of top coal and top coal recovery ratio demonstrated by the numerical simulation with the help of UDEC2D and PFC2D software at Block-9 Thar Coal. In the simulation results, the maximum vertical abutment stress was found at a distance of 3 m in front of face. A comprehensive study of the existence of top coal has shown that a 3 m thick layer of coal just above the shield can be easily caved behind the face. At the cutting-caving height ratio of 1:1 and drawing interval of 0.8 m 84.9% of top coal recovery ratio is successfully achieved. Thar Coal is the first coal mine that will use LTCC method in Pakistan. Hence, this research conclusion can provide useful information in the future production at Thar Coal.

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