

Formation Mechanism and Prevention Method of Water Inrush from Roof Bed Separation with Full-mechanized Caving Mining Ultra Thick Coal Seam

Wei Qiao^{1,2}, Wenping Li¹

*1 School of Resources and Geosciences, China University of Mining and Technology, Xuzhou, Jiangsu, China,
qweiqm@163.com;*

2 Postdoctoral Workstation, Yankuang Group, 273500 Zoucheng, Shandong, China

Abstract We analyze the water inrush case in roof bed separation of a ultra thick coal seam mining face with the method of full-mechanized caving mining. In addition, we summarize the type of water inrush in bed separation and discuss the mechanism of hydrostatic water inrush formation in roof bed separation of a mining face. And the possible separation location in the study area was calculated and distinguished. The prevention method of water inrush from roof bed separation was introduced emphatically. We have designed a type of drill hole(straightway diversion drill hole, SDD for abbreviation) which could effectively drain the water in the separation. We also studied the relationship between the mining height and water inrush from the separation, and the relevance of mining rate and water yield in the separation. The conclusion of this paper has important reference value for the work of preventing water in the separation.

Keywords ultra thick coal seam, full-mechanized caving mining, separation space, water in separation, prevention method