

论文

煤层底板强含水层超前疏放分析与应用

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摘要:

为实现对煤系地层中裂隙强含水层的整体高效疏放, 以开滦东欢坨煤矿12-2煤层底板强含水层疏放为实例开展研究。从含水层水文地质参数空间分布、地质构造控制作用、含水层揭露部位的涌突水特征与含水层露头补给条件方面, 综合分析了含水层特征, 得出含水层于-500水平以浅富水且顺层水力联系良好, 走向上划分为3个次级富水单元。采用数值模拟方法预测了已揭露出水点在目标期内的疏放水效果与强径流区。以此为依据, 确定了3个疏降水中心与钻孔布设方案。通过实施疏放水方案, 成功实现了含水层在目标期的整体强烈疏放, 保障了首采工作面的安全开采。

关键词: 煤层; 底板; 强含水层; 疏放水; 东欢坨煤矿

Analysis and application on the advanced discharge of water-rich aquifer of coal floor

Abstract:

Seam floor 12-2 in Kailuan Donghuantuo Mine was an example to investigate the discharge of water-rich aquifer for fulfilling entire and efficient drainage in coal-bearing strata. The aquifer features were comprehensively analyzed according to its spatial distribution of hydrogeological parameter, control effect of geological structure, water burst features of exposed spots of aquifer and its supply conditions of aquifer. It is concluded that water-rich zone is upper -500 level and there is a good hydraulic connection along bedding, and three sub-water-rich units are zoned along the strike. Numerical simulation method was used to have predicted out discharge effect of exposed water burst spots and strong run-off area in the target time period. According this, three centers of discharge of water and drilling layout were determined. After practicing the layout of discharge of water, successfully, the aquifer was whole intensively drained in the target time period; it ensured that the first mining face of seam floor 12-2 was normally mined.

Keywords: coal seam; floor; water-rich aquifer; discharge; Donghuantuo Coal Mine

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