

RESEARCH and APPLICATION of QUICK-SPEED SOLUTION MINING TECHNIQUE and TOOL

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Abstract

Solution mining is a project which consumes the longest time and the maximal time on construction of salt cavern gas / oil storage. It is a great meaning for reducing time and expenditure that quicken the velocity of solution mining in effect. The quick-speed solution mining technique is expatiated which is suitable for a cylindrical development of the insoluble pocket in the deepest part of the cavern, moreover its practice effect are analyzed in application to field. The main promoting dissolve principles of the solution mining tool are presented on the basis of theory of cavitating jet. Some problems of solution mining tool in application to field are analyzed, and the corresponding innovative approaches are also put forward. The field application of quick-speed solution mining technique and tool indicate it can improve the salt corrosion velocity by one times and also benefit to take the insolubles at the cavern bottom to the floor and increase the volume of salt cavern.

Key words: gas storage; salt cavern; solution mining technique; solution mining tool; cavitation jet