

DELAYED BRINE OUTFLOW DURING CHANGES IN WATER INPUT FLOW

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Abstract

During the leaching of a salt cavern, when changing the input flow, it is frequently observed that it takes time for the output flow to reach the same value. This delay can be a few hours, and increases with the size of the cavern. The reason is that the cavern is a very compressible body: cavern pressure must change significantly before being able to reach the proper value for flows to equilibrate. A simple model is proposed and validated against several cases of production data. The simple model is used to optimize basic operational cases. Other examples highlighting the significance of cavern compressibility are discussed.

Key words

Compressibility, Cavern leaching, Brine flow, Friction losses