



AMERICAN PETROLEUM INSTITUTE

API Recommended Practice 1170

Design and Operation of Solution-mined Salt Caverns Used for Natural Gas Storage

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This recommended practice (RP) provides the functional recommendations for salt cavern facilities used for natural gas storage service and covers facility geomechanical assessments, cavern well design and drilling, solution mining techniques and operations, including monitoring and maintenance practices. This RP is based on the accumulated knowledge and experience of geologists, engineers, and other personnel in the petroleum and gas storage industries and promotes public safety by providing a comprehensive set of design guidelines. This RP recognizes the nature of subsurface geological diversity and stresses the need for in-depth, site specific geomechanical assessments with a goal of long-term facility integrity and safety.

This RP includes the cavern well system (wellhead, wellbore, and cavern) from the emergency shutdown (ESD) valve down to the cavern and facilities having significant impact to safety and integrity of the cavern system.

This RP may be applied to existing facilities at the discretion of the user.

This RP does not apply to caverns used for the storage of liquid or liquefied petroleum products, brine production, or waste disposal; nor to caverns which are mechanically mined, or depleted hydrocarbon or aquifer underground gas storage systems.

This document was written to provide a technical reference for the development and operations of solution-mined salt caverns and is not intended to represent or reflect any Federal, State, or local regulatory requirement. Depending on location and nature of the project, the recommended practices herein may address items that are in conflict with some regulatory requirements. If this occurs, the regulatory requirement supersedes the recommended practice unless an appropriate waiver or variance is granted from the issuing agency. A thorough review of the applicable Federal, State, and local rules and regulations is to be performed prior to the design of solution-mined natural gas storage caverns to ensure ongoing compliance.

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