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**Technical
Conference
Paper**



Specialized Cavern Well & Mining Design Within Bedded Salt

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Abstract

Compass Minerals operates several solution mining brine production facilities across North America, including its Unity, Saskatchewan facility, located approximately 350 kilometers (217 miles) southeast of Edmonton, Alberta, where it has developed solution mined caverns within the Prairie Evaporite salt formation.

In 2022, Compass Minerals commenced development of two new caverns which required a specialized wellbore and cavern configuration and solution mining method due to certain limitations and requirements including drilling build angles, maximum injection pressure, desired flow rate, and operational cost efficiency.

This technical paper presents the following topics:

- A discussion of typical wellbore and cavern configurations and mining methods utilized throughout the industry;
- A discussion of the specialized wellbore and cavern configuration and solution mining method developed by Lonquist for Compass Minerals' new caverns;
- Complexities with drilling, completing and solution mining the wells;
- A high-level summary of progress to date; and
- Possible applications for this unique wellbore and cavern configuration and mining method.

Key words: Bedded salt, solution mining, completion, tail-pipe, roof control, Annular Casing Packer (ACP), brine production