

Moisture Content of Gas in Salt Caverns : Surface Measurements

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Abstract

Involvement of gas storage in the whole gas chain implies the respect of gas requirements established by the gas transmission network of each country. In particular, moisture content is monitored in order to exclude hydrate formation in pipelines and surface facilities. However, residual brine from leaching remains at the bottom of salt caverns and water evaporates into the stored gas. This water needs to be treated at the surface with dehydration units, which represent high investments and operational costs.

At present, a 100% water saturation of the gas withdrawn from the cavern is assumed for dimensioning and calculations, but experience tends to show that moisture content in gas can be significantly lower. Knowing the moisture content evolution in salt caverns is essential to optimize processes, and it starts by representative and reliable measurements.

In this paper we will focus on methodology associated with moisture measurements at surface. Storengy created its own sampling suitcase in order to meet all the requirements we will explain in this study.

Key words: salt caverns for gas storage, hydrates formation, moisture content