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STRATTON RIDGE SALT DOME: DIVERSITY AND INTEGRATION OF DEVELOPMENT AND OPERATIONS

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Abstract

The Stratton Ridge Salt Dome is located on the Gulf Coast of Texas (USA) in Brazoria County. The dome was discovered in 1913 and has been used since 1946 to provide brine for Dow Chemical's Texas operations, as well as providing storage for Natural gas, and various liquid products. The dome is approximately 5 square miles in area (top of salt) and has more than 100 operational caverns, ranging in permitted size up to 90 MMbbl. The dome geometry is considerably different from what is typically experienced in gulf coast salt domes, with the eastern one third of the top forming a basin situated approximately 1000 feet lower than the remainder.

Solution mining sources of water come from surface water supplies (Oyster Creek and the Brazos River), as well as from underground aquifers. Produced brine is used by Dow chemical as feed for Chlorine production, and other operators utilize disposal wells for their produced brine.

In addition to Dow's brine development and liquid and natural gas storage facilities, INEOS has several caverns utilized for liquid storage. Kinder Morgan is operator of two gas storage caverns and Enterprise Products has two storage caverns. An LNG import (and proposed future export) facility operated by Freeport LNG Development LP, is located approximately 10 miles from the dome and is currently developing gas cavern storage facilities at Stratton Ridge to support its business operations.

The intent of this paper is to provide an overview of the geology of the Stratton Ridge Salt Dome and the diversity and integration of operations associated with the solution mining and developed cavern operations.

Key words: Caverns for Gas Storage, Caverns for Liquid Storage, Gas Storage, Gulf Coast of the U.S. and Mexico, LNG, LPG, Salt Domes, Texas