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MIDDLE EAST SALT DEPOSITS – DISTRIBUTION AND POTENTIAL USE

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Abstract

The use of local salt deposits in the Middle East is developing slowly from open pit table salt production to the utilization of brine in Ethylene Dichloride plants and the construction of cavities for strategic and commercial storage of oil, oil products and gas. Underground storage of waste is discussed as well. There is a need and the potential for such a market but still it is not a focus of authorities and companies of the region. Most of the projects stuck in the exploration phase. Nevertheless it may be a question of time when industrial development or the need for security of supply accelerates the use of salt deposits.

This paper is discussing the potential of locations under geological aspects keeping in mind the infrastructure and the specific local requirements. Beside mining of natural outcrops, trap forming salt deposits have mainly been encountered by oil and gas wells.

The evaporites are of Cambrian, Jurassic and Tertiary age. Iran has the largest evaporite deposits. They are primarily of Eocambrian and Tertiary age. Diapirism is widespread and lifts the evaporites to extractable depths. Iraq is primarily characterized by Tertiary bedded salt which lies at relatively shallow depths and extends into Iran and Syria as well. Flat-bedded and relatively deep Jurassic salt occurs in southern Iraq and in Kuwait. The oldest evaporite deposits in the region occur in the United Arab Emirates as well as in Oman and Iran. Saudi Arabia is characterized by very deep deposits in the Gulf Region but also shallower ones at the shore of the Red Sea. At many places diapiric movements are responsible for the elevation.

The political situation of the entire region has an influence on strategic storage considerations. Pipelines are vulnerable with respect to war or terroristic attacks. Long distances from selected sites to e.g. export terminals should be avoided.

Key words: Middle East, Salt, Brine, Gas, Oil, Products, Waste Disposal, Oman, Iran, Iraq, Israel, Jordan, Kuwait, Saudi Arabia, Yemen, United Arab Emirates