

LATEST DEVELOPMENTS IN DESIGN OF WELLHEADS FOR OIL CAVERN STORAGES IN GERMANY

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1 Abstract

The extreme increase in oil prices also known as the “oil crisis” within the seventies of the last century have highlighted Germany’s dependence on oil supplies.

In order to reduce this dependence the German government decided to set up a national crude oil reserve in the 1970’s. For strategic and safety reasons this reserve has been stored in salt cavern storages.

After around 40 years in operation, some of these storages have experienced corrosion on the casings and oil was leaking from the storages. All storage operators have started to develop concepts to overhaul and improve the downhole completion and above ground installation.

Hartmann Valves & Wellheads is involved and has contributed to new technical solutions for several projects with different operators. Technical details of these solutions will be presented to give an overview of latest developments.

The paper covers features such as:

- Tension spool for an additional production string with static seals and safety annulus
- Integral components like combined valves and pack-off adapters
- Double barrier within valves, hangers and flange connections
- Fire Safe metal sealing elements
- Preparation and calibration of strain gauges to monitor tubings

Key words: Wellhead for crude oil storage operation, Double barrier concept, Environmental protection, Safety