



OIL & GAS PRODUCTION TECHNOLOGY

Solving Liquid Loading Problems in Gas & Gas Condensate and High GOR Wells

ABOUT THE COURSE

The course provides you with a basic understanding of gas well liquid unloading, including the use of standard artificial lift technology to assist in unloading and in alternative foaming agent methods. You use practical examples to enhance your understanding of the gas well liquid unloading processes.

Liquid loading in low production gas wells is a nuisance for production engineers and the most controlling factor in the abandonment of mature pressure-depletion gas and gas-condensate reservoirs. The course provides a comprehensive approach for recognizing and modeling liquid loading (load-up) process, when it will occur and which method and technology should be used to assure a well production without liquid load up at the bottom and/or in wellbore. It is essential to maintain gas wells free of liquid, otherwise, the production will be severely reduced by backpressure of the accumulated liquids, and by reduced relative permeability of the gas in the near-wellbore zone and during the course these phenomena will be supported by numerous cases. The proper selection

of the tubing diameter is the crucial for providing flow conditions without liquid loading.

The proper selection means to select tubing diameter such that natural energy in the reservoir will give a gas velocity sufficient to lift liquids from the sand face and reservoir through the wellbore to the surface. Depending of dynamic conditions in the reservoir, well and surface the optimum tubing diameter varies through the well production life.

DESIGNED FOR

Operation engineers involved in every-day activities. Field supervisors and engineers responsible for optimization of gas and gas condensate wells having liquid loading problem, technicians responsible for monitoring and data selection.

YOU WILL LEARN

- How to recognize liquid loading in gas, gas condensate and high GOR wells
- Modeling liquid loading process
- Use software tools to identify well load-up problems
- Application various methods for solving problems

COURSE OUTLINE

- Overview of liquid loading problems
- Symptoms of load up process, how to recognize it and influencing factors
- Liquid loading sequences and modeling downhole and wellbore effects
- Critical gas rate and velocity
- System analysis of liquid loaded wells
- Multicriteria method for selecting the best unloading method
- Methods for solving liquid loading problem (velocity string, foam agents, intermittent operations with and without plunger, various artificial lift method, wellhead compressors, downhole water separation, etc)