Gas Lift System Production Optimization

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Introduction:

This course addresses various areas of gas lifting operations. It gives a complete look on the operational activities which will enable field operators to fully optimize even from systems selection, design, and installation. Moreover, the course will then focus on the techniques in achieving production optimization, specifically with continuous flow installations, monitoring, and run-life optimization.

In order to achieve optimal levels of production, NODAL analysis will be used in order to analyze and troubleshoot gas lifted wells. Class exercises and case studies will also be presented in order to test the candidates' application of the concepts learnt in the course into situational instances of field operations.

The objective of this course is to provide comprehensive coverage of Gas Lift design in Production Optimization. The latest technology multi-phase flow and inflow well performance is covered. Continuous flow and intermittent lift including valve mechanics are emphasized. Theory and applications are balance throughout. Example problems are discussed and others worked out by participants.

Objectives:

By the end of this BTS training course, participants will be able to:

- Understand the techniques in gas lift system operations to achieve production
- Learn to optimize production through gas lift system design, analysis, and troubleshooting
- Apply techniques in gas lift operations from beginning to end of operations

- Manage challenging environment faced by gas lifted wells
- Overcome the limitations and problems faced in applying these optimization techniques
- Optimize operations through understanding gas lifting's role in the whole production system
- Gain practical skills in valve mechanics and NODAL analysis
- Integrate gas lift system best operation practices with production optimization

Who should attend?

Drilling Engineers, Senior Drilling Engineers, Drilling Supervisors, Work over Engineers, Petroleum Engineers, Completion Engineers, Tool Pushers, Reservoir and Senior Reservoir Engineers, Geologists, Production Engineers & technologists, Well site Engineers, Lifting Personnel.

Course Outline:

- Artificial Lift Methods
- Multiphase Flow in Oil Wells
- Basics of Nodal Analysis
- Gas Lift Installation Types
- Gas Lift Valves & Construction
- Design and Operation
- Temperature and Effect on the Design
- Setting and Testing
- Continues Vs Intermittent Gas Lift
- Operating Principles and Unloading
- Valve Spacing
- Optimization
- Design of Continuous Flow Gas Lift Installations
- Inflow Performance (IFP)
- Reservoir Deliverability
- Productivity Index and Vogel IPR
- Effect of Reservoir Pressure and Water Cut
- New Developments in Gas Lifting

- NODAL Analysis of Continuous Flow Gas Lifted Wells
- Optimization of Continuous Flow Gas Lift Installations
- Unloading Design for Continuous Flow
- Gas Lift Systems

- Reciprocating Rod Lift
- Progressing Cavity Pumping
- Hydraulic Pumping
- Electrical Submersible Pumping
- Plunger and Capillary System
- Analysis and Troubleshooting Continuous Flow Gas Lift Wells
- Well Application and Trouble Shooting