Intelligent Gas Lift Automation

EuALF Gas Lift Masterclass

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The majority of the world’s gas lifted wells are operated in a non-optimal state

- Is my well completely unloaded?
- Is the well multi-point injecting?
- What is my lift depth?
- Am I optimized on gas lift?
- Can I lift deeper?
- Is my wellbore hydraulic model a good match to actual well performance?
- How much will I have to intervene?
- Do I have enough gas?
- What should be my lifting life-cycle?
Legacy Technology Challenges

- Narrow Operating Window.
- Design safety margins.
- Injection depth limited.
- Difficult to assess lift effectiveness.
- Intervention to optimize.
- Sensitive to well dynamics.
- Multi-point injection.
- Valve Chatter
Intelligent surface operated gas lift enables continuous production optimization

- **Technical**
  - Variable orifice size at any depth
  - Deeper injection – through use of full casing pressure to bottom
  - No deviation limitation – works in horizontal sections
  - No well intervention required for gas injection rate changes
  - Pressure and temperature data returned to surface
  - Remote monitoring and control
  - Intelligent field-wide management

- **Business**
  - Eliminate intervention
  - Reduce OPEX
  - Mitigate instabilities
  - Enhance recoveries
  - Optimise production
  - Reduce HSE risk
Data-driven decision making enables optimized production
Case History 1
Well Optimization

Through downhole gauge measurement, the operator recognised the opportunity to increase gas injection rate from 400 to 500 MCFD.

Silverwell DIAL valves were opened, decreasing casing pressure.

Net Oil Production increased 10% from 217 to 239 BOPD.

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Case History 2
Mitigating Instability

8/64\textsuperscript{th} orifice size causing **multi-point injection** and well instability.

Upper IPO valve continuously **opening and closing**.

Operator **increased the port size** to 10/64 by opening an additional valve. **Well stability achieved**.

Valve closed to replicate issue and confirm the DIAL action.
Case History 3
Gas Management

Through downhole gauge measurement, the operator recognised the opportunity to reduce the gas injection rate.

The valve combination was changed from 18/64 to 12/64ths.

The operator increased casing pressure and increased Net Oil Production by 18%.
Cross-functional business-case development accelerates technology adoption

More production
• Accelerating return-on-investment
• increased well production from **enhanced lift efficiency**

Less intervention
• Reducing opex & risk
• reduced well down-time from **intervention-free operation**

More data
• Informing production optimization
• increased insight from **multiple in-well sensors**

Less uncertainty
• Enabling decisions
• reduced misunderstanding from **integrated gas lift**
Thank you!
Questions?

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