Temporary DTS Monitoring with Coiled Tubing
Agenda

- Appropriate DTS Selection
- Temporary DTS Monitoring Applications
- Distributed Temperature Sensing in CT
- Example of an Actual Data-Set
- Specific CT String With Optical Fiber
- Fit-For-Purpose Coil Unit & Operation
- Summary
## Appropriate DTS Selection

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Temporary DTS Monitoring Applications

- Steam chamber development
- Evaluate SAGD process
  - Detect & avoid steam breakthrough
  - Optimize the steam/oil ratio
- Thermal model matching
- Completion issues
  - Casing leak
  - Plugged liner

When data is accurately collected for the life of the well, interpretations can be powerful.

Increase heavy oil recovery and/or reduce OPEX and CAPEX
Distributed Temperature Sensing Through CT

- A measurement on an optical fibre
- Spatial Resolution of 1 meter
- Based on backscattering of light
- Proven over the past 20 years in industrial fire detection and power line monitoring
Spatial Resolution

Which temperature array plot is right?
Use DTS and get the whole story.
Actual Data-Set Example
Coiled Tubing String – Specifically Designed for DTS

1.75” Coiled Tubing String

- Able to reach TD on most HO completions
- High temperature fiber optic (300 degC/572 degF)
- Efficient deployment/retrieval method

Utilizes ASE measurement system

- Accurate temperature measurements

Real-time temperature data
Fit-For-Purpose Coiled Tubing Unit

- Quick & efficient rig up/down time
- BHA, Lubricator, and BOP’s assembled prior to transport
- Single connection to tie onto wellhead
- Elimination of a crane
- Reduced footprint
- Real-time data monitoring
CT Operations

Tubing Force Analysis
- Ability to reach TD
- Operating limits

Fit-for-purpose well control stack
- High temperature seals
- Cooling System

Real-time data monitoring
- Monitor Job Parameters
  - Depth, Weight, Pressures
- Fatigue life & tubing limits
QHSE Highlights

Quality
- High quality real-time data
- Efficient rig-up/rig down times

Health
- Reduced crew size
- Automatic pipe lube (chemical exposure)

Safety
- No swinging loads
- Reduced exposure (WH/Pinch/Equip)

Environment
- Small foot print
- Self-contained coil unit
## Summary

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“Temporary distributed temperature sensing provides real-time data to assist in the evaluation of the thermal process, leading to increased efficiency and reduced production costs”

Thanks for your attention!

Questions?