Reservoir Engineering Services

Understanding your resource play to optimize recovery

When it comes to getting the most out of your resource play, knowledge is definitely power. At Trican, our reservoir engineering services group is dedicated to technological innovation. Our team of experienced fracture engineers, reservoir engineers, geologists and geophysicists expertly extract and analyze reservoir data to optimize your resource recovery.

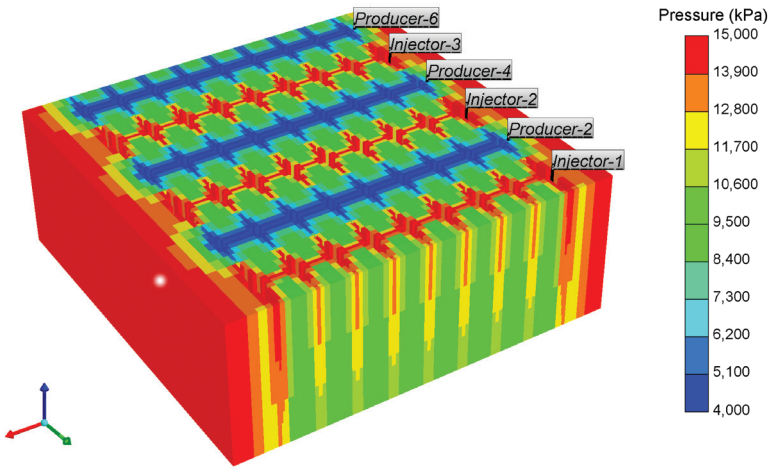

Figure 1. A waterflood simulation model with multi-staged fractured horizontal wellbores

Trican's reservoir engineering services include:

- Fracture spacing optimization
- Wellbore spacing optimization
- Full field reservoir studies
- Waterflood and gas injection studies
- Thermal simulations
- Compositional modelling
- Pressure transient analysis
- Rate transient analysis
- Unconventional gas reservoir studies (shale gas, tight gas and coalbed methane reservoirs)
- Fracture design optimization
- Reservoir characterization

SRVmax™ Studies

SRVmax™ is an integrated reservoir simulation study for maximizing the recovery of oil and/or gas in a resource play. The main focus of this integrated process is to optimize:

- Fracture spacing
- Wellbore spacing

The study involves the calibration of fracture models using Microseismic data, integrated with reservoir simulation models. The reservoir simulation model is fine-tuned through history matching, and the history matched model is then used to make informed decisions on fracture and wellbore spacing.

Full Field Reservoir Studies

Our reservoir simulation expertise can be used to optimize your field recovery and reservoir depletion strategies. Detailed geological structural maps are built to represent the faults and boundaries of your reservoir. The produced geological models are loaded with dynamic properties to study infill drilling, reservoir management and recovery optimization.

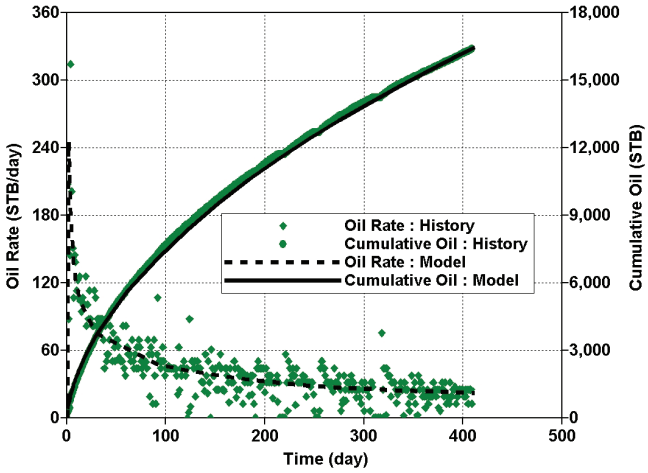

Figure 2. Oil Production History Matching

Secondary and Tertiary Recovery

Trican's reservoir services include additional types of simulation studies such as:

- Waterflood and gas injection studies
- Thermal reservoir simulation (e.g, steam assisted gravity drainage and cyclic steam stimulation)

Unconventional Reservoir Modelling

- Compositional modelling
- Shale gas, tight gas and coalbed methane reservoirs
- Adsorption and diffusion studies for shale gas and coalbed methane

Pressure Transient and Rate Transient (PTA / RTA) Analysis

Trican offers well test and production data analysis, including traditional and modern decline curve analysis, static and flowing material balance analysis, reserves estimation and forecasting.

Our PTA/RTA analysis is done in conjunction with fracture simulation. This enables a more accurate determination of fracture parameters and near wellbore reservoir parameters, such as permeability and skin.

Microseismic Fracture Mapping

Microseismic monitoring provides clients with 3D maps displaying fracture locations, shapes and orientations. Fractures models are calibrated with microseismic data for a more accurate representation of fracture parameters in reservoir simulation and analytical models.

Reservoir Characterization

- Rock mechanics testing for stimulation design
- Stress dependent permeability and porosity measurements at in-situ conditions
- Stratigraphic and core logging analysis
- Organic matter characterization and adsorption isotherm measurements
- Effective permeability and porosity measurements

For more information, please contact the **Reservoir Engineering Group** at **Trican Well Service**.

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