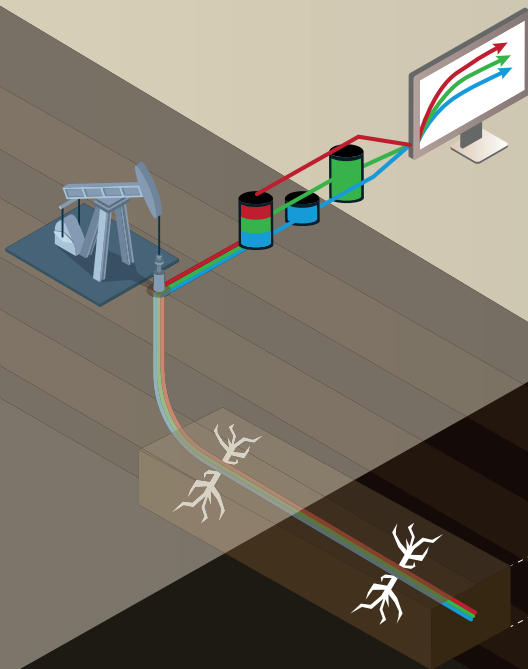# History Matching & Forecasting

A PIPE-IT SHALE SERVICE

Detailed insight into your shale wells

Pipe-It Shale Solution uses daily production data from horizontal multi-fractured wells to numerically model reservoir, fracture and well characteristics. This provides more accurate predictions of future well performance under different production conditions, including uncertainty analysis.
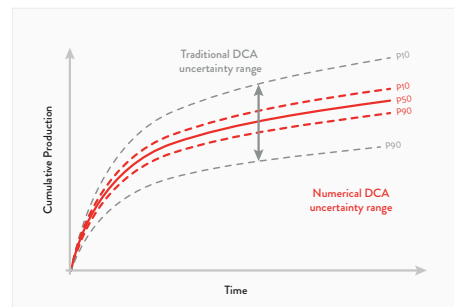
- Fracture Geometry
- Treatment Size
- Geological Description
- Wellbore Hydraulics
- Separator Capacity
- Well Development / Operation

Accurate Single Well Forecast
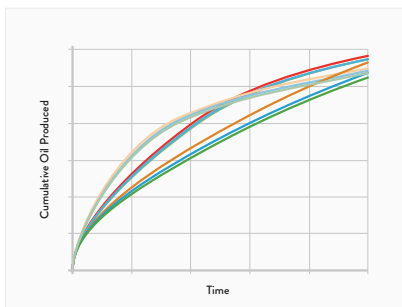
Accurately forecast production under changing operating conditions, reducing uncertainty in booked reserves.

Numerical Decline Curve Generation

Generate reliable decline curves for a section / area based on the detailed single well analysis.

Global Experts in Integrated Asset Modeling

CHALLENGE:

Significant uncertainty in forecasts of production and revenue.

Production from horizontal multi-fractured shale wells is associated with significant uncertainty. Simplified analytical models often fail to accurately describe well performance.

Horizontal shale wells are increasing in complexity. Forecasts based on DCA alone introduce a high degree of uncertainty in reserves booking and production planning. Parameters commonly unknown are in-situ reservoir fluid, reservoir properties, fracture geometry and extent and the presence of natural fractures. Detailed numerical models are complex and time consuming to build.

SOLUTION:

History Matching and Forecasting from Petrostreamz is based on a detailed numerical finite difference well model. The history match is conducted on readily available data and the history matched model can be used to study and optimize a range of well management and design issues.

Features

- A detailed numerical finite difference well model is history matched using readily available completion and production data.
- Uncertainty in key parameters is taken into account to provide a range of reserve estimates from the numerical model.
- In-situ reservoir fluid properties are determined.
- History matched model accounts for temporary shut-ins, choke adjustments and other operational changes.
- Accurate description of historic and future liquids production, based on detailed numerical modeling and EOS.

Requirements

- PVT description of reservoir (can be supplied by Petrostreamz).
- Completion and Production Data.
- Optionally any measured geological parameters.

Value Delivered

Insight into expected well performance
- Increased certainty in reserves forecasts for the history matched well.
- Ability to adjust forecasts under changing operating conditions (artificial lift, fracture deterioration, etc).
- Increased insight into well completion performance (fracture properties).
- Reliable forecasts of liquid production.

Foundation for neighboring well/section development
- Based on the information from the pilot well, it is possible to optimize the design, frac treatment, and spacing of new wells to maximize operator's Net Present Value.
- Foundation for optimizing the completion design and production strategy of nearby (offset/infill) wells.
- Make more informed decisions for future field/section development based on numerical model results.

A set of reliable Decline Curves can be developed based on detailed single well analysis

Delivered by experts in Shale Well Modeling

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