

Industry Issue

Escape from Empiricism

Current practices in production management, ramp-up and shut-in operations are based on empiricism and trial-and-error approaches. Well management becomes even more complicated when managing a network of wells. iDOMS is a software tool that allows an operator to **maximize total hydrocarbon production** to the sales line by properly managing and controlling each well in the field



Our Method

An integrated approach

We believe that proper well management necessitates the coupling of surface equipment with wellbore and reservoir models. Our algorithm provides robust dynamic linking of all three components and assists operators in maximizing production and minimizing the risk of completion or wellbore failures.

Scope of Software Application

Unique features

- Manages naturally flowing and wells on artificial lift
- Accounts for well interference through surface facilities and pipeline network.
- Performs dynamic nodal analysis and synchronous solution of the surface network.
- Ensures that completion and reservoir constraints are satisfied for all operating wells
- Properly manages shut-ins and ramp-ups by adjusting choke sizes and artificial lift equipment in adjacent wells.
- Calibrates reservoir and wellbore parameters by using real-time surface pressure measurements

Required Input

Reservoir, wellbore and completions

Some input requirements are:

1. Surface network
2. Formation properties
3. Fluid properties
4. Wellbore diagram
5. Completion properties
6. Available choke sizes
7. Artificial lift configuration



Basic Output

Rates, pressure and completion integrity

1. Production schedule for each well in the field
 - Choke sizes for naturally flowing wells
 - Settings for gas lift valves or ESP frequencies for wells on artificial lift
2. Surface pressures / bottom-hole pressures.
4. Completion performance and integrity.

Benefits of using iDOMS?

It's all about revenue and cost

- **Maximize Revenue:** Maximize production rates while satisfying completion, reservoir and surface equipment constraints.
- Provide well operators or automated well control systems with **operational recommendations**.
- **Reduce Costs:** Minimize man hours by efficiently coupling simulation tools.
- **Minimize the risk of completion failures** which may result in costly workovers and down time.
- **Identify production bottlenecks.**

Example Applications

- Determine choke sizes, operate gas lift valves and adjust ESP frequencies for each well in order to **maximize total hydrocarbon production from the field**.
- Prudently **implement shut-in and ramp-up operations** by adjusting choke sizes, gas lift valves and ESP frequencies in adjacent wells
- **Design, simulate and implement bean-up or clean-up operations** to prevent proppant crushing, sand production or wellbore failures
- **History-match** reservoir parameters and **calibrate network model** using real-time surface pressure measurements
- Assist in the **design of surface facilities** for the given set of wells and reservoir parameters

Consulting and Training Services

Infuse your project with our customized solutions

At any stage-gate of your project, we can furnish customized actionable solutions for your production, reservoir and facilities problems.

Contact

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