Weatherford®

ResSure℠ Live

Real-time Reservoir Monitoring and Analysis

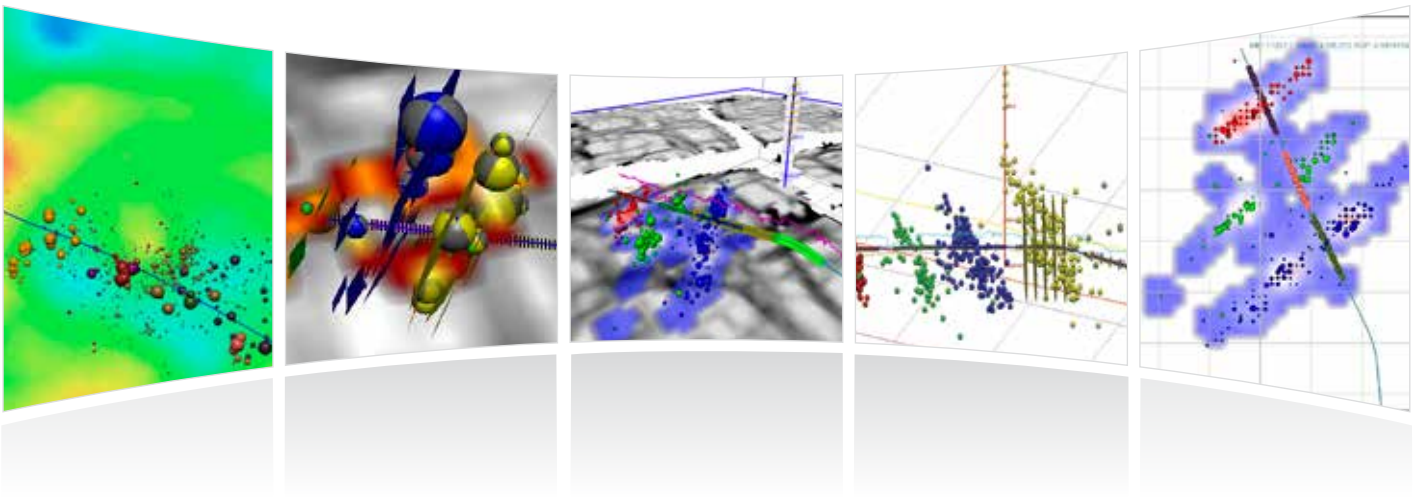
Picture a better way to produce
The reservoir-centric solution, from drilling through production

Make faster and more assured stimulation decisions.

ResSure℠ Live service from Weatherford can save you time, effort and money with more accurate analysis and informed decisions based upon real-time operating conditions.

ResSure Live service uses unique data-interpretation software to analyze formation evaluation data, surface logging and microseismic data to help you identify ideal completion intervals for enhanced stimulation. This comprehensive, real-time service can lower your completion costs by giving you the information you need to make faster and more assured stimulation decisions. With *ResSure* Live service, you can adjust to operating conditions in real time, leading to more informed decisions and more productive fields by improving individual well quality while lowering overall field development costs.

ResSure Live service, the industry's first fully integrated, plug-and-play real-time service capability, provides a dynamic 3-D view of the well and across the reservoir, and can accommodate updates from real-time data acquired during drilling. This unique and dynamic view of the field is used to optimize drilling trajectories, adjust stimulation plans, and improve field development workflows, resulting in lower field development costs and higher and more consistent production rates. Weatherford's ongoing technology focus will continue to provide critical innovations across the reservoir in the most cost-effective manner for clients.



Reservoir Modeling

The key to maximizing the benefits of ResSure Live service is the construction and maintenance of a fully integrated 3-D model. Weatherford constructs the model from all available reservoir information and continually updates it with real-time data from drilling, stimulation, microseismic and permanent monitoring operations, making sure that any field-development decision is based upon a complete and up-to-date understanding of the reservoir structure and dynamics.

- Map by-passed pay
- Improve in-fill drilling
- More accurate asset valuation
- Reduce development costs
- Optimize well spacing

Dynamic Drill Targeting

Well trajectories in unconventional oil and gas reservoirs are largely based upon an initial stress-field analysis, which often proves to be inadequate shortly after production begins. ResSure Live service enables revision of the stress model as new details are collected at the end of the drill bit through logging and monitoring operations.

- Minimize drainage overlap
- Consistent well performance
- Less well interference
- Optimize well trajectories

Real-time Stimulation Control

Stimulation plans are now based on a 3-D model derived from all other completion results across the field, providing the optimal perforation setup and completion technique for each treatment. Real-time stimulation data are then viewed and analyzed within ResSure Live service and correlated with the 3-D model to provide optimal stimulation locations along the lateral, replacing geometric perforations with model-derived geologic perforations, resulting in more consistent and higher production from each perforation. As dynamic analysis continues, the reservoir model is further refined, increasing its predictive capabilities and the ability to further optimize field development plans.

- Optimize stimulation technique
- Optimize perforation locations
- Reliable production forecasting
- Lower stimulation costs

Microseismic Monitoring

Microseismic surveys provide a more complete understanding of reservoir complexities and how these critical reservoir properties change temporally and spatially due to natural and induced processes. Microseismic surveys, as directed by accurate and up-to-date reservoir models, can improve treatment effectiveness and, in turn, dramatically improve the efficiency of field development processes and ultimate recovery through optimized well trajectories and stimulations, and more accurate estimates of simulated reservoir volumes.

- Validate stimulation
- Verify stress field
- Compute stimulated volume
- Minimize well interference
- Refine stimulation plan

Permanent Monitoring

Permanent and continuous monitoring of temperatures and pressures within the reservoir zone can provide valuable intelligence on producing zones and decline trends. This data can be correlated with logs and reservoir structure, resulting in more focused drilling and geology-based stimulations. Weatherford's unique permanent monitoring systems can be deployed in virtually any environment; from deep offshore to SAGD and unconventional oil and gas fields, providing the intelligence required to optimize drilling targets and stimulation techniques while lowering ultimate field development costs.

- Optimize infill drilling
- Optimize stimulations
- Manage productivity decline
- Lower field developing and operating cost

ResSure Live service is part of Weatherford's commitment to finding new, innovative ways to increase field production for our clients. To learn more, contact your Weatherford representative or go online to **weatherford.force.com/CPP**

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