



# Scalable Fiber for Live Reservoir Insights

FIBER OPTIC FRACTURE MONITORING

# Eliminate the Cost and Complexity of Fiber Installation

Fiber provides valuable insights that help operators understand and validate fracture performance. However, for many operators, the cost and complexity of incorporating fiber into their overall fracturing program is simply not feasible.

At Halliburton, we strive for continuous improvement, which means discovering innovative ways to incorporate fracture monitoring into your well factory approach.

By eliminating installation cost and complexity, Halliburton has made fiber a practical option for routine fracture monitoring—allowing you to benefit from actionable insights stage to stage, on more wells across your asset.



SCALABLE  
FIBER

REDUCED  
INDIRECT COSTS BY  
\$600,000

CONDENSED  
INSTALLATION  
FROM 6 MONTHS TO  
2 WEEKS

LIVE  
RESERVOIR  
INSIGHTS

INSTALLED  
IN STANDARD  
HOLE SIZES

ELIMINATES  
COST AND RISK  
OF ADDITIONAL  
MAPPING RUNS

## Simplified Fiber Installation and Design

Halliburton has reduced the undesired complexity with traditional fiber installation by simplifying and condensing the process from an average of six months down to two weeks—making the process more manageable and easier to incorporate into your overall fracture design.

By reengineering our downhole equipment to fit standard North America wellbores and hole sizes, Halliburton has eliminated the need for wellbore construction changes, such as requiring a larger hole, which impacts drilling schedules, planning cycles and your bottom line.

This step-change in traditional fiber installation provides a means to more

easily incorporate fracture monitoring, without disrupting your factory-mode approach.

## Practical Fiber with Feasible Economics

In simplifying the complex design process, we have engineered \$600K of unnecessary indirect costs out of the installation process—making fiber a more economically feasible option to integrate into your overall asset development plan.

With a scalable solution that can be run in standard hole sizes, we have reduced the total cost of ownership by at least \$200K. We have also incorporated FIBERSIGHT® Map fiber locating sensors, which eliminate the cost and risk associated with an additional mapping run.

## A Standardized Process for Reduced Lead Times

By standardizing our equipment, we now hold inventory, which allows Halliburton to provide fiber optic fracture monitoring services to customers in merely two weeks, compared to the three-month lead-time our competitors require.

When it comes to fiber optic installation, our operating process is uniquely streamlined.

We work with all major wellhead providers, and coordinate with them directly to accommodate fiber cable installation with minimal changes to operations.

Traditionally, orientated perforations can slow down fracture operations,

however our processes enable operators to achieve the same fracture efficiency on fiber wells compared to other providers.

## Live Reservoir Insights to Drive Business Decisions

For fiber to truly be practical, you have to easily be able to put those terabytes of data to practical use.

Our processing and visualization transforms traditional fiber optic data into live reservoir insights that drive business-relevant answers, such as understanding where your proppant is going and whether you're interacting with another well.

Using both enhanced or standard fiber, our industry leading

distributed acoustic sensing (DAS) interrogator unit enhances signal-to-noise ratio to deliver high fidelity data, including additional sensing capabilities such as pressure measurements and DAS microseismic, at a lower downhole cost.

These real-time reservoir insights provide quantitative measurements to understand fracture placement and how you may be impacting surrounding wells.

And, through our post frac analysis and reporting, you can perform post cross well analysis, with easier integration across data sets for quick plotting that extracts true business value.

Trying to understand what's happening downhole while fracturing is complicated.

The solution shouldn't be.

At Halliburton, we have simplified fiber installation by engineering out unnecessary complexity and cost, for a more practical fracture monitoring solution that compliments your well factory approach.

Learn more about our factory-mode fiber for scalable use by contacting us today.

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

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