

# PRODUCTION WELL SERVICES

Diagnose, Restore, and Rejuvenate Rig-Free



**Weatherford**<sup>®</sup>

# DIAGNOSE, RESTORE, AND REJUVENATE RIG-FREE

We are your single-source production well services company.

We are your rigless restoration resource. As your single-source contact for integrated production well services, we can diagnose and repair common production problems without a rig and often without well shut-in.

From there, we go beyond standard production well services. We not only locate and produce behind-the-casing reserves rig-free, but also retrofit optical systems that deliver real-time insight into your reservoir. Because we operate a global fleet of wireline, slickline, and coiled-tubing units, a rejuvenated and more profitable well is never more than a phone call away.





## FIND IT

**Track down any downhole issue with actionable reservoir data.**

Our single-source wireline production services include production logging, casing and cement evaluation, and behind-the-casing reserves detection. Using collective experience, gained over 40 years of service, our specialists diagnose downhole issues and make concrete recommendations that restore field productivity and inform decisions on production management.



## FIX IT

**Restore productivity with our rigless restoration solutions.**

We re-establish profitability and increase the life expectancy of producing wells with the world's largest selection of coiled-tubing- and thru-tubing-conveyed stimulation, chemical injection, gas lift, sand control, and well-integrity remediation.



## GO BEYOND

**Discover a CAPEX-free path to more reserves.** Once we locate bypassed production, we help you to produce and manage your increased reserves with a comprehensive array of rigless artificial lift, restimulation, and optical downhole monitoring services.



# FIND IT

## EVALUATE AND DIAGNOSE DOWNHOLE ISSUES

Our single-source wireline production services include production logging, casing and cement evaluation, and behind-the-casing reserves detection. Using experience gained over 40 years of service, our specialists diagnose downhole issues and make concrete recommendations that restore field productivity and inform decisions on production management.

## EVALUATE RESERVOIR FLOW AND IDENTIFY TUBING LEAKS

Our production logging tools provide an accurate summary of the downhole environment. Working in single-phase or multi-phase environments, we deliver fluid-movement data from the wellbore, which is a critical component to manage your well and reservoir. Deployed via E-line or slickline, and providing data via real-time telemetry or memory acquisition mode, our production logging suites can help you:

- Identify crossflow
- Identify individual reservoir contributions
- Evaluate fluid phases
- Identify tubing and casing leaks



## REVEAL CASING AND CEMENT ANOMALIES

We help to prevent complex problems tomorrow by uncovering the smallest of threats today. The SecureView® casing and cement evaluation system provides high-definition logs of your inner casing, outer casing, cement strength, and cement bond. And should we find a problem, our comprehensive remediation toolbox can fix the issue with a smaller bite out of your budget than you might expect.

- Cement bond-to-pipe, bond-to-formation, and compressive-strength measurements
- Casing wear, deformation, defects (internal and external), and thickness measurements

## DETECT BYPASSED PAYZONES

There's more out there. The only questions are where and how much. Our Raptor™ reservoir saturation technology tells you what lies just outside your wellbore. Rather than a generalized, qualitative interpretation of what lies beyond the casing, our Raptor system defines oil and gas locations within inches:

- Detect formation fluid saturations (oil-water, liquid-gas, and three-phase)
- Measure oil-water saturation in freshwater formations
- Measure oil-water saturation in saltwater formations
- Measure gas-liquid saturation



EXE

# REPAIR WELLS AND RESTORE PRODUCTIVITY

When well integrity problems and declining production sideline your operations, we bring your well back online rig-free and often without shut-in. Using any conveyance available—including coiled tubing, thru-tubing, wireline, and slickline—our V0-qualified and single-trip restoration solutions revive productivity and increase the life expectancy and profitability of producing wells.

## RESTORE SAFETY-VALVE FUNCTIONALITY RIG-FREE

Restore safety-valve functionality and productivity without pulling the tubing. Based on the industry-leading Optimax™ safety valve, our Renaissance® systems retrofit a new safety-valve control line where the original has failed and enhance production by enabling the delivery of downhole treatment fluids.

- Replace damaged control lines
- Retrofit capillary injection or high-volume water-injection systems
- Retrofit wells without safety valves



## MANAGE SAND PRODUCTION

Whether you have a failed sand-control system or sand production is higher than predicted, our thru-tubing-conveyed sand-control solutions—including conventional standalone well screens and gravel packs—enable thru-tubing-deployed remediation.

- Prevent formation sand from entering the production string
- Control sand and fines migration

## RENEW RESERVOIR CONNECTIVITY

Revitalize your existing wells with our single-trip, multizone technologies. Deployed thru-tubing or with a coiled-tubing unit, the SurgeFrac system can selectively set multiple packers for targeted chemical treatments. And the ReelFrac system enables multiset, targeted proppant placement, which dramatically increases efficiency compared to conventional plug-and-perf operations.

- Selectively stimulate producing zones
- Selectively seal off perforation sections for chemical treatment
- Mitigate poor permeability, porosity, and pressure along horizontal sections

## RE-ESTABLISH WELL INTEGRITY AND MANAGE WATER INTRUSION

Isolate problem zones and resist gas intrusion with our VO-qualified technologies. Working through tight restrictions and with the production tubing in place, our permanent or retrievable well barriers, straddle systems, plugback services, and wireline-conveyed tubing and casing patch systems isolate problematic wellbore zones without the use of a rig.

- Mitigate cross-zone production and water production
- Restore tubular integrity rig-free

## REMOVE DEBRIS AND WELLBORE OBSTRUCTIONS

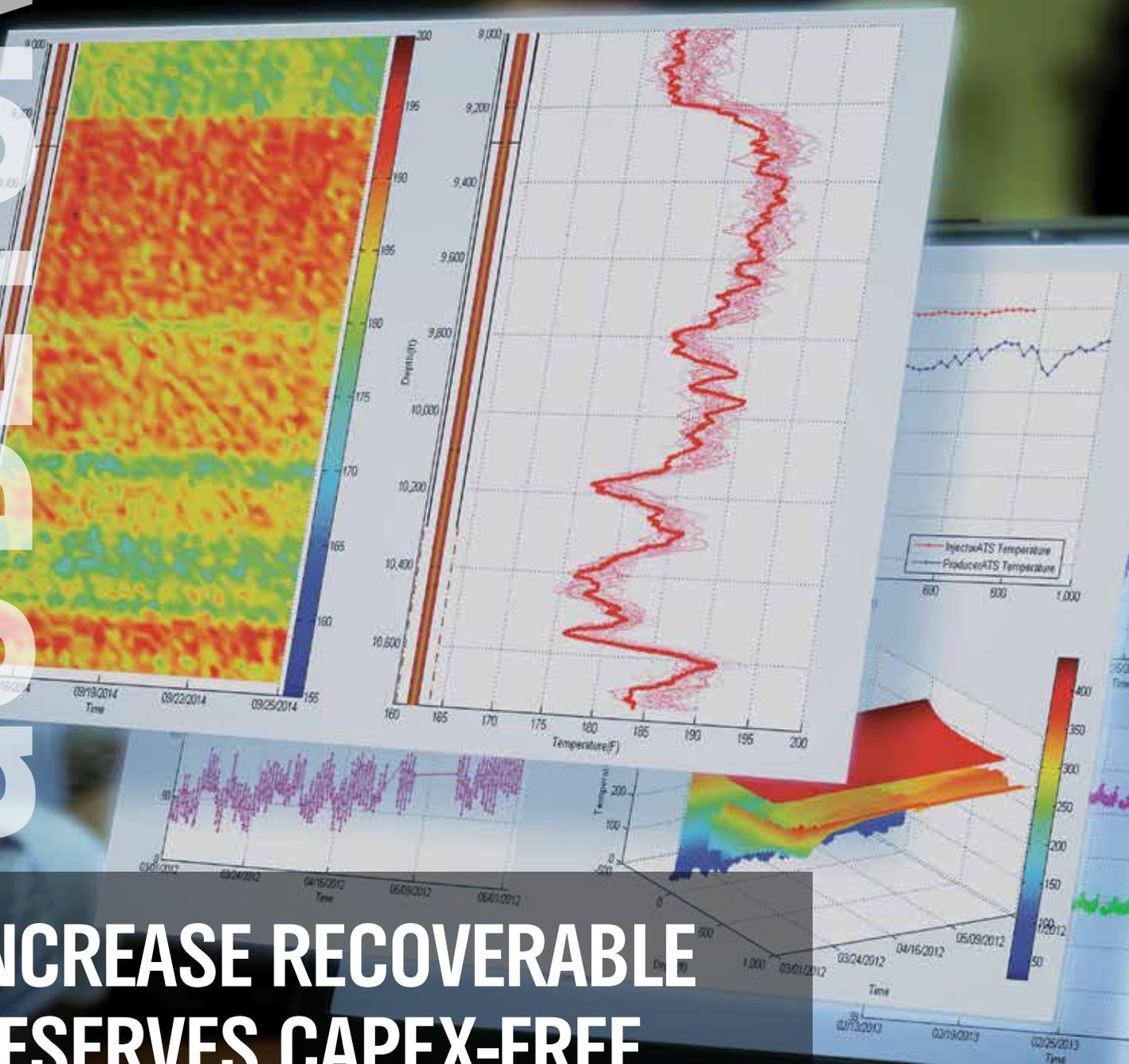
Using a range of proprietary thru-tubing and wireline-conveyed technologies—including the smallest-diameter motorized cutting tool (MCT) in the industry—our skilled fishing and milling technicians deliver a clear wellbore with minimal downtime.

- Remove scale and tubular blockages
- Mill through and fish out obstructions

GO BEYOND

# INCREASE RECOVERABLE RESERVES CAPEX-FREE

Once we've identified economic reserves of bypassed hydrocarbons with our industry-leading saturation logging technologies, we help you to produce and proactively manage your increased reserves. Using our comprehensive rigless systems—including stimulation, artificial lift, and well monitoring—we help you to better understand and maximize the economic life of your rejuvenated assets.



## MAXIMIZE WELLBORE EXPOSURE

Perforating is critical to flow management and effective reservoir drainage. Our perforating services include wireline-conveyed and tubing-conveyed perforating (TCP) services for all types of environments and conditions. Our gun systems are rated to 30,000-psi (206.8-MPa) bottomhole pressures, and our charges are API registered.

- Optimize reservoir drainage
- Perforate new zones

## STIMULATE BYPASSED PRODUCTION

Boost production with our rigless, single-trip stimulation technologies. Our ZoneSelect® coiled-tubing (CT) stimulation system enables complete customization for the location and number of stages. Combined with the ReelFrac packer system, our CT technologies can help to select and stimulate an unlimited number of zones in any well environment.

- Single-trip stimulation with unlimited zones
- Long openhole laterals and multistage completions

## LIFT SMARTER TO MAINTAIN PRODUCTION

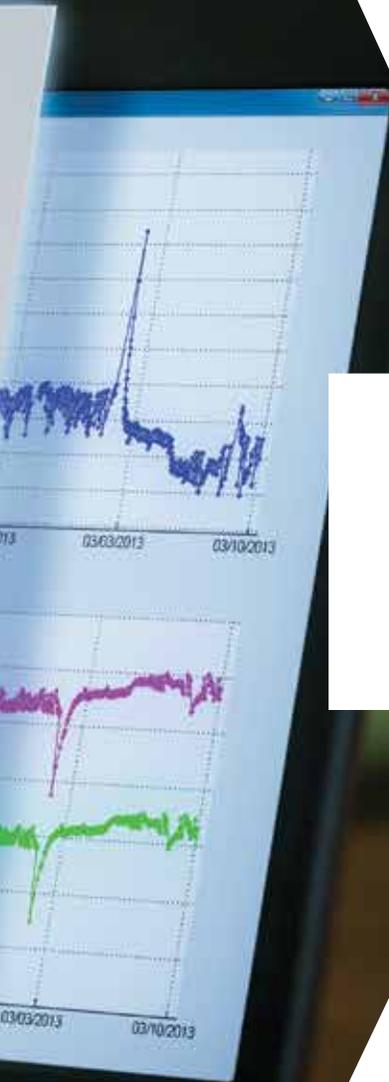
When reservoir pressure drops and natural production decline occurs, we can help you to lift smarter with our comprehensive artificial-lift portfolio, which includes jet pump, plunger lift, gas lift, and capillary technologies. In existing gas-lift wells, our deep gas-lift system places the lift point farther downhole. Our inverted gas-lift system (IGLS) retrofits wells not previously completed for gas lift. Our velocity and continuous chemical-injection strings reduce the liquid-loading effect in producing gas wells and reduce paraffin, corrosion, and scale buildup in oil-producing wells.

- Reduce the liquid-loading effect
- Decrease paraffin, corrosion, and scale buildup
- Reduce the surface tension and density of produced water

## SUSTAIN REAL-TIME PRODUCTION VISIBILITY

Once you reach optimal production, we can help you to maintain it with a real-time window into well performance. Our OmniWell® reservoir monitoring system provides actionable data from the toe of the reservoir through the completion to the tubing hanger.

- Delivers real-time data
- Monitors well parameters such as pressure and temperature





# FIND IT, FIX IT, AND GO BEYOND WITH OUR RIGLESS CONVEYANCE SYSTEMS

As your rigless restoration resource, we support integrated production well services with a global fleet of wireline, slickline, and coiled-tubing units. The flexibility of our technologies enables the use of any conveyance available to increase the life expectancy and profitability of producing wells.

## PROVEN RESULTS AROUND THE WORLD

**FOUND IT**  
IN THE PERMIAN BASIN, USA

**SECUREVIEW® CASED-HOLE EVALUATION PINPOINTED CASING LEAK AND SAVED \$300,000 IN REPAIRS**

Tasked to find the cause and location of a major leak in a new horizontal well, our wireline team used the SecureView service to find a split casing problem and also located the top-of-cement far deeper than expected. The logs enabled the client to remediate the wellbore without restricting its size and saved US \$300,000 in remediation work.

**FOUND IT**  
IN ROMANIA

**RAPTOR™ RESERVOIR SATURATION SYSTEM DISCOVERED 295 FT OF BYPASSED NATURAL GAS AND INCREASED PRODUCTION TO 2,500 Mcf/D**

A client suspected additional natural gas pay behind the casing but faced inconclusive results from competitors. Our wireline team deployed the Raptor system and increased the known net pay zone from 6.5 ft (2 m) thick to 98 ft (30 m) in one interval, with a total net addition of 295 ft (90 m) of pay zone. This enabled a production increase to 2,500 Mcf/D.

**FIXED IT**  
IN OFFSHORE BRUNEI

**WIDEPAK™ DEEP GAS-LIFT SYSTEM INCREASED PRODUCTION BY 500% AND SAVED \$5 MILLION IN RIG TIME**

Our thru-tubing services installed a deep gas-lift system to revitalize a declining offshore oil well. The operation raised injection pressure to 870 psi (6,000 kPa), doubled the drawdown pressure, and saved US \$5 million by eliminating the need for a workover rig.



## WIRELINE

Our wireline fleet performs more than 37,000 trips to the wellsite every year. All Weatherford wireline production technologies operate in memory mode, which gives you the operational flexibility to gather actionable, high-resolution data for any job.



## THRU-TUBING

We perform thousands of thru-tubing interventions every year. Honed through decades of service, our vast array of thru-tubing equipment delivers improved economics and less risk, NPT, and well-possession time.



## COILED TUBING

As one of the largest coiled-tubing intervention service providers, we operate a broad range of tools that perform in any downhole environment. Using technologies that conform to API 16ST guidelines, we provide safe, consistent, and reliable service for artificial lift, flow assurance, and more.

### FIXED IT IN GERMANY

## RENAISSANCE® WDCL SYSTEM RESTORED PRODUCTION TO 2,544 Mcf/D WITHOUT A WORKOVER

Working in a sour gas well, our rigless team installed a Renaissance WDCL (Weatherford damaged control line) system to replace a plugged tubing-retrievable subsurface safety valve (TRSSSV). By creating a custom-engineered and workover-free solution, production was restored to 2,544 Mcf/D.

### BEYOND EXPECTATIONS IN OFFSHORE NORWAY

## INVERSE GAS-LIFT SYSTEM DELIVERED FIRST PRODUCTION FROM SHUT-IN, BROWNFIELD WELL

Facing a well that had never produced because of natural pressure declines, our rigless team installed an inverse gas-lift system. The operation not only delivered the first production in the well, it did so with the existing completion components and without the use of a rig.

### BEYOND EXPECTATIONS IN RUSSIA

## REELFRAC PACKER SYSTEM BROUGHT WELL ONLINE 36 DAYS EARLY AND CUT COMPLETION TIME BY 75%

Tasked to reduce the operational time for a frac job that typically takes 48 days, our team suggested single-trip multistage fracturing via coiled tubing—the first operation of its kind in Russia. The crew performed all 16 frac stages in just 12 days, which brought the well online 36 days ahead of schedule.



## DIAGNOSE, RESTORE, AND REJUVENATE RIG-FREE

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Use a single-source production well services company to diagnose, restore, and rejuvenate your assets rig-free. To learn how our services and technologies can work for you, contact your authorized Weatherford representative, or visit us at [weatherford.com](http://weatherford.com).

[WEATHERFORD.COM/PRODUCTIONWELLSERVICES](http://WEATHERFORD.COM/PRODUCTIONWELLSERVICES)

### GET CONNECTED

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