



Weatherford®

Re-Entry Services



Drilling



Evaluation



Completion



Production



Intervention

Casing exits

Accessories

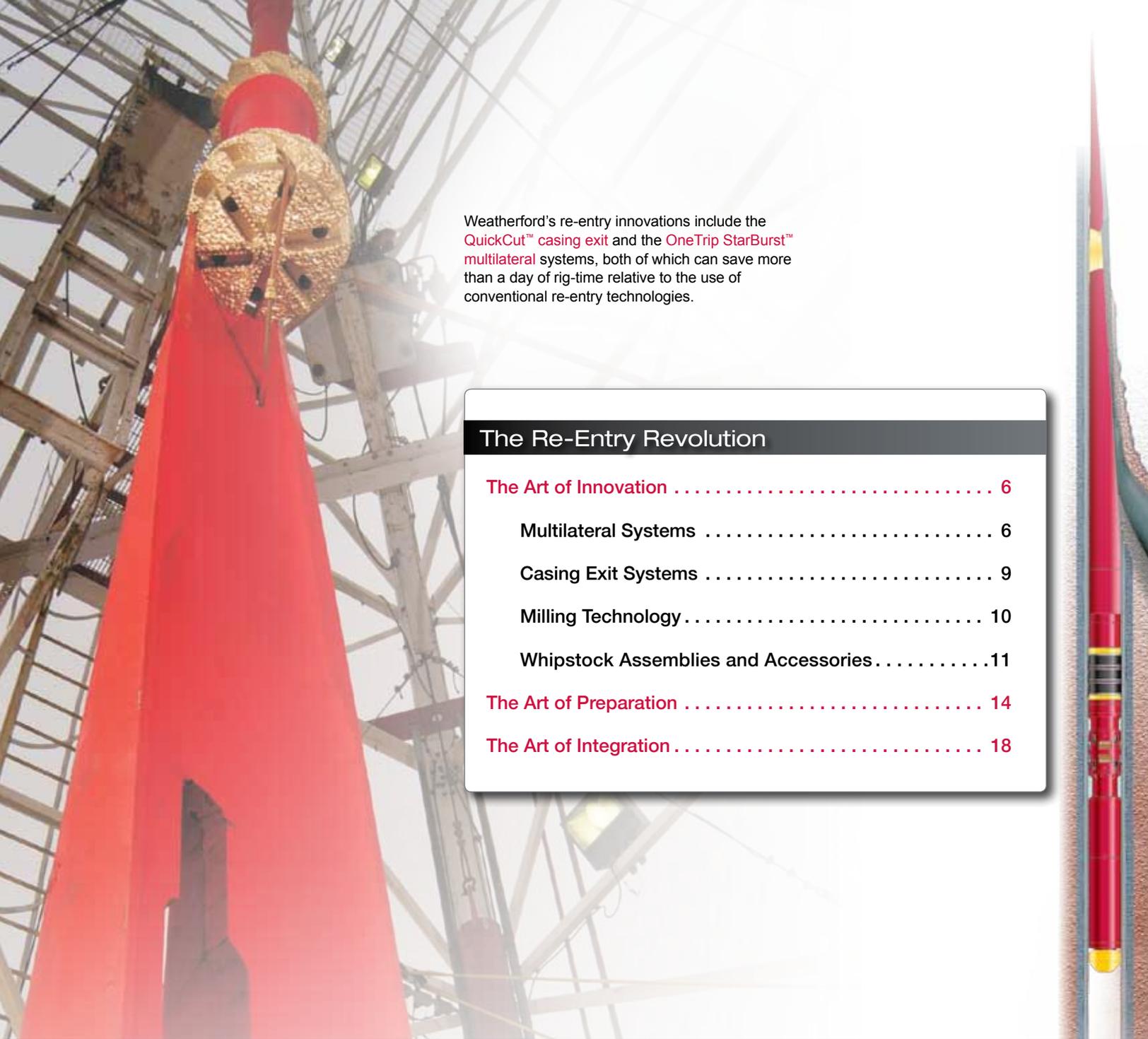
- Whipstocks
- Openhole
- QuickCut™
- Shallow-angle QuickCut

Multilaterals

- MillThru™
- OneTrip StarBurst™
- Selective re-entry system
- StarBurst™

The Art of Intervention

Revolutionizing wellbore re-entry with an array of cutting-edge milling, casing exit and multilateral technologies to maximize efficiency and drive down costs



Weatherford's re-entry innovations include the **QuickCut™ casing exit** and the **OneTrip StarBurst™ multilateral** systems, both of which can save more than a day of rig-time relative to the use of conventional re-entry technologies.

The Re-Entry Revolution

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Recent Re-Entry Milestones

2004

- Weatherford completes the world's first four casing exits through extremely high-chrome-content casing in Kazakhstan. The specific composition of the SM-2035-110 corrosion-resistant alloy (CRA) casing was 22 percent chrome, 35 percent nickel and 4.5 percent molybdenum.

2005

- Using its shallow-angle *QuickCut* casing exit system, Weatherford completes the world's first three successful thru-tubing, rotary-drilling installations from a floating structure in Norway.
- Weatherford installs the world's first single-trip casing exit in 20-in casing, using a hydraulically actuated *QuickCut* system from a semisubmersible rig.

2008

- Weatherford negotiates an approximately 26,000-ft (7,925-m) wellbore trajectory—20,000 ft (6,096 m) of which was horizontal—to create a casing exit that saved an extended-reach well in Russia, setting a world record for casing exit distance in the process.



On the *Cutting Edge* of the *Re-Entry Revolution*

Advances in re-entry technology have expanded petroleum industry frontiers, from rejuvenating aging fields to exploiting coalbed methane (CBM) resources. Weatherford's unparalleled portfolio of world-class re-entry systems are engineered to maximize efficiency and reduce costs by using the most innovative technology available. We deliver industry-leading service with fit-for-purpose technology to consistently execute the most reliable casing exits and multilateral junctions to ensure successful operations. With a global reach and highly trained and competent personnel, our track-record speaks for itself.

Our Re-Entry Services

Casing Exits

Multilaterals

2009

- Weatherford debuts the world's first multilateral system capable of creating TAML Level 4 junctions in a single trip—the OneTrip StarBurst™ system—in Norway. The technology helped a client save valuable rig time during the installation of a multilateral system used to inject gas into adjacent producer wells.
- Weatherford's QuickCut™ system and associated technologies are used to create a casing exit through extremely tough-to-penetrate V-150 high-yield casing in Mexico.
- Weatherford installs its 1,000th retrievable, zonal-isolation, packer whipstock system.
- Weatherford surpasses 2,700 QuickCut installations globally.

2010

- Weatherford surpasses 200 successful whipstock installations in open holes using its IPP™ inflatable production packer as an anchor.
- Weatherford completes its 10,000th casing exit and 400th multilateral installation. The latter total includes more than 60 multilateral installations using Weatherford's StarBurst™ systems.
- Weatherford successfully installs the world's first casing exit in 17 7/8-in. casing, using a hydraulically actuated QuickCut system.
- Weatherford surpasses 600 single-trip retrievals of a whipstock, using the retrieval hook as the primary method.
- A pioneer in solid expandable technology, Weatherford installs a MetalSkin® solid expandable liner through a casing exit made with a QuickCut system for the 13th time.

Re-entry Applications and Answers

Re-Entry Application	Operation Type
<p>Reducing top-down drilling costs</p> <p>Multiplying production capacity several fold with horizontal, rather than vertical, well designs</p> <p>Making the development of smaller fields economically feasible</p>	New field development
<p>Enhancing efficiency while creating casing exits to maneuver around wellbore obstructions, thereby reducing costs</p>	Sidetracking
<p>Reaching remote drilling targets faster by minimizing the time required to exit the main wellbore</p> <p>Overcoming high-dogleg severity with advanced casing exit and whipstock assemblies</p>	Extended-reach drilling
<p>Maximizing efficiency when creating necessary casing exits</p>	Infill drilling
<p>Rendering access to new economically feasible reserves, even in light of comparatively high rig rates, by reducing top-down drilling costs and the number of subsea wellheads required</p> <p>Recovering slots on space-constrained platforms</p>	Offshore drilling
<p>Leveraging existing wellbores to access bypassed reserves cost effectively, breathing new life into mature fields</p>	Brownfield re-development
<p>Installing multilateral gas- or water-injection systems to stimulate production from adjacent wells</p>	Enhanced oil recovery
<p>Mitigating the high capital expenditures (CAPEX) associated with CBM projects, using multilateral systems</p> <p>Dewatering coal seams more quickly to bring production on line sooner and at higher rates</p>	CBM development
<p>Maximizing reservoir contact for thermal generation with multilaterals</p>	Geothermal wells
<p>Reducing the time, risk and costs of any departures from the main wellbore</p>	Shale resource development



Industry Myths

Weatherford's Answers

Milling of exotic materials is too risky or even impossible.

Our advanced MillSmart™ technology has transformed the act of cutting through exotic materials—P-110, Q-125, TAC-140, V-150 and chromium (13, 18 and 25 percent)—from extraordinary to ordinary.

Low-side exits are not feasible.

Our patented WhipBack® technology makes low-side exits feasible. Its design enables the operator to take the optimum route to the target zone.

The window cannot be exited; the whipstock must have turned.

Our MultiCatch™ anchors mitigate the risk of whipstock turning, typically associated with conventional anchors. It features a unique wedge-style design enhanced by a radial slip profile that can catch three casing sizes.

Losing a whipstock during retrieval will undermine efficiency or even jeopardize the entire operation.

In 2009 we achieved a better than 99 percent whipstock retrieval rate on 564 attempts, using primary recovery methods. We have also developed a hollow whipstock for our multilateral systems that does not need to be retrieved when wellbore conditions make recovery costly or otherwise problematic.

The dogleg severity is too high.

Our fit-for-purpose casing exit systems overcome the challenges typically associated with dogleg severity. Our close-coupled, full-gauge mill structure generates an extended transition from the parent to the lateral bore using a 2° or 3° concave assembly.

Exiting multiple casing strings is not a viable option.

With our array of advanced milling technologies and associated expertise, we are well equipped to create exits through single, double and even triple casing strings. We have created more than 80 successful departures through multiple casing strings.

Openhole sidetracks using inflatable packers as anchors are unreliable and expensive.

Weatherford has rewritten the rules governing the cost effectiveness and reliability of openhole sidetracks using inflatable packers as whipstock anchors; to date we have completed hundreds of such sidetracks.

The milling assembly will mill through the whipstock instead of through the casing.

We employ a unique milling technique, which involves milling along (but not through) a section of the whipstock, to deflect the assembly through the casing wall and create a seamless transition from the main bore to the lateral.

The Art of *Innovation*

We have built one of the most comprehensive selections of re-entry technologies in the oil and gas industry. Tested in quality-critical applications the world over, our portfolio encompasses dedicated multilateral and casing exit systems, innovative milling technology and an array of whipstock assemblies.

Multilateral Systems

Multilateral systems exploit existing wellbores to eliminate top-down drilling costs. Accessing bypassed reserves in mature fields is one of their primary applications. Installing multilateral systems necessitates the creation of casing exits and junctures classified by the level of support in accord with the Technology Advancement for Multilaterals (TAML) scale. With a selection of TAML Level 1 through 4 systems, Weatherford has completed more than 400 multilateral installations in a variety of environments around the world. Our portfolio features the award-winning OneTrip StarBurst™ Level 4 system, designed to optimize the installation of complex multilaterals.

Award-winning multilateral technology

Our *OneTrip StarBurst* system received two prestigious industry awards in 2009: The Offshore Technology Conference (OTC) Spotlight on New Technology Award and Hart Energy Publishing's Meritorious Award for Engineering Excellence. In both cases, the review panels consisted of third-party industry experts. To be considered for the 2009 Spotlight Award, entrant technologies had to be less than two years old; proven through full-scale implementation or successful prototype testing; of broad interest to the oil and gas industry; and "groundbreaking." The Meritorious Award for Engineering was given to technologies that demonstrate innovation in design in one of several categories; the *OneTrip StarBurst* system received the award in the drilling tools category.





OneTrip StarBurst™ Level 4 system. The first of its kind, this system minimizes the duration, associated cost and risk of installing multilaterals that require the mechanical support of Level 4 junctures. Incorporating our field-proven QuickCut™ casing exit technology and a unique, single-trip, hollow whipstock, the system reduces the trips otherwise required to create the junction, typically translating to a time savings of at least two days. Applications include accessing new reserves from existing wellbores, recovering slots on offshore platforms, mitigating the elevated risk and cost of deepwater drilling, and creating multilateral gas- or water-injection systems.

StarBurst™ Level 3 and 4 systems. Our *StarBurst* systems create Level 3 or 4 junctions that permit full-liner access to the lateral. Both leverage a unique, hollow whipstock assembly to enhance installation efficiency. They also feature overlapping concentric strings that, when combined with cement, reinforce junctions to ensure maximum reliability.

Our *StarBurst* and *OneTrip StarBurst* systems feature a unique, hollow whipstock. Unlike conventional whipstocks, our systems remain in the wellbore. Eliminating whipstock retrieval reduces the time and cost of multilateral installations, minimizes the time between drilling and running of lateral casing, and minimizes risk exposure.



Real Result

Norway (North Sea, Åsgard Field)

***OneTrip StarBurst* maximizes efficiency on installation of multilateral gas-injection well**

An operator used our *OneTrip StarBurst* TAML Level 4 system to install a complex multilateral gas-injection well. The innovative system helped save an estimated minimum of two days on the time-sensitive operation. In addition, the successful installation enabled maximum efficiency of the gas injection into the adjacent producer wells, ultimately leading to increased production from the adjacent producer wells.

Real Result

Equatorial Guinea

A 9 5/8-in. *StarBurst* system enables cost-effective creation of casing exit at extreme depth in an ERD well and provided access to new targets

Set at a depth of more than 19,297 ft (5,882 m), our *StarBurst* multilateral system enabled creation of a casing exit in an extended-reach drilling (ERD) well, thereby permitting access to new targets with minimized drilling demands.



MillThru™ Level 4 system. The primary application of our *MillThru* system is cost-effective creation of reliable Level 4 junctions that permit full-liner access to the lateral and main bores. The system incorporates standard casing exit equipment to create the lateral window and a simple mill assembly to regain access to the main bore through the liner. Combined with cement, its overlapping concentric strings reinforce the junction to ensure maximum strength and reliability.

SRS™ selective re-entry system. Our *SRS* system for cased-hole wells creates simple yet highly reliable Level 2 multilateral junctions. It combines conventional casing exit and milling technology with a robust, ISO-V3-rated PakLatch™ permanent sealbore packer, designed to endure hostile downhole conditions. This versatile, high-torque-load rated packer can accommodate single or multiple laterals and enables reliable re-entry access from a single orientation data point. The *SRS* system can accommodate 4 1/2- through 9 5/8-in. casing.

Real Result

Venezuela (Bare Field)

Inaugural *MillThru* system installation leads to field's highest-producing multilateral

Our *MillThru* system created a Level 4 junction that provided full access to the lateral and the main bore. The successful operation marked the inaugural deployment of the *MillThru* system. Before this installation achievement, the operator had previously struggled with a 25 percent success rate using competitor Level 4 multilateral systems. Additionally, the initial stabilized production rate of the multilateral created with the *MillThru* system—1,854 bbl/d—was the highest in the field, which had an average rate of 633 bbl/d.

Real Result

Offshore Kuwait (Ratawi Field)

Selective re-entry system eliminates top-down drilling costs, facilitates logging

Our Level 2, cased-hole *SRS* system enabled production to flow from a new horizontal well, while preserving access to the original, nonproductive vertical wellbore. This approach eliminated top-down drilling costs, as well as the need for additional surface piping. Furthermore, it facilitated the deployment of logging tools into the vertical wellbore to obtain critical reservoir data.



Casing Exit Systems

We draw on extensive experience—which exceeds more than 10,000 successful casing exits—and advanced milling technology to maximize efficiency when creating casing exits. Faster exits can reduce the duration and associated costs of extended-reach, horizontal and infill drilling, as well as sidetracking.

QuickCut™ casing exit systems. The *QuickCut* systems are designed to create casing exits with maximum efficiency, thereby reducing the time and associated cost of drilling out from the main wellbore. Quickly and easily made up on the rig floor, they can mill full-bore windows and extended-length ratholes in a single-trip, which can save a day or more of rig time compared to conventional systems. The unique lead-mill geometry of our *QuickCut* systems significantly improves penetration rates and gauge retention, further enhancing operational efficiency. Variations include standard, shallow-angle and coiled-tubing systems.



Global QuickCut Casing Exits FY10

Region	Canada	USA	Latin America	Europe/ West Africa	Middle East	Former Soviet Union	Asia Pacific	Norway	India	Global
Total	972	605	131	182	1,094	50	174	38	131	3,381



Real Result

Sakhalin Island, Russia

Shallow-angle QuickCut casing exit system helps save multimillion-dollar, extended-reach well

The collapse of an 8 1/2-in. hole had required an operator to plug a multimillion-dollar, extended-reach well. Hired to rescue the well, we used a shallow-angle *QuickCut* casing exit system and other technologies to sidetrack the impasse. In the process, Weatherford negotiated an approximately 26,000-ft (7,925-m) wellbore trajectory—20,000 ft (6,096 m) of which was horizontal—to create the casing exit. The operation succeeded in restoring production.

Real Result

Gulf of Mexico

Shallow-angle QuickCut system mills window in single trip through two casing strings

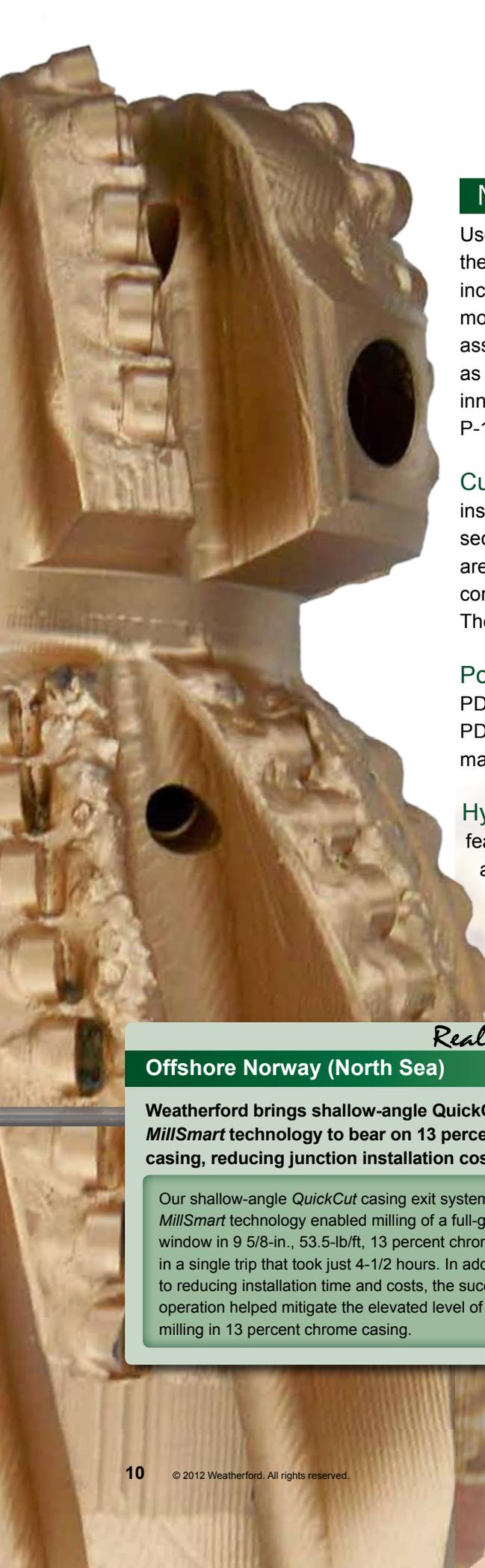
An operator's plan to access a new reservoir target involved deviating a wellbore from an existing slot on an offshore platform. Used with our hydraulic actuated MultiCatch™ whipstock anchor, an 11 7/8-in. *QuickCut* system enabled the operator to mill the required window in a single trip through two casing strings, minimizing rig time and associated costs. The operation marked the 10th consecutive successful run of the system in offshore Mexico.

Real Result

United Kingdom

QuickCut casing exit system plays integral role in development of coalbed methane well

Our *QuickCut* casing exit system enabled a client to evaluate the thickness of a coal seam and to conduct a long-term production test in a CBM reservoir, both critical steps in the development of the underlying resources. The successful operation has helped the operator—an area university—to achieve its goal of becoming energy independent.



Milling Technology

Used to remove casing sections, re-entry milling enables departures from the main wellbore. Weatherford's diversified portfolio of milling technology includes 38 sizes of cutting structures, capable of actuating and milling in more than 70 casing weights. We also offer our MillSmart™ technology, an assortment of advanced milling products and related offerings that serves as a foundation for our casing exit and multilateral systems. With our innovative milling technology, we can penetrate exotic materials, such as P-110, Q-125, TAC-140, V-150 and chromium (13, 18 and 25 percent).

CustomCut™ carbide inserts. Our *CustomCut* milling-grade carbide inserts create a smooth transition between parent bores and the lateral section in a single trip, even in tough-to-drill formations. In addition, they are equipped with proprietary technology that breaks cuttings into small components to improve hole-cleaning efficiency and penetration rates. The inserts are available in various configurations and geometries.

Polycrystalline diamond cutters (PDCs). We offer PDC-equipped milling tools. With high-impact strength, the durable PDC cutting structures enhance efficiency when milling through exotic materials to minimize costs, risk and nonproductive time.

Hydraulic modeling software. Our hydraulic modeling software suite features the HydraPro™, HydraForce™, Hydra-Cut™ and HydraBoost™ applications, designed to simulate and consequently optimize milling operations. The software facilitates pre-job planning in challenging drilling conditions (such as extended-reach, deepwater, high-angle, high-pressure/high-temperature environments).

Real Result

Offshore Norway (North Sea)

Weatherford brings shallow-angle QuickCut™ and MillSmart technology to bear on 13 percent chrome casing, reducing junction installation cost and risk

Our shallow-angle *QuickCut* casing exit system with *MillSmart* technology enabled milling of a full-gauge window in 9 5/8-in., 53.5-lb/ft, 13 percent chrome casing in a single trip that took just 4-1/2 hours. In addition to reducing installation time and costs, the successful operation helped mitigate the elevated level of risk of milling in 13 percent chrome casing.

Real Result

Southern Mexico

QuickCut system with MillSmart technology mills window through V-150 high-yield casing in a single trip

Our *QuickCut* casing exit with *MillSmart* technology milled a window and rathole through V-150 high-yield casing in a single trip, while preventing the slips from biting into the casing. The milling assembly experienced a gauge loss of just 1/16 in.



Whipstock Assemblies and Accessories

Whipstocks guide the milling assembly into the casing wall. Once an exit has been milled, they also facilitate the drilling and completion of the bottomhole assembly's (BHA's) safe departure from the wellbore. We offer a complete selection of mechanically and hydraulically actuated whipstock assemblies for casing ranging from 4 1/2- to 20-in. OD. Our whipstock accessories include multiple anchors, which secure whipstocks to the casing wall until recovery. With such a broad selection of accessories, we can generate more than 100 different whipstock assembly configurations.

Openhole whipstock assembly. This simple, cost-effective assembly features a screw-in whipstock with multiple anchoring options. It eliminates the need for false bottoms and cementing barriers, reducing the time otherwise required to sidetrack from an open hole. The assembly's multiple attachment options include fishing tool attachments, which engage internal or external stuck fish; perforated tail pipe for cementing in hard-to-drill formations; and inflatable packers for off-bottom sidetracks. The system also features an optional mechanical orientation device that enhances directional control of the whipstock when using a stuck fish as an anchor.

Low-side casing exit whipstock anchor. Incorporating our patented WhipBack® technology, our retrievable low-side casing exit anchor enables milling in an upward or downward direction. This feature facilitates—and in some cases enables—milling in deviated holes. It can also shorten the milling assembly's route in any hole to enhance efficiency. Our low-side casing exit anchor can be mechanically or hydraulically actuated.

Weatherford's standard cutting structures have more than 38 sizes available and can actuate and mill in over 70 casing weights.



Real Result

Mexico (Los Humeros Geothermal Field)

Weatherford's openhole whipstock enables sidetracking where high temperatures made conventional technology impractical

Our openhole whipstock enabled sidetracking of an openhole geothermal well to recover a fish. High temperatures made a conventional sidetrack with a cement plug impractical. Our approach eliminated the need for a cement plug.

Real Result

Arkansas, USA (Fayetteville Shale)

Weatherford's openhole whipstock assemblies save time and costs on sidetracking operations

Our openhole whipstock assemblies with IPP™ injection-production packers optimized the drilling of 18 lateral gas wells. By removing the need for cement plugs and cement, the technologies eliminated cementing costs on all wells; saved at least 24 hours per well that would otherwise have been spent spotting and waiting for the cement to set; and reduced risk exposure relative to sidetracking from cement plugs.

MultiCatch™ whipstock anchor. The hydraulically or mechanically actuated *MultiCatch* whipstock anchor is compatible with all of our whipstock assemblies. It can also accommodate multiple casing sizes and weights, which minimizes the risks associated with unknown or varying casing weights and with casing IDs that have changed because of wear; consequently, the anchor is ideally suited for accessing new reserves in mature fields.

Zonal-isolation packer anchors. Our hydraulically set, zonal-isolation packer anchors are ISO-V3 rated. We offer retrievable and permanent models. Unlike conventional mechanically set anchors, they are actuated with differential pressure and flow rate once the setting depth and direction have been verified. This simple innovation permits continuous logging and orientation control. The rugged shear-release mechanism of our zonal isolation packer anchors facilitates whipstock retrieval.

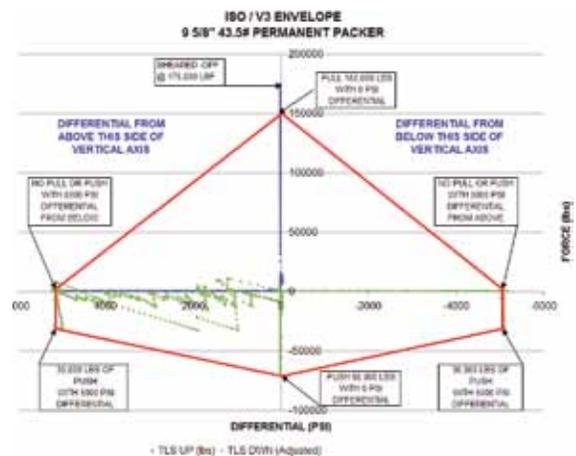
PakLatch™ whipstock anchor. Used with selective re-entry systems, the *PakLatch* anchor is a permanent, big-bore-packer anchor that permits 360° whipstock orientation. It is ideally suited for wells with high-dogleg severity. Such wells can hinder bottom-trip orientation and their short-radius curves often necessitate the use of shorter whipstock assemblies. The *PakLatch* anchor's big-bore capacity facilitates access to lower zones in the parent wellbore.

ROKANKOR® openhole whipstock anchor.

The high-performance *ROKANKOR* anchor grips the formation during lateral and multilateral installations in open holes. This hydraulically actuated permanent packer was designed to minimize formation damage by utilizing multiple slips to increase coverage across the slip contact area. The anchor has a maximum torque rating of 10,000 ft/lb; a push/pull loading capacity of 100,000 lb (45,359 kg).



**Our whipstock/
anchor assemblies
are available in
more than 100
configurations.**



Real Result

Alberta, Canada (Mannville Coals)

QuickPack™ anchors save time on CBM project

QuickPack anchors enabled single-trip retrieval of whipstocks used to drill seven laterals on a CBM project, facilitating the deployment of a large-OD submersible pump required during the dewatering phase. The average well possession time per lateral—from whipstock installation to retrieval—was just 20.3 hours. Unbudgeted fishing operations can have a devastating impact on the economics of CBM projects, making fast, error-free whipstock retrieval imperative.

ROKANKOR is a registered trademark of Petrowell Limited.



Zonal Isolation Packer Installations/Retrievals FY 2010

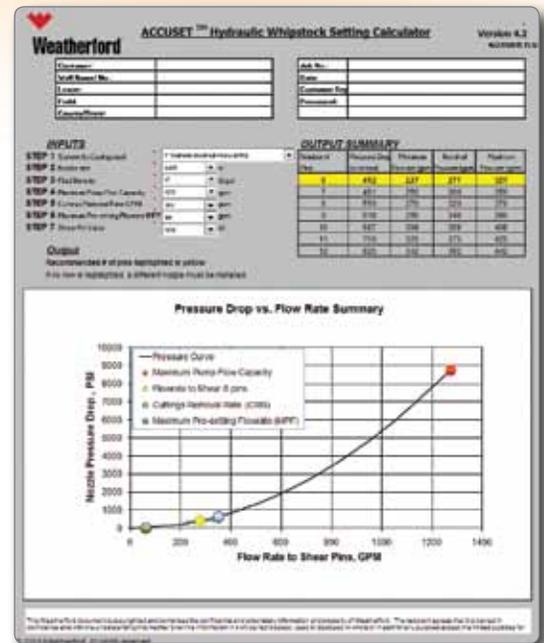
Total installations	1,104
Installations in 7-in. casing	717
Successful single-trip retrievals/attempts	570 / 573
Installations in 9 5/8-in. casing	387
Successful retrievals/attempts	5 / 5

QuickChange™ sub. Compatible with virtually any whipstock assembly, the *QuickChange* sub makes changing whipstock packers an easier, faster process. As a shear-release mechanism, it also facilitates retrieval of whipstock assemblies when well conditions preclude the use of conventional retrieval methods. And a novel debris management feature minimizes debris accumulation in the anchor's slip area to reduce the risk of performance failure.

AccuSet™ hydraulic calculator. The *AccuSet* calculator determines the nozzle ID and number of shear pins required to actuate the hydraulic anchors used in our *QuickCut™* casing exit system, taking into account specific well conditions. The calculator's algorithms are based on laboratory test results and data from field use of the system's whipstock.

Lock-out technology (drilling motors). We offer a high-performance drilling motor equipped with a unique lock-out mechanism. When the motor is used with our milling assemblies on re-entry operations, the lock-out feature enables drilling fluid to bypass the motor while orienting the whipstock or hydraulically actuating the anchor; consequently, it helps to reduce the risk of nonproductive time during extended-reach and thru-tubing-rotary drilling and in complex wells.

AccuSet hydraulic calculator.



Real Result

Saudi Arabia (Safaniyah Field)

MultiCatch™ anchor helps operator overcome wellbore restrictions to reach new reserves

Our *QuickCut* system with a *MultiCatch* anchor enabled creation of a casing exit to access new reserves, despite the presence of a casing patch in the wellbore that severely restricted the casing ID. Moreover, the operation was completed in a single trip and total milling time was just 2 hours and 21 minutes.

Real Result

Puerto Gaitan, Colombia

Unique anchor enables low-side exit in one trip, reducing costs

Used with our *QuickCut* casing exit system, our low-side casing exit anchor enabled a client to mill a low-side exit in a single trip, completing in approximately six hours. The efficiency of the operation helped minimize costs, while the capability to exit the casing on the low side of the main bore facilitated access to new reserves.

The Art of *Preparation*

Preparation is essential to the success of re-entry operations. Our re-entry services personnel must contend with a host of variables—drilling environments, downhole conditions, reservoir characteristics, casing types, wellbore geometries, the sizes and positions of obstructions. These variables change from one operation to the next. Rigorous training and competence assurance are some of the methods we use to ensure that our re-entry specialists are well prepared to design and implement cost-effective re-entry strategies that meet your unique needs.

Select Re-Entry Courses

Drilling Tools and BHA Configurations
Fishing and Milling Software
Fishing Technology
IADC WellCap Well Control Introduction
Re-Entry Technology (10-day course)
Theory of Carbide Applications
Wellbore Cleaning
Wireline Services Pipe Recovery

Our re-entry courses range from casing exit fundamentals to more specialized disciplines, such as carbide technology.



Uniform, global competence assurance standards. Weatherford's re-entry personnel are assessed against uniform, global competence assurance standards; they receive uCAN certifications for tasks they are qualified to perform independently and weCAN certifications for tasks they perform in the presence of a qualified assessor.



On the cutting edge of competence assurance: carbide welding. Weatherford has implemented a uniform, global, multilevel carbide welder competence assurance program to certify personnel tasked with welding (brazing) crushed carbide and tungsten carbide inserts—integral to the manufacturing and refurbishing of our high-performance milling technologies. Competency carbide certification addresses three basic fundamentals required to be a global leader in the re-entry market. One process, one procedure equals one deliverable.





Laying a foundation for quality service

Under the auspices of our **Fast Track Program**, we provide our re-entry specialists with extensive training in re-entry techniques and technologies, as well as best quality, health, safety, security and environmental (QHSSE) practices. The program includes 2 months of classroom training, during which participants are exposed to theory and case studies, followed by 3 to 4 months of field training under the supervision of a more experienced mentor. We launched the Fast Track Program in 2004; and in 2009 alone, more than 100 employees from 28 countries graduated.

We also use Weatherford's Competence Assurance System to evaluate our re-entry specialists on an ongoing basis. Our methodology includes assessment and formal recording of evidence that verifies competence in a specific area, as defined by global standards. A global human resources management system, **EMPLOYEEconnect**, enables us to track the training and competency of re-entry specialists and identify re-entry personnel by specific skill sets.



Re-entry Service Delivery Life Cycle



Competency: the three criteria.
The ability to consistently apply skills, knowledge and attitude to a given task as measured against a defined global standard.



Planning for success

We use a basic, four-step process to develop and execute re-entry strategies that meet your objectives. An important part of that process, proper job planning and preparation down to the smallest detail, help ensure optimal results.

1

Evaluate

We draw on multiple resources, including our suite of advanced MillSmart™ hydraulic modeling software, to gather the information required to develop a thorough understanding of your re-entry needs.

2

Engineer

Using data we obtained during the evaluation phase, we work with you to develop a re-entry strategy. A Weatherford account engineer serves as your primary point of contact during this critical phase. We can also tap our collective expertise in complementary disciplines, such as directional drilling, reservoir evaluation and well completion.

3

Execute

Our approach to project execution is highly collaborative. Re-entry teams typically consist of our own engineering and support staff and client personnel. We also work with third-party service providers, as needed. A jobsite-based Weatherford representative coordinates the execution of all re-entry related services through your drilling supervisor.

4

Assess

We conduct a post-job assessment to verify that we have met your objectives. Our evaluation also includes a completion report and a Lessons Learned document, used to facilitate the planning of future projects.



Tracking performance to optimize results

The Weatherford Performance Tracking System (WPTS) contains detailed information about thousands of re-entry operations. We use it to develop and reinforce best QHSSE practices, identify personnel with relevant experience, select appropriate re-entry tools and techniques, determine milling parameters, and apply hard-won lessons from one re-entry operation to the next.

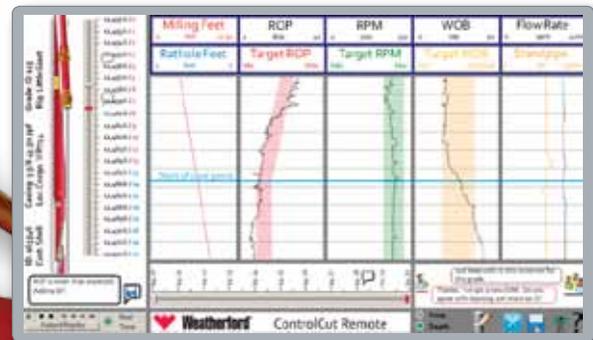


Combining expertise with a world-class infrastructure

Our Houston, Texas, USA-based Technology and Training Center serves as the primary research and development hub for our re-entry technology. Re-entry technology R&D activities are also carried out at other facilities in locations throughout the world, including Aberdeen, UK; Abu Dhabi, UAE; Samara, Russia; and Singapore. All of our re-entry products and systems are manufactured at certified facilities.

Developing next-generation re-entry technologies.

Weatherford's re-entry R&D efforts recently yielded the **ControlCut software application**. The system enables you to monitor casing exit installations from remote locations, as well as to assess performance against similar operations and make adjustments accordingly.



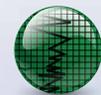
The Art of *Integration*

Weatherford's products and services span the life cycle of a well—drilling, evaluation, completion, production and intervention. Our portfolio includes offerings that are highly complementary to our re-entry services, such as our liner systems; well-completion services; and directional drilling technologies—logging-while-drilling, measurement-while-drilling, rotary-steerable systems and drilling motors. Furthermore, our re-entry services are an integral component of a broader range of closely related intervention capabilities, which include fishing, thru-tubing wellbore cleaning and well abandonment.

Whether making a casing exit or installing a multilateral, Weatherford incorporates tools and techniques to keep wellbore debris to a minimum. To remove any debris that does accumulate in your wellbore during re-entry—or any other phase of development—we offer a full range of wellbore cleaning services and technologies.



Drilling



Evaluation



Completion



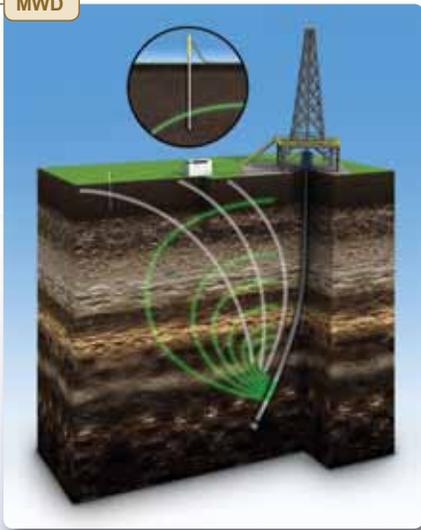
Production



Intervention



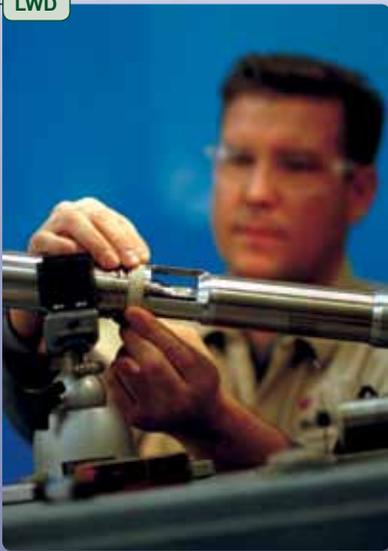
MWD



Rotary-steerable systems



LWD



Liner systems





Re-Entry Services

To learn how our re-entry services can help you optimize casing exits and multilateral installations, contact an authorized Weatherford representative, or visit weatherford.com.



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