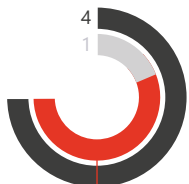


TRIDENT® DELIVERS 58 HOURS SAVING IN GULF OF MEXICO

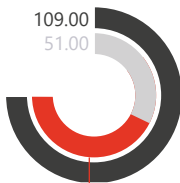
Performing cut & pull operation in 3,798ft water depth



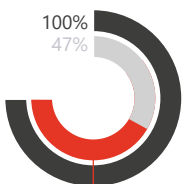
Industry Standard
Ardyne Operation
Customer Savings



3
TRIPS SAVED



58
HOURS SAVED



53%
EFFICIENCY GAIN

THE CHALLENGE

In a deepwater direct vertical access (DVA) slot recovery operation, a major international operator required casing recovery to a critical location in the wellbore in order to perform sidetracking operations. To minimize well costs from alternative solutions, Ardyne proposed the **TRIDENT System** as a **single trip casing retrieval solution**.

Utilizing annulus cement bond logs of 13-5/8" casing to be recovered, the operator was able to identify the critical target depth in order to deliver the sidetracking operation.

THE SOLUTION

Conventional technology has the ability to cut and recover casing however the TRIDENT System with its unique integral tension set packer design enables repeated cuts and annulus circulation clean-ups following each and every cut.

THE TRIDENT SYSTEM WAS SUCCESSFULLY DEPLOYED IN THE GOM PROVING TO THE OPERATOR THE SYSTEM CAN CONTRIBUTE TO IMPROVED SAFETY AND PERFORMANCE AMBITIONS WHILE REDUCING RIG TIME. DEPLOYING THE TRIDENT SYSTEM ELIMINATED UNNECESSARY TRIPS FROM THE OPERATION, WHILE ALSO SIGNIFICANTLY REDUCING TIME IN THE HSE RED ZONE.



Operation carried out in conjunction with Wellbore Fishing & Rental Tools

THE RESULT

Working at a water depth of 3,798ft, the initial cut was made at 7,572ft MD but annulus circulation could not be achieved due to the extent of dehydrated barite sag. As a result, the second cut was made per the procedure. As a unique feature of TRIDENT we were able to re-set the integral packer and subsequently achieved annulus circulation in order to free the casing. In comparison with the original slot recovery plan, TRIDENT saved 58 hours of planned rig time with this **truly one trip system**.

Through Ardyne's network of fishing company partnerships, we can supply globally through your existing contracts.

TRIDENT Casing Recovery System - 100+ Runs

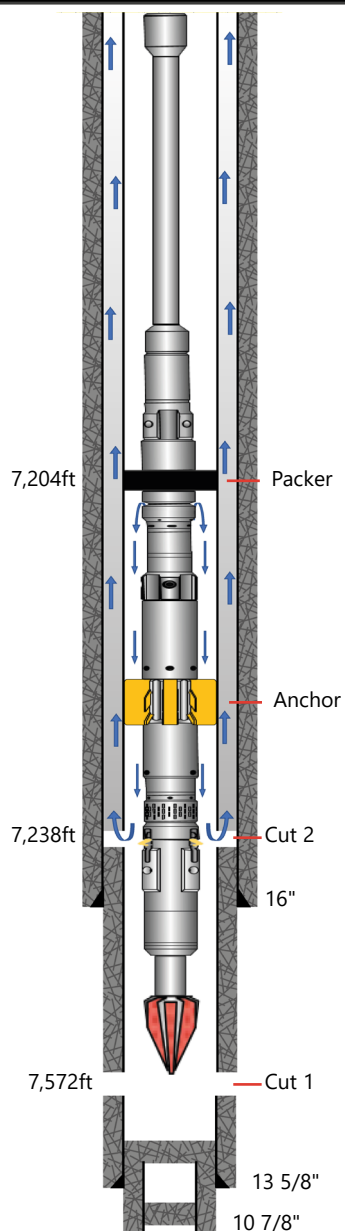


THE VALUE TRIDENT CREATES

Proven time saving - the TRIDENT one trip system



TRIDENT Offshore



Conventional Approach

	Rig Activity	Time
Run 1 26.00	P/U and test casing cutter	1.50
	RIH 3500ft DP spaceout	4.00
	P/U Marine Swivel	1.00
	Continue RIH to 7572ft	6.50
	Cut casing @ 7572ft	1.00
	Pump slug and pull out 4000ft DP	5.50
	L/D Marine Swivel & POOH cutter BHA to surface	6.50
Run 2 19.00	P/U Jar & Spear BHA	2.00
	RIH to hanger	6.50
	Attempt to jar casing free	4.00
	Pull out jar assembly, L/D BHA	6.50
Run 3 26.00	RIH to 3241ft	5.50
	P/U Marine Swivel and spaceout	2.00
	RIH to cut depth 7238ft	5.00
	Cut casing @ 7238ft	1.00
	Pump slug and POOH, L/D Marine Swivel & cutter assembly	12.50
Run 4 38.00	P/U BHA	3.00
	RIH to 7238ft	5.00
	Pull free casing & Circulate out old mud in 13 5/8" annulus	10.50
	Pump out of hole	16.50
	L/D BHA	3.00
TOTAL		109.00

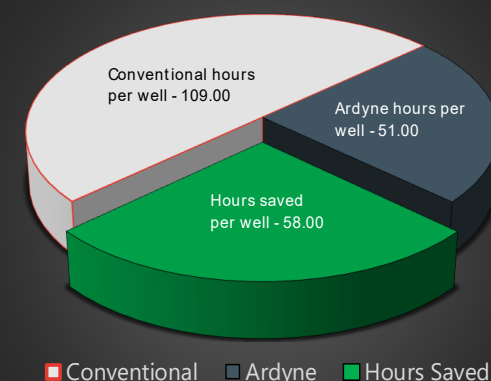
Ardyne Real Time Hours

	Rig Activity	Time
Run 1 51.00	Make up & Test 13 5/8" TRIDENT BHA	2.25
	RIH Trident BHA to 7572ft	10.50
	Cut 13 5/8" casing @ 7572ft & test pull	2.00
	Pull wet 3 stands to next cutting depth, 7238ft	1.50
	Cut casing @ 7238ft	0.75
	Circulate out 13 5/8" casing annulus	9.50
	Pump slug and POOH to casing hanger @ 3997ft	5.00
	Set packer and anchor at casing hanger and pull free	1.00
	Pump out of hole	16.50
	L/D TRIDENT assembly	2.00
TOTAL		51.00

Single Trip Accomplished

- Two cuts made - in the same trip (*more were possible if required*)
- Circulation at cut point (*indicating casing free*)
- Reset anchor at hanger & recover casing to surface
- 2 trips saved = eliminated red zone activity

TRIDENT Time Savings



Ardyne Efficiency Gain

- **No requirement** for Marine Swivel
- Ability to make **multiple cuts in same trip**
- **High flow rate** available for circulation (590gpm) - bypassing cutter
- **Multiple Packer settings** in same trip
- TRIDENT assembly required only **one connection to make up BHA**
- **Circulation at cut point** - provided indication of free casing, displacement of annulus at depth, and assistance with handling annular gas immediately
- Red Zone reduction - **22,000ft of tripping avoided** - Less BHA handling
- **Eliminates** requirement for **extensive fishing equipment** - conventional approach