Oilfield Service Professionals

2025

Optimizing Downhole Drillable Intervention:
Modular, High-Performance Drillable Technologies for Enhanced Wellbore Isolation & Remediation

**Patent Pending*

OSP™

QUALITY | TECHNOLOGY | VALUE

BLAKE ARABIE - SVP

WHO IS OSP?

Oilfield Service Professionals (**OSP**) is a top-tier technology and service provider in the upstream oil and gas industry.

Our product and service line offering is focused on the following business units:

- **Downhole Intervention Systems (DIS)**
- **Well Construction & Completions (WCC)**

INTRODUCTION

- Wellbore remediation and abandonment require reliable drillable systems and versatile setting tools, driving operational efficiencies and reducing operator spread cost.

- Traditional tools lack **API 11D1 validation**, have **challenges with slip retention** & **premature setting**, have **restricted flow areas**, and need **multiple deployment setups** (mechanical, hydraulic, wireline setting tools).

- Gulf of America (GOA) Lower Tertiary **HPHT operations** demand **robust barriers** to withstand **casing ID transitions**, especially in **Tieback Receptacles (TBR),** where conventional mechanical barriers fail.

- Introducing the **OSP Drillable Technology Suite** with the latest innovation around **BarrierPro™** (cast-iron), **SqueezePro™** (composite), and the **MultiPro™ Technology Suite** featuring a modular approach for enhanced flexibility and efficiency within setting tools.

PROBLEM STATEMENT

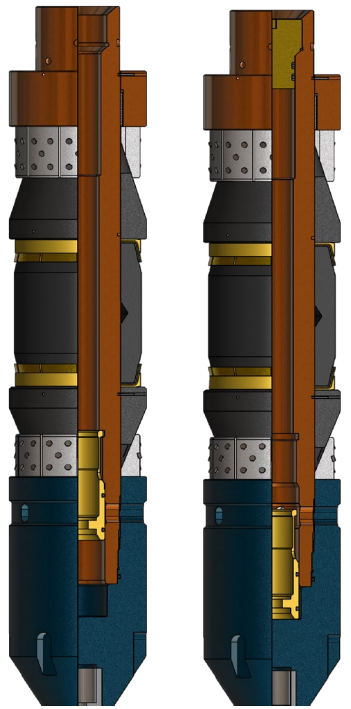
- Existing setting tools **require multiple** dedicated configurations.
- **Traditional barriers** are prone to **failure** when exposed to **complex wellbore geometries, high-pressure, & high-temperature** environments.
- **High costs** and **inefficiencies** due to the need of separate tools for different methods.
- **The need for innovative, adaptable, and dependable drillable solutions for wellbore isolation is increasingly critical.**

SOLUTION:
PREMIUM DRILLABLE TECHNOLOGY

Drillable Intervention Systems – BarrierPro™, SqueezePro™, MultiPro™

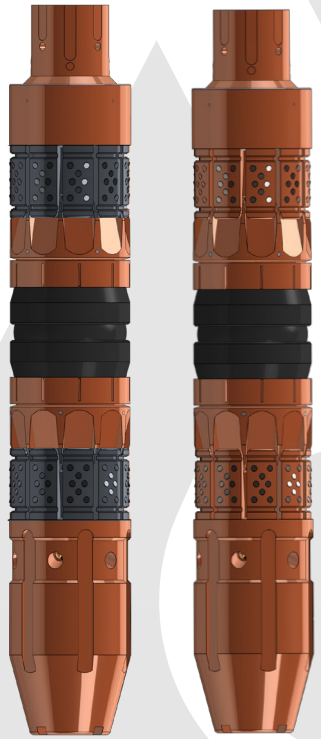
- **Revolutionary adaptation of cast-iron and composite drillable downhole intervention tool technology.**
- Designed to eliminate the risk commonly associated with drillable cement retainers and bridge plugs:
  - **Setting Tools and WLAKs** are field convertible and **compatible** with both cast-iron and composite products
  - **Large-bore** stinger design
  - **Large annular clearance** due to reduced tool OD
  - Reduced length for **quicker drill-out** capability
  - **Enhanced elastomer** element design for increased pressure capabilities
  - **Improved slip retention device** requiring no composite bands or slotted segments eliminating the risk of:
    - damaging the equipment during mobilization and lifting,
    - losing slips downhole, and
    - partial setting of slips

Provides superior wellbore isolation, faster drill-out, and cost savings.



BarrierPro™
Cast-Iron Retainer/BP

MultiPro™
Setting Equipment



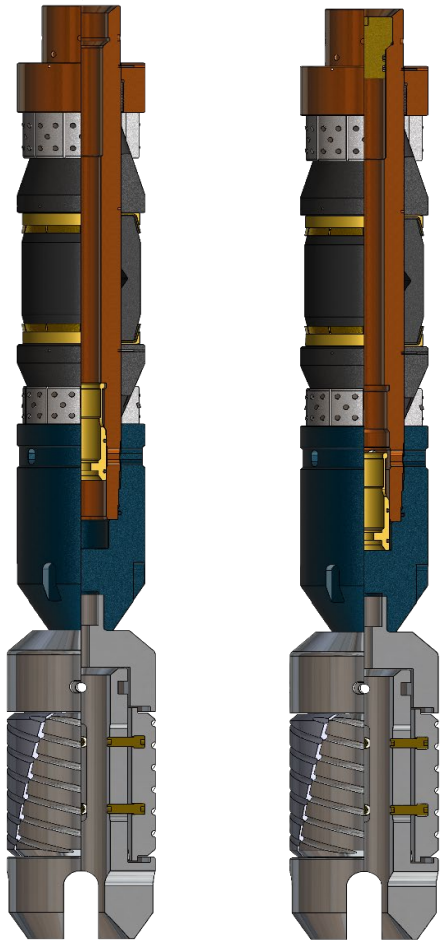
SqueezePro™
Semi & Fully Composite Retainer/BP

CleanPro™
Drillable Scraper

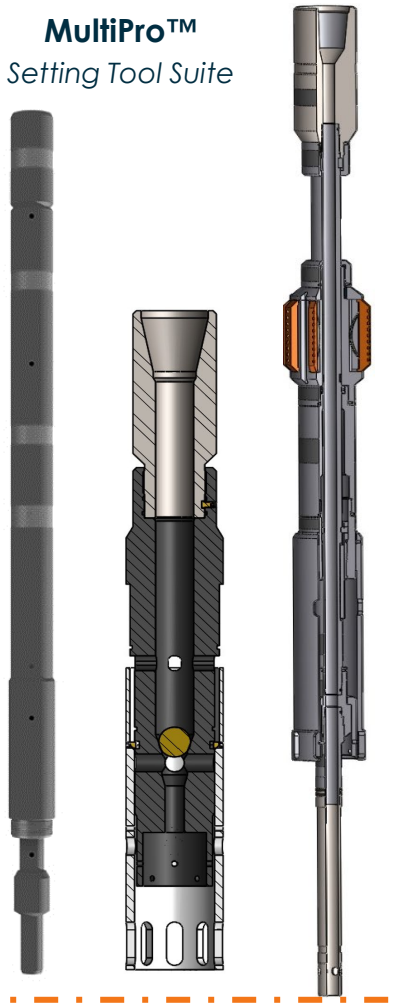
SOLUTION:
PREMIUM DRILLABLE TECHNOLOGY

OSP™
QUALITY | TECHNOLOGY | VALUE

BarrierPro™
Cast-Iron Retainer/BP

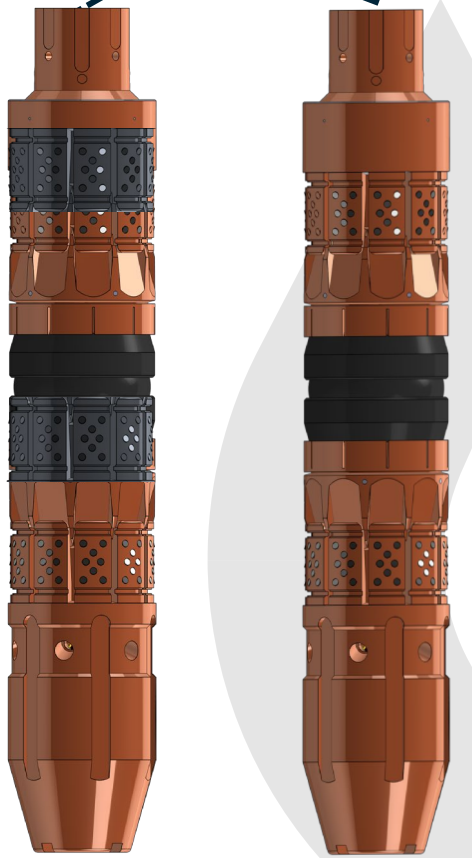


MultiPro™
Setting Tool Suite



MultiPro™
Wireline Adapter Kit

SqueezePro™
Semi & Fully
Composite Retainer/BP



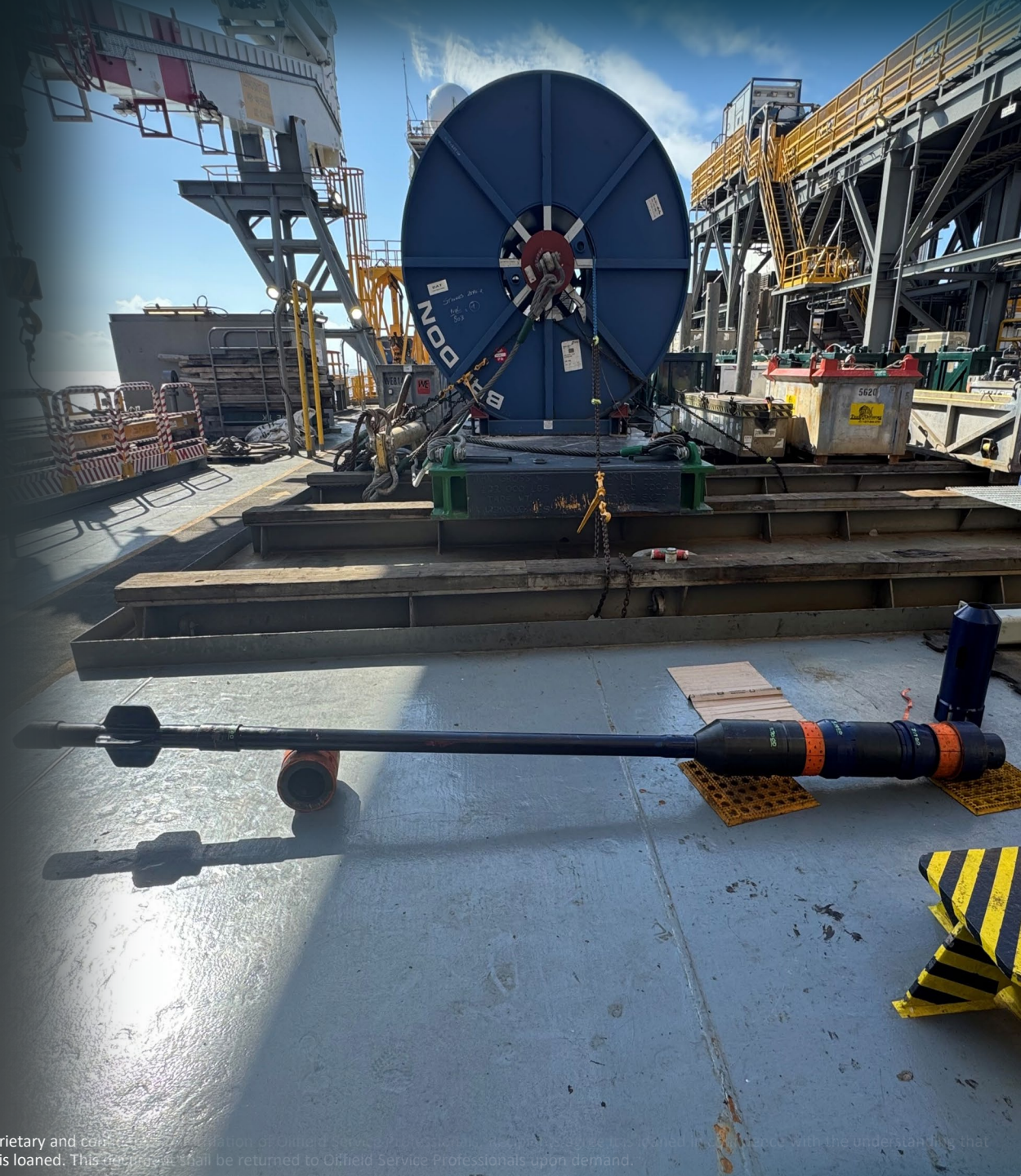
VALUE: ENHANCED PERFORMANCE & EFFICIENCY

- **Inventory Simplification:** Modular design reduces the need for multiple tool suites, lowering inventory and maintenance costs.
- **Versatile Deployment:** Supports mechanical, hydraulic, and wireline methods with quick-change field conversion, minimizing equipment requirements.
- **Operational Efficiency:** Enables faster deployment and retrieval, reducing non-productive time (NPT) and overall operational costs.
- **Enhanced Reliability:** Advanced sealing, optimized slip retention, and high-pressure ratings ensure consistent performance in both standard & HPHT environments.

CASE STUDY (GOA)

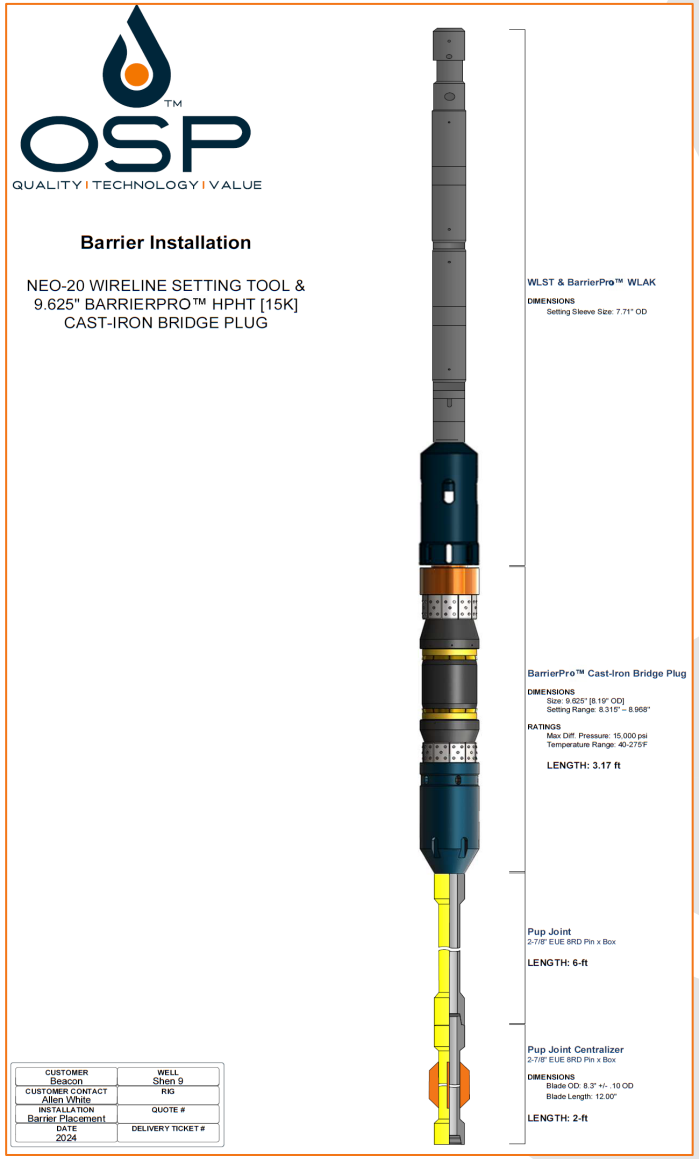
OSP's proprietary Drillable Product Suite [**BarrierPro™ and MultiPro™**] combined key technologies that addressed several operational risks.

- ✓ **Overcame Tieback Receptacle ID transitions and Premium Thread Connection shoulders**
- ✓ **Reduced well intervention time and associated costs.**
- ✓ **Provided a reliable solution for ultra-deepwater wellbore isolation (>34k-ft).**
- ✓ **Increased operational efficiencies.**



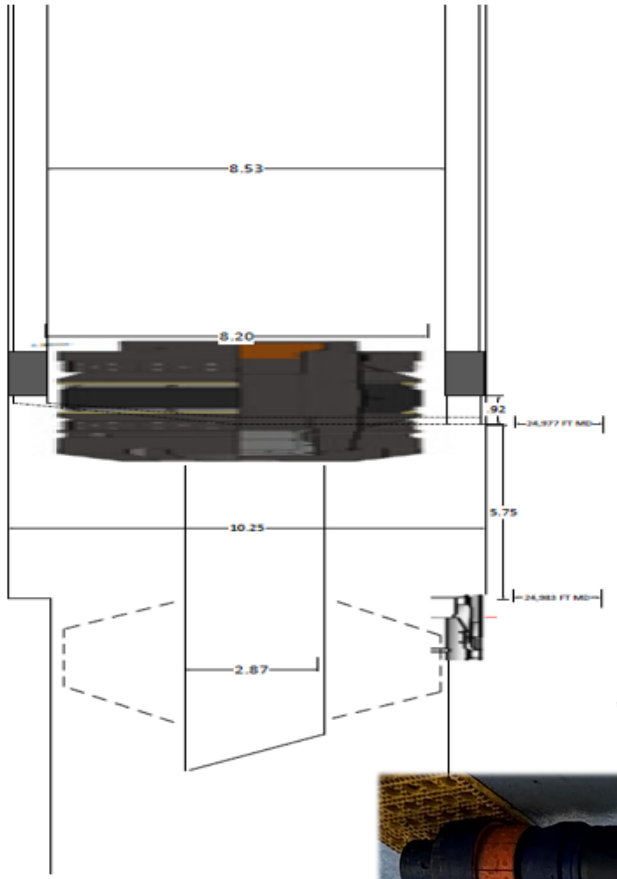
CASE STUDY #1
HPHT [15K] Drillable Barrier System

- **LOCATION:** Ultra-Deepwater Gulf of America (GOA)
- **CHALLENGE:** Deploying a 9-7/8" mechanical barrier in a HPHT environment with complex casing ID transitions in the Tieback Receptacle (TBR), where previous barrier solutions had failed to seal or set reliably.
- **SOLUTION:** OSP's highly engineered BarrierPro™ HPHT Drillable Technology (API 11D1-V3 rated 15,000 psi) served as the proper solution for barrier isolation.
  - ✅ **The system also featured an enhanced centralizer design to navigate the tight casing transitions**
- **OUTCOME:** The barrier was successfully deployed and set at over 31,000 feet with no complications. The custom centralizer ensured smooth placement through the TBR, and the BarrierPro™ sealed reliably under extreme conditions.
- **RESULTS:**
  - ✅ Validated 15,000 psi barrier installation
  - ✅ Zero deployment failures in challenging geometry
  - ✅ Reduced NPT due to smooth, single-run operation
  - ✅ Proven reliability and adaptability where conventional systems had failed

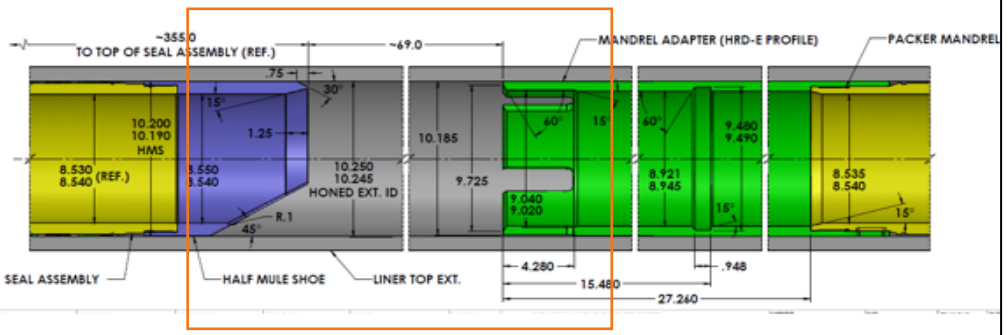


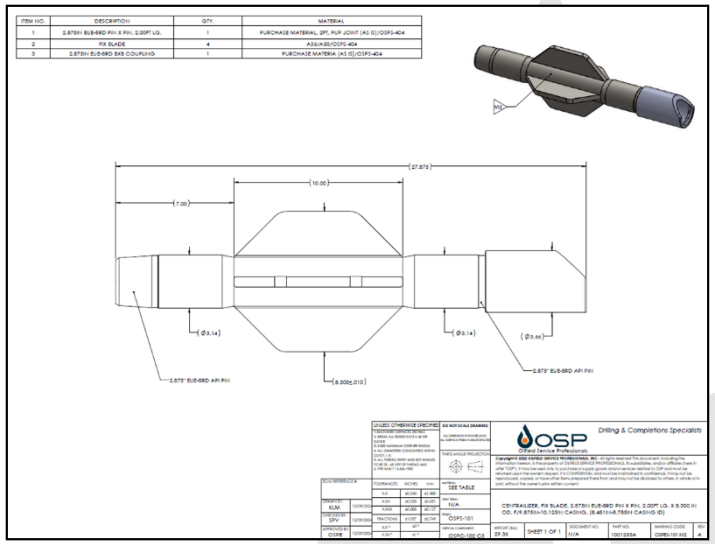
CASE STUDY #1
TIEBACK RECEPTACLE (TBR)

OSP CENTRALIZATION



Tieback seal x Liner Hanger
Profile – AS RUN





CASE STUDY #1
CONCLUSION

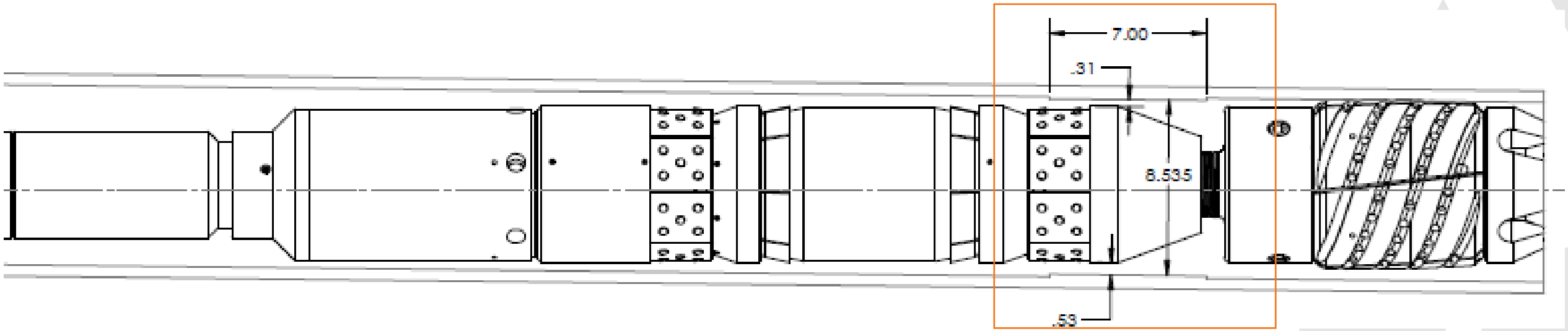
- **Successful setting and sealing in a 30,000-psi-rated well at over 31,000 feet depth.**
- **Pressure-tested to 15,000 psi differential, confirming zonal isolation under HPHT conditions.**
- **Barrier navigated complex casing transitions within the Tieback Receptacle (TBR) with no deployment issues.**
- **Custom centralizer system enabled smooth placement, minimizing friction and misalignment risk.**
- **Reduced non-productive time (NPT) through efficient deployment and optimized procedures.**
- **System proved robust and adaptable where conventional tools had failed, demonstrating enhanced reliability.**

CASE STUDY #2
34,000-ft BarrierPro™ Drillable Deployment

- **LOCATION:** Ultra-Deepwater Gulf of America (GOA)
- **CHALLENGE:** Several attempts of setting mechanical barriers at nearly 34,000 ft with connection transitions, risking well integrity and adding costly delays.
- **SOLUTION:** OSP was mobilized within a few hours to location and deployed the BarrierPro™ Hydra-Set™ drillable barrier system alongside its latest in drillable scraper single-trip technology. This system ensures the following:
  - ✅ proper centralization in premium connections with ID transitions (>850 connections)
  - ✅ wellbore cleanout can be accomplished in same trip for barrier installation,
  - ✅ while providing an API-11D1 qualified, reliable sealing solution.
- **OUTCOME:** The system was successfully installed at a record-breaking depth of 34,000-ft with no premature setting issues or sealing failures. The integrated solution ensured optimal performance in one of the complex well environments.
- **RESULTS:**
  - ✅ Achieved one of the industry's deepest mechanical barrier installations (~34,000 ft)
  - ✅ No setting failures, leaks, or pressure integrity issues
  - ✅ Single-Trip barrier/scraper solution ensured optimal setting surface preparation and proper centralization in casing connections where transitions exist
  - ✅Enhanced operator confidence and set a new standard for ultra-deepwater barrier deployment
  - ✅ Zero deployment failures in challenging geometry

CASE STUDY #2

Premium Connection with Internal Shoulder

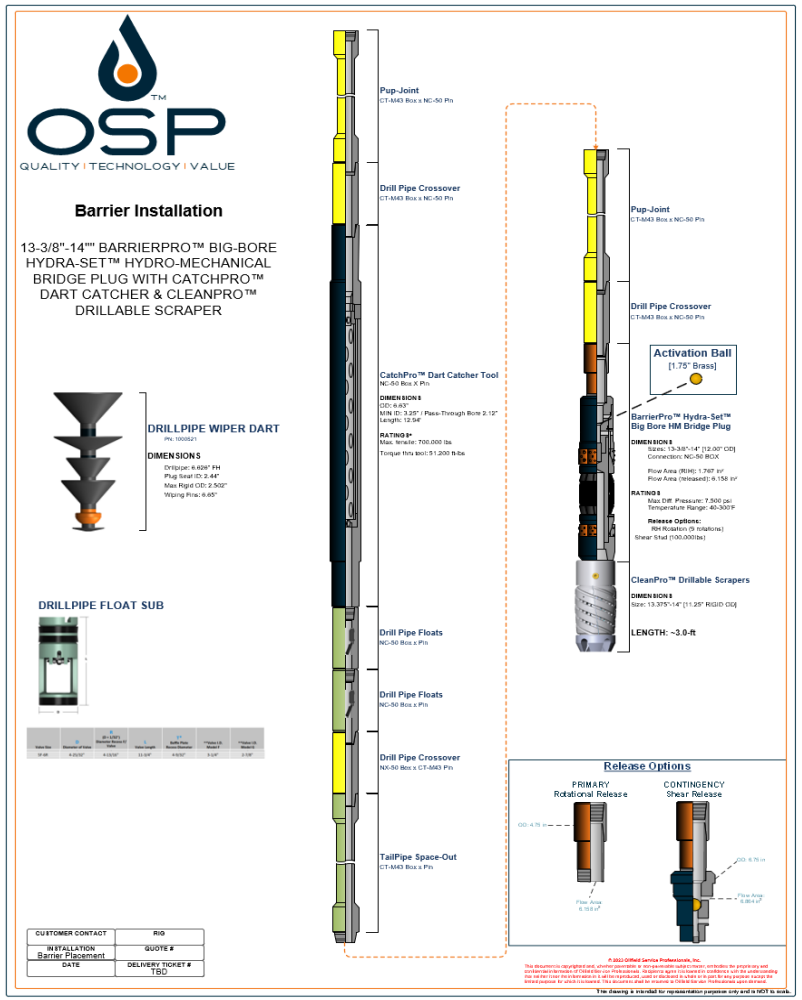


CASE STUDY #2
CONCLUSION

- **Successful installation of over 34,000 feet, marking the deepest mechanical barrier deployment for BarrierPro™**
- **No setting failures, leaks, or pressure integrity issues**
- **BarrierPro™ system provided reliable sealing performance with API 11D1-V3 qualified elements**
- **Single-Trip barrier & scraper solution ensured optimal setting surface preparation and proper centralization in casing connections where transitions exist**
- **Enhanced operator confidence and set a new standard for ultra-deepwater barrier deployment**
- **Rapid response and mobilization enabled OSP to deliver a working solution within hours due to previous failed attempts**

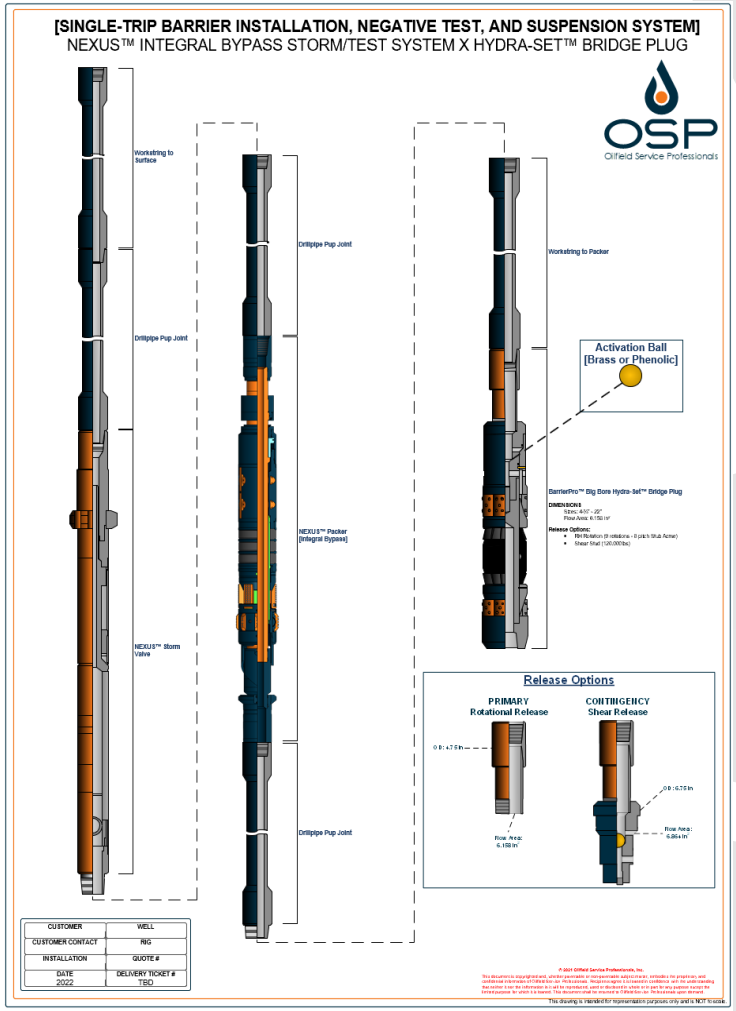
LAYOUTS – Hydra-Set™ BRIDGE PLUG SYSTEMS

HYDRA-SET™ & CATCHPRO™ DART/BALL CATCHER



HYDRA-SET™ & NEXUS™ PACKER SINGLE-TRIP

HYDRA-SET™ & NEXUS™ PACKER/VALVE SINGLE-TRIP



VALUE PROPOSITION

PROBLEM:

Wellbore cleaning, Mechanical barrier installation, & properly placed balanced cement plugs are required during most abandonment operations to ensure proper well integrity. In some cases, these operations have to be completed in multiple trips due to other supplier limitations, which increases rig time and operational costs.

SOLUTION:

OSP's BarrierPro™ Hydra-Set™ Bridge Plug coupled with the CleanPro™ Drillable Scraper, eliminates the need to run a scraper cleanout assembly & improves operator's well integrity while increasing operational efficiencies during these types of applications.

SINGLE-TRIP WELLBORE CLEANING, MECHANICAL BARRIER INSTALLATION, & CEMENT PLUG PLACEMENT

HESS - Tulane NO #1

PREVIOUS SUPPLIER'S OPERATION	TIME (HRS)	TIME (HRS)	OSP OPERATION
WELLBORE CLEANING	**15.91**	**9.44**	**INSTALL CleanPro™ Drillable Scraper and BarrierPro™ Hydra-Set™ BRIDGE PLUG (DART CATCHER OPTIONAL)**
P/U & RIH with Clean-out BHA (10,431ft @ 100ft/min)	9.19	9.19	P/U & RIH with HMBP (10,431ft @ 100ft/min)
Clean setting area of Bridge Plug and Circulate bottoms up	1.50	0.25	Circulate/Reciprocate around setting area
POOH with Clean-out BHA (2000ft/hr)	5.22	-	-
INSTALL MECHANICAL BARRIER - EZSV with MST	**46.15**	**20.22**	**INSTALL MECHANICAL BARRIER - Hydra-Set™ HMBP**
P/U & RIH with EZSV/Drag-Block MST (10,431ft) - limited to 60ft/min	15.49	-	-
Set EZSV, test backside, and disconnect	1.00	1.00	Set HMBP, test backside, and disconnect
POOH with MST **(MST removed from well due to large OD DB section & limit in flow area <2.0in^2)** - (2000ft/hr)	5.22	-	-
RIH with open-ended tubing to balanced plug depth (2000ft/hr)	5.22	-	-
Displace well	6.50	6.50	Displace well @ 16BPM & 1445PSI **(TUBING ADAPTER FLOW AREA >6.15in^2)**
Mix and pump balanced plug	7.50	7.50	Mix and pump balanced plug
POOH with open-ended tubing (2000ft/hr)	5.22	5.22	POOH with Tubing Adapter (2000ft/hr)
			Other Advantages:
			- OSP Multi-Service Specialist accomadates both operations
			- No Setting Tool required (less inventory, no rental cost, & no NDE Inspection cost)
			- Ability to run with CatchPro™ Dart Catcher for mechanical fluid separation and indications
			- No large OD components (Drag Block Body) required to pull through CMT)
			- Hydra-Set™ has Full-bore ID with >6.15in of flow area and EZSV-MST limited with 1.62in ID/<2.0in^2
			- CleanPro™ Drillable Scraper removes the need for additional cleanout run prior to setting CIBP & removes costly rental
Total Hours	62.06	29.66	Total Hours
	32.40		Difference in Hours
Rig Spread Cost (Per Day)	$ 750,000.00	$ 31,250.00	Rig Spread Cost (Per Hour)
	$1,012,578.13		VALUE SAVINGS

VALUE PROPOSITION

OSP™
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PROBLEM:

Mechanical barrier installation, properly placed balanced cement plugs, & negative tests are required during most wellbore construction or abandonment operations to ensure proper well integrity. In some cases, these operations have to be completed in multiple trips due to other supplier limitations, which increases rig time and operational costs.

SOLUTION:

OSP's NEXUS™ HD Integral Bypass Packer, coupled with the BarrierPro™ Hydra-Set™ Bridge Plug, improves operator's well integrity while increasing operational efficiencies during these types of applications.

Real Results:

- Tulane NO #1

SINGLE-TRIP WELLBORE CLEANING, MECHANICAL BARRIER INSTALLATION, CEMENT PLUG PLACEMENT, & NEGATIVE TEST

PREVIOUS SUPPLIER'S OPERATION	TIME (HRS)	TIME (HRS)	OSP OPERATION
WELLBORE CLEANING	**15.91**	**37.67**	**INSTALL/TEST - CleanPro™ Drillable Scraper/BarrierPro™ Hydra-Set™ Bridge Plug, CatchPro™ Dart Catcher, & NEXUS™ Packer**
RIH with Clean-out BHA	9.19	4.60	RIH with CatchPro™ Dart Catcher, BarrierPro™ HMBP & Drillable Scraper
Clean setting area of Bridge Plug	1.50	0.50	M/U NEXUS™ Integral Bypass Packer
POOH with Clean-out BHA	5.22	4.60	Continue RIH with NEXUS™ Packer, tailpipe, CatchPro™ Dart Catcher, BarrierPro™ HMBP & Drillable Scraper
		0.25	Reciprocate around setting area
INSTALL MECHANICAL BARRIER - EZSV with MST	**23.99**	1.00	Set HMBP, test backside, and disconnect
P/U & RIH with EZSV/Drag-Block MST (10,431ft) - limited to 60ft/min	15.49	7.50	Mix and pump balanced plug
Set EZSV, test backside, and disconnect	1.00	1.00	Set Packer and test backside
Mix and pump balanced plug	7.50	6.50	Perform Negative Test
		6.50	Displace well @ 15-20BPM **(TUBING ADAPTER FLOW AREA >6.15in^2)**
NEGATIVE TEST - RTTS Packer	**36.11**	5.22	POOH
Short-trip to M/U RTTS Packer with Integral Bypass	6.94		
RIH with RTTS Packer (MST below) to depth	6.94		
Set Packer and test backside	1.00		
Perform Negative Test	6.50		
Displace well through MST	9.50		
POOH	5.22		

Other Advantages:

- OSP Multi-Service Specialist accomadates both operations
- No Setting Tool required (less inventory, no rental cost, & no NDE Inspection cost)
- Ability to run with CatchPro™ Dart Catcher for mechanical fluid separation and indications
- No large OD components (Drag Block Body) required to pull through CMT)
- Hydra-Set™ has Full-bore ID with >6.15in of flow area and EZSV-MST limited with 1.62in ID/<2.0in^2
- CleanPro™ Drillable Scraper removes the need for additional cleanout run prior to setting CIBP & removes costly rental

Total Hours	76.01	37.67	Total Hours
	38.34		Difference in Hours
Rig Spread Cost (Per Day)	$ 750,000.00	$ 31,250.00	Rig Spread Cost (Per Hour)
	$1,198,246.53		VALUE SAVINGS

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For more information, please contact us at

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