SET® Technology
A Real-Time Success Stories

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• Overview of SET® Technology
• Recent success stories
• SET in deep wells
• Conclusion
• Questions
Pipe expansion using a solid cone and hydraulic pressure
Expandable Applications

- Casing Rejuvenation
- Tubing Rejuvenation
- Shutoff and Stimulation
- Sidetrack
- Openhole Isolation
- Pre-Abandonment
- Abandonment plug
Recent Success Stories
Success Story #1
Sidetrack, Deepwater GOM, TLP, 2010

Challenge
• TD significantly deeper than previous wells
• First two conventional casing attempts failed
• 13-3/8 in. casing was damaged

Objective
• Repair damaged 13-3/8 in. casing
• Add casing string to address wellbore instability

Results
• Sidetracked with 9-5/8 x 11-3/4 in. SET® OHL; added casing string
• Longest sidetrack in GOM; TD below 31,000 ft MD

Value / Benefit
• Reduced NPT in 12-1/4 in. hole by 58% = 29 days = $29M
• Discovered new reservoir
• TLP life extended by ~7 years
Success Story #2  
Sidetrack, Deep Shelf GOM, HPHT, 2009

Challenge
• Utilize existing infrastructure (older well) to access new ultra-deep target

Objective
• Sidetrack thru 13-5/8 in. and 11-7/8 in. casing
• Extend 9-5/8 in. casing shoe with 7-5/8 x 9-5/8 in. SET® OHL

Results
• 6,935 ft (pre-expansion length, current World Record) 7-5/8 x 9-5/8 in. SET® OHL successfully installed
• First time swellable elastomers used with SET
• Average make-up 16 joints/hr; expanded 700 ft/hour

Value / Benefit
• Swellable elastomers ensured successful LOT; no remedial squeeze
• Maximized hole size at TD
• Proper target zone evaluation; Planned future completions
• Facilitated ultra-deep discovery
Success Story #3
New exploratory well, GOM Deepwater, Sub-sea, 2011

Description
• First post-Macondo deepwater exploration well to receive a permit; subsea BOPs

Challenges
• Achieve isolation across hydrocarbon-bearing sands below 16 in. casing
• Provide additional, proven mechanical barrier above upper hydrocarbon sands
• Reduce ECDs during cementing production liner

Objective
• Optimize well design using Solid Expandable Technology

Results
• 2,278 ft, 13-3/8 x 16 in. SET® OHL safely and successfully installed
• Attained zone isolation and second mechanical barrier above upper hydrocarbon sands
• Production casing run as liner with tie back; lowered ECDs during cementing; obtained 100% returns

Value / Benefit
• Third well into structure; contains 130 million bbls
• Hydrocarbons (75% oil) @ $90/bbl, well’s value = $2.9B
Recent SET Trends in Deep Wells

- Planning-in larger SET system sizes (9-5/8 in. and 13-3/8 in.) higher in wells
- Re-development of mature assets to extend life of older offshore facilities/fields
- Additional mechanical barrier to hydrocarbon reservoirs
- Use of swellable elastomers technology with SET
What does SET Technology offer you?

Optimized drilling and completion
- Reduces tapering effect in deep wells
- Provides maximum hole size at TD
- Optimizes drilling BHA performance
- Enhances zonal isolation
- Improves well hydraulics (ECDs) and optimizes cementing
- Reduces drilling NPT
Questions?