



شركة أبوظبي للعمليات البترولية البرية (أدكو)  
Abu Dhabi Company for Onshore Oil Operations (ADCO)

# SPPR Statistics

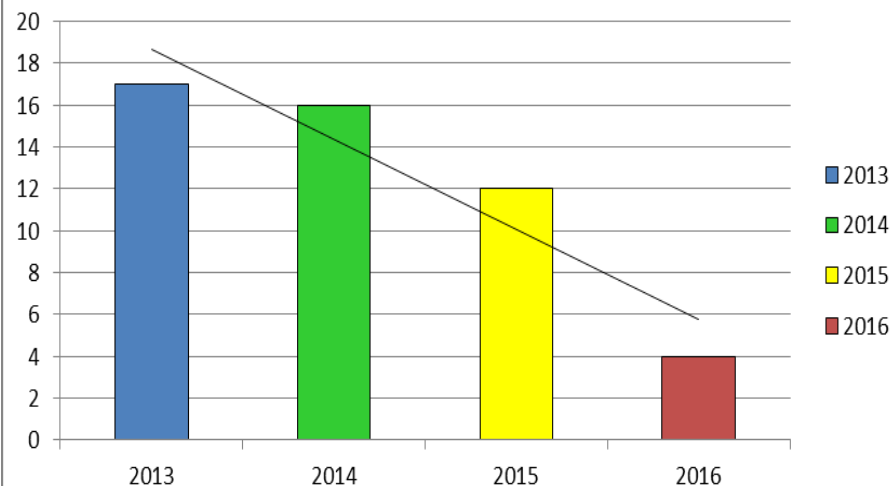
2013 - 2016

# Champion Stuck Pipe Prevention Rule

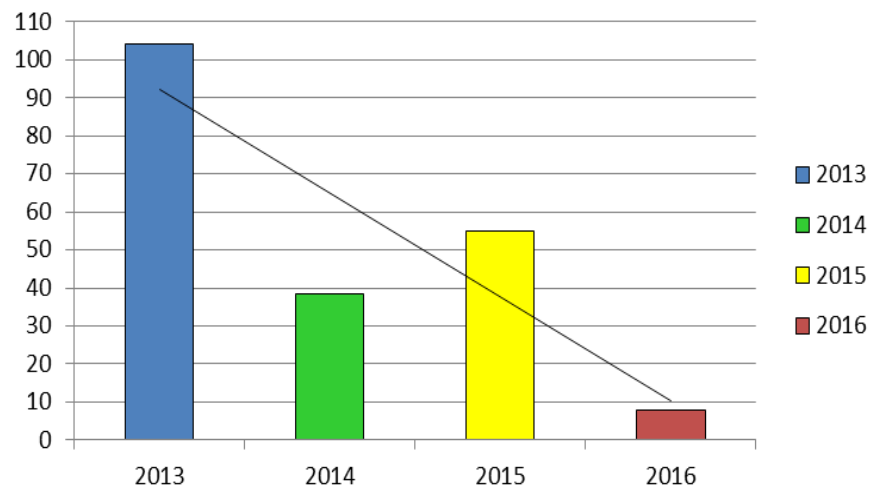
## 2013 - 2016



### Total # Stucks



### Total Lost Days



Q1				Q2				Q3				Q4			
2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
NDC-24	NDC-50	ND-10*	ND-113	NDC-22	NDC-17	ND-21		NDC-10	ND-53	ND-02		NDC-02	ND-54	ND-64	
NDC-50	NDC-59	ND-55*	ND-59	NDC-11	NDC-55	ND-61		NDC-59		ND-16		NDC-09*	ND-24	ND-10	
	NDC-10		ND-50		NDC-01	ND-59		NDC-55		ND-54		ND-16	ND-16	ND-122	
	NDC-22				NDC-50			NDC-01		ND-56		NDC-24	ND-62		
	NDC-9				NDC-61							NDC-34			
					NDC-31							NDC-52*			
												NDC-55			
												NDC-56			
												NDC-59			

\* Lost BHA

### 2013 Summary

# Stuck Pipe	Lost Days	Lost (M\$)	BHA Lost	SPFR	SPSR	SPHR
17	104.0	7,377	2	74.6	8.8	10,955

### 2014 Summary

# Stuck Pipe	Lost Days	Lost (M\$)	BHA Lost	SPFR	SPSR	SPHR
16	38.3	2,680	0	70.2	0.0	4,035

### 2015 Summary

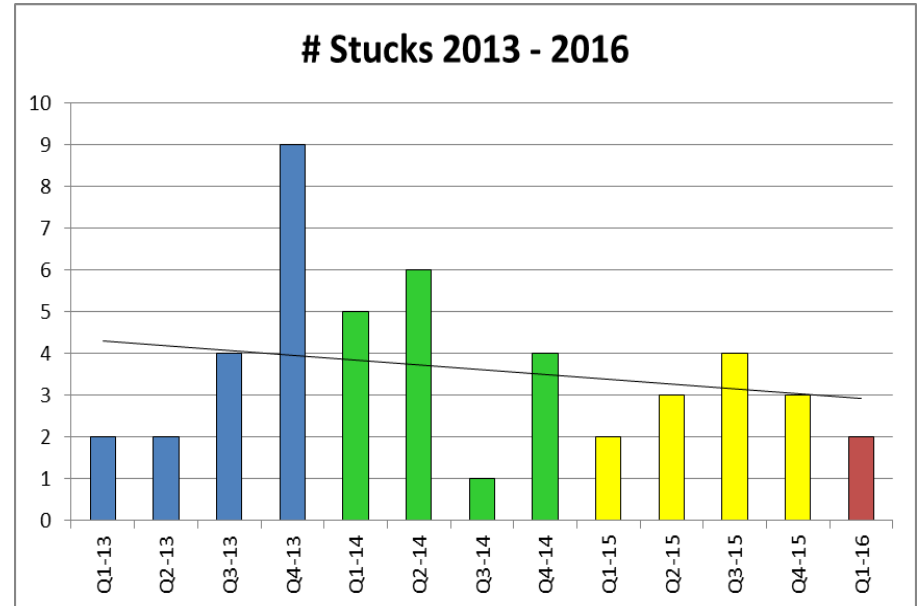
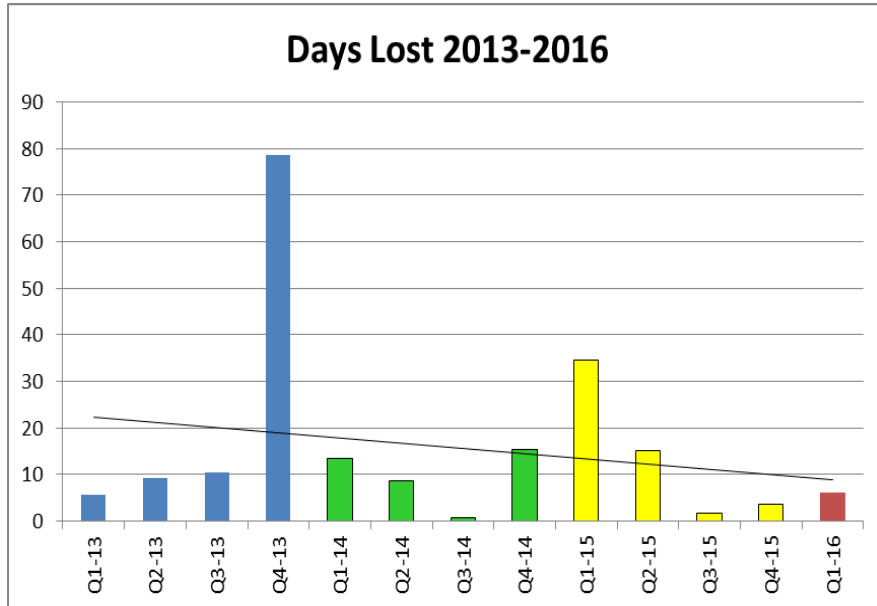
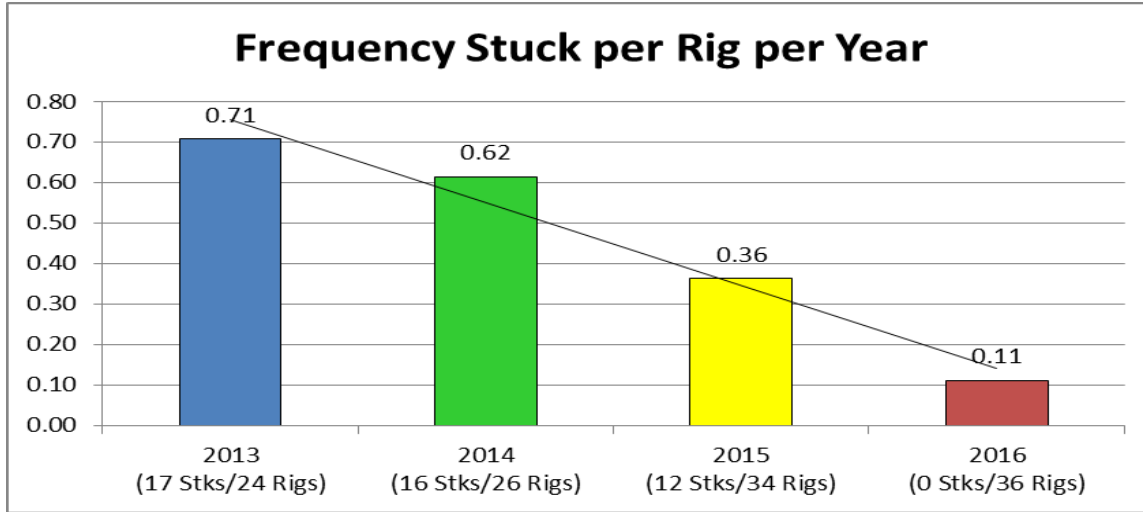
# Stuck Pipe	Lost Days	Lost (M\$)	BHA Lost	SPFR	SPSR	SPHR
12	66.0	9,628	2	42.1	7.0	5,556

### 2016 Summary

# Stuck Pipe	Lost Days	Lost (M\$)	BHA Lost	SPFR	SPSR	SPHR
4	7.8	587.5	0.0	58.0	0.0	2723.8

# Champion Stuck Pipe Prevention Rule

## Trends 2013 – Q1 2016



# Champion Stuck Pipe Prevention Rule

## 2013 - 2016



Rig	2013				2014				2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NDC- 08																
NDC- 51																
NDC- 57																
NDC- 58																
NDC- 60																
NDC- 63																
NDC-106																
NDC-110																
NDC-111																
NDC-112																
NDC-114																
GW-164																
NDC- 11		209.5														
NDC- 17						34.0										
NDC- 21									23.5							
NDC- 31						64.0										
NDC- 34				71.5												
NDC- 52				178.5												
NDC- 53							18.0									
NDC- 62								240.0								
NDC- 64												26.0				
NDC-113													16.5			
NDC-122														267.0		
NDC- 01			29.5			8.5										
NDC- 02				243.5							16.0					
NDC- 09				842.5	11.0											
NDC- 10			40.5		119.0				551.0			58.0				
NDC- 16				210.0				72.5			5.0					
NDC- 22		15.5			66.0											
NDC- 24	104.0			300.5				48.0								
NDC- 50	29.5				109.0	17.0								22.0		
NDC- 54							16.0				16.0					
NDC- 55			93.5	8.0		21.0			276.5							
NDC- 56				26.5							6.0					
NDC- 59			87.0	5.0	19.0					24				149.5		
NDC- 61						56.0				196.5						

ADCO Stuck Statistics 2013 to Q1 2016					
Criteria	# Rigs	% of Rig Fleet	# Total Stucks	% Stucks	Days Lost
Rigs NO Stucks	12	33%	0	0	0
Rigs w/ 1 Stuck	11	31%	11	24%	24.0
Rigs w/ ≥ 2 Stucks	13	36%	37	82%	103.4



Green: Event ≥ 6 hours and ≤ 24 hours  
 Yellow: Event > 24 hours and ≤ 72 hours



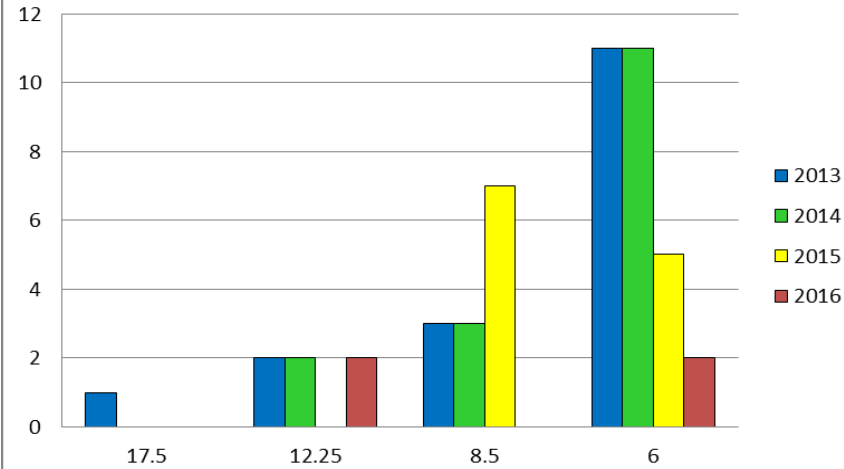
Red: Event > 72 hours  
 Black: Event BHA lost

# Champion Stuck Pipe Prevention Rule

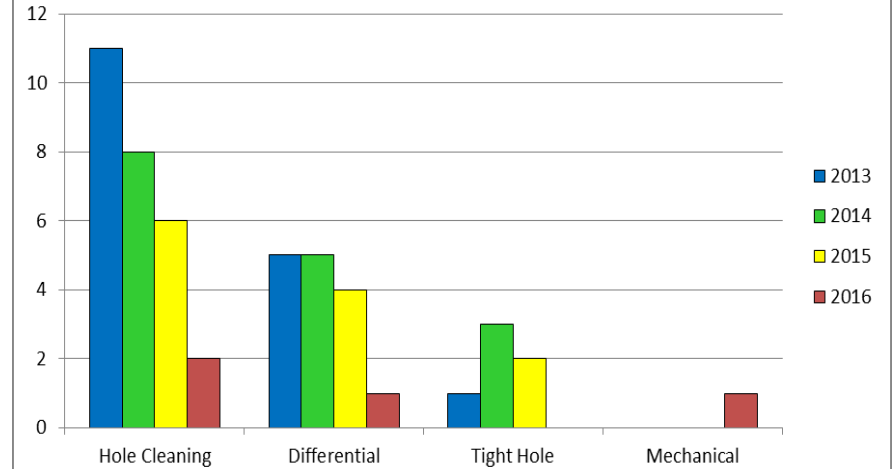
## 2013 - 2016



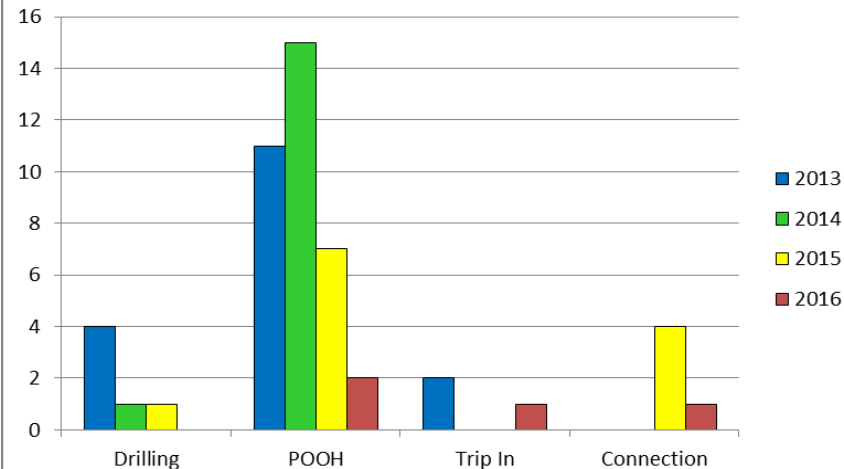
### Hole Size



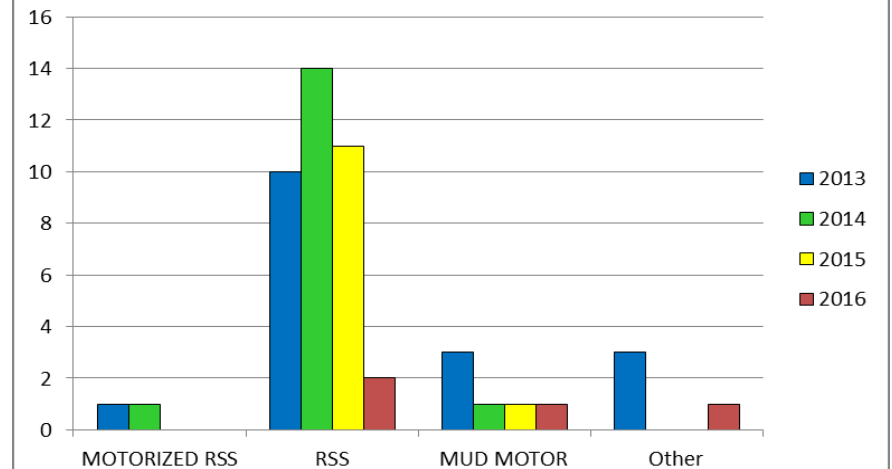
### Type of Stuck



### Event during Stuck



### BHA

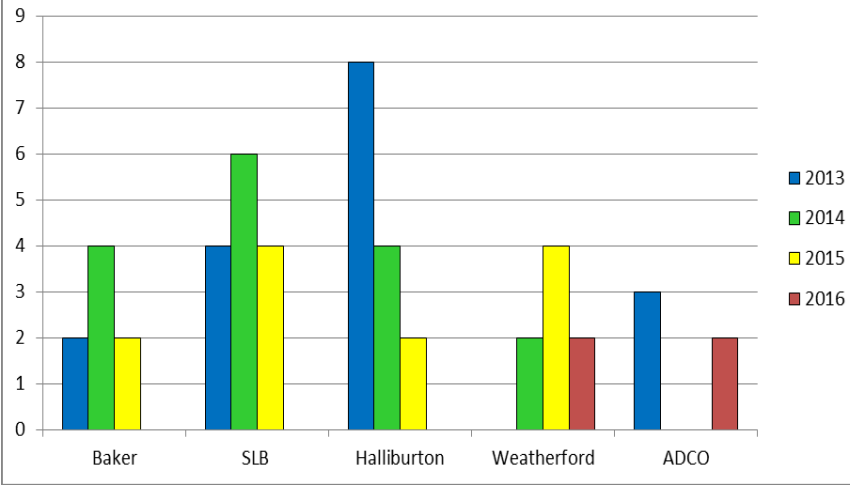


# Champion Stuck Pipe Prevention Rule

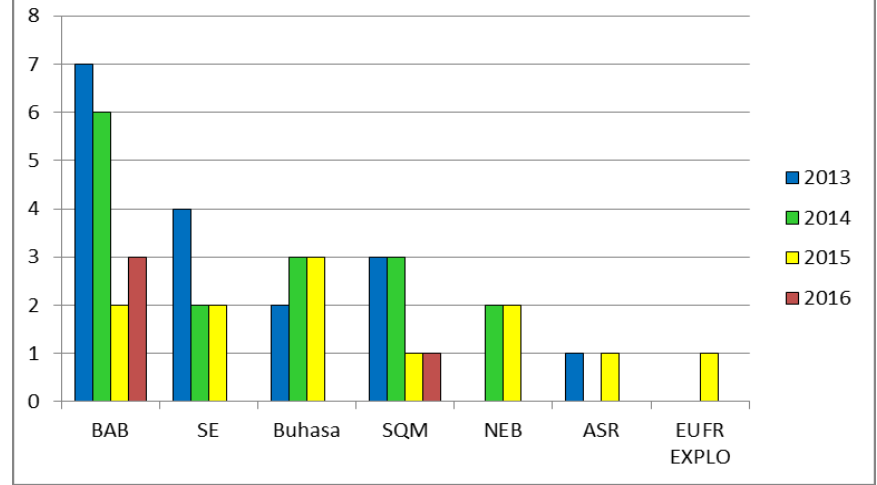
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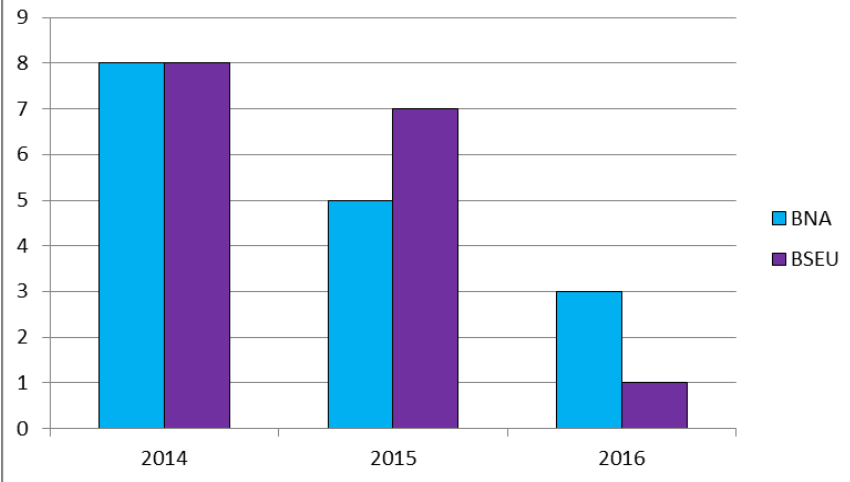
### Company



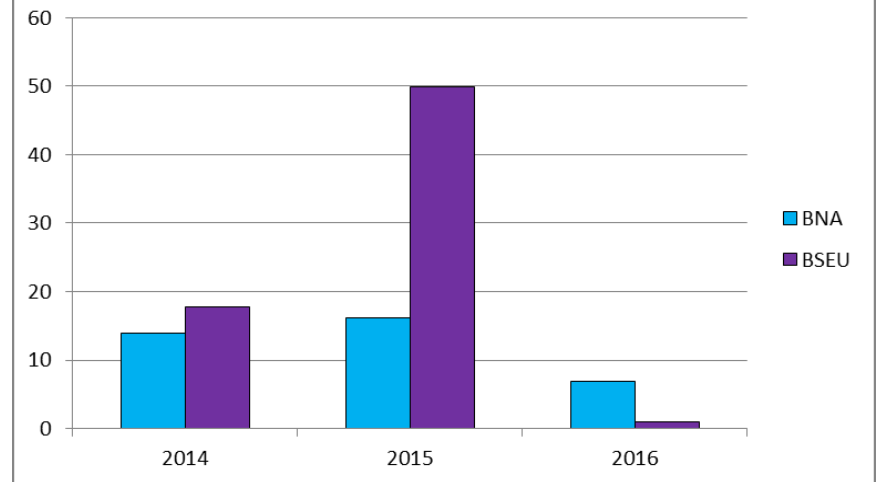
### # Stuck / DOM



### # Stuck Pipe / VP



### Days Lost due SP / VP





# Drilling SP<sup>2</sup>R:

Stuck Pipe Prevention Rules



Planning

Torque and drag simulation

Monitor torque and drag all the time

Minimize stationary time (4 mins.max) across depleted zone.



SP<sup>2</sup>R1



SP<sup>2</sup>R2



SP<sup>2</sup>R3



SP<sup>2</sup>R4

**Always Remember;**  
In highly deviated and horizontal wells:



SP<sup>2</sup>R5

Maintain good hole cleaning practices.



SP<sup>2</sup>R6

Monitor mudweight in and out All the time.



SP<sup>2</sup>R7

Use re-enforcement materials for the high differential pressure zones.



SP<sup>2</sup>R8

Maintain hole stability all the time. *by right design (casing, mud and cement)*

- Sweeps are inefficient to clean !!!
- Shale shaker clean doesn't mean your hole is clean!!!
- Time of rotation and circulation with right parameters is the key factor for good hole cleaning.

SP<sup>2</sup>R9