

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Tuesday, April 10, 2018

WS SUNRISE 2-5-5 PRODUCTION

Job Date: Thursday, March 15, 2018

Sincerely,

Julia Nichols

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **WS SUNRISE 2-5-5** cement **Production** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Approximately 50 barrels of cement were returned to surface.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton [Fort Lupton]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404	Ship To #: 3847557	Quote #:	Sales Order #: 0904706344							
Customer: EXTRACTION OIL & GAS		Customer Rep: Shane								
Well Name: WS-SUNRISE	Well #: 2-5-5	API/UWI #: 05-123-46048-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: SW SE-32-6N-85W-249FSL-1704FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Bradley Hinkle								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	11769ft	Job Depth TVD	8902ft							
Water Depth		Wk Ht Above Floor								
Perforation Depth (MD)	From	To								
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	0	9.625	8.921	36		J-55	0	1593	0	1593
Casing	0	5.5	4.778	20		P-110	0	11769	0	8902
Open Hole Section			8.5				1593	11792	0	8902
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	KLX	
Float Shoe	5.5	1	KLX	11769		Bottom Plug	5.5		HES	
Float Collar	5.5	2	KLX	11764		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Spacer	Tuned Spacer III	50	bbl	11.5	3.73		5		
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	Primary Cement	ELASTICEM	1940	sack	13.2	1.57		8	7.53	

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Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Fresh Water	261	bbl	8.33			9	
Cement Left In Pipe		Amount	5 ft		Reason			Wet Shoe by Design	
Mix Water:		pH 6	Mix Water Chloride: 0 ppm			Mix Water Temperature: 50 °F			
Cement Temperature: ## °F °C		Plug Displaced by: ## lb/gal kg/m3 XXXX			Disp. Temperature: ## °F °C				
Plug Bumped? Yes		Bump Pressure: 2400 psi MPa			Floats Held? Yes				
Cement Returns: 50 bbl		Returns Density: ## lb/gal kg/m3			Returns Temperature: ## °F °C				
Comment 50 bbls Tuned Spacer and 50 bbls cement to surface.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	3/14/2018	21:00:00	USER				Crew called for an on location of 0200 3/15/2018. Crew was Bradley Hinkle, Mitchell Camper, Peter Ginsberg, Kenneth Hulse and Martin Schmidt.
Event	2	Depart Shop for Location	Depart Shop for Location	3/14/2018	23:45:00	USER				Pre-journey safety meeting.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	3/15/2018	01:00:00	USER				Perform a site assessment and pre-rig up safety meeting. Approximately 100 joints of casing to run.
Event	4	Safety Meeting	Safety Meeting	3/15/2018	05:00:00	USER	7.62	0.00	2.00	Pre-job safety meeting with all personnel on location.
Event	5	Start Job	Start Job	3/15/2018	05:44:07	COM4	7.17	0.00	46.00	
Event	6	Test Lines	Test Lines	3/15/2018	05:48:00	COM4	7.61	0.00	4270.00	Pressure test lines with a 500 psi electronic kick-out test.
Event	7	Pump Spacer 1	Pump Spacer 1	3/15/2018	05:56:32	COM4	11.57	3.10	316.00	Pump 50 bbls Tuned Spacer mixed at 11.5 ppg with surfactants added throughout. Density verified by pressurized scales.
Event	8	Pump Cement	Pump Cement	3/15/2018	06:06:14	COM4	12.90	5.10	457.00	Pump 542 bbls (1940 sacks, 1.57 yield, 7.53 gal/sk) ElastiCem mixed at 13.2 ppg. Density verified by pressurized scales.
Event	9	Check Weight	Check weight	3/15/2018	06:24:10	COM4	13.17	8.00	432.00	Cement weighed at 13.2 ppg.
Event	10	Shutdown	Shutdown	3/15/2018	07:20:14	COM4	13.82	0.00	64.00	
Event	11	Clean Lines	Clean Lines	3/15/2018	07:21:25	COM4	15.98	0.00	21.00	Blow down lines and then wash pumps and lines until clean.
Event	12	Drop Top Plug	Drop Top Plug	3/15/2018	07:32:08	COM4	8.34	0.00	23.00	Top plug loaded. Witnessed by KLX hand and customer.
Event	13	Pump Displacement	Pump Displacement	3/15/2018	07:32:26	COM4	8.38	1.60	24.00	Pump 261 bbls fresh water. Good returns throughout. 50 bbls Tuned Spacer and 50 bbls cement to surface.
Event	14	Bump Plug	Bump Plug	3/15/2018	08:00:25	COM4	8.25	0.00	2571.00	Bump plug at 2400 psi and increase 500 psi over.

Event	15	Pressure Up Well	Pressure Up Well	3/15/2018	08:02:03	COM4	8.27	4.80	2404.00	Pressure up to burst at 3800 psi. Pump 5 bbls for wet shoe at 5 bbls/ minute.
Event	16	Check Floats	Check Floats	3/15/2018	08:03:53	USER	8.29	0.00	212.00	Floats held. 1.5 bbls back.
Event	17	End Job	End Job	3/15/2018	08:04:41	COM4	8.28	0.00	25.00	
Event	18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/15/2018	08:10:00	USER	8.26	0.00	22.00	Pre-rig down safety meeting.
Event	19	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	3/15/2018	09:30:00	USER				Pre-journey safety meeting.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

