

HALLIBURTON

iCem® Service

NOBLE ENERGY INC E-BUSINESS

Date: Tuesday, August 09, 2016

Lapp A15-613

Production

Job Date: Sunday, August 07, 2016

Sincerely,

Lauren Roberts

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Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Lapp A15-613** 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.

10 bbl. of spacer 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 [Ft. Lupton]

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3723528		Quote #:		Sales Order #: 0903461196					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: Dave Nielson							
Well Name: LAPP			Well #: A15-613		API/UWI #: 05-123-42812-00						
Field: WATTENBERG		City (SAP): GILL		County/Parish: WELD		State: COLORADO					
Legal Description: SW SW-13-6N-64W-768FSL-400FWL											
Contractor:				Rig/Platform Name/Num: H&P 524							
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB61755				Srv Supervisor: Aaron Smith							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST		230 degF					
Job depth MD		17560ft		Job Depth TVD		6876					
Water Depth				Wk Ht Above Floor		4					
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		9.625	8.921	36			0	1912	0	1912	
Casing		5.5	4.778	20			0	17549	0	6876	
Open Hole Section			8.5				1912	17560	1912	6876	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5					Top Plug	5.5	1	HWE		
Float Shoe	5.5	1	SSII	17549		Bottom Plug	5.5	2	Hwe		
Float Collar	5.5	1	SSII	17503		SSR plug set	5.5		HES		
Insert Float	5.5					Plug Container	5.5		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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11 lb/gal Tuned Spacer III	Tuned Spacer III			40	bbl	11	4.72			

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
2	11 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11	4.72			
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	Elasticem w/o SCBL	EXPANDACEM (TM) SYSTEM	150	sack	13.2	1.57		5	7.53
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
4	Elasticem	EXPANDACEM (TM) SYSTEM	638	sack	13.2	1.6		5	7.69
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
5	EconoCem	ECONOCEM (TM) SYSTEM	1506	sack	13.5	1.68		5	7.98
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
6	Displacement	Displacement	387	bbl	8.33				
Cement Left In Pipe		Amount	45 ft		Reason			Shoe Joint	
Comment 10 bbls to surface, Top of Cement 1474'									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	8/7/2016	03:00:00	USER				For on location @0900
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/7/2016	06:30:00	USER				Journey management meeting prior to departure
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	8/7/2016	07:30:00	USER				With all equipment and materials.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/7/2016	07:45:00	USER				Hazard hunt and water test performed, PH 7, Cl 32ppm, Temp 71.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/7/2016	08:00:00	USER				JSA to discuss the hazards of rig-up
Event	6	Rig-Up Completed	Rig-Up Completed	8/7/2016	09:00:00	USER				
Event	7	Circulate Well	Circulate Well	8/7/2016	14:30:00	USER				8bpm, 867 psi, 257 units of gas, 1.5 hours.
Event	8	Start Job	Start Job	8/7/2016	16:25:50	COM6	0.00	8.29	0.00	With water supplied from uprights.
Event	9	Test Lines	Test Lines	8/7/2016	16:43:53	COM6	0.90	8.18	61.00	@4517 psi
Event	10	Drop Bottom Plug	Drop Bottom Plug	8/7/2016	16:49:09	COM6	0.00	8.28	-12.00	pre-loaded HWE bottom plug in casing.
Event	11	Pump Spacer 1	Pump Spacer 1	8/7/2016	16:50:01	COM6	2.90	10.16	38.00	80 bbls tuned spacer @ 11 ppg, first 40 bbls with surfactants. verified with scales.
Event	12	Pump Lead Cement	Pump Lead Cement	8/7/2016	17:06:08	COM6	0.00	10.97	2.00	788 sks (224.55 bbls) ElastiCem @ 13.2 ppg, first 150 sks without super cbl, verified with scales.
Event	13	Drop Bottom Plug	Drop Bottom Plug	8/7/2016	17:15:16	COM6	3.00	13.24	137.00	Hand dropped second HWE bottom plug in casing, verified by customer rep.
Event	14	Pump Tail Cement	Pump Tail Cement	8/7/2016	17:45:36	COM6	6.10	13.53	393.00	1506 sks (450.61 bbls) EconoCem @ 13.5 ppg, verified with scales.
Event	15	Shutdown	Shutdown	8/7/2016	17:55:31	USER	6.10	13.97	540.00	Cement head stuck open, tub balled off.

Event	16	Comment	Comment	8/7/2016	17:56:38	USER	3.40	13.95	226.00	fixed cement, resumed pumping.
Event	17	Shutdown	Shutdown	8/7/2016	19:01:21	COM6	0.00	13.16	57.00	
Event	18	Drop Top Plug	Drop Top Plug	8/7/2016	19:17:03	COM6	0.00	7.91	-25.00	Dropped HWE to plug in casing.
Event	19	Pump Displacement	Pump Displacement	8/7/2016	19:17:07	COM6	0.00	7.90	-25.00	386.82 bbls fresh water
Event	20	Bump Plug	Bump Plug	8/7/2016	19:58:50	COM6	0.00	7.92	1995.00	@500 over. Final circulating pressure 1610 psi
Event	21	Other	Check Floats	8/7/2016	20:06:24	COM6				Floats good 4 bbls back.
Event	22	End Job	End Job	8/7/2016	20:06:32	COM6				Thanks Aaron Smith and Crew
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/7/2016	20:08:00	USER	0.00	7.88	-30.00	JSA to discuss the hazards of rig-down.
Event	24	Rig-Down Completed	Rig-Down Completed	8/7/2016	20:40:00	USER				
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/7/2016	21:00:00	USER				Journey management meeting held prior to departure

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