

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

MLD 11 Production

Job Date: Wednesday, September 13, 2017

Sincerely,

Fort Lupton District Cement

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **MLD 11** 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.

50 bbls of cement to surface

5 bbls of wet shoe pumped

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 #: 369404		Ship To #: 3800435		Quote #:		Sales Order #: 0904294469				
Customer: EXTRACTION OIL & GAS				Customer Rep:						
Well Name: MLD		Well #: 11		API/UWI #: 05-123-44816-00						
Field: WATTENBERG	City (SAP): BERTHOUD	County/Parish: WELD		State: COLORADO						
Legal Description: NW NW-22-4N-68W-801FNL-520FWL										
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 346						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Robert Davis						
Job										
Formation Name										
Formation Depth (MD)	Top	1600		Bottom	11350					
Form Type				BHST						
Job depth MD	11340ft			Job Depth TVD						
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	3	9.625	8.921	36		J-55	0	1600	0	0
Casing		5.5	4.778	20		P-110	0	11340	0	0
Open Hole Section			8.5				1600	11350	1600	6834
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			11340		Top Plug	5.5		HES	
Float Shoe	5.5					Bottom Plug	5.5		HES	
Float Collar	5.5					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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73		5.5		
149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

last updated on 9/13/2017 12:21:00 PM

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(v. 4.4.18)

Created: Monday, October 02, 2017

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Cementing Job Summary

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	ElastiCem	ELASTICEM (TM) SYSTEM	1880	sack	13.2	1.57		6.5	7.54
0.30 %		SCR-100 (100003749)							
7.54 Gal		FRESH WATER							
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
3	Displacement	Displacement	250.5	bbl	8.34			8	
Cement Left In Pipe		Amount	2 ft		Reason			Shoe Joint	
Mix Water: pH 7		Mix Water Chloride:	200 ppm			Mix Water Temperature:		65 °F °C	
Cement Temperature: ## °F °C		Plug Displaced by:	8.33 lb/gal kg/m3 XXXX			Disp. Temperature: ## °F °C			
Plug Bumped? Yes		Bump Pressure:	2250-3600 psi MPa			Floats Held? Yes			
Cement Returns: 50 bbl m3		Returns Density: ## lb/gal kg/m3				Returns Temperature: ## °F °C			
Comment FULL RETURNS THOUGH THE JOB, 50 BBLs OF SPACER AND 50 BBLs OF CEMENT RETURNS TO SURFACE. FLOATS HELD 2 BBLs BACK TO THE TRUCK. RUPTURE PLUG @ 3600 PSI									

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)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	9/12/2017	22:00:00	USER					CALLED OUT FROM FT LUPTON COLORADO
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/13/2017	00:30:00	USER					LEAVE YARD AFTER SAFTEY MEETING
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	9/13/2017	02:00:00	USER					ARRIVED ON LOCATION AND TALKED TO COMPANY MAN ABOUT JOB FIGURES AND THE SPOTTING OF OUR EQUIPMENT
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	9/13/2017	05:00:00	USER					ASSESSED LOCATION AN TOOK WATER SAMPLE
Event	5	Rig-Up Equipment	Rig-Up Equipment	9/13/2017	05:30:00	USER					SPOTTED EQUIPMENT AND RIGGED UP TO FLOOR RIG IS RUNNING CASING
Event	6	Other	Other	9/13/2017	06:00:00	USER					Water test=pH: 7____, Cl: _250____, temp _65____degrees Tannin-Lignin: __NEG.____; Sulfate: __100____
Event	7	Other	Other	9/13/2017	06:30:00	USER					Rig Circulation: ____ bbls Circulation Rate: ____ bbl/min Mud Density _10.9____ lb/gal Mud YP/PV: _____
Event	8	Other	Other	9/13/2017	06:45:00	USER					Spacer: __50____ bbl TOS__0____ Lead Cement: __525____ bbl, __1880____ sks, TOC__0____ Tail Cement:

											____ bbl, ____ sks, TOC____ Displacement: __250.5__ bblCMT left in Pipe_0____ Reason__ WET SHOE____
Event	9	Other	Other	9/13/2017	07:00:00	USER					TD: __11350__, TP __11340__, SJ: __2__, OH: __8.5__, Casing: Size/Weight/Grade: __5.5/20#/P110____ , Previous Casing Shoe: __1600____
Event	10	Rig-Up Completed	Rig-Up Completed	9/13/2017	08:30:00	USER	0.00	8.35	-16.00	20.90	RIG UP COMPLETE SAFETY MEETING WITH RIG HANDS AND HALLIBURTON ABOUT THE DANGERS OF OUR EQUIPMENT AND WENT OVER JOB FIGURES. READY TO TEST LINES
Event	11	Start Job	Start Job	9/13/2017	09:03:52	COM4	0.00	8.36	-2.00	0.00	
Event	12	Check Weight	Check weight	9/13/2017	09:08:53	COM4	0.00	8.35	0.00	0.00	
Event	13	Prime Pumps	Prime Pumps	9/13/2017	09:16:47	COM4	0.00	8.35	2.00	0.00	
Event	14	Test Lines	Test Lines	9/13/2017	09:22:08	COM4	0.00	8.54	5977.00	3.00	FLOOD LINES W/ 3 BBLS OF WATER, LOW PSI TEST TO 500 PSI, HIGH PSI TEST TO 6000 PSI
Event	15	Pump Spacer 1	Pump Spacer 1	9/13/2017	09:24:51	COM4	0.00	8.23	84.00	3.00	TUNED SPACER, 50 BBLS @ 11.5 PPG, PUMPED @ 5.5 BPM @ 600 PSI
Event	16	Pump Lead Cement	Pump Lead Cement	9/13/2017	09:35:11	COM4	5.40	11.82	615.00	51.60	ELASTICEM, 1880 SKS @ 13.2 PPG, YEILD @ 1.57, GAL/SK @ 7.54, 2951.6 FT3, 330 BBLS OF WATER TO MIX, 525 BBLS PUMPED @ 6.5 BPM @ 930 PSI, HOC-11340, TOC-0

Event	17	Drop Top Plug	Drop Top Plug	9/13/2017	11:05:36	COM4	0.20	13.66	37.00	552.80	3RD PARTY WET SHOE PLUG
Event	18	Pump Displacement	Pump Displacement	9/13/2017	11:10:26	COM4	0.00	7.82	25.00	570.10	250 BBLS, PUMPED @ 8 BPM @ 2800 PSI, FULL RETURNS THOUGHOUT THE JOB, 50 BBLS OF SPACER AND 50 BBLS OF CEMENT RETURNS TO SURFACE
Event	19	Bump Plug	Bump Plug	9/13/2017	11:43:57	COM4	0.00	8.36	2711.00	249.90	500 OVER, BUMPED @ 2250 PSI TOOK TO 3600 PSI TO RUPTURE PLUG
Event	20	Other	Other	9/13/2017	11:44:48	USER	1.20	8.39	3654.00	250.80	PUMPED 5 BBLS FOR WET SHOE, @ 5 BPM @ 2390 PSI, THE SHUT DOWN, AND CHECKED FLOATS, FLOATS HELD WITH 2 BBLS BACK TO THE TRUCK
Event	21	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	9/13/2017	12:00:00	USER	4.70	0.99	8.00	264.80	SAFETY MEETING OVER RIGGING DOWN
Event	22	Rig-Down Equipment	Rig-Down Equipment	9/13/2017	12:15:00	USER					RIG DOWN EQUIPMENT AND HOSES
Event	23	Rig-Down Completed	Rig-Down Completed	9/13/2017	13:30:00	USER					RIG DOWN COMPLETE
Event	24	Safety Meeting - Departing Location	Safety Meeting - Departing Location	9/13/2017	13:45:00	USER					SAFETY MEETING OVER DEPARTURE AND JOURNEY HOME
Event	25	Depart Location for Home	Depart Location for Home	9/13/2017	14:00:00	USER					LEAVE LOCATION

3.0 Job Chart

3.1 Job Chart

