

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Tuesday, August 07, 2018

VT-LDS C4-16-18 Production

Job Date: Sunday, July 29, 2018

Sincerely,

Julia Nichols

Legal Notice

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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

3.0 Attachments..... 9

 3.1 Custom Results – Job Chart with Events9

 3.2 Custom Results – Job Chart without Events.....10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **VT-LDS C4-16-18** 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 43 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 #: 3788959	Quote #:	Sales Order #: 0905019846							
Customer: EXTRACTION OIL & GAS		Customer Rep: Jose Torees								
Well Name: VT-LDS	Well #: C4-16-18	API/UWI #: 05-123-44414-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: SW NW-15-5N-85W-1904FNL-483FWL										
Contractor:		Rig/Platform Name/Num: Patterson 901								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Thomas Haas								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	20359ft	Job Depth TVD	7520							
Water Depth		Wk Ht Above Floor	5'							
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	1637	0	1637
Casing	0	5.5	4.778	20	BTC	P-110	0	20359	0	7520
Open Hole Section			8.75				1637	8153	1637	7520
Open Hole Section			8.5				8153	20365	0	0
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		20359		Bottom Plug	5.5			
Float Collar	5.5	1		20354		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5			
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	23.4	6	1762	
0.50 gal/bbl		MUSOL(R) A, 5 GAL PAIL (100064220)								
149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003685)								

last updated on 8/7/2018 1:52:58 PM

Page 1 of 3

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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
2	ElastiCem	ELASTICEM (TM) SYSTEM	3265	sack	13.2	1.57	7.53	8	24585
0.45 %		SCR-100 (100003749)							
7.53 Gal		FRESH WATER							
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	Displacement	452	bbl	8.33				
Cement Left In Pipe		Amount	0			Reason Wet Shoe		Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride: <300 ppm			Mix Water Temperature:		63 °F	
Cement Temperature:		N/A	Plug Displaced by: 8.33 lb/gal F.W.			Disp. Temperature:		N/A	
Plug Bumped?		Yes	Bump Pressure: 2580 psi			Floats Held?		Yes	
Cement Returns:		43 bbl	Returns Density: N/A			Returns Temperature:		N/A	
Comment Pumped calculated displacement, plug bumped at 2580 psi, wet shoe disk burst at 3601 psi, pumped 5 bbl wet shoe, 43 bbl cement back to surface, checked floats, floats held, 5.5 bbls back to the truck.									

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	7/29/2018	10:00:00	USER				CREW CALLED OUT AT 10:00 7/29/2018, REQUESTED ON LOCATION 16:00 7/29/2018. CREW PICKED UP CEMENT, CHEMICALS (25 GAL MUSOL, 25 GAL DUAL SPACER B, 10 GAL D-AIR), 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 11610427/10924982 BODY LOAD: 11036295 PUMP ELITE: 11644701/11360070
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/29/2018	13:45:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	7/29/2018	14:00:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	7/29/2018	15:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1637', CASING: 5.5" 20# @ 20359', 5' SHOE JOINT, 8.75" OPEN HOLE TO 8153 8.5" OPEN HOLE TO T.D., TVD @ 67520', 11 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/29/2018	15:15:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	7/29/2018	15:30:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/29/2018	19:00:00	USER	8.49	0.00	-1.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	7/29/2018	20:07:05	COM4	9.06	0.00	-10.00	BEGIN JOB DATA RECORDING.
Event	9	Test Lines	Test Lines	7/29/2018	20:11:15	COM4	8.49	0.00	4315.00	PRESSURE TESTED IRON TO 4700 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1000 PSI, 5TH GEAR STALL OUT @ 2200 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	7/29/2018	20:15:31	COM4	11.47	3.90	284.00	PUMP 50 BBLS OF TUNED SPACER @ 11.5 LB/GAL, DENSITY VERIFIED BY PRESSURIZED MUD SCALES. ADDED 25 GAL MUSOL, 25 GAL DUAL SPACER B, AND 10 GAL D-AIR TO

SPACER.

Event	11	Pump Cement	Pump Cement	7/29/2018	20:26:34	COM4	13.11	5.00	313.00	PUMP 3265 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.54 GAL/SK, 913 BBLS, TOC @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Shutdown	Shutdown	7/29/2018	22:36:17	COM4	8.66	0.00	36.00	SHUTDOWN TO DROP TOP PLUG.
Event	13	Drop Top Plug	Drop Top Plug	7/29/2018	22:38:47	COM4	8.81	0.00	1.00	PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.
Event	14	Pump Displacement	Pump Displacement	7/29/2018	22:38:55	COM4	8.81	0.00	1.00	BEGIN CALCULATED DISPLACEMENT OF 452 BBL FRESH WATER.
Event	15	Cement Returns to Surface	Cement Returns to Surface	7/29/2018	23:30:36	USER	8.32	7.50	2884.00	CEMENT RETURNED TO SURFACE 409 BBL INTO DISPLACEMENT, 43 BBL CMT TO SURFACE.
Event	16	Bump Plug	Bump Plug	7/29/2018	23:38:24	COM4	8.33	0.00	2827.00	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE OF 2580 PSI.
Event	17	Other	Rupture Wet Shoe Disk	7/29/2018	23:39:59	USER	8.38	2.10	3581.00	WET SHOE DISK RUPTURED AT 3601 PSI.
Event	18	Other	Wet Shoe	7/29/2018	23:40:53	USER	8.32	5.50	3146.00	PUMPED A 5 BBL WET SHOE.
Event	19	Check Floats	Check Floats	7/29/2018	23:42:31	USER	8.33	0.00	2706.00	RELEASED PRESSURE BACK TO THE TRUCK, FLOATS HELD 5.5 BBL BACK TO THE TRUCK.
Event	20	End Job	End Job	7/29/2018	23:45:19	COM4	8.37	0.00	16.00	END JOB DATA RECORDING.
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/30/2018	00:00:00	USER	8.24	3.30	14.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	7/30/2018	01:00:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/30/2018	01:15:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	24	Crew Leave Location	Crew Leave Location	7/30/2018	01:30:00	USER				THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

