

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

VT-LDS 2-16-18 Production

Sincerely,
Meghan Jacobs

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 **VT-LDS 2-16-18** 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 80bbls of cement 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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404		Ship To #: 3786963		Quote #:		Sales Order #: 0904957877				
Customer: EXTRACTION OIL & GAS				Customer Rep: Jose Torres						
Well Name: VT-LDS		Well #: 2-16-18		API/UWI #: 05-123-44419-00						
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO				
Legal Description: SW NW-15-5N-65W-1889FNL-602FWL										
Contractor:				Rig/Platform Name/Num: Patterson 901						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Luke Kosakewich						
Job										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type										
BHST										
Job depth MD		20386ft			Job Depth TVD		6844			
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	1557	0	1557
Casing	0	5.5	4.778	20	BTC	P-110	0	20376	0	6844
Open Hole Section			8.375				1557	8506	1557	6844
Open Hole Section			8.5				8506	20386	6844	6844
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe						Top Plug	5.5	1	Weatherford	
Float Shoe	5.5			20376		Bottom Plug				
Float Collar	5.5			20370		SSR plug set				
Insert Float						Plug Container	5.5	1	HES	
Stage Tool						Centralizers				
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		6		
Fluid Data										
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	

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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	3275	sack	13.2	1.57		8	7.53
3	Displacement	Displacement	451.8	bbl	8.33			10	
Cement Left In Pipe		Amount	Reason		Wet Shoe				
Mix Water:		pH 7	Mix Water Chloride:	0 ppm	Mix Water Temperature:		74 °F °C		
<p>Comment There were full returns throughout the job. Got 50 bbls. of spacer and 80 bbls. of cement to surface. Did not bump the plug. Customer wanted to pump 5 bbl. over the 5 bbl. wet shoe. Pumped a total 461 bbls of fresh water. Shutdown and check floats. Floats held. Got 3 bbls. of fluid back to the truck.</p>									

2.0 Real-Time Job Summary

2.1 Job Event Log

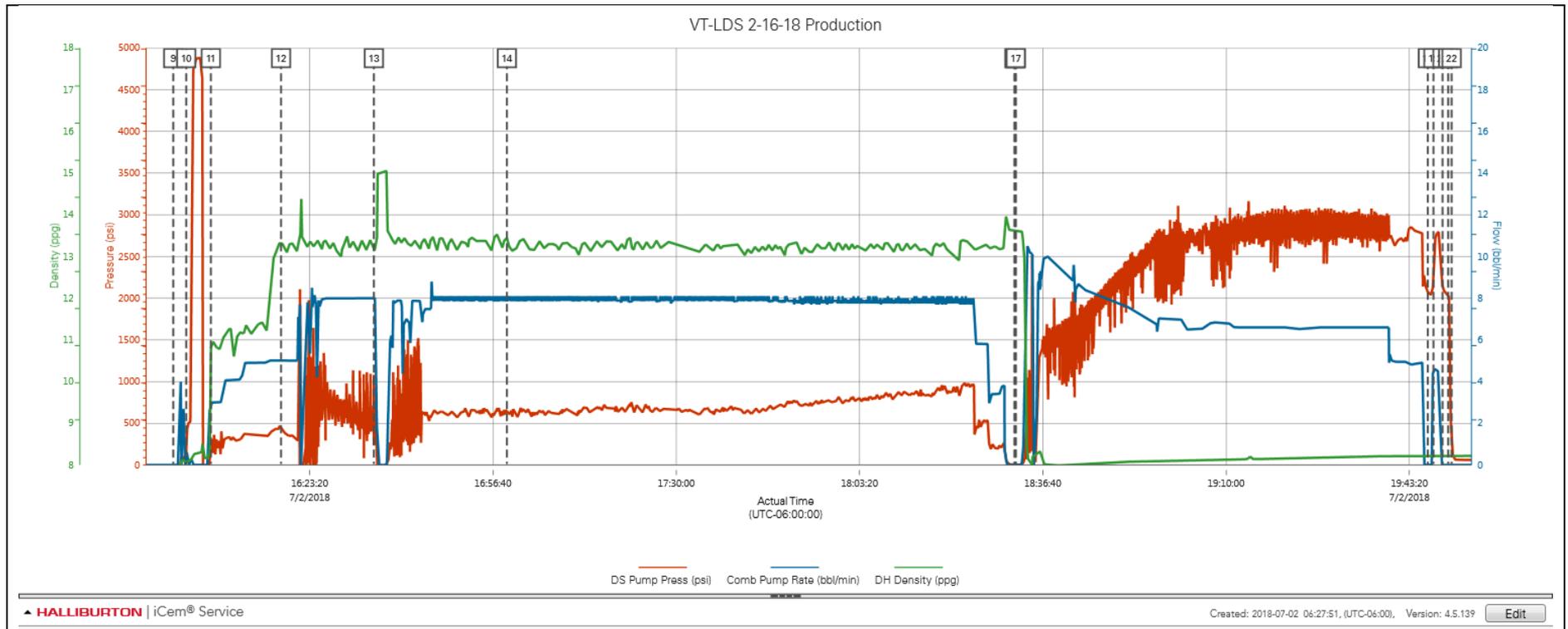
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	DH Density (ppg)	Comments
Event	1	Call Out	Call Out	7/2/2018	03:00:00	USER				Crew was called out at 03:00 for an on location time of 09:00.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	7/2/2018	06:50:00	USER				Crew held a pre journey safety meeting and JSA.
Event	3	Depart Shop for Location	Depart Shop for Location	7/2/2018	07:00:00	USER				Started journey management with dispatch and left location.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/2/2018	08:00:00	USER				Crew performed a site assessment, safety meeting and hazard hunt on location. Checked in with the customer and discussed the job procedures, rig up and well bore schematics. The rig was running casing. They were 7,000' from being on bottom.
Event	5	Other	Other	7/2/2018	08:05:00	USER				Well bore: MD: 20,386', TP: 5.5" 20# set at 20,376', FC: 20.370', TVD: 6,844', SC: 9.625" 36# set at 1,557', OH: 8.75" drilled to 8,506. OH: from 8,506 to 20,386, Mud # 10.5 ppg. Water test: PH: 7, Chlorides: 0, Temp: 74 Degrees.
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/2/2018	08:15:00	USER				The crew held a pre rig up safety meeting and JSA.
Event	7	Rig-Up Equipment	Rig-Up Equipment	7/2/2018	08:25:00	USER				The crew rigged up all lines, hoses and equipment for the job.
Event	8	Safety Meeting	Safety Meeting	7/2/2018	10:00:00	USER				Halliburton cement crew held a pre cement job safety meeting and JSA with third party personnel and rig crew.
Event	9	Start Job	Start Job	7/2/2018	15:58:32	COM5	-142.00	0.00	0.00	Pumped 3 bbls. of fresh water at 3 bpm. to fill lines and establish circulation.
Event	10	Test Lines	Test Lines	7/2/2018	16:00:53	COM5	16.00	0.00	8.07	Pressure tested lines to 4,900 psi. with a 500 psi. electronic kick out test.
Event	11	Pump Spacer 1	Pump Spacer 1	7/2/2018	16:05:21	COM5	215.00	3.00	10.59	Pumped 50 bbls. of Tuned Spacer III with surfactants

mixed at 11.5 ppg., Yield: 3.73 ft³/sks, 23.4gal/sks.
Density was verified by pressurized scales.

Event	12	Pump Lead Cement	Pump Lead Cement	7/2/2018	16:18:08	COM5	449.00	5.00	13.34	Pumped 916 bbls. (3275 sks.) of Elasticem mixed at 13.2 ppg., Yield: 1.57 ft ³ /sks, 7.53 gal/sks. Density was verified by pressurized scales.
Event	13	Shutdown	Shutdown	7/2/2018	16:35:01	USER	1081.00	8.00	13.15	Had to bleed off pressure and fix a leak.
Event	14	Check Weight	Check Weight	7/2/2018	16:59:12	COM5	664.00	7.90	13.47	Cement weighed up at 13.2 ppg.
Event	15	Shutdown	Shutdown	7/2/2018	18:31:30	COM5	4.00	0.00	13.61	Shutdown and loaded the top plug.
Event	16	Drop Top Plug	Drop Top Plug	7/2/2018	18:31:40	COM5	4.00	0.00	13.60	Dropped the top plug which was witnessed by the customer.
Event	17	Pump Displacement	Pump Displacement	7/2/2018	18:31:46	COM5	4.00	0.00	13.60	Pumped 451.8 bbls. of fresh water for displacement.
Event	18	Shutdown	Shutdown	7/2/2018	19:46:40	USER	2074.00	0.00	8.20	Pumped calculated displacement.
Event	19	Pump Water	Pump Water	7/2/2018	19:47:43	USER	2382.00	4.60	8.22	Pumped 5 bbl. wet and pumped 5 more bbls. over calculated displacement including wet shoe and did not bump the plug.
Event	20	Shutdown	Shutdown	7/2/2018	19:49:21	USER	2145.00	0.00	8.20	Shutdown.
Event	21	Check Floats	Check Floats	7/2/2018	19:50:24	USER	2033.00	0.00	8.21	Bled off pressure to check floats and float held. Got 3 bbls. of fluid back to the truck.
Event	22	End Job	End Job	7/2/2018	19:51:00	USER	287.00	0.00	8.23	Circulated 50 bbls. of spacer and 80 bbls. of cement to surface.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/2/2018	20:00:00	USER	58.00	0.00	8.23	Halliburton cement crew held a pre rig down safety meeting and JSA.
Event	24	Rig-Down Equipment	Rig-Down Equipment	7/2/2018	20:10:00	USER	196.00	4.40	8.21	Rigged down all lines, hoses and equipment.
Event	25	Safety Meeting - Departing Location	Safety Meeting - Departing Location	7/2/2018	22:15:00	USER				Held a pre journey safety meeting with the crew.
Event	26	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/2/2018	22:30:00	USER				Started journey management with dispatch and left location.

3.0 Attachments

3.1 VT-LDS 2-16-18 Production – Job Chart with Events



3.2 VT-LDS 2-16-18 Production – Job Chart without Events

