

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

VT-LDS 5-16-18 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 5-16-18** 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 50bbls 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 #: 3787053	Quote #:	Sales Order #: 0905008451							
Customer: EXTRACTION OIL & GAS		Customer Rep: Danny Herrera								
Well Name: VT-LDS	Well #: 5-16-18	API/UWI #: 05-123-44416-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: SW NW-15-5N-65W-1901FNL-507FWL										
Contractor:		Rig/Platform Name/Num: Patterson 901								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srv Supervisor: Nicholas Roles								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	20148ft	Job Depth TVD								
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	1597	0	0
Casing	0	5.5	4.778	20	BTC	P-110	0	20148	0	0
Open Hole Section			8.75				1597	8413	0	0
Open Hole Section			8.5				8413	20160	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	5.5			20148	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		6		
Fluid #										
2	ElastiCem	ELASTICEM (TM) SYSTEM	3270	sack	13.2	1.57		8	7.53	

last updated on 7/27/2018 9:18:29 AM

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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	Displacement	447	bbl	8.33			10	
Cement Left In Pipe	Amount	0 ft			Reason			Wet Shoe	
Mix Water:	pH 06	Mix Water Chloride:	5 ppm			Mix Water Temperature:	68 °F		
Cement Temperature:	## °F °C	Plug Displaced by:	## lb/gal kg/m3 XXXX			Disp. Temperature:	68°F		
Plug Bumped?	No	Bump Pressure:	#### psi			Floats Held?	Yes		
Cement Returns:	50 bbl	Returns Density:	## lb/gal kg/m3			Returns Temperature:	## °F °C		
Comment Got 50bbls Cement to surface.									

2.0 Real-Time Job Summary

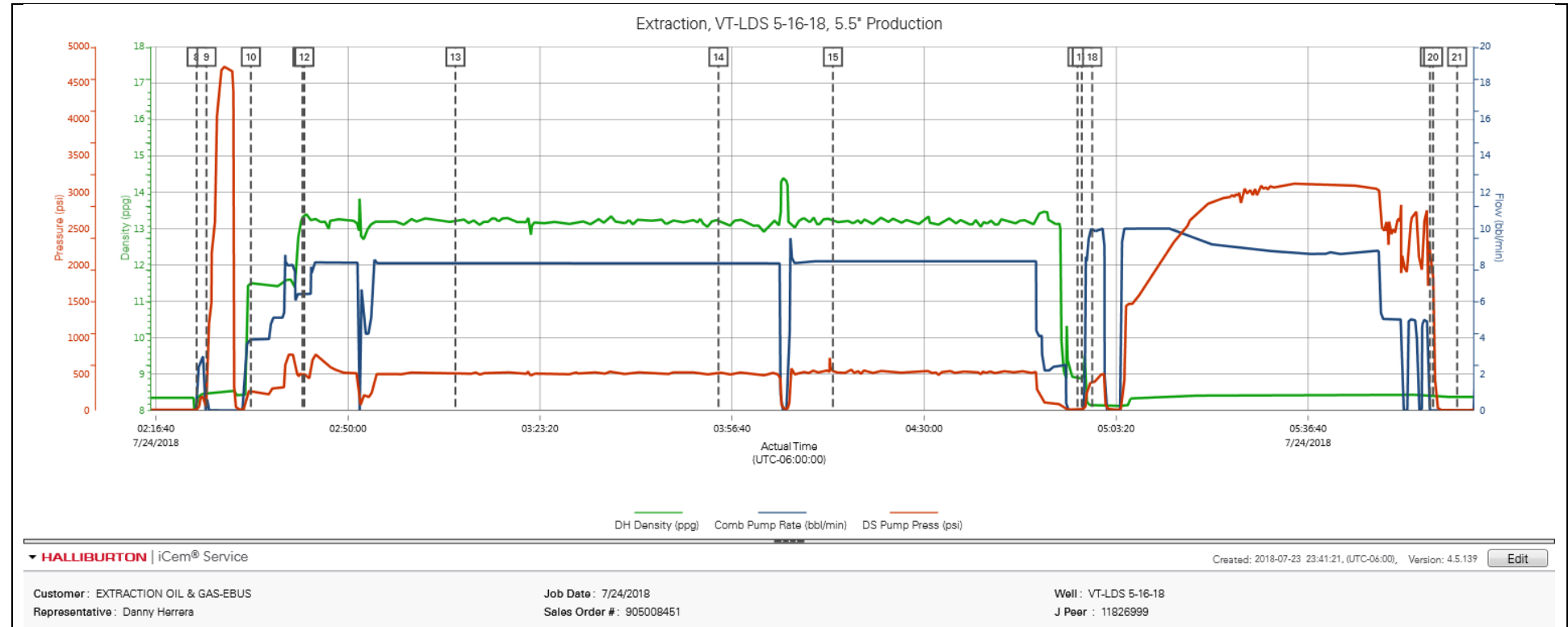
2.1 Job Event Log

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	7/23/2018	18:00:00	USER				Called out by Service Coordinator for O/L at 0000
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	7/23/2018	21:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/23/2018	22:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/23/2018	23:00:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/23/2018	23:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	7/23/2018	23:30:00	USER				Water test- PH-6, Chlor-0, Temp-85.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/24/2018	02:00:00	USER	8.35	0.00	9.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	7/24/2018	02:23:43	COM4	8.36	0.00	8.00	TD-20160', OH-8.75" 0-8413', OH-8.5" 8413'-20160, TP-20148' 5.5" 20#, TVD-6759', SURF-1597' 9.625" 36#, MUD 9.8#
Event	9	Test Lines	Test Lines	7/24/2018	02:25:26	COM4	8.44	0.00	44.00	Pumped 5bbls fresh water to fill lines at 4bpm 320psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1800psi, proceeded to bring pressure to 4500psi, held well and no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	7/24/2018	02:33:08	COM4	11.51	3.90	251.00	Pumped 50bbls of 11.5# 3.78y 23.8g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-air at 5bpm 400psi.
Event	11	Pump Lead Cement	Pump Lead Cement	7/24/2018	02:42:06	COM4	13.30	6.40	498.00	Pumped 3270sk or 914bbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 498psi.

Event	12	Check Weight	Check Weight	7/24/2018	02:42:26	COM4	13.38	6.40	510.00	Weight verified with pressurized mud scales.
Event	13	Check Weight	Check Weight	7/24/2018	03:08:39	COM4	13.20	8.10	523.00	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	7/24/2018	03:54:19	COM4	13.25	8.10	522.00	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check Weight	7/24/2018	04:14:11	COM4	13.23	8.20	520.00	Weight verified with pressurized mud scales.
Event	16	Shutdown	Shutdown	7/24/2018	04:56:37	COM4	8.90	0.00	13.00	Pumped 3bbls fresh water ahead of plug.
Event	17	Drop Top Plug	Drop Top Plug	7/24/2018	04:57:22	COM4	8.88	0.00	12.00	Dropped by KLX tool hand, witnessed by company man and HES supervisor.
Event	18	Pump Displacement	Pump Displacement	7/24/2018	04:59:11	COM4	8.14	10.00	399.00	Pumped 447bbls fresh water at 10bpm.
Event	19	Bump Plug	Bump Plug	7/24/2018	05:57:49	COM4	8.41	0.00	2131.00	Slowed down at 420bbls away to 5bpm, final circulating pressure-2300psi. Did not see clear bump on plug, pressure climbed to 2700psi but did not reach 500psi over final circulating pressure. Pumped 447bbls fresh water, then proceeded with 5bbls fresh water for wet shoe.
Event	20	Check Floats	Check Floats	7/24/2018	05:58:21	USER	8.41	0.00	1850.00	Released pressure and got 3bbls back. Floats held.
Event	21	End Job	End Job	7/24/2018	06:02:32	COM4	8.37	0.00	5.00	Got 50bbls Cement to surface.
Event	22	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	7/24/2018	06:10:00	USER	8.36	0.00	2.00	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/24/2018	07:45:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	24	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/24/2018	08:00:00	USER				Pre journey management prior to departure.

3.0 Attachments

3.1 VT-LDS 5-16-18 Production – Job Chart with Events



3.2 VT-LDS 5-16-18 Production – Job Chart without Events

