

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

Date: Thursday, December 07, 2017

## **Launer 8 PRODUCTION**

Job Date: Wednesday, November 29, 2017

Sincerely,

**Julia Nichols**

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Launer 8** 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 60 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 #: 3818160	Quote #:	Sales Order #: 0904463896							
Customer: EXTRACTION OIL & GAS		Customer Rep: Shane Hackford								
Well Name: LAUNER	Well #: 8	API/UWI #: 05-123-45176-00								
Field: WATTENBERG	City (SAP): WINDSOR	County/Parish: WELD	State: COLORADO							
Legal Description: SE SE-28-7N-87W-745FSL-380FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Steven Markovich								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	14757ft	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	1566	0	1566
Casing	0	5.5	4.778	20		P-110	0	14757	0	0
Open Hole Section			8.5				1566	14804	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			14757		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		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 <sup>3</sup> /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		
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 (100003685)								

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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	2400	sack	13.2	1.57		5	7.53
7.50 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	328	bbl	8.34				
<b>Comment</b> Spacer to surface at 218bbls away, cement to surface at 268bbls away bringing 60bbls of cement to surface. Plug burst at 4142psi and then pumped a 5bbl wet shoe.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

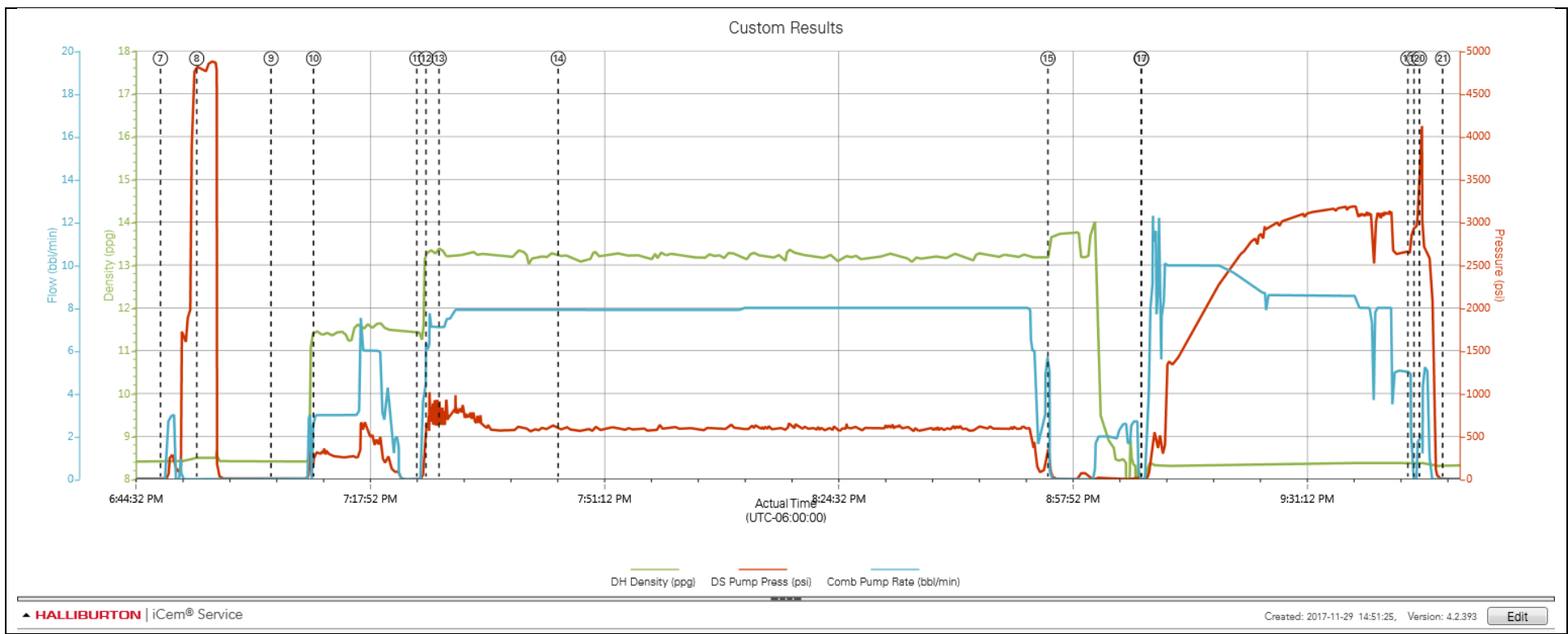
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	11/29/2017	08:00:00	USER				Job called out with an on location time of 14:30
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/29/2017	13:00:00	USER				JSA with HES crew on driving safety and route to location.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	11/29/2017	14:00:00	USER				Arrived on location, rig still running casing approx 4200'
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/29/2017	14:10:00	USER				JSA and hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	11/29/2017	14:30:00	USER				Rigged up HES lines and equipment.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	11/29/2017	18:30:00	USER	8.41	37.00	3.00	JSA with HES and rig crew on job procedure.
Event	7	Start Job	Start Job	11/29/2017	18:48:20	COM4	8.42	5.00	0.00	TD 14804' TP 14757' FC 14752' 5 1/2" 20# production casing 8 1/2" open hole 9 5/8" 36# surface casing at 1566'
Event	8	Test Lines	Test Lines	11/29/2017	18:53:30	COM4	8.50	4805.00	0.00	Set kick outs to 500psi and do kick out test then bring pressure up to 5000psi and hold.
Event	9	Check Weight	Check weight	11/29/2017	19:04:05	COM4	8.41	5.00	0.00	Weight verified by pressurized scales.
Event	10	Pump Spacer 1	Pump Spacer 1	11/29/2017	19:10:08	COM4	11.46	316.00	3.00	Pump 50bbls of 11.5ppg 3.73yield Tuned Spacer. Added 25 gallons of Musol A and Dual Spacer B on the fly. Pumped at 6bbl/min 619psi.
Event	11	Check Weight	Check weight	11/29/2017	19:24:50	COM4	11.43	-2.00	0.00	Weight verified by pressurized scales.
Event	12	Pump Lead Cement	Pump Lead Cement	11/29/2017	19:26:08	COM4	13.28	569.00	6.10	Pump 671bbls (2400sks) of 13.2ppg 1.57yield Cement. Pumped at 8bbl/min 596psi.
Event	13	Check Weight	Check weight	11/29/2017	19:28:00	COM4	13.35	747.00	7.10	Weight verified by pressurized scales.
Event	14	Check Weight	Check weight	11/29/2017	19:44:57	COM4	13.21	579.00	8.00	Weight verified by pressurized scales.
Event	15	Shutdown	Shutdown	11/29/2017	20:54:38	COM4	13.55	119.00	0.00	Shutdown and clean pumps and lines.

Event	16	Drop Top Plug	Drop Top Plug	11/29/2017	21:07:54	COM4	7.31	-2.00	0.00	Plug loaded and dropped in front of company rep.
Event	17	Pump Displacement	Pump Displacement	11/29/2017	21:07:59	COM4	2.37	-3.00	0.00	Pump 326 bbls of H2O. Pumped at 10bbl/min and slowed rate with pressure increase. Spacer to surface at 216bbls away cement to surface at 266bbls away bringing 60bbls of cement to surface.
Event	18	Bump Plug	Bump Plug	11/29/2017	21:45:52	COM4	8.36	2640.00	5.00	Bumped plug at 226 away, final lifting pressure was 2637psi. Took pressure 500psi over and held.
Event	19	Other	Other	11/29/2017	21:46:44	COM4	8.36	2951.00	0.10	Kicked pumps in at 2bbl/min to burst plug.
Event	20	Other	Other	11/29/2017	21:47:31	COM4	8.39	4120.00	1.90	Plug burst at 4142psi, brought rate up to 5bbl/min and pumped a 5 bbl wet shoe.
Event	21	End Job	End Job	11/29/2017	21:50:49	COM4	8.33	0.00	0.00	Thank you Steve Markovich and crew.



3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

