

# HALLIBURTON

iCem<sup>®</sup> Service

## EXTRACTION OIL & GAS

Date: Saturday, September 24, 2016

### **Winder #11**

Production

Job Date: Sunday, September 18, 2016

Sincerely,  
Lauren Roberts

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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 **Winder #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.

**65 bbl. 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]**

*The Road to Excellence Starts with Safety*

Sold To #: 369404	Ship To #: 3535921	Quote #:	Sales Order #: 0903544826
Customer: EXTRACTION OIL & GAS		Customer Rep:	
Well Name: WINDER		Well #: 11	API/UWI #: 05-123-39581-00
Field: SEVERANCE	City (SAP): WINDSOR	County/Parish: WELD	State: COLORADO
Legal Description: NE NE-9-6N-67W-936FNL-684FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 341	
Job BOM: 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HX38199		Srvc Supervisor:	
<b>Job</b>			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	16950ft	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		9.625	8.921	36			0	1560	0	1560
Casing		5.5	4.778	20			0	17100	0	6925
Open Hole Section			7.875				1561	17100	1560	6925

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make	
Guide Shoe	5.5			17090	Top Plug	5.5		HES	
Float Shoe	5.5			17086	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 ft3/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	3.74		5		
149.34 lbm/bbl		<b>BARITE, BULK (100003681)</b>								
35.40 gal/bbl		<b>FRESH WATER</b>								

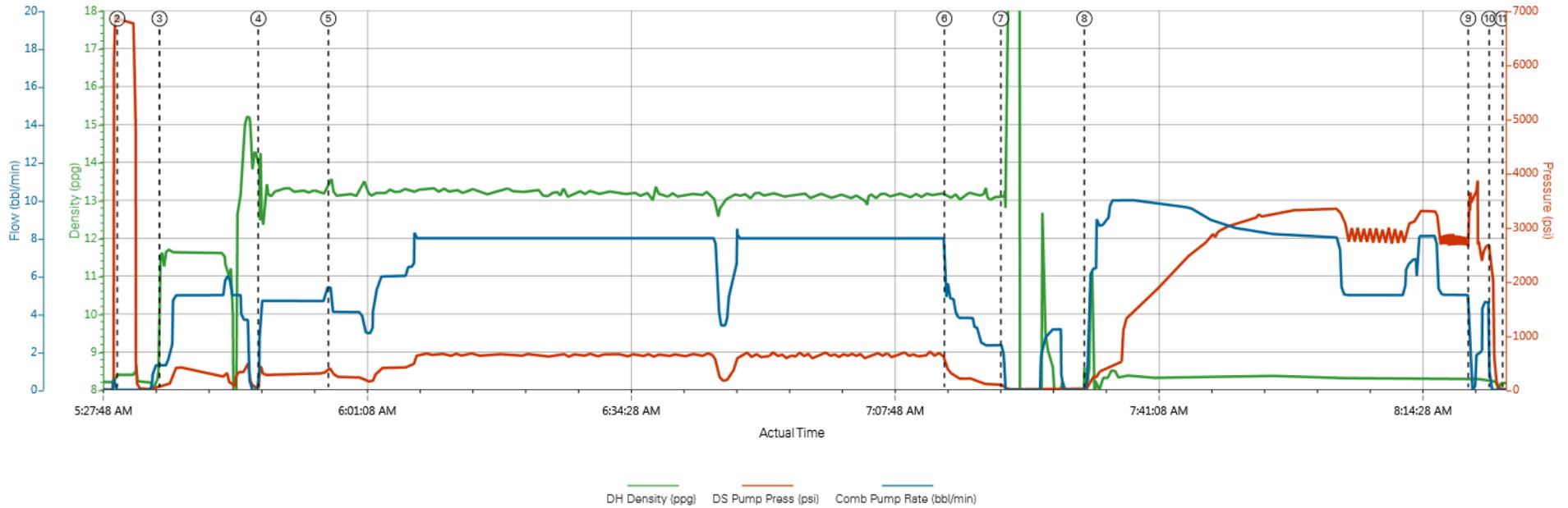
0.30 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>							
0.30 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
2	ElastiCem	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		5	7.48
7.48 Gal		<b>FRESH WATER</b>							
0.90 %		<b>HR-5, 50 LB SK (100005050)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
3	ElastiCem W/ Super CBL	ELASTICEM (TM) SYSTEM	2050	sack	13.2	1.57		5	7.49
7.49 Gal		<b>FRESH WATER</b>							
0.80 %		<b>HR-5, 50 LB SK (100005050)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
4	Displacement	Displacement	378	bbl	8.33			8	
<b>Cement Left In Pipe</b>		<b>Amount</b>	4ft		<b>Reason</b>			<b>Shoe Joint</b>	
<b>Comment</b> Got 65 BBLs of Cement and 50 BBLs of Spacer back to surface.									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density <i>(ppg)</i>	Pump Rate <i>(bbl/min)</i>	Driv-Side Pump Pressure <i>(psi)</i>	Comments
Event	1	Start Job	Start Job 05:16	9/18/2016	05:16:47	COM1	0.09	0.00	5.00	START JOB, FILL LINES WITH 5 BBLS OF FW AHEAD. RETURNS VERIFIED.
Event	2	Pressure Test	Pressure Test 05:29	9/18/2016	05:29:53	USER	8.41	0.00	6820.00	PRESSURE TEST TO 6000 PSI. PRESSURE TEST WAS CONDUCTED IN ACCORDANCE WITH HMS.
Event	3	Pump Spacer	Pump Spacer 05:35	9/18/2016	05:35:12	USER	11.66	1.30	67.00	PUMPED 50 BBLS OF 11.5 PPG TUNED SPACER III. DENSITY WAS VERIFIED WITH PRESSURIZED MUD SCALES IN ACCORDANCE WITH HMS. CALCULATED TO GET ALL SPACER BACK TO SURFACE; GOT ALL SPACER TO SURFACE.
Event	4	Pump Lead Cement	Pump Lead Cement 05:47	9/18/2016	05:47:41	USER	13.57	4.70	429.00	PUMPED 150 SKS OF ELASTICEM AT 13.2 PPG, 1.57 FT3/SK AND 7.48 GAL/SK. DENSITY WAS VERIFIED WITH PRESSURIZED MUD SCALES IN ACCORDANCE WITH HMS. CALCULATED TO GET ALL LEAD CEMENT TO SURFACE 41.5 BBL; GOT 41.5 BBLS LEAD BACK TO SURFACE.
Event	5	Pump Tail Cement	Pump Tail Cement 05:56	9/18/2016	05:56:32	USER	13.61	5.00	430.00	PUMPED 2050 SKS OF ELASTICEM AT 13.2 PPG, 1.57 FT3/SK AND 7.49 GAL/SK. DENSITY WAS VERIFIED WITH PRESSURIZED MUD SCALES IN ACCORDANCE WITH HMS. GOT 18.5 BBLS OF TAIL BACK TO SURFACE.
Event	6	Slow Rate	Slow Rate 07:14	9/18/2016	07:14:20	USER	13.13	5.30	406.00	SLOW RATE
Event	7	Shutdown	Shutdown 07:21	9/18/2016	07:21:29	USER	13.10	1.90	94.00	SHUTDOWN AFTER PUMPING TAIL CEMENT. PUMPS AND LINES FLUSHED TO CATCH TANK. KLX REP AND HES DROPPED 3RD PARTY PLUG. PLUG LAUNCH CONFIRMED.
Event	8	Pump Displacement	Pump Displacement 07:32	9/18/2016	07:32:02	USER	8.05	0.00	16.00	PUMPED 378 BBLS OF FW DISPLACEMENT. KLX REP ON MIXING UNIT THROUGHOUT DISPLACEMENT.
Event	9	Other	Rupture Disc 08:20	9/18/2016	08:20:30	USER	8.30	0.00	3427.00	RUPTURED DISC AT 3900 PSI, PUMPED 5 BBLS FOR WET SHOE.
Event	10	Shutdown	Shutdown 08:23	9/18/2016	08:23:10	USER	8.24	0.00	2180.00	SHUTDOWN AFTER PUMPING 5 BBL WET SHOE.
Event	11	End Job	End Job 08:24	9/18/2016	08:24:51	COM1	8.19	0.00	4.00	END JOB. TOTAL CEMENT BACK TO SURFACE WAS 65 BBLS.

### Custom Results



- ① Start Job 05:16 0.09;5.0      ④ Pump Lead Cement 05:47 13.57;429;4.7      ⑦ Shutdown 07:21 13.1;94;1.9      ⑩ Shutdown 08:23 8.24;2180;0
- ② Pressure Test 05:29 8.41;6820;0      ⑤ Pump Tail Cement 05:56 13.61;430;5      ⑧ Pump Displacement 07:32 8.05;16;0      ⑪ End Job 08:24 8.19;4;0
- ③ Pump Spacer 05:35 11.66;67;1.3      ⑥ Slow Rate 07:14 13.13;406;5.3      ⑨ Rupture Disc 08:20 8.3;3427;0

Custom Results

