

# HALLIBURTON

iCem<sup>®</sup> Service

## EXTRACTION OIL & GAS

Date: Friday, September 09, 2016

### **Winder South #4**

Production

Job Date: Thursday, September 08, 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 South #4** 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.

**23 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 #: 3535917		Quote #:		Sales Order #: 0903526706					
Customer: EXTRACTION OIL & GAS				Customer Rep: Todd Stephens							
Well Name: WINDER SOUTH			Well #: 4		API/UWI #: 05-123-39577-01						
Field: SEVERANCE		City (SAP): WINDSOR		County/Parish: WELD		State: COLORADO					
Legal Description: NE NE-9-6N-67W-754FNL-684FEL											
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 346							
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Steve McCoy							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		16860ft		Job Depth TVD							
Water Depth				Wk Ht Above Floor		3 ft					
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	1556		1556	
Casing		5.5	4.778	20			0	16860	0	7075	
Open Hole Section			7.875				1556	16870	0	7075	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			16860		Top Plug	5.5				
Float Shoe	5.5					Bottom Plug	5.5				
Float Collar	5.5					SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5			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 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	4.38		5	
149.34 lbm/bbl		BARITE, BULK (100003681)									
35.40 gal/bbl		FRESH WATER									

0.30 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>							
0.30 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>							
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	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>							
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	ElastiCem W/ Super CBL	ELASTICEM (TM) SYSTEM	1950	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>							
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
4	Displacement	Displacement	372.6	bbl	8.33			8	
Cement Left In Pipe		Amount	ft	Reason				Shoe Joint	
Comment									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

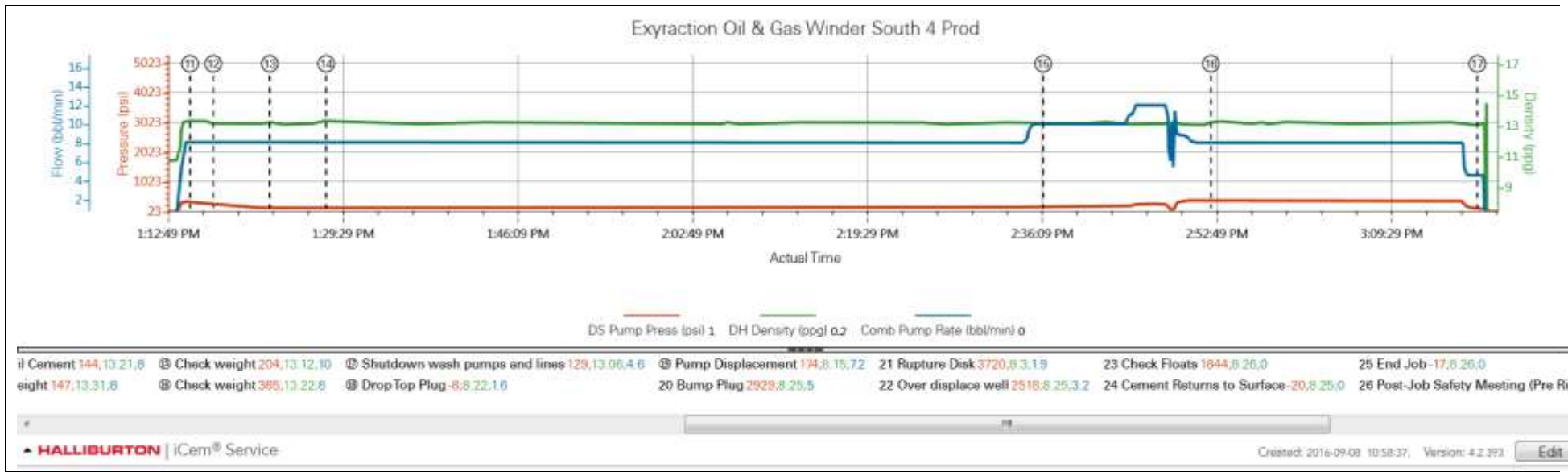
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Driv-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	9/8/2016	00:30:00	USER				Requested on Location @ 0600
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/8/2016	03:55:00	USER				
Event	3	Depart Shop for Location	Depart Shop for Location	9/8/2016	04:00:00	USER				
Event	4	Arrive At Loc	Arrive At Loc	9/8/2016	05:00:00	USER				
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	9/8/2016	05:15:00	USER				Discussed well site hazards and spotting equipment
Event	6	Rig-Up Equipment	Rig-Up Equipment	9/8/2016	05:30:00	USER				
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/8/2016	12:30:00	USER	63.00	8.29	0.00	
Event	8	Start Job	Start Job	9/8/2016	12:42:40	COM16	-1.00	8.29	0.00	Fill Lines
Event	9	Test Lines	Test Lines	9/8/2016	12:55:13	COM16	4385.00	8.32	0.00	4500 GOOD TEST NO LEAKS
Event	10	Pump Spacer 1	Pump Tuned Spacer	9/8/2016	12:58:55	COM16	152.00	11.55	1.30	Mixed & Pumped 50 bbls Tuned Spacer with surfactants @ 11.5 ppg
Event	11	Pump Lead Cement	Pump Lead Cement	9/8/2016	13:15:08	COM16	329.00	13.33	8.00	Mixed & Pumped 150 SKS ElastiCem @ 13.2 ppg, 1.57 Y, 7.48 gps without CBL
Event	12	Check Weight	Check weight	9/8/2016	13:17:22	COM16	258.00	13.13	8.00	pressurized mud scales 13.2 ppg
Event	13	Pump Tail Cement	Pump Tail Cement	9/8/2016	13:22:45	COM16	144.00	13.21	8.00	Mixed & Pumped 1950 SKS ElastiCem @ 13.2 ppg, 1.57 Y, 7.49 gps with CBL
Event	14	Check Weight	Check weight	9/8/2016	13:28:08	COM16	147.00	13.31	8.00	pressurized mud scales 13.2 ppg
Event	15	Check Weight	Check weight	9/8/2016	14:36:31	COM16	204.00	13.12	10.00	pressurized mud scales 13.2 ppg/ pump was not pumping at 100% efficiency more like 50% lost prime on PS Pump
Event	16	Check Weight	Check weight	9/8/2016	14:52:31	COM16	365.00	13.22	8.00	pressurized mud scales 13.2 ppg

Event	17	Shutdown	Shutdown wash pumps and lines	9/8/2016	15:17:55	USER	129.00	13.06	4.60	SHUTDOWN WASH PUMPS AND LINES
Event	18	Drop Top Plug	Drop Top Plug	9/8/2016	15:25:20	COM16	-8.00	8.22	1.60	witnessed by COMPANY MAN
Event	19	Pump Displacement	Pump Displacement	9/8/2016	15:26:30	COM16	174.00	8.15	7.20	372.6 BBLS Fresh water
Event	20	Bump Plug	Bump Plug	9/8/2016	16:17:37	COM16	2929.00	8.25	5.00	
Event	21	Other	Rupture Disk	9/8/2016	16:19:05	USER	3720.00	8.30	1.90	Ruptured disk at 3840 PSI
Event	22	Other	Over displace well	9/8/2016	16:19:37	USER	2518.00	8.25	3.20	Over displaced well by 5 bbls
Event	23	Check Floats	Check Floats	9/8/2016	16:23:10	USER	1844.00	8.26	0.00	Floats Held 3 bbls back to truck
Event	24	Cement Returns to Surface	Cement Returns to Surface	9/8/2016	16:25:00	USER	-20.00	8.25	0.00	23 bbls cement to Surface
Event	25	End Job	End Job	9/8/2016	16:26:00	COM16	-17.00	8.26	0.00	
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	9/8/2016	16:30:00	USER	-6.00	8.30	0.00	
Event	27	Rig-Down Equipment	Rig-Down Equipment	9/8/2016	16:35:00	USER	-4.00	0.61	0.00	
Event	28	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/8/2016	17:45:00	USER				
Event	29	Depart Location for Shop	Depart Location for Shop	9/8/2016	17:50:00	USER				



3.0 Attachments

3.1 Extraction Oil & Gas -Cement.png



3.2 Extraction Oil & Gas -Custom Results.png

