

# HALLIBURTON

iCem<sup>®</sup> Service

## **BILL BARRETT CORPORATION-EBUS**

Date: Tuesday, October 24, 2017

**AEF 4-62-29-5764C Production Liner**

Job Date: Wednesday, September 27, 2017

Sincerely,

**Bryce Hinsch**

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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 **AEF 4-62-29-5764C** cement **production liner** 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 10 bbls of cement were returned to surface off the liner top.**

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]**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 343492		<b>Ship To #:</b> 3721202		<b>Quote #:</b>		<b>Sales Order #:</b> 0904324406					
<b>Customer:</b> BILL BARRETT CORPORATION E-BILL				<b>Customer Rep:</b> Curtis Crowton							
<b>Well Name:</b> ANSCHUTZ EQUUS FARMS			<b>Well #:</b> 4-62-29-5764C		<b>API/UWI #:</b> 05-123-42748-00						
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> ROGGEN		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> SWSW-28-4N-62W-245FSL-306FWL											
<b>Contractor:</b> Cade				<b>Rig/Platform Name/Num:</b> Cade 24							
<b>Job BOM:</b> 7525 7525											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HX38199				<b>Srvc Supervisor:</b> Nicholas Roles							
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>							
<b>Form Type</b>					<b>BHST</b>						
<b>Job depth MD</b>		16357ft			<b>Job Depth TVD</b>						
<b>Water Depth</b>					<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>							
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Drill Pipe		4	3.34	14			0	219		0	
Casing		7	6.276	26	LTC	J-55	0	6673		0	
Casing		4.5	4	11.6	LTC	P-110	5690	16357	0	0	
Open Hole Section			6.125				6672	16361	0	0	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
Guide Shoe	4.5					Top Plug	4.5		HES		
Float Shoe	4.5			16357		Bottom Plug	4.5		HES		
Float Collar	4.5					SSR plug set	4.5		HES		
Insert Float	4.5					Plug Container	4.5		HES		
Stage Tool	4.5					Centralizers	4.5		HES		
<b>Fluid Data</b>											
<b>Stage/Plug #: 1</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>
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III			20	bbl	11.5	3.86		5	
145.18 lbm/bbl		<b>BARITE, BULK (100003681)</b>									

36.10 gal/bbl		<b>FRESH WATER</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	NeoCem Lead	NeoCem TM	550	sack	13.2	2.04		6	9.74
9.70 Gal		<b>FRESH WATER</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	Liner Displacement	Liner Displacement	164.5	bbl	8.33			4.5	
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	Drill Pipe Displacement	Drill Pipe Displacement	37.2	bbl	8.33			4.5	
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	
<b>Comment</b> Got 10bbls 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)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	9/27/2017	08:00:00	USER				Called out by Service Coordinator for O/L at 1330
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/27/2017	11:45:00	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	9/27/2017	12:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/27/2017	13:00:00	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	9/27/2017	13:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	9/27/2017	13:30:00	USER				Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/27/2017	14:30:00	USER				Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	38	Start Job	Start Job	9/27/2017	15:25:31	RTD Import	8.48	-98.07	0.00	TD-16361' 6.125" OH, TP-16357' 4.5" 11.6#, DP-4" 15.5# 94.2', HW-4" 28.4# 5600.2', Inter-7" 26# 6672' WS Sub 16300'.

Event	42	Test Lines	Test Lines	9/27/2017	15:31:05	RTD Import	8.49	-48.85	0.00	Pumped 5bbls fresh water to fill lines at 2bpm 110psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 2054psi, proceeded to bring pressure to 5000psi, held well and no leaks.
Event	50	Pump Spacer 1	Pump Spacer 1*	9/27/2017	15:37:10	RTD Import	8.46	-94.28	0.00	Pumped 20bbls of fresh water at 5bpm 1317psi
Event	52	Pump Spacer 2	Pump Spacer2*	9/27/2017	15:43:01	RTD Import	8.35	1367.89	4.70	Pumped 20bbls of 11.5# 3.86y 24.8g/s Tuned Spacer III at 5bpm 1262psi.
Event	55	Check Weight	Mud Cup Sample Pulled	9/27/2017	15:43:45	RTD Import	11.61	1527.83	4.78	Weight verified with pressurized mud scales.
Event	77	Pump Cement	Pump Cement*	9/27/2017	15:47:45	RTD Import	12.59	1360.32	5.36	Pumped 550sks or 200bbls 13.2# 2.04y 9.74g/s Neocem at 6bpm 1700psi.
Event	79	Check Weight	Mud Cup Sample Pulled	9/27/2017	15:49:27	RTD Import	13.04	1797.55	5.90	Weight verified with pressurized mud scales.
Event	116	Check Weight	Mud Cup Sample Pulled	9/27/2017	15:57:39	RTD Import	13.24	999.74	5.90	Weight verified with pressurized mud scales.
Event	122	Check Weight	Mud Cup Sample Pulled	9/27/2017	16:01:27	RTD Import	13.15	1046.12	5.91	Weight verified with pressurized mud scales.
Event	159	Check Weight	Mud Cup Sample Pulled	9/27/2017	16:13:50	RTD Import	13.20	1100.06	5.90	Weight verified with pressurized mud scales.
Event	244	Shutdown	Shutdown	9/27/2017	16:25:26	RTD Import	13.36	-98.07	0.00	Pumped 5bbls fresh water through pumps to pits.
Event	259	Drop Top Plug	Drop Top Plug	9/27/2017	16:35:11	RTD Import	8.23	-97.12	0.00	Dropped by Weatherford, witnessed by HES supervisor.
Event	260	Pump Displacement	Pump Displacement*	9/27/2017	16:35:24	RTD Import	8.22	-96.17	0.00	Pumped 201.7bbls fresh water at 4.5bpm slowed

										down to 3bpm at 30bbls gone for first latch, at 37bbls gone pressure rose to 1950psi, continued pumping at 4.5bpm.
Event	266	Bump Plug	Bump Plug	9/27/2017	17:24:30	RTD Import	8.38	2108.91	0.00	at 180bbls gone slowed to 3bpm to land plug. Final Circulating-1417psi Bump Pressure1960. Held pressure for 5min casing test.
Event	268	Check Floats	Check Floats	9/27/2017	17:29:06	USER	8.37	2512.07	4.11	Released pressure and got 0.5bbls back. Floats held.
Event	270	Other	Other	9/27/2017	17:30:25	RTD Import	8.23	-97.12	0.00	Pressured up to blow ball seat at 2705psi. Continued to pump 5bbls fresh water at 4bpm 2265psi.
Event	273	Pressure Up Well	Pressure Up Well	9/27/2017	17:41:29	RTD Import	8.43	2080.52	0.00	Pumped 1.5bbls to establish circulation through backside, shutdown, rig closed rams and pumped water to pressure up to 2000psi for 5min.
Event	274	Other	Other	9/27/2017	17:51:15	RTD Import	8.26	627.81	1.05	Released from liner hanger with 900psi on DP, once released circulated DP clean with fresh water at 7bpm. Cement to surface at 130bbls away, cleaned up at 140bbls away, pumped additional 15bbls.
Event	277	End Job	End Job	9/27/2017	18:16:38	USER	8.28	1248.64	7.06	Got 10bbls cement to surface.
Event	279	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/27/2017	18:30:00	USER				Discussed rigging down hazards and procedure according to HMS.
Event	280	Depart Location Safety	Depart Location Safety	9/27/2017	19:45:00	USER				Held meeting with all



Meeting		Meeting					personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	281	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/27/2017	20:00:00	USER	Pre journey management prior to departure.

## 3.0 Attachments

### 3.1 Bill Barrett AEF 4-62-29-5764C Production Liner Job Chart

