

# HALLIBURTON

iCem<sup>®</sup> Service

## **CONOCO/PHILLIPS COMPANY-EBUS**

Date: Saturday, September 02, 2017

**State Bierstadt 4-65 35-34 1DH Two-Stage Surface**

Job Date: Wednesday, August 09, 2017

Sincerely,

**Bryce Hinsch**

## Legal Notice

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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 **State Bierstadt 4-65 35-34 1DH** cement **two-stage surface** 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 50 bbls of spacer and 20 bbls of cement were returned to surface on the 1<sup>st</sup> stage above the stage tool.**

**Approximately 50 bbls of spacer and 40 bbls of cement were returned to surface on the 2<sup>nd</sup> stage.**

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*

Sold To #: 352431	Ship To #: 3814238	Quote #: 0022338139	Sales Order #: 0904223199
Customer: CONOCO/PHILLIPS COMPANY-EBUS		Customer Rep: Aron Negusse	
Well Name: STATE BIERSTADT 4-65 35-34		Well #: 1DH	API/UWI #: 05-005-07295-00
Field: WILDCAT	City (SAP): AURORA	County/Parish: ARAPAHOE	State: COLORADO
Legal Description: NE NE-35-4S-65W-1250FNL-650FEL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 448	
Job BOM: 392189 392189			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB41307		Srvc Supervisor: Bradley Hinkle	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	2279ft	Job Depth TVD	2279ft
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
Open Hole Section			12.25				0	1773		0
Casing		9.625	8.921	36	LTC	J-55	0	2279		0
Open Hole Section			12.25				1777	2286		0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625				Top Plug	9.625	1	Weatherford
Float Shoe	9.625	1	Weatherford	2279	Bottom Plug	9.625		HES
Float Collar	9.625	1	Weatherford	2234	SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625	1	HES
Stage Tool	9.625	1	Weatherford	1773	Centralizers	9.625		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	Spacer	Tuned Spacer III	50	bbl	10	8.82		4		

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	Tail Cement	SWIFTCEM	165	sack	14.2	1.59		6	7.89	
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	Fresh Water	40	bbl	8.33			8		
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	Water Based Mud	132	bbl	8.9			8		
Cement Left In Pipe		<b>Amount</b>	44 ft		<b>Reason</b>			<b>Shoe Joint</b>		
Mix Water:		pH 7	<b>Mix Water Chloride:</b> 0 ppm			Mix Water Temperature: 65 °F				
Cement Temperature:		## °F °C	<b>Plug Displaced by:</b> ## lb/gal kg/m3 XXXX			Disp. Temperature: ## °F °C				
Plug Bumped?		Yes/No	<b>Bump Pressure:</b> #### psi MPa			Floats Held? <b>Yes/No</b>				
Cement Returns:		## bbl m3	<b>Returns Density:</b> ## lb/gal kg/m3			Returns Temperature: ## °F °C				
<b>Comment</b> 50 bbls Tuned Spacer and 20 bbls Cement to surface when circulating after DV Tool opened.										

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 352431	<b>Ship To #:</b> 3814238	<b>Quote #:</b> 0022338139	<b>Sales Order #:</b> 0904223199
<b>Customer:</b> CONOCO/PHILLIPS COMPANY-EBUS		<b>Customer Rep:</b> Richard Perez	
<b>Well Name:</b> STATE BIERSTADT 4-65 35-34		<b>Well #:</b> 1DH	<b>API/UWI #:</b> 05-005-07295-00
<b>Field:</b> WILDCAT	<b>City (SAP):</b> AURORA	<b>County/Parish:</b> ARAPAHOE	<b>State:</b> COLORADO
<b>Legal Description:</b> NE NE-35-4S-65W-1250FNL-650FEL			
<b>Contractor:</b> H & P DRLG		<b>Rig/Platform Name/Num:</b> H & P 448	
<b>Job BOM:</b> 392189 392189			
<b>Well Type:</b> HORIZONTAL OIL			
<b>Sales Person:</b> HALAMERICA\HB41307		<b>Srvc Supervisor:</b> Bradley Hinkle	

**Job**

<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>	1773ft	<b>Job Depth TVD</b>	1773ft
<b>Water Depth</b>		<b>Wk Ht Above Floor</b>	
<b>Perforation Depth (MD)</b>	<b>From</b>		<b>To</b>

**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
Open Hole Section			12.25				0	1773		1773
Casing		9.625	8.921	36	LTC	J-55	0	1773		1773

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
<b>Guide Shoe</b>	9.625				<b>Top Plug</b>	9.625	1	Weatherford
<b>Float Shoe</b>	9.625				<b>Bottom Plug</b>	9.625		HES
<b>Float Collar</b>	9.625				<b>SSR plug set</b>	9.625		HES
<b>Insert Float</b>	9.625				<b>Plug Container</b>	9.625	1	HES
<b>Stage Tool</b>	9.625	1	Weatherford	1773	<b>Centralizers</b>	9.625		HES

**Fluid Data**

<b>Stage/Plug #: 2</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	
1	Spacer	Tuned Spacer III	50	bbl	10	8.82				

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	Lead Cement	SWIFTCEM	605	sack	12	2.56		8	15.11	
3	Displacement	Fresh Water	137	bbl	8.33			8		
Cement Left In Pipe		Amount	45 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		0 ppm		Mix Water Temperature:			60 °F
Cement Temperature:		## °F °C	Plug Displaced by:		## lb/gal kg/m3 XXXX		Disp. Temperature:			## °F °C
Plug Bumped?		Yes	Bump Pressure:		480 psi		Floats Held?			Yes
Cement Returns:		40 bbl	Returns Density:		## lb/gal kg/m3		Returns Temperature:			## °F °C
<b>Comment</b> 50 bbls Tuned Spacer and 40 bbls 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 <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	8/8/2017	12:00:00	USER				Crew called for an on location of 1630. Crew was Bradley Hinkle, Thomas Haas, Jim Krichmar, John Kendall and Dale Sanford.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	8/8/2017	15:30:00	USER				Pre-journey safety meeting.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	8/8/2017	16:30:00	USER				Sign in, perform a site assessment and pre rig-up safety meeting. Approximately 400 feet of casing to run.
Event	4	Other	Job Numbers	8/8/2017	16:35:00	USER				TD: 2286. TP: 2278.9 FC:2234.8 DV Tool: 1733.2. 9.625" casing inside a 12.25" OH. Mud weight at 8.9 ppg.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/8/2017	20:45:00	USER	8.34	0.00	37.00	Pre-job safety meeting with all personnel on location.
Event	6	Start Job	Start Job	8/8/2017	21:32:05	COM4	8.40	0.00	-6.00	
Event	7	Test Lines	Test Lines	8/8/2017	21:36:25	COM4	8.41	0.00	22.00	Pressure test lines with a 500 PSI electronic kick-out test.
Event	8	Pump Spacer 1	Pump Spacer 1	8/8/2017	21:46:39	COM4	8.39	1.90	22.00	Pump 50 bbls Tuned Spacer mixed at 10 ppg. Density verified by pressurized scales.
Event	9	Shutdown	Shutdown	8/8/2017	22:02:49	USER	9.91	0.00	48.00	Shutdown to mix up cement.

Event	10	Pump Tail Cement	Pump Tail Cement	8/8/2017	22:10:13	COM4	9.91	0.00	4.00	Pump 47 bbls (165 sacks) SwiftCem mixed at 14.2 ppg. 31 lbs FE-2 added in mix water per engineers. Density verified by pressurized scales.
Event	11	Shutdown	Shutdown	8/8/2017	22:23:40	USER	13.79	0.00	97.00	
Event	12	Clean Lines	Clean Lines	8/8/2017	22:26:56	USER	16.77	0.00	1.00	Wash pumps and lines until clean.
Event	13	Drop Top Plug	Drop Top Plug	8/8/2017	22:33:07	COM4	8.10	0.00	1.00	Top plug dropped by breaking off cap on cement head and dropping through. Verified visually that plug had fallen completely through plug container.
Event	14	Pump Displacement	Pump Displacement	8/8/2017	22:33:17	COM4	8.09	0.00	1.00	Pump 172 bbls. First 40 fresh water. Final 132 bbls water based mud. Good returns throughout.
Event	15	Bump Plug	Bump Plug	8/8/2017	23:02:46	COM4	8.99	3.90	455.00	Bump plug at 419 PSI. Brought pressure to 960 PSI and held for 5 minutes.
Event	16	Check Floats	Check Floats	8/8/2017	23:09:03	USER	8.93	0.00	29.00	Floats held. 1 bbl back.
Event	17	Load Tools	Drop DV Tool Sleeve Tool	8/8/2017	23:10:39	USER	8.92	0.00	5.00	Drop DV Tool sleeve opening device. Wait 10 minutes for it to fall.
Event	18	Set Tool	Set Tool	8/8/2017	23:25:06	USER	8.86	0.90	24.00	Pump 1 bbl per minute to shift sleeve. Sleeve shifted at 653 PSI. Increased rate to 3 bbls per minute until returns were verified.
Event	19	Circulate Well	Circulate Well	8/8/2017	23:26:10	USER	8.91	2.20	64.00	Pump 380 bbls to circulate spacer and cement out from above the DV Tool. 50 bbls spacer and 20 bbls cement to surface before mud was

circulating back at surface.

Event	20	Shutdown	Shutdown	8/9/2017	00:25:48	USER	9.01	0.00	82.00	
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/9/2017	00:30:00	USER	8.97	0.00	6.00	Pre rig-down safety meeting. Removed plug container and manifold from casing for rig to circulate.

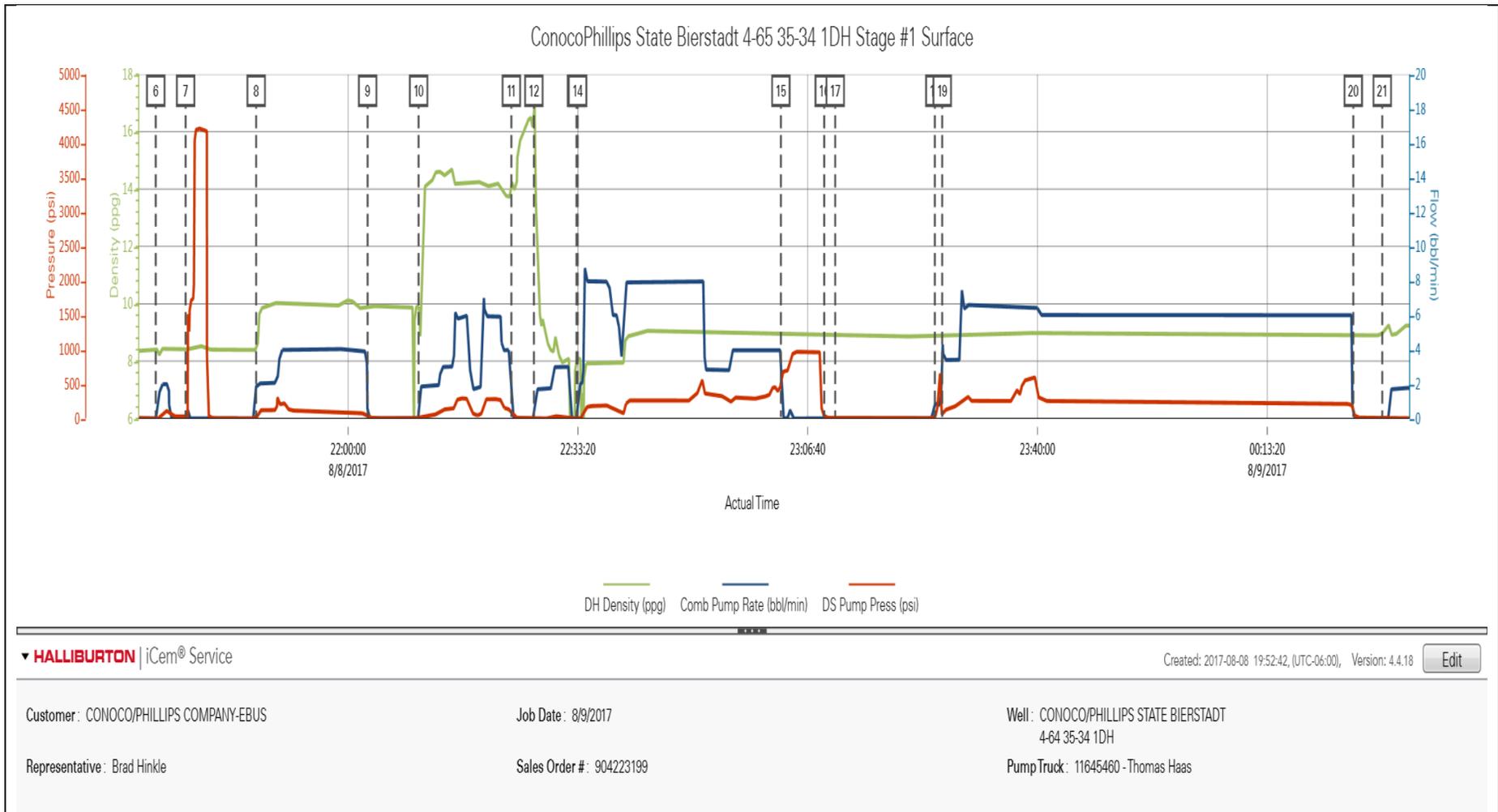
Second Stage

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comments
Event	1	Resume	Resume	8/9/2017	07:00:00	USER				Rig circulated on well to complete 8 hours after bump plug from first stage which was at 2300 on 8/8/2017.
Event	2	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/9/2017	07:30:00	USER	8.84	0.00	38.00	Pre-job safety meeting with all personnel on location.
Event	3	Start Job	Start Job	8/9/2017	08:15:38	COM4	8.75	0.00	39.00	
Event	4	Test Lines	Test Lines	8/9/2017	08:20:09	COM4	8.49	0.00	48.00	Pressure test lines with a 500 PSI electronic kick-out test.
Event	5	Pump Spacer 1	Pump Spacer 1	8/9/2017	08:30:55	COM4	8.45	0.00	41.00	Pump 50 bbls Tuned Spacer mixed at 10 ppg. Density verified by pressurized scales.
Event	6	Pump Cement	Pump Cement	8/9/2017	08:47:06	COM4	10.44	0.00	39.00	Pump 245 bbls (605 sacks) SwiftCem mixed at 12 ppg. Density verified by pressurized scales.
Event	7	Check Weight	Check Weight	8/9/2017	08:54:42	COM4	11.90	8.00	309.00	Cement weighed at 12 ppg.
Event	8	Check Weight	Check Weight	8/9/2017	09:07:23	COM4	12.05	8.00	333.00	Cement weighed at 11.95 ppg.

Event	9	Shutdown	Shutdown	8/9/2017	09:38:13	COM4	15.39	0.00	57.00	
Event	10	Clean Lines	Clean Lines	8/9/2017	09:42:15	USER	9.92	0.00	38.00	Wash pumps and lines until clean.
Event	11	Drop Top Plug	Drop Top Plug	8/9/2017	09:47:31	COM4	8.18	1.70	39.00	Top plug preloaded and witnessed by customer and Weatherford tool hand.
Event	12	Pump Displacement	Pump Displacement	8/9/2017	09:47:39	COM4	8.04	2.00	57.00	Pump 137 bbls fresh water. Good returns throughout. 50 bbls Tuned Spacer and 40 bbls cement to surface.
Event	13	Bump Plug	Bump Plug	8/9/2017	10:06:53	COM4	8.36	0.00	825.00	Bump plug at 480 PSI and brought pressure to 980 PSI. Held for 5 minutes.
Event	14	Release Casing Pressure	Release Casing Pressure	8/9/2017	10:11:33	USER	8.40	0.00	363.00	Bleed off pressure to verify DV Tool had closed. 4 bbls came back and cement in cellar fell indicating no closure of DV Tool. Prepared to attempt to close DV Tool again.
Event	15	Pressure Up	Pressure Up	8/9/2017	10:12:53	USER	8.37	0.00	313.00	Pump back on top plug to set DV Tool. Kicked pressure out at 1300 PSI and held until pressure leveled off.
Event	16	Release Casing Pressure	Release Casing Pressure	8/9/2017	10:15:44	USER	8.43	0.00	1365.00	Release pressure to verify DV Tool closed. Half bbl back.
Event	17	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/9/2017	10:30:00	USER	8.44	0.00	40.00	Pre rig-down safety meeting with HES and H&P personnel.
Event	18	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/9/2017	12:30:00	USER				Pre-journey safety meeting.

3.0 Attachments

3.1 Conoco State Bierstadt 4-65 35-34 1DH Stage #1 Surface



### 3.2 Conoco State Bierstadt 4-64 35-34 1DH Stage #2 Surface

