HALLIBURTON

iCem® Service

BILL BARRETT CORPORATION E-BILL

Date: Friday, April 24, 2015

ANSCHUTZ STATE 5-62-26-3225BH2

Job Date: Saturday, March 21, 2015

Sincerely,

Joshua Prudhomme

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Anschutz State 5-62-26-3225 BH2** cement **Intermediate** 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.

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

Job Times

	Date	Time	Time Zone
Called Out Time:	3/21/2015	15:00	MTN
Arrived On Location At:	3/21/2015	19:45	MTN
Job Started At:	3/21/2015	21:39	MTN
Job Completed At:	3/22/2015	00:02	MTN

1.2 Planned Pumping Schedule

Sold To #: 343492	**Ship To #:** 3590603	**Quote #:**	**Sales Order #:** 0902236888
Customer: BILL BARRETT CORPORATION E-BILL		**Customer Rep:** CECIL CROW	
Well Name: ANSCHUTZ STATE	**Well #:** 5-62-26-3225BH2		**API/UWI #:** 05-123-40221-00
Field: WATTENBERG	**City (SAP):** KERSEY	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW NW-26-5N-62W-1553FNL-350FWL			
Contractor: CADE DRLG		**Rig/Platform Name/Num:** CADE 24	
Job BOM: 7522			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB60191		**Srvc Supervisor:** Vaughn Oteri	

Job

Formation Name					
Formation Depth (MD)	**Top**		**Bottom**		
Form Type			**BHST**		
Job depth MD	6767ft		**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	821		0
Casing	0	7	6.276	26		J-55	0	6728		0
Open Hole Section			8.75				0	6728	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	7					Top Plug	7		HES
Float Shoe	7		6767			Bottom Plug	7		HES
Float Collar	7		6731			SSR plug set	7		HES
Insert Float	7					Plug Container	7		HES
Stage Tool	7					Centralizers	7		HES

Miscellaneous Materials

Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty	Conc
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size	Qty

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	15	bbl	11.5	3.76	24.2	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	Lead Cement	ECONOCEM (TM) SYSTEM	410	sack	12.5	1.89		6	10.25
10.25 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	Tail Cement	FRACCEM (TM) SYSTEM	175	sack	13.5	1.75		6	8.29
8.31 Gal		FRESH WATER							
47 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							

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	257	bbl	8.33				

Cement Left In Pipe	Amount	44 ft	Reason	Shoe Joint

Comment 25BBL OF CEMENT BACK TO SURFACE

1.3 Job Overview

		Units	Description
1	Surface temperature at time of job	^{o}F	43
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	9.8
4	Actual mud Plastic Viscosity (PV)	cP	
5	Actual mud Yield Point (YP)	$lb_f/100ft^2$	
6	Actual mud 30 min Gel Strength	$lb_f/100ft^2$	
7	Time circulated before job	HH:MM	
8	Mud volume circulated	bbls	
9	Rate at which well was circulated	bpm	
10	Pipe movement during hole circulation	Y/N	N
11	Rig pressure while circulating	psi	
12	Time from end mud circulation to start of job	HH:MM	
13	Pipe movement during cementing	Y/N	
14	Calculated displacement	bbls	257.12
15	Job displaced by	Rig/HES	HES
16	Annular flow before job	Y/N	N
17	Annular flow after job	Y/N	N
18	Length of rat hole	ft	10
19	Units of gas detected while circulating	units	
20	Was lost circulation experienced at any time?	Y/N	N

1.4 Water Field Test

Item	Recorded Value	Units	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH	6	-	6.0-8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	<200	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness	4	ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium		ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium		ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	39	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by:

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	3/21/2015	15:00:00	USER				CALL OUT FROM ARS OFFICE
Event	2	Arrive At Loc	Arrive At Loc	3/21/2015	19:45:00	USER				ARRIVE ON LOCATION MET WITH COMPANY REP TO DISCUSS JOB PROCESS AND CONCERNS ADVISED THAT THEY ONLY HAD THE LANDING JOINT TO RUN
Event	3	Start Job	Start Job	3/21/2015	21:39:43	COM6	0.60	8.43	12.00	HELD PREJOB SAFETY MEETING WITH ALL HANDS ON LOCATION TO DISCUSS JOB PROCESS AND HAZARDS
Event	4	Prime Pumps	Prime Pumps	3/21/2015	21:41:12	COM6	0.60	8.47	107.00	PUMPED 1BBL OF FRESH WATER TO PRIME LINES
Event	5	Test Lines	Test Lines	3/21/2015	21:41:24	COM6	0.60	8.48	85.00	PRESSURE TESTED PUMPS AND LINES FOUND NO LEAKS AND PRESSURE HELD GOOD
Event	6	Pump Spacer 1	Pump Spacer 1	3/21/2015	21:55:24	COM6	0.50	8.53	34.00	MIXED 15BBL OF 11.5PPG TUNE SPACER AT 2.0BPM 200PSI
Event	7	Pump Lead Cement	Pump Lead Cement	3/21/2015	22:01:51	COM6	2.60	12.70	253.00	MIXED 138BBL OF 12.5PPG ECONOCEM AT 6.0BPM 349PSI
Event	8	Check Weight	Check weight	3/21/2015	22:14:18	COM6	4.90	12.58	162.00	CONFIRM WEIGHT ON SCALES
Event	9	Pump Tail Cement	Pump Tail Cement	3/21/2015	22:26:10	COM6	5.40	12.99	108.00	MIXED 57BBL OF 13.5PPG FRACCEM AT5.5BPM 135PSI
Event	10	Shutdown	Shutdown	3/21/2015	22:39:15	COM6	0.40	10.87	35.00	
Event	11	Drop Top Plug	Drop Top Plug	3/21/2015	22:41:48	COM6	0.10	10.23	18.00	RELEASED PLUG WITNESSED BY COMPANY REP
Event	12	Pump Displacement	Pump Displacement	3/21/2015	22:42:30	COM6	0.30	10.17	18.00	PUMPED 257BBL OF FRESH WATER TO DISPLACE CEMENT

Event	13	Bump Plug	Bump Plug	3/21/2015	23:31:50	COM6	0.40	8.08	2699.00	BUMPED PLUG 500PSI OVER FINAL PUMP PRESSURE
Event	14	Other	Other	3/21/2015	23:37:23	COM6	0.40	8.13	40.00	RELEASED PRESSURE BACK TO PUMP TRUCK TO CHECK FLOATS , FLOATS HELD GOOD 2.5BBL BACK
Event	15	Pressure Up Well	Pressure Up Well	3/21/2015	23:37:39	COM6	0.40	8.13	38.00	PRESSURE UP WELL PER BILL BARRETT POLICY 15MIN AT 1100PSI
Event	16	End Job	End Job	3/22/2015	00:02:03	COM6	0.40	8.18	42.00	25BBL OF CEMENT BACK TO SURFACE

3.0 Attachments

3.1 Case 1-Custom Results.png