



Quote #:

| Execution #:





Cementing Treatment



Start Date	12/22/2017	Well	ANSCHUTZ-WILLIAMS 5-61-27-4956B
End Date	12/22/2018	County	WELD
Client	BILL BARRETT CORPORATION	State/Province	CO
Client Field Rep	Robert	API	05-123-45729
Service Supervisor	Eric Dewit	Type of Job	Liner
District	Cheyenne, WY		

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Previous Casing	6.28	7.00	23.00	6,413.00	6,027.00			
Open Hole	6.13			16,167.00	6,027.00	20.00		
Drill Pipe	3.34	4.00	14.00	5,559.00	5,559.00			
Liner	4.00	4.50	11.60	16,163.00	6,413.00			

Shoe Length (ft.): 58

HARDWARE

Bottom Plug Used?	No	Tool Type	Liner Hanger
Top Plug Used?	SSR Plug	Tool Depth (ft)	5,59
Top Plug Provided By	Weatherford	Max Casing Pressure - Rated (psi)	5,80
Top Plug Size	4.5	Max Casing Pressure - Operated (psi)	3,500
Centralizers Used	Yes	Pipe Movement	None
Landing Collar Depth (ft)	16,105	Top Connection Thread	1502
		Top Connection Size	2"

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	6
Circulation Prior to Job	Yes	YP Mud In	3
Lost Circulation Prior to Cement Job	No	10 sec SGS	1
Solids Present at End of Circulation	No	10 min SGS	2
Mud Density In (ppg)	9	Flare Prior to/during the Cement Job	No
Mud Density Out (ppg)	9	Gas Present	No
YP Mud Out	3		

Cementing Treatment



TEMPERATURE

Ambient Temperature (°F) -1 Mix Water Temperature (°F) 60

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	CD Spacer	11.0000					30.0000
Tail Slurry	P50-X1	13.5000	1.5930	7.95	755	1,202.0000	214.0000
Displacement 1	Water + MMCR	8.3300				0.0000	0.0000
Displacement 2	Water + Chems	8.3300				0.0000	130.0000
Displacement 2	Water + MMCR	8.3300				0.0000	20.0000
Displacement Final	Water	8.3300				0.0000	94.7000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	CD Spacer	GELLANT WATER, GW-86	0.80	PPB
Spacer / Pre Flush / Flush	CD Spacer	SAND, S-8, Silica Flour, 200 Mesh	179.40	PPB
Spacer / Pre Flush / Flush	CD Spacer	AR-20	0.60	PPB
Tail Slurry	P50-X1	CEMENT, CLASS G	50.00	PCT
Tail Slurry	P50-X1	EXTENDER, BENTONITE	4.00	BWOB
Tail Slurry	P50-X1	FLUID LOSS, FL-24, (BJS Only)	0.40	BWOB
Tail Slurry	P50-X1	BONDING AGENT, EC-2	3.00	BWOB
Tail Slurry	P50-X1	AR-20	0.20	BWOB
Tail Slurry	P50-X1	GELLANT WATER, GW-86	0.10	BWOB
Tail Slurry	P50-X1	Flyash (Rockies)	50.00	PCT
Tail Slurry	P50-X1	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	P50-X1	BONDING AGENT, BA-90	3.00	LBS/SK
Displacement 1	Water + MMCR	BIOCIDE, ALPHA 544	0.10	GPB
Displacement 1	Water + MMCR	AR-61	0.10	GPB
Displacement 1	Water + MMCR	ASF-50	0.08	GPB
Displacement 2	Water + Chems	BIOCIDE, ALPHA 544	0.01	GPB
Displacement 2	Water + Chems	ASF-50	0.08	GPB
Displacement 2	Water + MMCR	AR-61	0.10	GPB

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
6:52	CD Spacer	4.8	30.00	1205		
7:02	P50-X1	4.8	214.00	651		
8:15	Water + MMCR	6	20.00	400		
8:19	Water + Chems	5.60	130.00	2037		
8:45	Water + MMCR	5.60	20.00	2465		
8:54	Water	3	29	1684		

Cementing Treatment



	Min	Max	Avg
Pressure (psi)	122	3520	
Rate (bpm)	1	7.4	

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	25
Calculated Displacement Volume (bbls)	199	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	199	Amount of Spacer to Surface	20
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0
Bump Plug	Yes	Amount Bled Back After Job	1
Bump Plug Pressure (psi)	2,163	Total Volume Pumped (bbls)	633
Were Returns Planned at Surface	No	Top Out Cement Spotted	No
Cement returns During Job	0	Lost Circulation During Cement Job	No



Customer Name Bill Barrett
 Well Name Anschutz-Williams 5-6-27-4956B
 Job Type Liner

District Cheyenne
 Supervisor Eric Dewit
 Engineer _____

Seq No.	Start Date/Time	Category	Event	Equipment	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	12/22/2017 0:30	Mobilization	Callout		1					Customer calls with an RTS of 03:00
2	12/22/2017 3:14	Mobilization	Arrive on Location		48					Arrive on location
3	12/22/2017 3:15	Operational	Safety Meeting		53					Have STEACS Briefing with crew before pulling on location
4	12/22/2017 3:25	Operational	Spot Units		49					
5	12/22/2017 3:30	Operational	Rig Up		50					Rig up bulk, water, wash up, and high pressure lines
6	12/22/2017 5:50	Operational	Safety Meeting		53					Pre-job safety meeting with rig crew, and tool hand
7	12/22/2017 6:32	Operational	Start Pumping		55	8.34	1	2	122	Load pumps and lines
8	12/22/2017 6:35	Operational	Pressure Test		54	8.34	0	0	3448	Test pumps and lines
9	12/22/2017 6:41	Operational	Pump Spacer		56	8.34	4.8	20	1382	Pump 20 bbls of fresh water spacer
10	12/22/2017 6:52	Operational	Pump Spacer		56	11	4.8	30	1205	Batch, weigh, and pump 30 bbls of weighted spacer @11 ppg
11	12/22/2017 7:02	Operational	Pumping Cement		61	13.5	4.8	214	651	Pump 755 sacks of cement @13.5 ppg (Yield: 1.39 Mix water: 8.01)
12	12/22/2017 8:03	Operational	Clean Pumps and Lines		62					Wash pumps and lines, tool hand drops the dart
13	12/22/2017 8:15	Operational	Pump Displacement		64	8.34	6	0	400	Start fresh water displacement + Biocide + Clay Stabilizer (Retarder in the first 20 bbls)
14	12/22/2017 8:20	Operational	Other (See comments)		76	8.34	3.8	25	928	Drop rate to pick up the wiper plug
15	12/22/2017 8:24	Operational	Other (See comments)		76	8.34	3.8	35	2516	Pick up the wiper plug
16	12/22/2017 8:24	Operational	Other (See comments)		76	8.34	5.6	35	2037	Increase pump rate after picking up the plug
17	12/22/2017 8:32	Operational	Pump Displacement		64	8.34	5.6	82	2440	Fresh water + Biocide + Clay Stabilizer Displacement
18	12/22/2017 8:40	Operational	Pump Displacement		64	8.34	5.6	120	2465	Fresh water + Biocide + Clay Stabilizer Displacement
19	12/22/2017 8:51	Operational	Other (See comments)		76	8.34	3	188	1684	Drop rate to land the plug
20	12/22/2017 8:55	Operational	Land Plug		67	8.34	3	199	2163	Land the plug @1701 psi, Bump up to 2163
21	12/22/2017 8:57	Operational	Other (See comments)		76	8.34	0.8	0	3520	Burst the disc to pump the wet shoe
22	12/22/2017 8:58	Operational	Other (See comments)		76	8.34	4.8	0	2561	Pump 5 bbl wet shoe
23	12/22/2017 8:59	Operational	Other (See comments)		76	8.34	0	5	1130	Shut down
24	12/22/2017 8:59	Operational	Check Floats		68	8.34	0	0	0	Check floats (floats held)
25	12/22/2017 9:04	Operational	Other (See comments)		76					Rig sets the packer
26	12/22/2017 9:28	Operational	Pressure Test		54				2048	Rig pressure test the packer
27	12/22/2017 9:38	Operational	Other (See comments)		76				2016	End backside test
28	12/22/2017 9:54	Operational	Other (See comments)		76	8.34	0	0	900	Pump pressure down the drill pipe for rig to sting out
29	12/22/2017 9:56	Operational	Start Pumping		55	8.34	7.4	0	2238	Start rolling the hole
30	12/22/2017 10:09	Operational	Spacer Back to Surface		65	8.34	7.4	80	2170	Started getting our CD spacer to surface
31	12/22/2017 10:11	Operational	Cement Back to Surface		66	8.34	7.4	105	1956	Start getting cement to surface



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Seq No.	Start Date/Time	Category	Event	Equipment	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
32	12/22/2017 10:17	Operational	End Pumping		69	8.34	0	145	0	Shut down end job
33	12/22/2017 10:20	Operational	Safety Meeting		53					Pre-rig down safety meeting
34	12/22/2017 10:25	Operational	Rig Down		73					
35	12/22/2017 11:15	Mobilization	Leave Location		74					

