



Crestone Peak Resources Operating

Herren 1C-33H-H367

API # 05-123-47733

Production

12/12/2018

Quote #: 24226

Execution #: 13912



Crestone Peak Resources Operating

Attention: Mr. Jerry Thorstad | (303) 829-8179 | Jerry.Thorstad@Crestonepr.com

Crestone Peak Resources Operating | 10188 E I25 Frontage Rd. | Firestone, CO. 80504

Dear Mr. Jerry Thorstad,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,
Jason Creel
Field Engineer I | (307) 256-0306 | Jason.Creel@bjservices.com

Field Office 1716 East Allison Rd., Cheyenne WY, 82007
Phone: (307) 638-5585

Sales Office 999 18th St. Suite 1200 Denver, CO 80202
Phone: (281) 408-2361

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Wesley Bell	FORMATION	Codell
DISTRICT	Cheyenne, WY	RIG	Ensign 153
SERVICE	Cementing	COUNTY	WELD
		STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	OD (in)	ID (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)
Open Hole	0.00	8.50	0.00	12,301.00	7,333.00	10.00
Previous Casing	9.63	8.84	40.00	2,008.00	2,008.00	
Casing	5.50	4.78	20.00	12,283.00	7,333.00	

HARDWARE

Top Plug Used?	Yes	Tool Type	Float Collar
Top Plug Provided By	Non BJ	Tool Depth (ft)	12,272.00
Top Plug Size	5.500	Max Casing Pressure - Rated (psi)	12,630.00
Centralizers Used	Yes	Max Casing Pressure - Operated (psi)	3000.00
Centralizers Quantity	218.00	Pipe Movement	None
Centralizers Type	Bow	Job Pumped Through	No Manifold
Landing Collar Depth (ft)	12,272	Top Connection Thread	BTC
		Top Connection Size	5.5

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	15
Circulation Prior to Job	Yes	YP Mud In	6
Circulation Time (min)	90.00	YP Mud Out	6
Circulation Rate (bpm)	10.00	Solids Present at End of Circulation	No
Circulation Volume (bbls)	900.00	10 sec SGS	3
Lost Circulation Prior to Cement Job	No	10 min SGS	4
Mud Density In (ppg)	10.50	30 min SGS	5
Mud Density Out (ppg)	10.40	Flare Prior to / during the Cement Job	No
PV Mud In	15	Gas Present	No

TEMPERATURE

Ambient Temperature (°F)	34.00	Slurry Cement Temperature (°F)	65.00
Mix Water Temperature (°F)	60.00	Flow Line Temperature (°F)	121.00

FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	12.0000					1.0000
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	12.0000					90.0000
Lead Slurry	BJCem P100.3.01C	12.5000	2.1581	12.21	659	1421.0000	253.0000
Tail Slurry	BJCem P50.6.02C	13.5000	1.7523	8.70	974	1706.0000	303.7000
Displacement 1	Retarded Water	8.3300				0.0000	10.0000
Displacement Final	Displacement Final (Water)	8.3308				0.0000	262.2000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	5.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	243.3500	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	IntegraGuard GW-86	1.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SPACER SURFACTANT, SS-267	1.0000	GPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, SR-20	0.6100	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	IntegraGuard GW-86	1.2000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-31	0.5000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-7C	2.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	WEIGHTING ADDITIVE, W-11	243.6000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	SPACER SURFACTANT, SS-267	1.0000	GPB
Lead Slurry	BJCem P100.3.01C	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-24	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C	RETARDER, SR-20	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-66	0.5000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraGuard GW-86	0.2000	BWOB
Lead Slurry	BJCem P100.3.01C	EXTENDER, BENTONITE	4.0000	BWOB
Tail Slurry	BJCem P50.6.02C	FLUID LOSS, FL-66	0.6000	BWOB
Tail Slurry	BJCem P50.6.02C	EXTENDER, BENTONITE	2.0000	BWOB
Tail Slurry	BJCem P50.6.02C	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem P50.6.02C	CEMENT, CLASS G	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	IntegraGuard GW-86	0.1000	BWOB
Tail Slurry	BJCem P50.6.02C	SAND, S-8, Silica Flour, 200 Mesh	20.0000	BWOB
Tail Slurry	BJCem P50.6.02C	RETARDER, R-6	0.2000	BWOB
Tail Slurry	BJCem P50.6.02C	Flyash (Rockies)	50.0000	PCT

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Client Name: Crestone Peak Resources
Operating

Well: HERREN 1C-33H-H367

Well API: 05-123-47733



Start Date: 12/12/2018

End Date: 12/12/2018

Field Ticket #: FT-13912-M2V8C70201-
580807698

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ Services
Calculated Displacement Vol (bbls)	272.00
Actual Displacement Vol (bbls)	272.00
Did Float Hold?	Yes
Bump Plug	Yes
Bump Plug Pressure (psi)	2900.00
Were Returns Planned at Surface	Yes
Cement Returns During Job	Full

Amt of Cement Returned / Reversed	52.00
Method Used to Verify Returns	Visual
Amt of Spacer to Surface	90.00
Pressure Left on Casing (psi)	0.00
Amt Bled Back After Job	2.50
Total Volume Pumped (bbls)	918.00
Top Out Cement Spotted	No
Lost Circulation During Cement Job	No

BJ Cementing Event Log

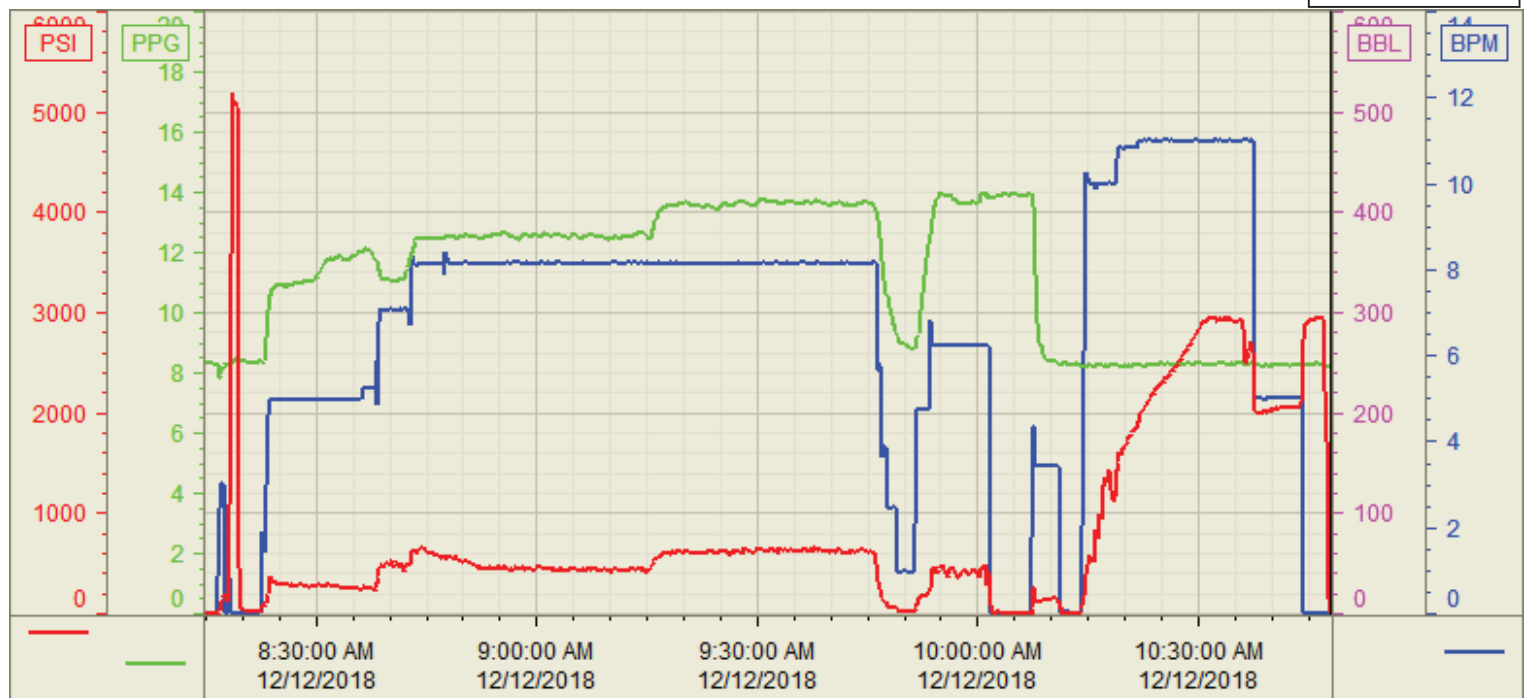
Long String - Cheyenne, WY - Wesley Bell

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	12/12/2018 04:30	Arrive on Location					Arrive on location, requested time was 06:30
2	12/12/2018 04:30	Rig Up					spot and rig in all BJ equipment
3	12/12/2018 06:00	Rig					Wait for rig to Circulate bottoms up
4	12/12/2018 07:30	STEACS Briefing					Hold STEACS briefing with rig crew and pump crew, review job procedures and job hazards
5	12/12/2018 08:19	Pressure Test	8.3400	3.00	2.00	5000.00	Test lines with fresh water, good test, no leaks
6	12/12/2018 08:23	Pump Spacer	12.0000	5.00	90.00	500.00	Pump Spacer, 30bbls at 11ppg, 30bbls at 12ppg, 30bbls at 11ppg.
7	12/12/2018 08:43	Pump Lead Cement	12.5000	8.00	253.00	550.00	Pump 253bbls of Lead cement at 12.5ppg, 659sks, Y: 2.158, WR: 12.21.
8	12/12/2018 09:16	Pump Tail Cement	13.5000	8.00	303.00	600.00	Pump 303bbls of Tail cement at 13.5ppg, 974sks, Y: 1.7523, WR: 8.7. Top of Tail at 4844'
9	12/12/2018 10:02	Wash Pumps and Lines	8.3400	3.00			Wash pumps and lines, load top plug
10	12/12/2018 10:14	Drop Top Plug	8.3400	5.00	10.00	500.00	Drop top latch down plug, begin displacement with water. First ten with retarder.
11	12/12/2018 10:25	Pump Displacement	8.3400	11.00	90.00	1100.00	100bbls of displacement away
12	12/12/2018 10:35	Pump Displacement	8.3400	11.00	100.00	3000.00	200bbls of displacement away. Spacer to surface at 120bbls away.
13	12/12/2018 10:37	Pump Displacement	8.3400	11.00	20.00	2900.00	220bbls of displacement away, cement at surface. 52bbls total to surface
14	12/12/2018 10:45	Land Plug	8.3400	5.00	52.00	1900.00	272bbls of displacement away, land plug, bump to 2900psi
15	12/12/2018 10:48	Check Floats	8.3400	0.00	0.00	0.00	2.5bbls back to truck, floats held
16	12/12/2018 10:50	Rig Down					Rig down all BJ equipment
17	12/12/2018 13:00	Leave Location					

Customer: Crestone
Well Number: 1C-33H-H367
Lease Info: Herren



Print Date/Time
12/12/2018 11:34:26 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	1.3	12/12/2018 10:47:57 AM	CementerDS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	8.18	12/12/2018 10:48:03 AM	CementerDENSITY2_ACTUAL_RATE
3	Combined Rate	0.00	12/12/2018 10:48:03 AM	CementerFlow_Combined
4				
5				

Source: Control1 11:34:20 AM