



Crestone Peak Resources Operating

Herren 1I-33H-H367

API # 05-123-47726

Production

01/06/2019

Quote #: 25148

Execution #: 14607



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	Zachary Hyde	FORMATION	NIOBRARA
CLIENT FIELD REPRESENTATIVE	Jerry Thorstad	RIG	Ensign 153
DISTRICT	Cheyenne, WY	COUNTY	WELD
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	OD (in)	ID (in)	WEIGHT (lbs/ft)	MD (ft)	TVD (ft)	EXCESS (%)
Previous Casing	9.63	8.84	40.00	1,966.00	1,946.00	
Open Hole		8.50		11,830.00	7,158.00	10.00
Casing	5.50	4.78	20.00	11,821.00	7,158.00	

HARDWARE

Bottom Plug Used?	No	Landing Collar Depth (ft)	11,809.00
Top Plug Used?	Yes	Tool Type	Float Collar
Top Plug Provided By	Non BJ	Tool Depth (ft)	11,809.00
Top Plug Size	5.500	Pipe Movement	None
Centralizers Used	Yes	Job Pumped Through	No Manifold
Centralizers Quantity	210.00	Top Connection Thread	BTC
Centralizers Type	Rigid	Top Connection Size	5.5

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	7
Circulation Prior to Job	Yes	YP Mud In	9
Circulation Time (min)	120.00	YP Mud Out	9
Circulation Rate (bpm)	10.00	Solids Present at End of Circulation	No
Circulation Volume (bbls)	1,200.00	10 sec SGS	5.00
Lost Circulation Prior to Cement Job	No	10 min SGS	7.00
Mud Density In (ppg)	9.50	30 min SGS	9.00
Mud Density Out (ppg)	9.50	Flare Prior to / during the Cement Job	No
PV Mud In	7	Gas Present	No

TEMPERATURE

Ambient Temperature (°F)	60.00	Slurry Cement Temperature (°F)	70.00
Mix Water Temperature (°F)	70.00	Flow Line Temperature (°F)	130.00

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 II	12.0000					90.0000
Lead Slurry	BJCem P100.3.01C	13.0000	1.9835	9.76	695	1,374.0000	244.6000
Tail Slurry	BJCem P50.6.02C	13.5000	1.7523	8.70	935	1,635.0000	291.2000
Displacement 1	Retarded Water	8.3300				0.0000	10.0000
Displacement Final	Displacement Final (Water)	8.3308				0.0000	251.9000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
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
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-7C	2.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-31	0.5000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	IntegraGuard GW-86	1.2000	PPB
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraCare EC-2	3.0000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraGuard GW-86	0.0500	BWOB
Lead Slurry	BJCem P100.3.01C	RETARDER, SR-20	0.8000	BWOB
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-86L	1.0000	GALS/SK
Lead Slurry	BJCem P100.3.01C	EXTENDER, BENTONITE	4.0000	BWOB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-24	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-66	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem P50.6.02C	RETARDER, R-6	0.2000	BWOB
Tail Slurry	BJCem P50.6.02C	IntegraGuard GW-86	0.1000	BWOB
Tail Slurry	BJCem P50.6.02C	Flyash (Rockies)	50.0000	PCT
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	EXTENDER, BENTONITE	2.0000	BWOB
Tail Slurry	BJCem P50.6.02C	FLUID LOSS, FL-66	0.6000	BWOB
Tail Slurry	BJCem P50.6.02C	SAND, S-8, Silica Flour, 200 Mesh	20.0000	BWOB
Displacement 1	Retarded Water	RETARDER, R-8L	0.5000	GPB

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ
Calculated Displacement Vol (bbls)	262.00
Actual Displacement Vol (bbls)	262.00
Did Float Hold?	Yes
Bump Plug	Yes
Bump Plug Pressure (psi)	2,200.00
Were Returns Planned at Surface	Yes
Cement Returns During Job	Full

Amt of Cement Returned / Reversed	42.00
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	3.00
Total Volume Pumped (bbls)	852.00
Top Out Cement Spotted	No
Lost Circulation During Cement Job	No

BJ Cementing Event Log

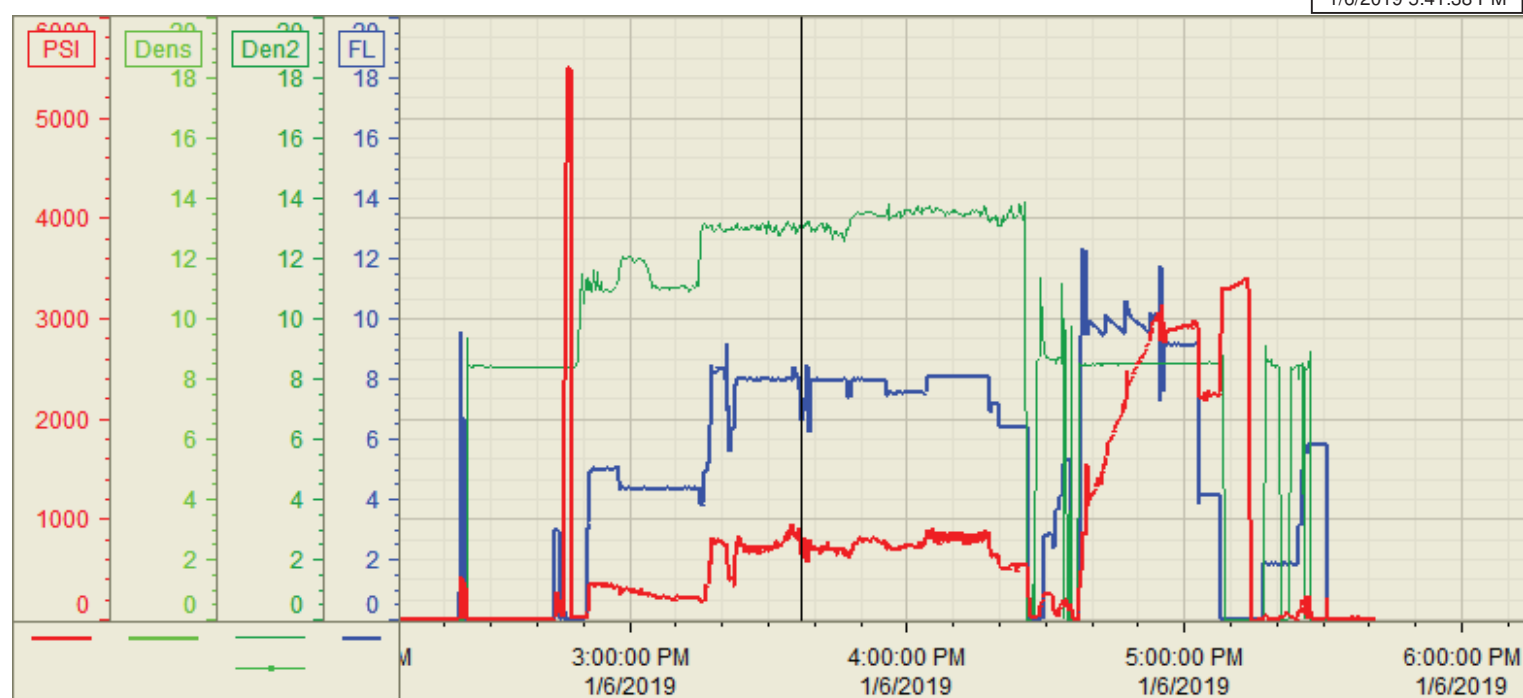
Long String - Cheyenne, WY - Zachary Hyde

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	01/06/2019 09:00	Callout					Crew gets called out requested time 1200 1/6/19
2	01/06/2019 09:30	Depart for Location					Crew leaves for location
3	01/06/2019 11:30	Arrive on Location					Crew arrives on location
4	01/06/2019 11:35	Spot Units					Crew spots units
5	01/06/2019 11:35	Rig Up					Crew rigs up iron and hoses needed for job
6	01/06/2019 14:30	STEACS Briefing					Crew has a safety meeting with company man and rig crew discussing the job
7	01/06/2019 14:43	Prime Up	8.3300	3.00	3.00	60.00	Filled lines 3 bbls
8	01/06/2019 14:45	Pressure Test					Pressure tested lines to 5500 psi
9	01/06/2019 14:48	Pump Spacer	11.0000	5.00	30.00	300.00	Pumped 30 bbls of spacer at 11 ppg
10	01/06/2019 14:58	Pump Spacer	12.0000	5.00	30.00	290.00	Pumped 30 bbls of spacer at 12 ppg
11	01/06/2019 15:04	Pump Spacer	11.0000	5.00	30.00	290.00	Pumped 30 bbls of spacer at 11 ppg
12	01/06/2019 15:15	Pump Lead Cement	13.0000	8.00	244.00	800.00	Pumped 244 bbls of Lead at 13 ppg(695sks, 1.98 yld, 9.76 gal/sk)
13	01/06/2019 15:48	Pump Tail Cement	13.5000	8.00	291.00	600.00	Pumped 291 bbls of Tail at 13.5 ppg(935 sks, 1.75 yld, 8.7 gal/sk)
14	01/06/2019 16:26	End Pumping					Shutdown
15	01/06/2019 16:26	Wash Pumps and Lines					Washed pump and lines
16	01/06/2019 16:36	Drop Top Plug					Dropped latch down plug
17	01/06/2019 16:36	Pump Displacement	8.3300	12.00	10.00	50.00	First 10 bbls of displacement with retarder
18	01/06/2019 16:37	Pump Displacement	8.3300	10.00	232.00	2800.00	232 bbls of Displacement with rigs displacement fluid
19	01/06/2019 17:03	Spacer Back-to-Surface					At 130 bbls away got spacer back to surface
20	01/06/2019 17:08	Cement Back-to-Surface					At 220 bbls away got cement to surface had a total of 42 bbls
21	01/06/2019 17:08	Pump Displacement	8.3300	4.00	20.00	2200.00	Last 20 bbls slowed rate to 4 bpm to land the plug
22	01/06/2019 17:08	Land Plug					Landed plug went 1000 psi over FCP. FCP was 2200 psi brought it up to 3200 psi for 5 minutes
23	01/06/2019 17:13	Check Floats					Checked floats
24	01/06/2019 17:13	Rig Down					Crew rigs down iron and hoses

Customer: Crestone
Well Number: 11-33H-H367
Lease Info: Herren



Print Date/Time
1/6/2019 5:41:38 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	640.4	1/6/2019 3:37:13 PM	Cementar\DS_DISCHARGE_PRESS_DIAL
2	Recirc - Density (PPG)	13.16	1/6/2019 3:37:11 PM	Cementar\DENSITY_ACTUAL_RATE
3	DH Density (PPG)	-29.63 i.	1/6/2019 3:37:14 PM i.	Cementar\DENSITY2_ACTUAL_RATE
4	Combined pump rate	6.84 i.	1/6/2019 3:37:14 PM i.	Cementar\Flow_Combined
5	Trend 1			
				Source: Control1 5:41:39 PM