



Crestone Peak Resources Operating

HERREN 1J-33H-H367

API # 05-123-47734

Production

01/11/2019

Quote #: 25384

Execution #: 14767



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,
Ashraf Hamid
Field Engineer I | (307) 365-9484 | Ashraf.Hamid@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	Roger Acuna	FORMATION	NIOBRARA
CLIENT FIELD REPRESENTATIVE	Buddy Burke	RIG	Ensign 153
DISTRICT	Cheyenne, WY	COUNTY	WELD
SERVICE	Cementing	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	11,875.00	7,224.00	10.00
Previous Casing	9.63	8.84	40.00	1,977.00	1,972.00	
Casing	5.50	4.78	20.00	11,863.00	7,224.00	

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	11,850.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	12,640.00
Top Plug Size	5.500	Max Casing Pressure - Operated (psi)	10,112.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	213.00	Job Pumped Through	Manifold
Centralizers Type	Rigid	Top Connection Thread	BTC
Landing Collar Depth (ft)	11,850	Top Connection Size	5.5

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	Flare Prior to / during the Cement Job	No
Circulation Time (min)	150.00	Gas Present	Yes
Circulation Rate (bpm)	10.00	Gas Units	3847
Circulation Volume (bbls)	1500.00	PV Mud In	15
Lost Circulation Prior to Cement Job	No	YP Mud In	7
Mud Density In (ppg)	10.50		

TEMPERATURE

Ambient Temperature (°F)	40.00	Slurry Cement Temperature (°F)	50.00
Mix Water Temperature (°F)	50.00		

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	1376.0000	244.9000
Tail Slurry	BJCem P50.6.02C	13.5000	1.7523	8.70	950	1659.0000	295.4000
Displacement 1	Retarded Water	8.3300				0.0000	10.0000
Displacement Final	Displacement Final (Water)	8.3308				0.0000	253.0000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	SPACER SURFACTANT, SS-267	1.0000	GPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	WEIGHTING ADDITIVE, W-11	243.6000	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	IntegraGuard GW-86	1.2000	PPB
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-86L	1.0000	GALS/SK
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C	EXTENDER, BENTONITE	4.0000	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, EC-2	3.0000	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
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
Tail Slurry	BJCem P50.6.02C	RETARDER, R-6	0.2000	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	IntegraGuard GW-86	0.1000	BWOB
Tail Slurry	BJCem P50.6.02C	FOAM PREVENTER, FP-25	0.3000	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
Tail Slurry	BJCem P50.6.02C	Flyash (Rockies)	50.0000	PCT

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ
Calculated Displacement Vol (bbls)	263.00
Actual Displacement Vol (bbls)	263.00
Did Float Hold?	Yes
Bump Plug	Yes
Bump Plug Pressure (psi)	3500.00
Were Returns Planned at Surface	Yes
Cement Returns During Job	Full

Amt of Cement Returned / Reversed	73.00
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	3.50
Total Volume Pumped (bbls)	893.30
Top Out Cement Spotted	No
Lost Circulation During Cement Job	No

BJ Cementing Event Log

Long String - Cheyenne, WY - Roger Acuna

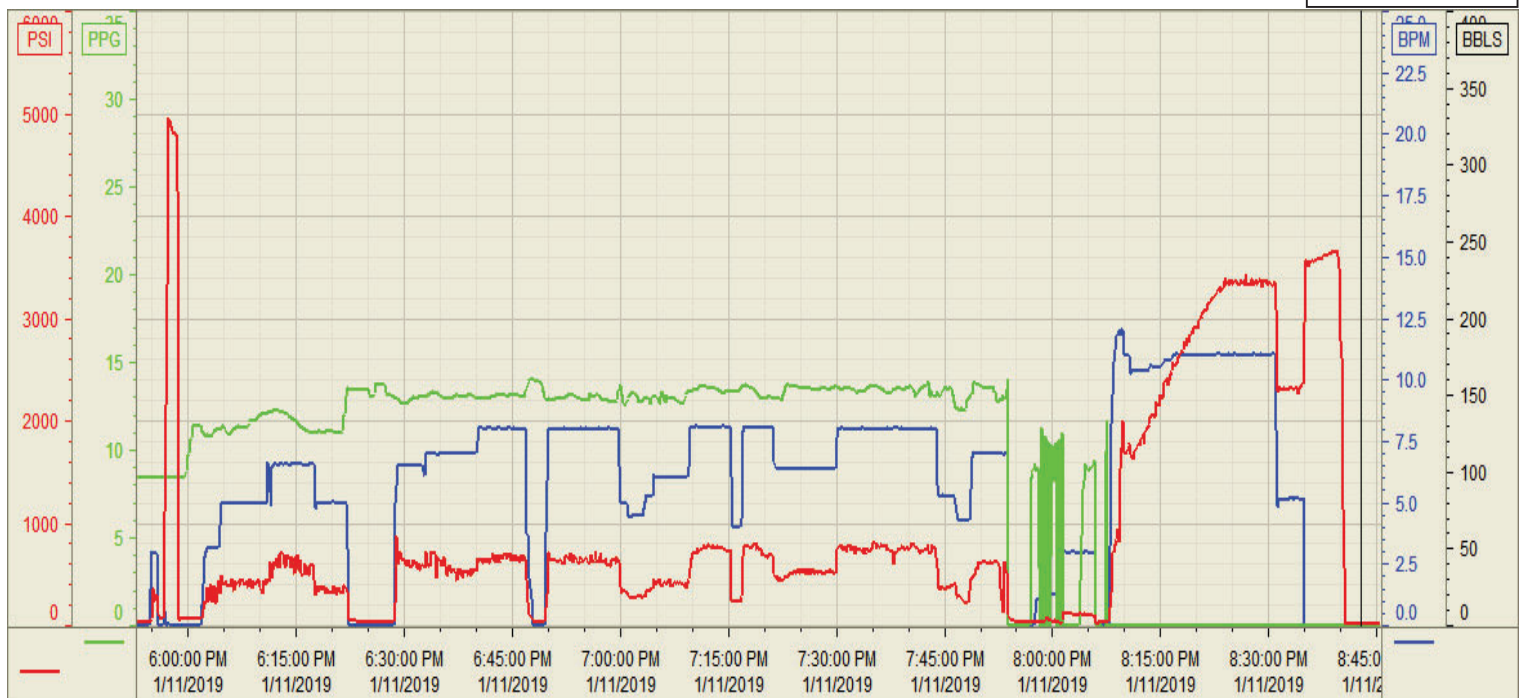
SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	01/11/2019 03:00	Callout					CALLED OUT RTS 1000
2	01/11/2019 05:30	Depart for Location					DEPART CHEYENNE WY CAMP
3	01/11/2019 08:30	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMPANY MAN
4	01/11/2019 08:45	STEACS Briefing					STEACS SPOT EQUIPMENT AND RIG UP
5	01/11/2019 09:00	Rig Up					RIG UP IRON AND HOSES
6	01/11/2019 10:00	Client					WAITING ON RIG TO FINISH RUNNING CASING AND CIRCULATE
7	01/11/2019 17:45	STEACS Briefing					PRE JOB SAFETY MEETING TO DISCUSS JOB PROCEDURES
8	01/11/2019 18:04	Pump Spacer	8.3300	3.00	3.00	250.00	FILL LINES 3BBLS FRESH WATER
9	01/11/2019 18:06	Pressure Test				5000.00	TEST LINES
10	01/11/2019 18:12	Pump Spacer	11.0000	6.50	30.00	650.00	PUMP 30BBLS INTEGRAGUARD SPACER @ 11PPG W/SURFACTANT
11	01/11/2019 18:19	Pump Spacer	12.0000	6.50	30.00	650.00	PUMP 30BBLS INTEGRAGUARD SPACER @ 12PPG W/SURFACTANT
12	01/11/2019 18:24	Pump Spacer	11.0000	6.50	30.00	650.00	PUMP 30BBLS INTEGRAGUARD SPACER @ 11PPG W/SURFACTANT
13	01/11/2019 18:38	Pump Lead Cement	13.0000	8.00	245.00	750.00	PUMP 245BBLS BJCEM P100.3.01C W/LATEX @ 13PPG (695SKS 1.98YLD 9.76GPS)
14	01/11/2019 19:19	Pump Tail Cement	13.5000	8.00	296.00	800.00	PUMP 296BBLS BJCEM P50.6.02C @ 13.5PPG (950SKS 1.75YLD 8.70GPS) CALCULATED TOP 4608'
15	01/11/2019 20:05	End Pumping					SHUTDOWN, WASH PUMPS AND LINES TO THE PIT
16	01/11/2019 20:07	Drop Top Plug					DROP TOP PLUG
17	01/11/2019 20:17	Pump Displacement	8.3300	11.00	240.00	3100.00	PUMP DISPLACEMENT
18	01/11/2019 20:28	Spacer Back-to-Surface					SPACER TO SURFACE @ 100BBLS INTO DISPLACEMENT
19	01/11/2019 20:37	Cement Back-to-Surface					CEMENT TO SURFACE @ 190BBLS INTO DISPLACEMENT
20	01/11/2019 20:41	Pump Displacement	8.3300	5.00	23.00	2500.00	SLOW RATE TO LAND PLUG
21	01/11/2019 20:45	Land Plug				3500.00	LAND PLUG 1000PSI OVER FINAL CIRCULATING PRESSURE
22	01/11/2019 20:49	Check Floats					CHECK FLOATS, FLOATS HELD GETTING 3.5BBLS BACK TO THE PUMP
23	01/11/2019 20:50	End Pumping					END JOB
24	01/11/2019 20:50	STEACS Briefing					STEACS RIG DOWN
25	01/11/2019 21:00	Rig Down					RIG DOWN IRON AND HOSES
26	01/11/2019 22:00	Leave Location					DEPART LOCATION

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



Print Date/Time

1/11/2019 10:14:16 PM



	Name	Y value	X value/time stamp	Tag name Y
1	PS - Press (PSI)	21.7 i.	1/11/2019 8:42:46 PM i.	CementerPS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	0.0 i.	1/11/2019 8:42:46 PM i.	CementerDENSITY_ACTUAL_RATE
3	Combined Rate (BPM)	0.00 i.	1/11/2019 8:42:46 PM i.	CementerFlow_Combined
4				
5				
6				

Source: Control1 10:14:09 PM