



Laramie Energy

End of Well Cement Report

Bruton 19-05E 05-077-10438
S:19 T:9S R:93W Mesa CO

CallSheet #: 1340 (Surface), 1345 (Production)
Proposal #: 13962



Attention: Mr. Chuck Mallary | (303) 859-3634 | cmallary@laramie-energy.com
Laramie Energy
1401 17th St, Suite 1400 | Denver, CO 80202

Dear Mr. Mallary,

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,

Zen Keith

Technical Specialist-II | (307) 757-7178 | Zen.Keith@bjservices.com

Field Office 28730 US-6, Rifle, CO 81650
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Table of Contents

Surface Post Job Report	3
1 Job Details & Summary.....	3
1.1 Geometry	3
1.2 Equipment / People	3
1.3 Timing.....	3
1.4 General Job Information	3
1.5 Job Details	3
1.6 Job Details (cont.).....	3
1.7 Circulation	4
1.8 Job Execution Information	4
1.9 Job Fluid Details	4
2 Job Logs.....	5
3 Water Analysis	6
4 Pump Diagrams.....	7
Production Post Job Report	8
1 Job Details & Summary.....	8
1.1 Geometry	8
1.2 Equipment / People	8
1.3 Timing.....	8
1.4 General Job Information	8
1.5 Well Fluid Details	8
1.6 Job Details	8
1.7 Job Details (cont.).....	8
1.8 Circulation	9
1.9 Job Execution Information	9
1.10 Job Fluid Details	9
2 Job Logs.....	10
3 Water Analysis	11
4 Pump Diagrams.....	12

Surface Post Job Report

1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Open Hole	Outer	n/a	11	n/a	n/a	60	1550	75
Casing	Inner	8.625	8.097	24	STC	0	1536.29	0
Casing	Outer	16	15.25	65	n/a	0	60	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	512		
Bulk Trailer	E496		128
Cement Pump	PPC11250	Gonzalez, Omar	128
Cement Chemical	403	Johnson, Brandon	128
Light Duty Pickups	2	Tippetts, Allen	128

1.3 Timing

Event	Date/Time
Call Out	9/13/2017 11:00
Depart Facility	9/13/2017 12:00
On Location	9/13/2017 14:00
Rig Up Iron	9/13/2017 14:30
Job Started	9/13/2017 19:08
Job Completed	9/13/2017 20:25
Rig Down Iron	9/13/2017 20:30
Depart Location	9/13/2017 22:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	8.33 lb/gal
Well Fluid Type	Water
Rig Circulation Vol	180 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	94.85 bbls
Actual Displacement	94.85 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	14 bbls
Well Topped Out	No

1.5 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	8.33 lb/gal
Well Fluid Density Out of Well	8.33 lb/gal

1.6 Job Details (cont.)

Metrics	Value
BHCT	82 °F
BHST	106 °F



1.7 Circulation

Lost Circulation Experienced
No

1.8 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		40.00	0
1	2	S100-12	Lead	12.00	2.53	14.85		168.00	75.59	0
1	3	S100-12	Tail	12.50	2.22	12.58		120.00	47.52	1050
1	4	Water	DisplacementFinal	8.33			42.00		97.00	0

1.9 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Lead	S100-12	AC3-10	Cement	100.00	%
1	2	Lead	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	2	Lead	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	2	Lead	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	2	Lead	S100-12	AXE-30	Extender	2.00	lb/sk
1	3	Tail	S100-12	AC3-10	Cement	100.00	%
1	3	Tail	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	3	Tail	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	3	Tail	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	3	Tail	S100-12	AXE-30	Extender	2.00	lb/sk

2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Call Out	9/13/2017	11:00					BJ crew called out
2	Safety Meeting	9/13/2017	11:45					journey management meeting at yard. Discuss weather, road conditions, safety concerns, and route
3	Depart Yard	9/13/2017	12:00					Depart Rifle Yard
4	Arrive on location	9/13/2017	14:00					Arrive at H&P 290
5	Safety Meeting	9/13/2017	14:15					Safety Meeting. Discuss safety concerns, rig up procedures, job assignments
6	Waiting	9/13/2017	16:00					Waiting on rig to run casing.
7	Safety Meeting	9/13/2017	18:30					Safety Meeting. Discuss safety concerns, rig up procedures, job assignments
8	Rig up	9/13/2017	18:45					Final rig up of surface equipment
9	Pump Spacer	9/13/2017	19:08	8.33	2	5	88	Pump 5 barrels fresh water spacer to fill pumps and lines
10	Pressure test	9/13/2017	19:11				3900	Pressure test all surface equipment
11	Release Pressure	9/13/2017	19:12					Release pressure. Test good
12	Pump Spacer	9/13/2017	19:13	8.33	5	45	91	Pump remaining 35 barrels freshwater spacer
13	Pump lead cement	9/13/2017	19:21	12	6	75.69	103	Mix and pump 75.69 barrels lead cement. 168 SKS, 2.53 YLD, 14.85 GAL/SK
14	Pump tail cement	9/13/2017	19:34	12.5	6	47.44	242	Mix and pump 47.44 barrels tail cement. 120 SKS, 2.22 YLD, 12.58 GAL/SK
15	Shut down. Drop Plug	9/13/2017	19:42					Shut down Drop plug. Witnessed by company rep.
16	Pump Displacement	9/13/2017	19:45	8.33	6	94.8	0	Pump 94.8 barrels fresh water displacement.
17	Slow rate	9/13/2017	19:48	8.33	2	14.8	421	Slow rate with 80 barrels displacement away.
18	Land Plug	9/13/2017	20:08					Land Plug with 94.8 barrels fresh water displacement away. Final circulating pressure 388PSI
19	Casing Test	9/13/2017	20:08					10 min casing test at 2145PSI
20	Release pressure	9/13/2017	20:18					Release pressure. Check Floats. Floats held with 0.5 barrels back



3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	60 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	220	0-1000
Total Hardness	>125 mg/L	0-500 mg/L
Carbonates	215 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	0.02 mg/L	0-300 mg/L



4 Pump Diagrams

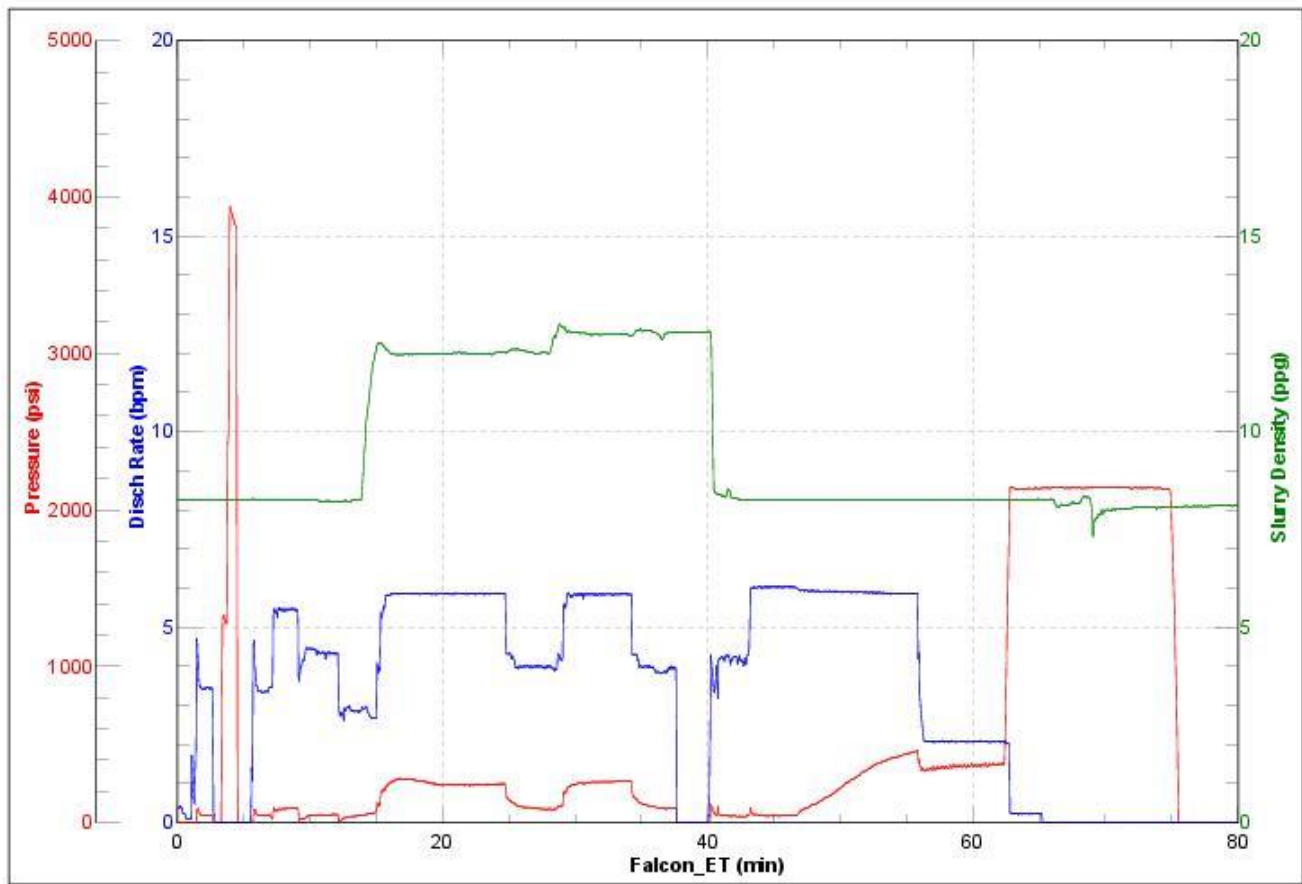


JobMaster Program Version 4.02C1

Job Number: 1340

Customer: Laramie

Well Name: Burton 19-05E



BJ Services

Job Start: Wednesday, September 13, 2017

Production Post Job Report

1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	8.625	8.097	24	STC	0	1550	0
Casing	Inner	4.5	4	11.6	LTC	0	8300	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1550	8311	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	6 (Silo)			
Silo	7 (silo)			
Bulk Trailer	E391	Gonzalez, Omar		122
Cement Chemical	403	Johnson, Brandon		122
Cement Pump	PPC11250	Linn III, Paul		122
Light Duty Pickups	4	Tippetts, Allen	Dewit, Eric	122

1.3 Timing

Event	Date/Time
Call Out	9/16/2017 16:00
Depart Facility	9/16/2017 17:00
On Location	9/16/2017 19:00
Rig Up Iron	9/16/2017 19:30
Job Started	9/17/2017 00:36
Job Completed	9/17/2017 02:56
Rig Down Iron	9/17/2017 03:15
Depart Location	9/17/2017 04:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.8 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	127.49 bbls
Actual Displacement	127.49 bbls
Total Spacer to Surface	17 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	30
Yield Point	28
10 sec. SGS	7
10 min. SGS	32
30 min. SGS	59
Filtrate	7.7
Flow Line Temp.	103

1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.8 lb/gal
Well Fluid Density Out of Well	9.8 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	176 °F
BHST	237 °F

**1.8 Circulation**

Lost Circulation Experienced
No

1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	CD Spacer	Spacer	11.00			32.84		60.00	0
1	2	P100-X2	Lead	12.70	1.97	11.07		885.00	311.03	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		402.00	136.00	6159
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		128.00	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	CD Spacer	ASR-20	StrengthRetrogression	179.97	lb/bbl
1	1	Spacer	CD Spacer	AR-10	Retarder	1.40	lb/bbl
1	1	Spacer	CD Spacer	ASF-20	Surfactant	0.80	gal/bbl
1	1	Spacer	CD Spacer	AVS-10	Viscosifier	0.80	lb/bbl
1	2	Lead	P100-X2	AC3-10	Cement	100.00	%
1	2	Lead	P100-X2	ABX-30	BondEnhancer	0.30	%BWOB
1	2	Lead	P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	P100-X2	ADS-10	Dispersant	0.10	%BWOB
1	2	Lead	P100-X2	AR-10	Retarder	0.50	%BWOB
1	2	Lead	P100-X2	AVS-10	Viscosifier	0.10	%BWOB
1	3	Tail	P70-X1	ACG-10	Cement	70.00	%
1	3	Tail	P70-X1	AFA-10	Extender	20.00	%
1	3	Tail	P70-X1	AXE-20	Extender	10.00	%
1	3	Tail	P70-X1	ABX-30	BondEnhancer	0.20	%BWOB
1	3	Tail	P70-X1	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	P70-X1	AFL-10	FluidLoss	0.40	%BWOB
1	3	Tail	P70-X1	AR-10	Retarder	0.30	%BWOB
1	3	Tail	P70-X1	ASR-20	StrengthRetrogression	25.00	%BWOB
1	3	Tail	P70-X1	AVS-50	Viscosifier	6.00	%BWOB
1	4	DisplacementFinal	Water w/ ASF-50	ASF-50	ClayProtection	0.08	gal/bbl

2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Callout	9/16/2017	16:00					BJ called out to Laramie Production
2	Safety Meeting	9/16/2017	16:45					Safety meeting to discuss route, safety concerns, driving conditions.
3	Leave Yard	9/16/2017	17:00					Leave Rifle yard for H&P290 Laramie Production
4	On location	9/16/2017	19:00					Arrive on H&P 290
5	Safety Meeting	9/16/2017	19:10					Safety meeting. Discuss rigup procedures, job assignment, safety
6	Rig up	9/16/2017	19:30					Rig up surface equipment
7	Waiting	9/16/2017	21:00					Waiting on casing
8	Casing on bottom	9/16/2017	23:30					Casing on bottom. Rig circulating @10 barrels/min
9	Safety Meeting	9/17/2017	00:01					Safety meeting with rig crew, company rep and BJ crew. Discuss safety concerns, rig up procedure, job rolls.
10	Rig up	9/17/2017	00:20					Final rig up of all surface iron
11	Pump water	9/17/2017	00:30	8.33	2	5	516	Pump 5 barrels fresh water ahead to fill pumps and lines
12	Shut down	9/17/2017	00:40					Shut down for pressure test
13	Pressure test	9/17/2017	00:41					Pressure test all surface equipment to 5,000 psi
14	Shut down	9/17/2017	00:45				5100	Release pressure. Test good
15	Pump Spacer	9/17/2017	00:48	11	5.9	60	857	Mix and Pump 60 Barrels CD Spacer
16	Pump lead cement	9/17/2017	01:01	12.7	5.9	310.5		Mix and pump 310.5 barrels lead cement@ 12.7 ppg, 1.97 YLD, 11.07 Gal/SK
17	Pump tail cement	9/17/2017	01:50	13.5	5.9	136	325	Mix and pump 136 barrels tail cement@ 13.5 PPG, 1.90 YLD, 9.55 GAL/SK
18	Shut down	9/17/2017	02:20					Shut down. Wash pump and lines to 3side tank
19	Drop Plug	9/17/2017	02:21					Drop top plug. Witnessed by company rep
20	Displacement	9/17/2017	02:26	8.33	10	127.49	438	Pump 127.49 barrels fresh water displacement with ASF-50
21	Slow Rate	9/17/2017	02:37	8.33	7	10	1913	Slow rate 100 barrels away
22	Slow Rate	9/17/2017	02:40	8.33	2	15	1717	Slow rate 115 barrels away
23	Land Plug	9/17/2017	02:46		2		1871	Land Plug with 127.49 barrels away
24	Casing test	9/17/2017	02:46					10 min casing test to 3100PSI
25	Release pressure	9/17/2017	02:56					Release pressure. Test good. Floats hold with 1.5 barrels back to truck.



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	61.5 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	<1 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



4 Pump Diagrams

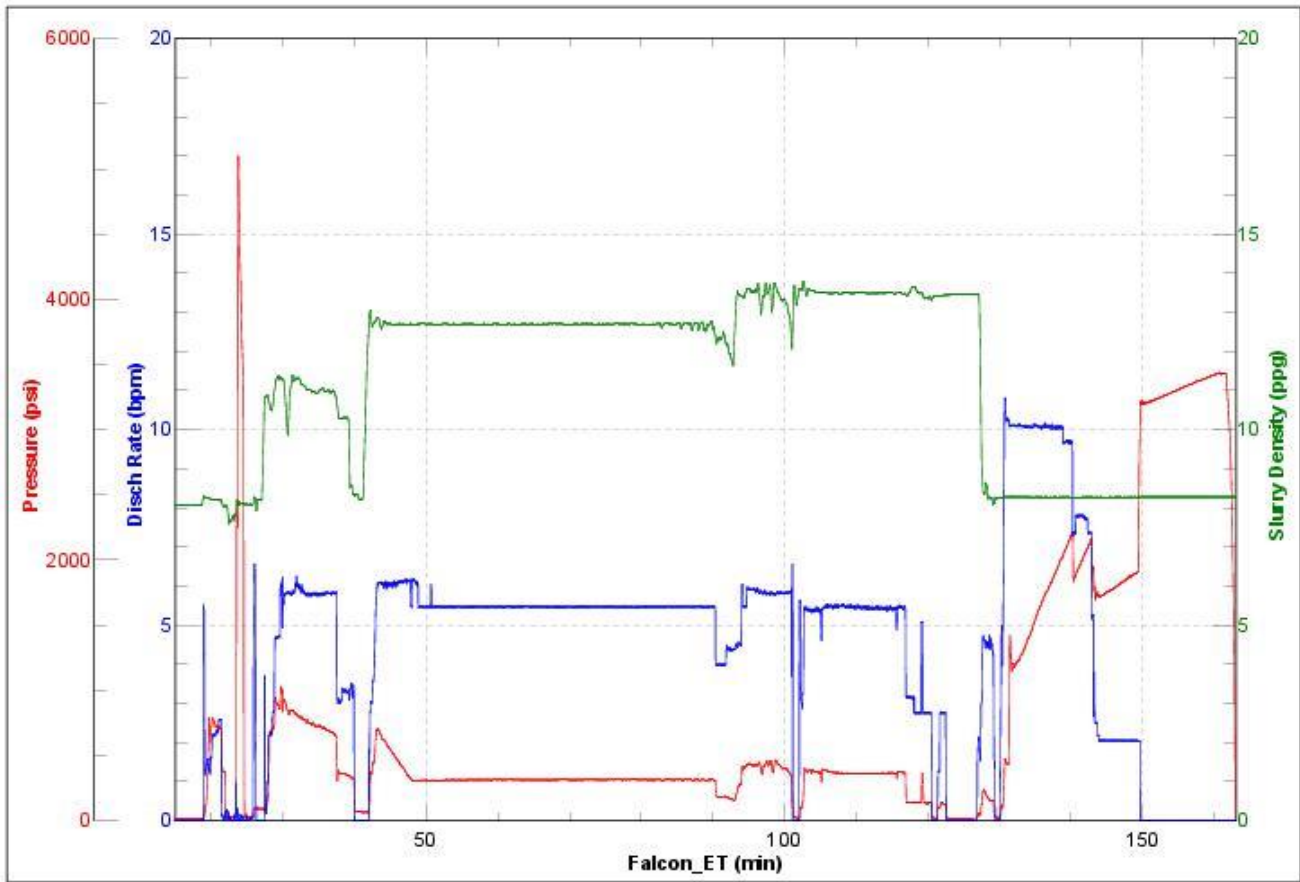


JobMaster Program Version 4.02C1

Job Number: 1345

Customer: Laramie Energy

Well Name: Burton 19-05E



BJ Services

Job Start: Sunday, September 17, 2017