



Laramie Energy End of Well Cement Report

Bruton 30-02E 05-077-10370
S:30 T:9S R:93W Mesa CO

CallSheet #: 802 (Surface), #837 (Production)
Proposal #: 13249



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

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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	0	1524	75
Casing	Inner	8.625	8.097	24	STC	0	1524	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	503	Cornett, Jesse	540
Bulk Trailer	512		65
Cement Pump	105	Chaparro, Hector	540
Cement Chemical	403	Snyder, Albert	540

1.3 Timing

Event	Date/Time
Call Out	5/23/2017 13:00
Depart Facility	5/23/2017 14:00
On Location	5/23/2017 16:00
Rig Up Iron	5/23/2017 17:20
Job Started	5/24/2017 04:03
Job Completed	5/24/2017 06:12
Rig Down Iron	5/24/2017 07:00
Depart Location	5/24/2017 08:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.3 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	150 bbls
Calculated Displacement	95 bbls
Actual Displacement	95 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	3 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	9.3 lb/gal
Well Fluid Density Out of Well	9.3 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 (sk)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		40.00	0
1	2	ALTCem S100-12	Lead	12.00	2.53	14.85		191.00	85.94	0
1	3	ALTCem S100-12	Tail	12.50	2.22	12.58		107.00	42.37	1024
1	4	Water	DisplacementFinal	8.33			42.00		95.00	0

1.9 Job Fluid Details

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



2 Job Logs

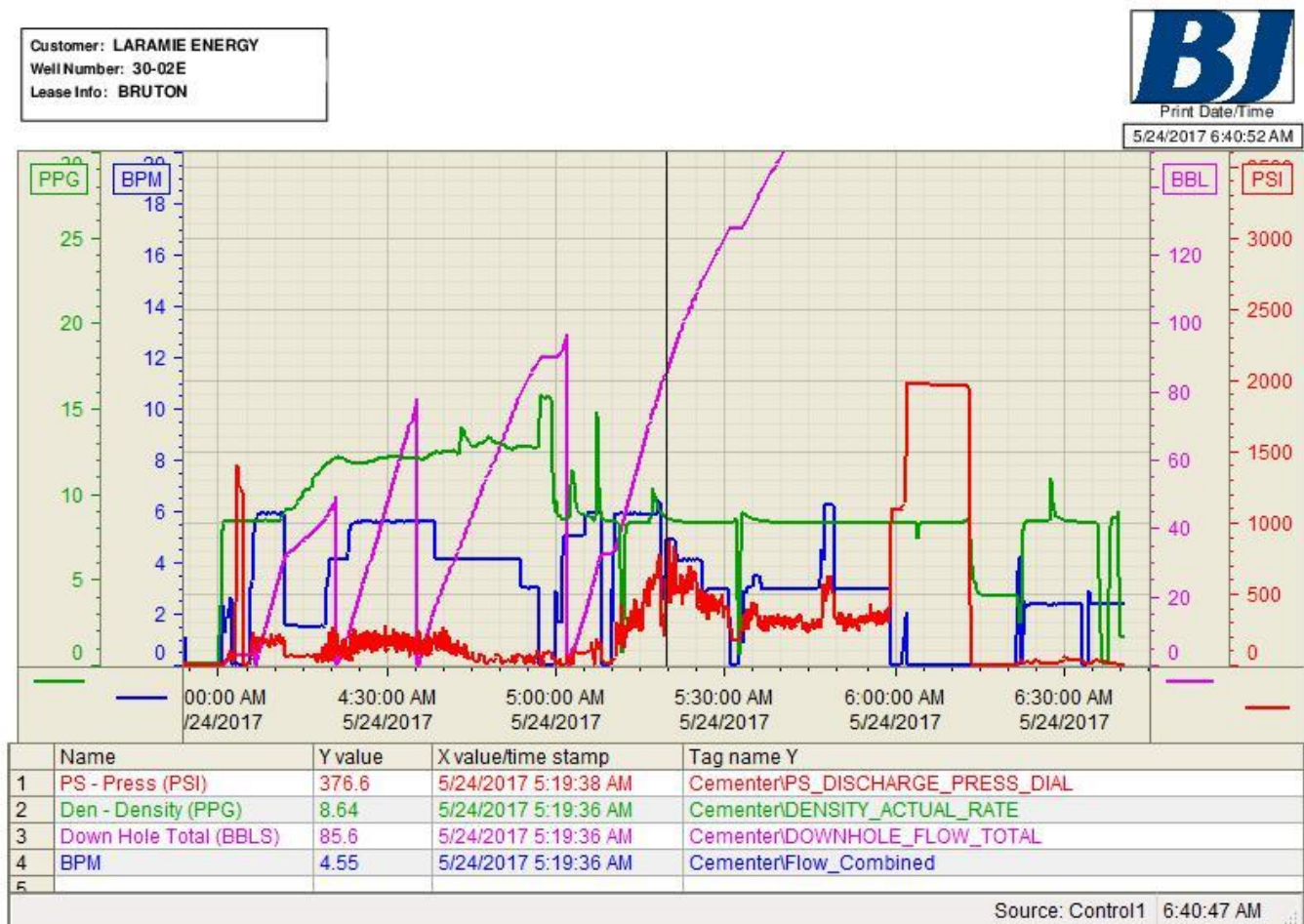
Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Arrive On Location	5/23/2017	16:00					
2	time requested on location	5/23/2017	19:00					rig coming out with drill pipe
3	pre spot safety meeting	5/23/2017	16:20					discussed how to spot
4	spot trucks	5/23/2017	16:30					used spotters
5	STEACS MEETING	5/23/2017	17:00					discussed how to rig up and job
6	Rig Up Iron	5/23/2017	17:20					broke up into 2 teams
7	waiting on rig	5/23/2017	18:00					rig running casing
8	waiting on rig	5/23/2017	21:30					top drive broke down
9	arrive back on location	5/24/2017	01:30					called back to location
10	waiting on rig	5/24/2017	01:40					running casing 15 joints left
11	Safety Meeting	5/24/2017	03:30					Drop bottom plug prior to stabbing head
12	Pressure Test Lines	5/24/2017	04:03	8.33	1	1	1000	good test
13	Pump Spacer	5/24/2017	04:05	8.33	4	40	120	water spacer
14	Pump Lead Cement	5/24/2017	04:20	12	6	86	110	mix and pump 191 sks of s100-12@12#
15	Pump Tail Cement	5/24/2017	04:31	12.5	5	43	210	mix and pump 107 sks of s100-12 @12.5#
16	drop plug	5/24/2017	04:58					wash on top of plug
17	Pump Displacement	5/24/2017	05:18	8.33	2	20	100	pumping fresh water
18	Pump Displacement	5/24/2017	05:28	8.33	2	40	400	good circulation
19	Pump Displacement	5/24/2017	05:38	8.33	2	60	500	good circulation
20	Pump Displacement	5/24/2017	05:48	8.33	2	80	490	good circulation
21	Pump Displacement	5/24/2017	05:50	8.33	2	90	470	spacer back to surface
22	Slow Pump Rate	5/24/2017	05:53	8.33	2	95	490	cement to surface 3 bbls to the pit
23	Land Plug	5/24/2017	05:55				1125	plug landed on calculated
24	casing pressure test	5/24/2017	06:01	8.33	1	1	2100	test held for 10 minutes
25	Check Floats	5/24/2017	06:11					
26	post job safety meeting	5/24/2017	06:15					
27	Rig Down Iron	5/24/2017	06:20					
28	journey management	5/24/2017	07:30					
29	Depart Location	5/24/2017	08:00					



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	65 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	500 mg/L	0-3000 mg/L
Total Alkalinity	100	0-1000
Total Hardness	25 mg/L	0-500 mg/L
Carbonates	8 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	7 mg/L	0-300 mg/L

4 Pump Diagrams



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	1524	0
Casing	Inner	4.5	4	11.6	LTC	0	7682	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1524	7682	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Silo	7 (silo)		65
Silo	6 (Silo)		65
Bulk Trailer	E-527	Agosto, Miguel	65
Cement Pump	105	Chaparro, Hector	65
Cement Chemical	403	Cornett, Jesse	65
Light Duty Pickups	2	Snyder, Albert	65

1.3 Timing

Event	Date/Time
Call Out	5/29/2017 12:00
Depart Facility	5/29/2017 14:00
On Location	5/29/2017 15:18
Rig Up Iron	5/29/2017 16:00
Job Started	5/29/2017 20:21
Job Completed	5/29/2017 23:09
Rig Down Iron	5/30/2017 00:45
Depart Location	5/30/2017 01:30

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.7 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	320 bbls
Rig Circulation Time	1 hours
Calculated Displacement	118 bbls
Actual Displacement	120 bbls
Total Spacer to Surface	18 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	24
Yield Point	20
10 sec. SGS	10
10 min. SGS	22
30 min. SGS	47
Filtrate	0
Flow Line Temp.	61

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	9.7 lb/gal
Well Fluid Density Out of Well	9.7 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	177 °F
BHST	238 °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			33.15		40.00	115
1	2	ALTCem P100-X2	Lead	12.70	1.97	11.07		777.00	273.07	1024
1	3	ALTCem P70-X1	Tail	13.50	1.90	9.55		401.00	135.66	5532
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		118.00	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	CD Spacer	ASR-20	StrengthRetrogression	179.73	lb/bbl
1	1	Spacer	CD Spacer	AR-10	Retarder	1.40	lb/bbl
1	1	Spacer	CD Spacer	ASF-20	Surfactant	0.50	gal/bbl
1	1	Spacer	CD Spacer	AVS-10	Viscosifier	0.80	lb/bbl
1	2	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%
1	2	Lead	ALTCem P100-X2	ABX-30	BondEnhancer	0.30	%BWOB
1	2	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	ALTCem P100-X2	ADS-10	Dispersant	0.10	%BWOB
1	2	Lead	ALTCem P100-X2	AR-10	Retarder	0.50	%BWOB
1	2	Lead	ALTCem P100-X2	AVS-10	Viscosifier	0.10	%BWOB
1	3	Tail	ALTCem P70-X1	ACG-10	Cement	70.00	%
1	3	Tail	ALTCem P70-X1	AFA-10	Extender	20.00	%
1	3	Tail	ALTCem P70-X1	AXE-20	Extender	10.00	%
1	3	Tail	ALTCem P70-X1	ABX-30	BondEnhancer	0.20	%BWOB
1	3	Tail	ALTCem P70-X1	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	ALTCem P70-X1	AFL-10	FluidLoss	0.40	%BWOB
1	3	Tail	ALTCem P70-X1	AR-10	Retarder	0.30	%BWOB
1	3	Tail	ALTCem P70-X1	ASR-20	StrengthRetrogression	25.00	%BWOB
1	3	Tail	ALTCem 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	5/29/2017	12:00					called out 12:00
2	Arrive On Location	5/29/2017	15:18					2 hours early
3	Spot equipment	5/29/2017	16:00					designate rolls
4	STEACS meeting	5/29/2017	16:20					talked about how we are pumping the job
5	Rig Up Iron	5/29/2017	17:00					all equipment rigged up
6	Safety Meeting	5/29/2017	20:00					STEACS meeting
7	drop bottom plug	5/29/2017	20:21					dropped bottom plug
8	Test Casing	5/29/2017	20:22	8.33	1	1	7000	test was good
9	Pump Spacer	5/29/2017	20:23	11	5	40	50	CD spacer
10	Pump Lead Cement	5/29/2017	20:48	12.7	6	273	230	Mix and pump 777sks of ALTcem P100-X2 @12.7
11	Pump Tail Cement	5/29/2017	21:50	13.5	6	135.7	100	mix and pump 401 sks of ALTcem P70-X1 @13.5#
12	wash pumps and lines	5/29/2017	22:30					wash to the pit
13	drop top plug	5/29/2017	22:32					Drop Top plug
14	Pump Displacement	5/29/2017	22:36	8.33	6	10	100	water with ASF-50
18	Pump Displacement	5/29/2017	22:45	8.33	6	50	260	good circulation
23	Pump Displacement	5/29/2017	22:56	8.33	6	100	1360	no cement to the surface
24	Slow Pump Rate	5/29/2017	23:02	8.33	3	110	1410	spacer to surface
25	Land Plug	5/29/2017	23:08	8.33	3	118	1410/2200	plug landed
26	casing test	5/29/2017	23:09	8.33	1	1	3000	hold for 10 minutes
27	Check Floats	5/29/2017	23:20					float is holding
28	Safety Meeting	5/29/2017	23:45					no cement to the surface
29	Rig Down Iron	5/30/2017	00:40					good circulation through job
30	journey management	5/30/2017	01:30					
31	Depart Location	5/30/2017	02:00					

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	70 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	250 mg/L	0-3000 mg/L
Total Alkalinity	<200	0-1000
Total Hardness	120 mg/L	0-500 mg/L
Carbonates	26 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	300 mg/L	0-3000 mg/L
Iron	5 mg/L	0-300 mg/L

4 Pump Diagrams

