



Laramie Energy End of Well Cement Report

Bruton 19-08W 05-077-10425
S:19 T:9S R:93W Mesa CO

CallSheet #: 1472 (Surface), 1475 (Production)
Proposal #: 14082



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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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	1560	75
Casing	Inner	8.625	8.097	24	STC	0	1550	0
Casing	Outer	16	15.25	65	n/a	0	60	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	E949	Gonzalez, Omar	132
Bulk Trailer	512		
Cement Pump	C156	McClure, Christian	132
Cement Chemical	403	Johnson, Brandon	132
Light Duty Pickups	4	Tippetts, Allen	132

1.3 Timing

Event	Date/Time
Call Out	10/3/2017 23:00
Depart Facility	10/4/2017 01:00
On Location	10/4/2017 03:30
Rig Up Iron	10/4/2017 03:50
Job Started	10/4/2017 07:30
Job Completed	10/4/2017 08:52
Rig Down Iron	10/4/2017 09:00
Depart Location	10/4/2017 10:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	8.4 lb/gal
Well Fluid Type	Water
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	95.8 bbls
Actual Displacement	95.8 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	26 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	8.6 lb/gal
Well Fluid Density Out of Well	8.6 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	10/3/2017	23:00					BJ called out for Laramie Surface
2	Safety Meeting	10/4/2017	00:15					Safety Meeting @ yard. Discuss journey management, directions, road conditions, and safety concerns
3	Depart Yard	10/4/2017	01:00					Depart Yard for Laramie H&P290
4	On location	10/4/2017	03:30					Arrive at H&P 290
5	STEACS	10/4/2017	03:45					STEACS briefing to cover rig up, job procedures, concerns, rig down, and safety
6	Rig-Up	10/4/2017	04:00					Rig-Up surface equipment
7	Waiting	10/4/2017	05:00					Waiting on rig to run casing
8	STEACS	10/4/2017	07:05					STEACS briefing with rig crew to cover rig up, job procedures, concerns, rig down, and safety
9	Rig-Up	10/4/2017	07:15					Final rig-up of surface equipment
10	Pump Spacer	10/4/2017	07:30	8.33	2	5	263	Pump 5 Barrels fresh water spacer ahead to fill pumps and lines
11	Pressure Test	10/4/2017	07:32				3000	Pressure test surface equipment to 3,000PSI
12	Release Pressure	10/4/2017	07:33					Release pressure, good test
13	Pump Spacer	10/4/2017	07:33	8.33	2	35	225	Pump remain 35 barrels fresh water spacer
14	Pump Lead Cement	10/4/2017	07:41	12	5	75.69	158	Mix and pump 75.69 barrels lead cement at 12.0 ppg, 168.0 sks, 2.53 yld, 14.85 gal/sk
15	Pump Tail Cement	10/4/2017	07:56	12.5	5	47.44	124	Mix and pump 47.44 barrels tail cement at 12.5 ppg, 120 sks, 2.22 yld, 12.58 gal/sk
16	Shut down	10/4/2017	08:04					Shut down. All cement away, drop plug. Witnessed by company rep
17	Pump Displacement	10/4/2017	08:07	8.33	5	95.804	26	Pump 95.8 barrels fresh water displacement
18	Land Plug	10/4/2017	08:42					land plug. FCP 377 PSI. Test casing to 2100 PSI for 10 min.
19	Release Pressure	10/4/2017	08:52					Release pressure, check floats. Floats holding. .5 barrels back to truck
20	STEACS	10/4/2017	09:00					STEACS to cover safety concerns
21	Rig-Down	10/4/2017	09:15					Rig-Down all surface equipment
22	End job	10/4/2017	09:45					Rig down complete. End job



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	48.3 °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	n/a 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

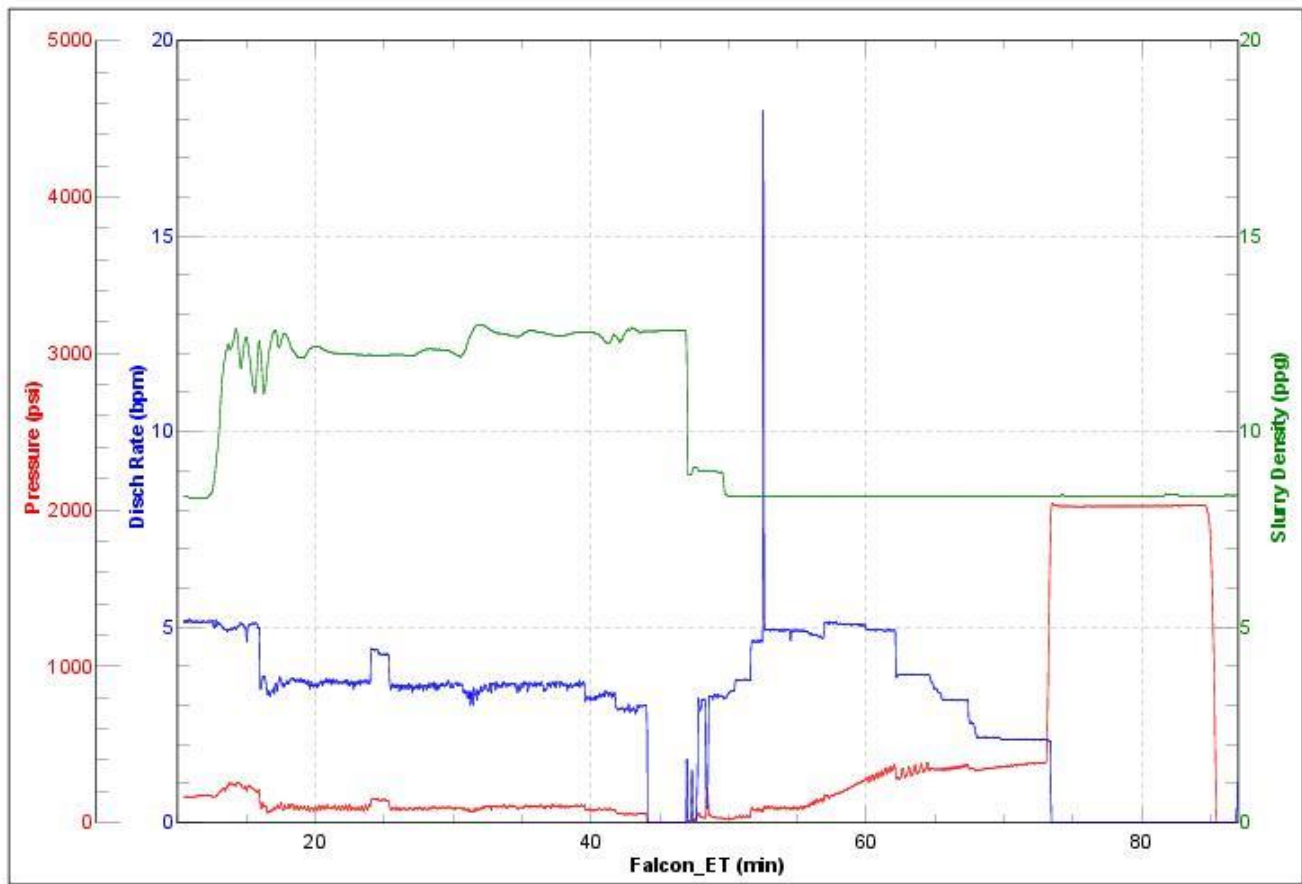


JobMaster Program Version 4.02C1

Job Number: 1472

Customer: Laramie Energy

Well Name: Bruton 19-08W



BJ Services

Job Start: Wednesday, October 04, 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	7633	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1550	7645	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	E491	Aden, Alan	130
Silo	6 (Silo)		
Cement Chemical	403	Chapman, Bradley	130
Silo	7 (silo)		
Cement Pump	C156	Nepgen, AJ	130
Light Duty Pickups	53	Staples, Anthony	130

1.3 Timing

Event	Date/Time
Call Out	10/7/2017 04:00
Depart Facility	10/7/2017 05:45
On Location	10/7/2017 07:45
Rig Up Iron	10/7/2017 08:15
Job Started	10/7/2017 10:01
Job Completed	10/7/2017 12:37
Rig Down Iron	10/7/2017 12:45
Depart Location	10/7/2017 13:30

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.3 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	900 bbls
Rig Circulation Time	1.5 hours
Calculated Displacement	117.4 bbls
Actual Displacement	117 bbls
Total Spacer to Surface	45 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	25
Yield Point	20
10 sec. SGS	4
10 min. SGS	24
30 min. SGS	44
Filtrate	8
Flow Line Temp.	55

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	9.3 lb/gal
Well Fluid Density Out of Well	9.3 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	175 °F
BHST	236 °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		766.00	269.20	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		402.00	136.00	5495
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	179.97	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	Call Out	10/7/2017	04:00					
2	Yard Call	10/7/2017	05:00					Yard Up STEACS Briefing with Crew.
3	Leave Yard	10/7/2017	05:45					Headed to Location
4	Arrive on Location	10/7/2017	07:45					Rig Was on Bottom and Starting to Circulate
5	Spot Equipment	10/7/2017	07:50					
6	Pre-Rig Safety Meeting	10/7/2017	08:00					Briefing with Crew, Assign Task
7	Rig Up	10/7/2017	08:10					
8	Pre-Job Meeting	10/7/2017	09:40					Briefing with Crew, Rig Crew, and Customer
9	Floor Rig Up	10/7/2017	09:50					Stab Head
10	Load Lines	10/7/2017	10:01	8.34	2	2	220	
11	Pressure Test	10/7/2017	10:03	8.34			5700	Tested Iron
12	Spacer	10/7/2017	10:10	11	5.12	60	377	Batch and Weighed Spacer
13	Lead Cement	10/7/2017	10:30	12.7	5	269	238	Batch, Weigh and Pump 766 sks of 12.7# Lead Cement (269 Bbls)
14	Tail Cement	10/7/2017	11:20	13.5	2.8	87	224	Weighed, and Pumped 402 sks of 13.5# Tail Cement (136 Bbls) Top of Tail @ 4311 ft
15	Rate Change	10/7/2017	11:50	13.5	5	50	237	
16	Shut Down	10/7/2017	12:03					Shut Down, Wash Up Pump and Lines to Pit
17	Drop Plug	10/7/2017	12:10	8.34	3	1	30	Plug Leaves Head
18	Displacement	10/7/2017	12:11	8.34	10	89	1436	
19	Rate Change	10/7/2017	12:20	8.34	7	20	1710	
20	Rate Change	10/7/2017	12:23	8.34	2.8	7	1760	
21	Bumped Plug	10/7/2017	12:27	8.34			3000	Bumped Plug @ 117 Bbls away, Got 45 Bbls Spacer to Surface. Bumped @ 3000psi and started Casing Test Per Customer Request.
22	Casing Test	10/7/2017	12:27				3084	
23	Bleed off/Check Floats	10/7/2017	12:37				3393	Floats Held, 1.5 Bbls Back
24	Rig Down Meeting	10/7/2017	12:40					
25	Leave Location	10/7/2017	14:00					



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	39 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	80	0-1000
Total Hardness	70 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



4 Pump Diagrams

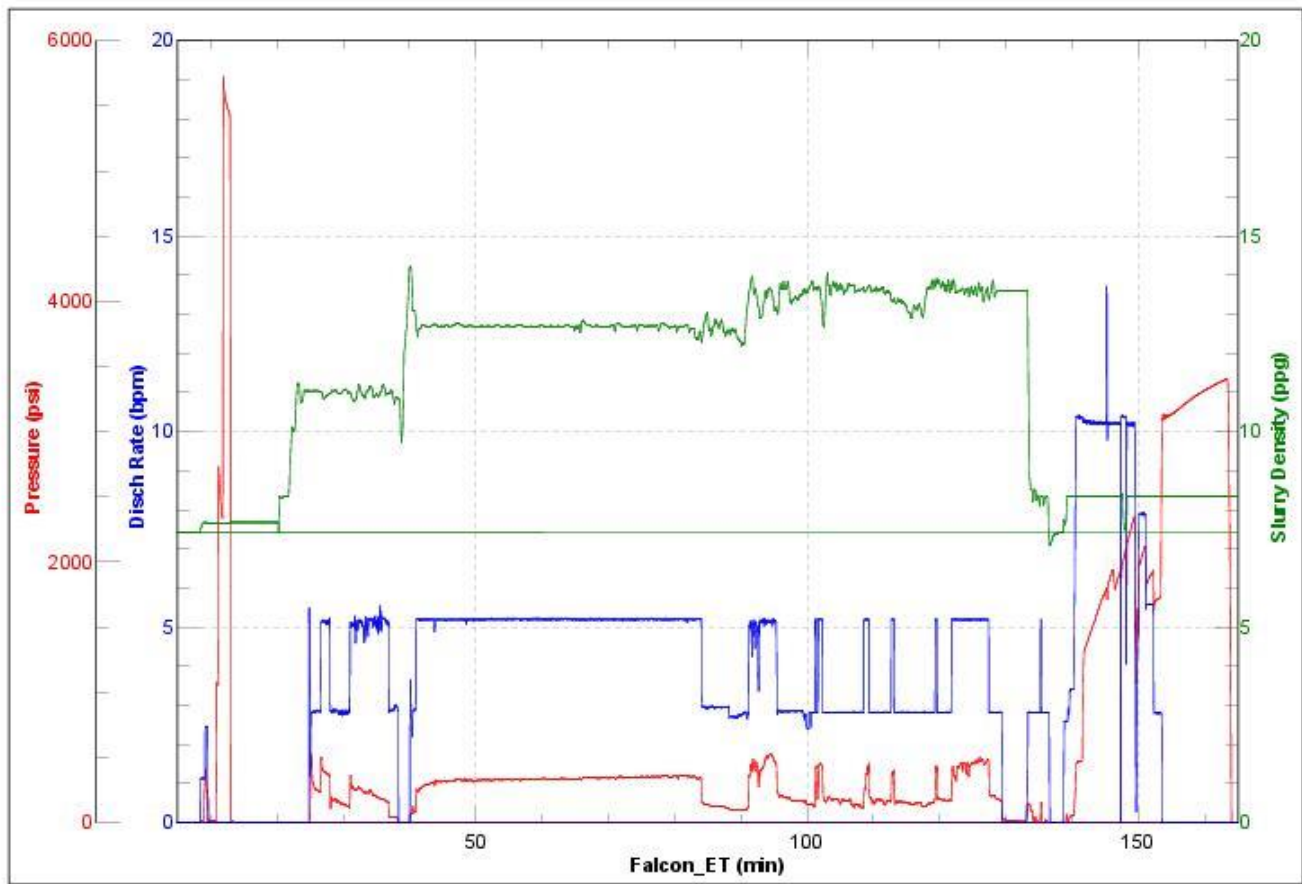


JobMaster Program Version 4.02C1

Job Number: 1475

Customer: Laramie

Well Name: Bruton 19-08W



BJ Services

Job Start: Saturday, October 07, 2017