



Laramie Energy End of Well Cement Report

Bruton 19-04E 05-077-10428
S:19 T:9S R:93W Mesa CO

CallSheet #: 1325 (Surface), 1328 (Production)
Proposal #: 13952



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

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E491	Velazquez, Damien	Richey, Steven	160
Bulk Trailer	512			
Light Duty Pickups	4	Gilliam, Glen		160
Cement Chemical	403	Busheri, Hamza		160
Cement Pump	PPC11250	McNeal, Lawrence	Youngberg, Wendell	160

1.3 Timing

Event	Date/Time
Call Out	9/9/2017 14:00
Depart Facility	9/9/2017 15:30
On Location	9/9/2017 17:00
Rig Up Iron	9/9/2017 17:15
Job Started	9/9/2017 20:51
Job Completed	9/9/2017 22:30
Rig Down Iron	9/9/2017 22:15
Depart Location	9/9/2017 23:15

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.8 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	10 bbls
Rig Circulation Time	0.75 hours
Calculated Displacement	96 bbls
Actual Displacement	95 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	24 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	9.8 lb/gal
Well Fluid Density Out of Well	9.8 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		190.00	85.49	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	BJ CREW CALLED OUT	9/9/2017	14:00					RTS-18:00
2	SAFETY MEETING	9/9/2017	14:45					BJ CREW JOURNEY MEETING
3	BJ CREW DEPARTS YARD	9/9/2017	15:30					BJ CREW DEPARTS YARD
4	BJ CREW ARRIVES	9/9/2017	17:00					BJ CREW ARRIVES ON LOCATION
5	RIG UP MEETING	9/9/2017	17:15					RIG UP MEETING WITH BJ CREW
6	RIG UP IRON	9/9/2017	17:30					BJ CREW RIGS UP EQUIPMENT
7	RUN CASING	9/9/2017	17:45					RIG RUNNING CASING
8	PIPE ON BOTTOM	9/9/2017	20:00					PIPE ON BOTTOM
9	SAFETY MEETING	9/9/2017	20:45					SAFETY MEETING WITH RIG/ BJ CREW
10	STAB HEAD	9/9/2017	20:50					BJ CREW STABS HEAD
11	BROKE CIRCULATION	9/9/2017	20:51	8.34	3.5	5	89	BROKE CIRCULATION 5 BBLS FRESH WATER
12	TEST LINES	9/9/2017	20:53					TEST LINES 3000 PSI
13	35 BBLS FLUSH	9/9/2017	20:53	8.34	5.5	35	180	35 BBLS FRESH WATER AHEAD
14	BATCH UP LEAD	9/9/2017	21:00	12				BATCH UP LEAD CEMENT AT 12 PPG
15	LEAD DOWN HOLE	9/9/2017	21:05	12	6		300	LEAD CEMENT DOWN HOLE
16	50 BBLS GONE	9/9/2017	21:15	12	6	50	230	50 BBLS LEAD CEMENT GONE
17	BATCH UP TAIL	9/9/2017	21:20	12.5				BATCH UP TAIL CEMENT AT 12.5 PPG
18	TAIL DOWN HOLE	9/9/2017	21:22	12.5	4		215	TAIL DOWN HOLE
19	25 BBLS GONE	9/9/2017	21:25	12.5	6	25	249	25 BBLS TAIL GONE
20	SHUT DOWN	9/9/2017	21:30					SHUT DOWN DROP PLUG
21	DISPLACEMENT	9/9/2017	21:31	8.34	7		217	START DISPLACEMENT
22	50 BBLS GONE	9/9/2017	21:38	8.34	7	50	320	50 BBLS GONE DISPLACEMENT
23	BUMPED PLUG	9/9/2017	21:49			95	390	BUMPED PLUG FCP-390 PSI TOOK TO 2110 PSI
24	CASING TEST	9/9/2017	21:49				2110	CASING TEST, HELD 10 MINS
25	BLED PRESSURE	9/9/2017	21:50					BLED PRESSURE, CHECKED FLOATS 1 BBL BACK. 24 BBLS CEMENT TO SURFACE
26	RIG DOWN MEETING	9/9/2017	21:55					RIG DOWN MEETING
27	RIG DOWN EQUIPMENT	9/9/2017	22:15					RIG DOWN EQUIPMENT
28	JOB COMPLETE	9/9/2017	22:45					JOB COMPLETE
29	DEPART LOCATION	9/9/2017	23:15					DEPART LOCATION



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	69 °F	50-80 °F
pH Level	7	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

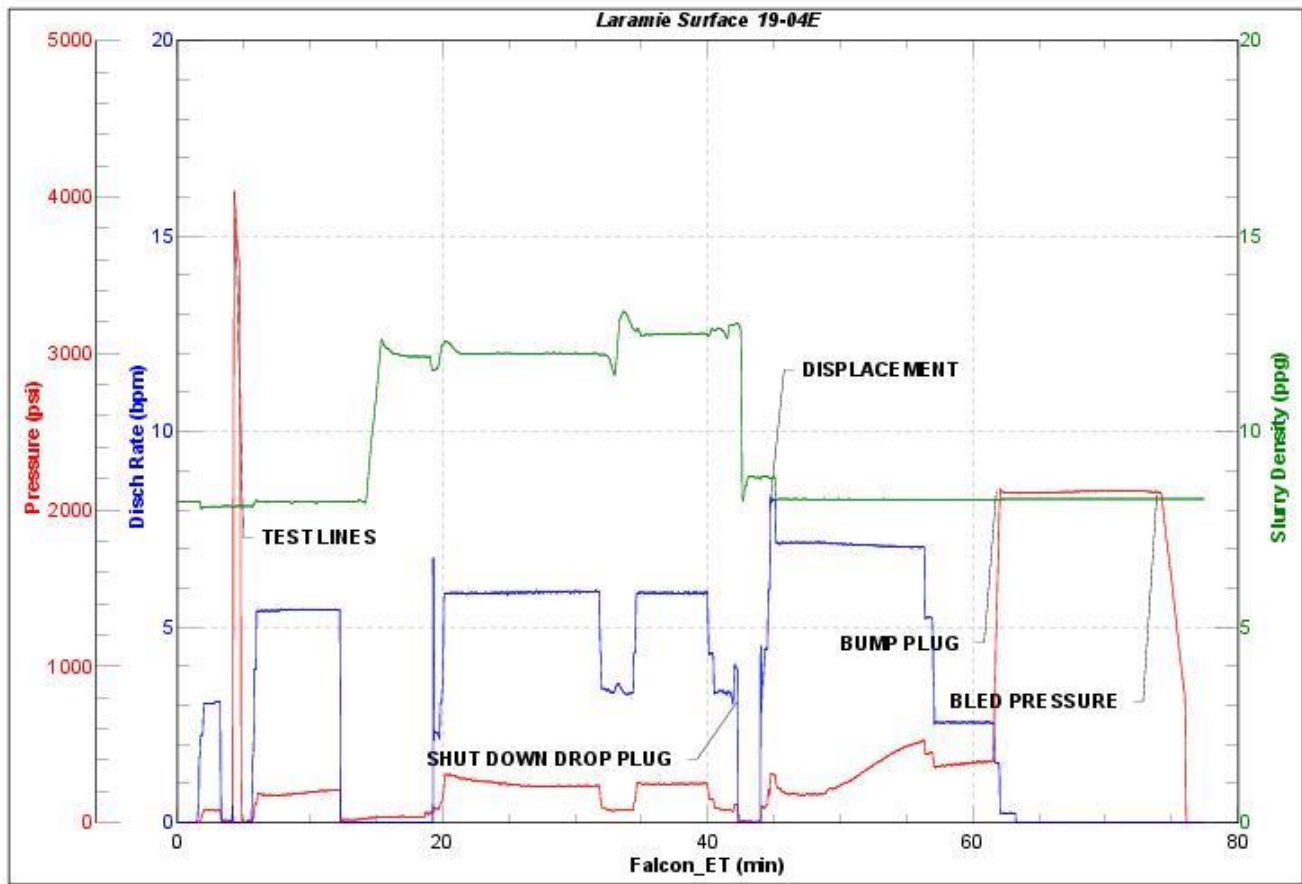


JobMaster Program Version 4.02C1

Job Number: 1325

Customer: Laramie

Well Name: Bruton 19-04E



BJ Services

Job Start: Saturday, September 09, 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	8399.41	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1550	8410	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Silo	6 (Silo)		
Silo	7 (silo)		
Light Duty Pickups	4	Tippetts, Allen	122
Cement Chemical	403	Johnson, Brandon	122
Cement Pump	PPC11250	Salaz, Eddie	122
Bulk Trailer	E491	Gonzalez, Omar	122

1.3 Timing

Event	Date/Time
Call Out	9/12/2017 10:30
Depart Facility	9/12/2017 12:00
On Location	9/12/2017 13:45
Rig Up Iron	9/12/2017 14:15
Job Started	9/12/2017 18:24
Job Completed	9/12/2017 21:03
Rig Down Iron	9/12/2017 21:10
Depart Location	9/12/2017 22:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.85 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	120 bbls
Rig Circulation Time	1 hours
Calculated Displacement	128.8 bbls
Actual Displacement	128.8 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	28
Yield Point	24
10 sec. SGS	6
10 min. SGS	25
30 min. SGS	47
Filtrate	7.7
Flow Line Temp.	109

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	9.85 lb/gal
Well Fluid Density Out of Well	9.85 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		896.00	314.89	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		402.00	136.00	6231
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		130.00	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	9/12/2017	10:30					Cement crew call out for Laramie production
2	Safety Meeting	9/12/2017	11:30					Pretrip STEACS meeting
3	Depart Rifle Yard	9/12/2017	12:00					Depart rifle yard for H&P 290
4	Arrive On Location	9/12/2017	13:44					Cement crew arrive on location
5	Safety Meeting	9/12/2017	14:00					STEACS meeting with cement crew. Discuss rig up procedures, hazards, communication, and job rolls
6	Rig Up	9/12/2017	14:15					Rig Up all surface equipment
7	waiting on location	9/12/2017	15:15					Finish rig up. Waiting on casing
8	Safety Meeting	9/12/2017	18:00					STEACS meeting with rig crew, BJ crew, and company rep. Discuss safety concerns, rig up procedures, and job assignments
9	Rig Up	9/12/2017	18:15					Final rig up of surface equipment
10	Pressure Test	9/12/2017	18:24					Pressure test all surface equipment to 5,000 PSI
11	Pump Spacer	9/12/2017	18:31	11	4	60	254	Mix and pump 60 barrels CD spacer
12	Pump Lead Cement	9/12/2017	19:08	12.7	7	314.4	534	Mix and pump lead cement. 12.7 PPG, 1.97 YLD, 11.07 Gal/SK
13	Pump Tail Cement	9/12/2017	19:58	13.5	7	136	433	Mix and pump 136 barrels tail cement. 13.5 PPG, 1.90 YLD 9.55 Gal/SK
14	Shut down	9/12/2017	20:26					Shut down to drop plug, plug witnessed by company rep
15	Wash Pumps and lines	9/12/2017	20:27					Washpumps and lines to 3 side tank
16	Pump displacement	9/12/2017	20:32	8.33	10	128.8		Pump 128.8 barrels fresh water displacement with ASF-50
17	Slow rate	9/12/2017	20:41		2	118	2153	Slow rate with 118 barrels away
18	Land Plug	9/12/2017	20:51				2102	Land plug with 128.8 barrels displacement away. Final circulating pressure
19	Casing Test	9/12/2017	20:51					Perform 10 min casing test at 3105PSI
20	Check Floats	9/12/2017	21:02					Release pressure. 1.5 Barrels back to unit
21	Rig down	9/12/2017	21:10					Rig down BJ cement job. End job



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	64.8 °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	256 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

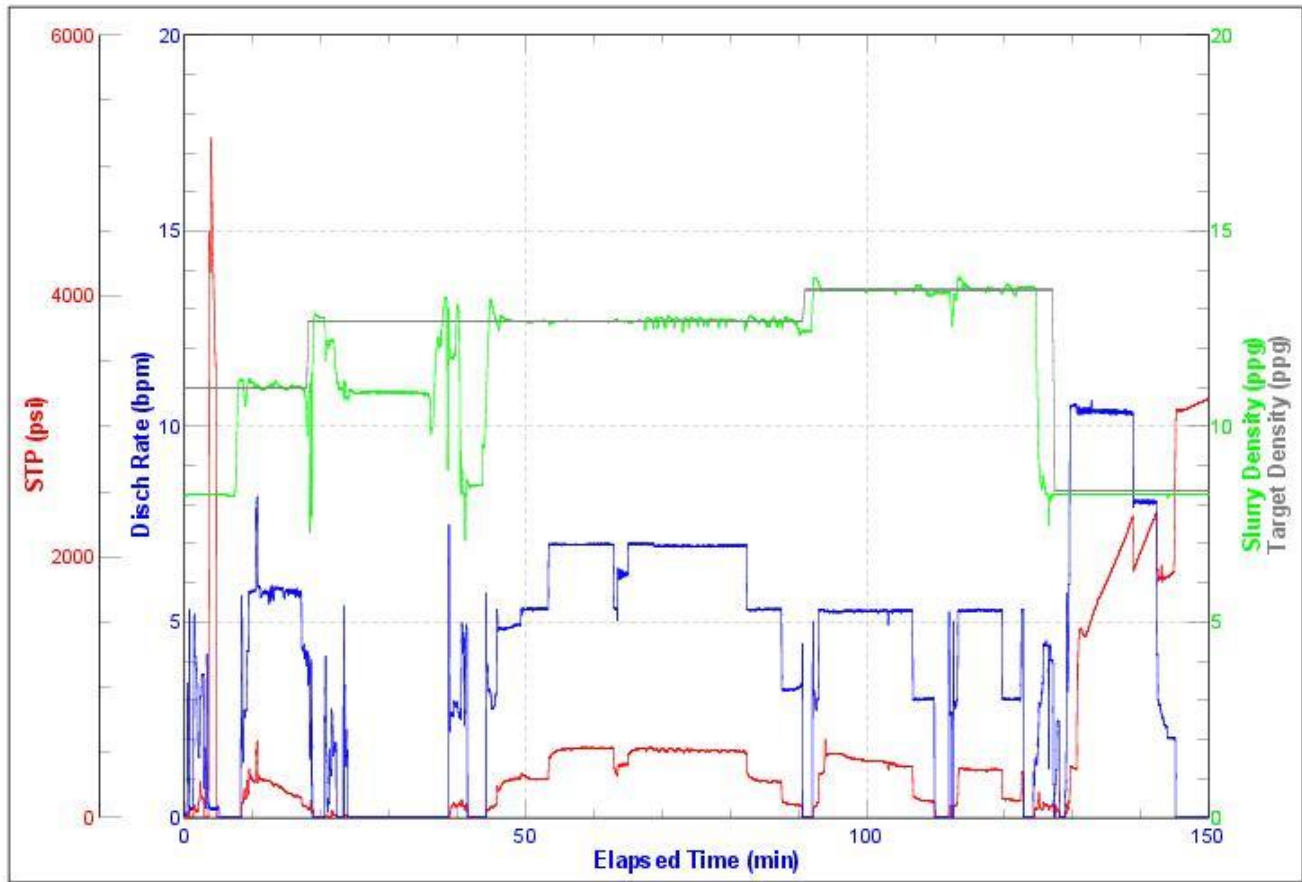


JobMaster Program Version 4.02C1

Job Number:

Customer:

Well Name:



BJ Services

Job Start: Tuesday, September 12, 2017