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# **Laramie Energy**

## **End of Well Cement Report**

**Bruton 19-05W 05-077-10424**  
**S:19 T:9S R:93W Mesa CO**

CallSheet #: 1367 (Surface), 1368 (Production)  
Proposal #: 13995



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

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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](mailto:Zen.Keith@bjservices.com)

**Field Office**      28730 US-6, Rifle, CO 81650  
Phone: (307) 360-3062

**Sales Office**      999 18th St. Suite 1200 Denver, CO 80202  
Phone: (281) 408-2361



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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	1550	75
Casing	Inner	8.625	8.097	24	STC	0	1549.91	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	512			
Bulk Trailer	E949	Salaz, Eddie		
Cement Chemical	403	Johnson, Brandon		122
Light Duty Pickups	4	Tippetts, Allen	Dewit, Eric	122
Cement Pump	PPC11250	Gonzalez, Omar		122

#### 1.3 Timing

Event	Date/Time
Call Out	9/17/2017 17:00
Depart Facility	9/17/2017 18:15
On Location	9/17/2017 20:00
Rig Up Iron	9/17/2017 20:30
Job Started	9/17/2017 22:28
Job Completed	9/17/2017 23:40
Rig Down Iron	9/17/2017 23:45
Depart Location	9/17/2017 23:59

#### 1.4 General Job Information

Metrics	Value
Well Fluid Density	8.33 lb/gal
Well Fluid Type	Water
Rig Circulation Vol	350 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	95.78 bbls
Actual Displacement	95.78 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	10 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 <sup>3</sup> /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	9/17/2017	17:00					BJ service crew call-out
2	Safety Meeting	9/17/2017	17:50					Safety meeting at yard. Discuss driving directions, road conditions, safety concerns, following distances.
3	Depart Yard	9/17/2017	18:15					Depart Rifle yard fo H&P 290 Laramie Energy
4	Arrive at location	9/17/2017	20:00					BJ service crew arrive at H&P 290 Laramie
5	Safety Meeting	9/17/2017	20:15					Rig up safety meeting. Discuss job rolls, rig up procedures, safety concerns.
6	Rig-up	9/17/2017	20:30					Rig-up ground equipment
7	Safety Meeting	9/17/2017	21:45					Safety meeting with Rig Crew. Discuss safety concerns, rig up procedures, job procedures.
8	Rig-up	9/17/2017	22:00					Finial rig-up of all surface equipment
9	Pump water	9/17/2017	22:28	8.33	5	5	175	Pump 5 barrels fresh water spacer ahead to fill pumps and lines
10	Pressure Test	9/17/2017	22:30				3000	Pressure test all surface equipment
11	Release pressure	9/17/2017	22:32					Release pressure off all surface equipment. Test good
12	Pump water	9/17/2017	22:33	8.33	5	35	182	Pump remaining 35 barrels fresh water spacer
13	Pump lead cement	9/17/2017	22:39	12	5	79.69	287	Mix and pump 79.69 barrels lead cement @ 112.0 PPG, 2.53 YDL, 14.85 GAL/SK
14	Pump tail cement	9/17/2017	22:51	12.5	5	47.44	217	Mix and pump 47.44 barrels tail cement @ 12.5 PPG, 2.22 YLD, 12.58 GAL/SK
15	Shut down	9/17/2017	23:00					Shut down, drop pplug and wash pumps and lines
16	Pump water	9/17/2017	23:02	8.33		95.78	88	Pump 95.78 barrels fresh water displacement
17	Slow Rate	9/17/2017	23:17	8.33		2	389	Slow rate to 2 barrels/min with 90 barrels away
18	Land Plug	9/17/2017	23:25				385	Land Plug with 95.78 barrels displacement away. finial circulating pressure 385PSI
19	Casing test	9/17/2017	23:25					10 min casing test to 2100
20	Release pressure	9/17/2017	23:35					Release pressure, check floats, floats holding with .5 barrels back to surface



### 3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	63 °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

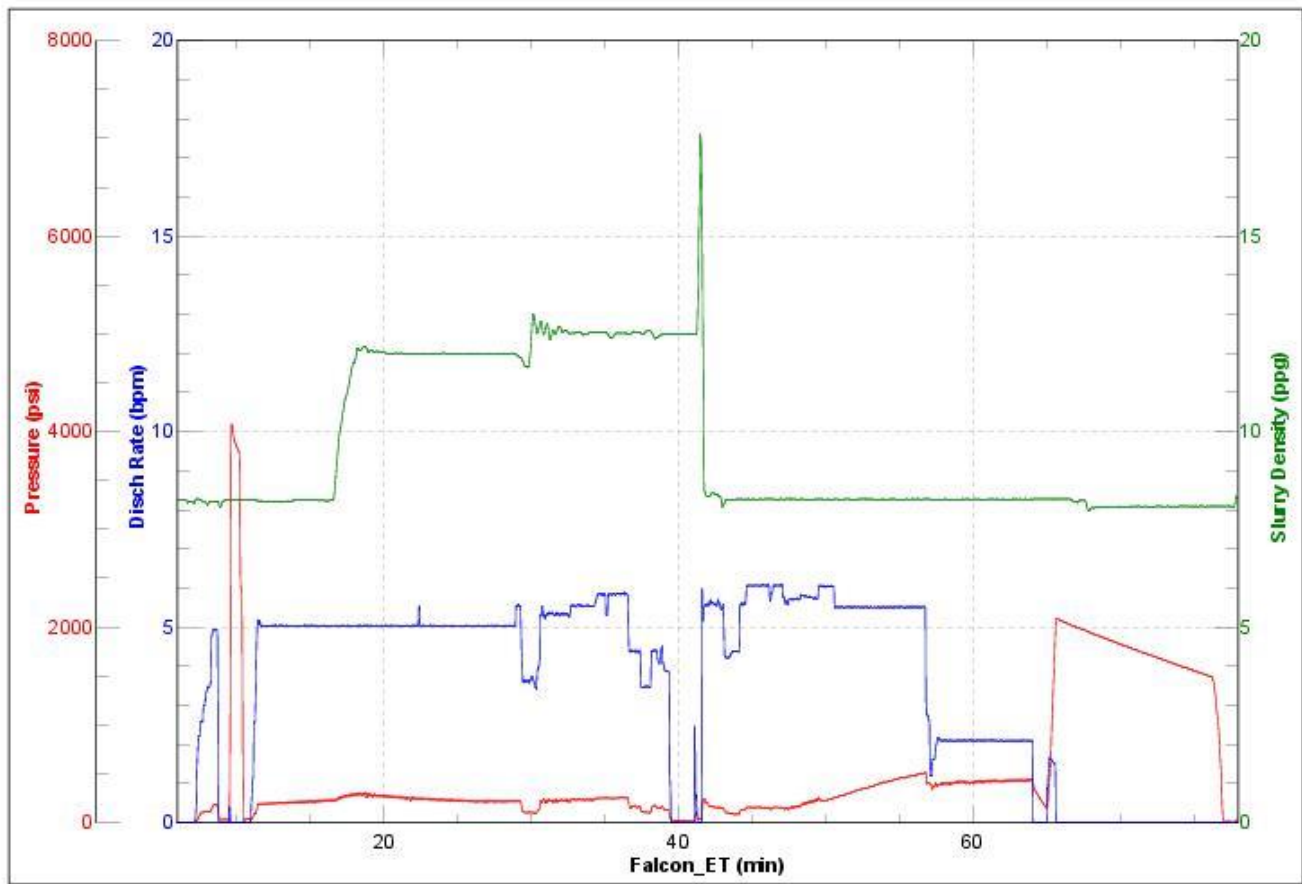


JobMaster Program Version 4.02C1

Job Number: 1367

Customer: Laramie Energy

Well Name: Burton 19-05W



BJ Services

Job Start: Sunday, September 17, 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	7794	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1550	7794	10

#### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E529	Cose, Rhaun		160
Light Duty Pickups	2	Roush, James	Gilliam, Glen	160
Silo	6 (Silo)			
Silo	7 (silo)			
Cement Chemical	403	Velazquez, Damien		160
Cement Pump	PPC11250	McNeal, Lawrence	Youngberg, Wendell	160

#### 1.3 Timing

Event	Date/Time
Call Out	9/20/2017 09:00
Depart Facility	9/20/2017 12:00
On Location	9/20/2017 14:00
Rig Up Iron	9/20/2017 14:15
Job Started	9/20/2017 13:12
Job Completed	9/20/2017 17:53
Rig Down Iron	9/20/2017 18:00
Depart Location	9/20/2017 19:15

#### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	120 bbls
Actual Displacement	120 bbls
Total Spacer to Surface	10 bbls
Total CMT to Surface	0 bbls

#### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	18
Yield Point	14
10 sec. SGS	5
10 min. SGS	19
30 min. SGS	46
Filtrate	7.8
Flow Line Temp.	79

#### 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	9.6 lb/gal
Well Fluid Density Out of Well	9.6 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 <sup>3</sup> /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		794.00	279.04	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		402.00	136.00	5644
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		120.00	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	BJ CREW CALLED OUT	9/20/2017	09:00					RTS- 15:00
2	STEACS/JOURNEY	9/20/2017	11:45					STEACS BRIEFING WITH CREW
3	BJ CREW DEPARTS YARD	9/20/2017	12:00					BJ CREW DEPARTS YARD
4	BJ CREW ARRIVES	9/20/2017	14:00					BJ CREW ARRIVES ON LOCATION
5	STEACS/RIG UP	9/20/2017	14:05					STEACS MEETING WITH CREW
6	BJ CREW RIGS UP	9/20/2017	14:15					BJ CREW RIGS UP EQUIPMENT
7	SAFETY MEETING	9/20/2017	15:35					SAFETY MEETING WITH RIG/CREW
8	STAB HEAD	9/20/2017	15:45					BJ CREW STABS HEAD
9	BREAK CIRCULATION	9/20/2017	15:55	8.34	4	5	275	BROKE CIRCULATION FROM RIG
10	TEST LINES	9/20/2017	15:57					TEST LINES 5000 PSI
11	BATCH UP SPACER	9/20/2017	16:00	11				BATCH UP SPACER AT 11 PPG
12	DOWN HOLE SPACER	9/20/2017	16:05	11	4		200	DOWN HOLE SPACER
13	50 BBLS GONE	9/20/2017	16:50	11	2	50	94	50 BBLS GONE SPACER
14	BATCH UP LEAD	9/20/2017	16:20	12.7				BATCH UP LEAD CEMENT AT 12.7 PPG
15	DOWN HOLE LEAD	9/20/2017	16:25	12.7	7		480	DOWN HOLE LEAD CEMENT AT 12.7 PPG
16	50 BBLS GONE	9/20/2017	16:32	12.7	7	50	515	50 BBLS GONE LEAD CEMENT
17	100 BBLS GONE	9/20/2017	16:38	12.7	7	100	505	100 BBLS GONE LEAD CEMENT
18	150 BBLS GONE	9/20/2017	16:45	12.7	7	150	438	150 BBLS GONE LEAD CEMENT
19	200 BBLS GONE	9/20/2017	16:51	12.7	7	200	445	200 BBLS GONE LEAD CEMENT
20	BATCH UP TAIL	9/20/2017	16:56	13.5				BATCH UP TAIL AT 13.5 PPG
21	TAIL DOWN HOLE	9/20/2017	16:58	13.5	7		665	TAIL DOWN HOLE AT 13.5 PPG
22	50 BBLS GONE	9/20/2017	17:05	13.5	7	50	670	50 BBLS DOWN HOLE TAIL CEMENT
23	100 BBLS GONE	9/20/2017	17:14	13.5	4	100	250	100 BBLS GONE TAIL CEMENT
24	SHUT DOWN	9/20/2017	17:18					SHUT DOWN WASH LINES
25	DROP PLUG	9/20/2017	17:23					DROP PLUG, START DISPLACEMENT



26	DISPLACEMENT	9/20/2017	17:25	8.34	8		720	DISPLACEMENT
27	50 BBLS GONE	9/20/2017	17:31	8.34	10	50	1550	50 BBLS GONE DISPLACEMENT
28	100 BBLS GONE	9/20/2017	17:37	8.34	10	100	2100	100 BBLS GONE DISPLACEMENT
29	BUMPED PLUG	9/20/2017	17:43	8.34	2	120	1935	BUMPED PLUG FCP-1935 PSI
30	CASING TEST	9/20/2017	17:43				3015	CASING TEST 10 MINS 3015 PSI
31	BLED PRESSURE	9/20/2017	17:53					BLED PRESSURE 1.5 BBLS BACK
32	STEACS RIG DOWN	9/20/2017	17:55					RIG DOWN MEETING WITH BJ CREW
33	RIG DOWN EQUIP	9/20/2017	18:00					BJ CREW RIGS DOWN EQUIPMENT
34	STEACS/ JOURNEY	9/20/2017	18:55					STEACS WITH BJ CREW JOURNEY BACK
35	BJ CREW DEPARTS	9/20/2017	19:15					BJ CREW DEPARTS LOCATION



### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	62 °F	50-80 °F
pH Level	7.1	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	75	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

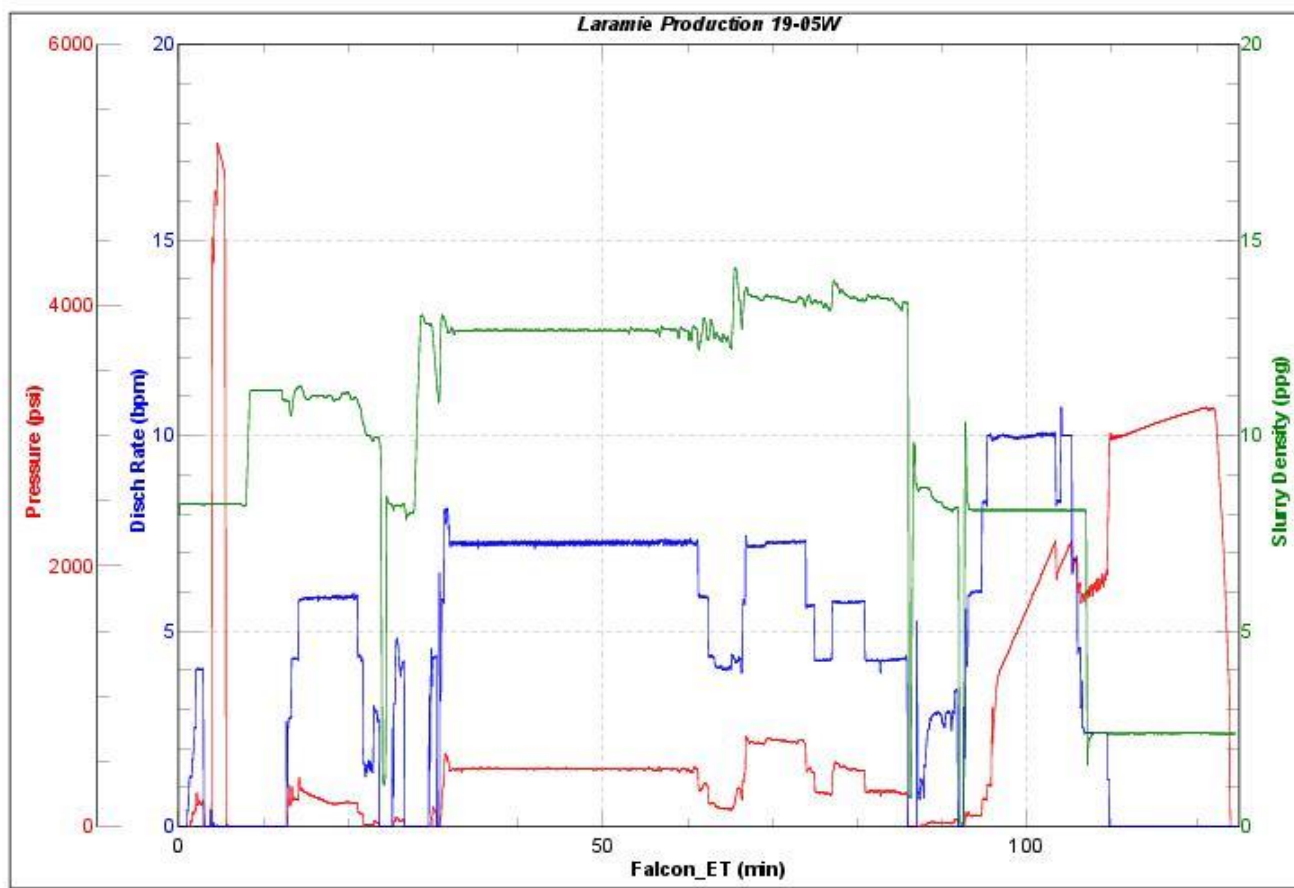


JobMaster Program Version 4.02C1

Job Number: 1368

Customer: Laramie

Well Name: Bruton 19-05W



BJ Services

Job Start: Wednesday, September 20, 2017