



Laramie Energy

End of Well Cement Report

Bruton 19-12E 05-077-10365
S:30 T:9S R:93W Mesa CO

CallSheet #: 1050 (Surface), 1064 (Production)
Proposal #: 13501



SURFACE Post Job Report

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

Dear Mr. Mallery,

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 1716 East Allison Rd., Cheyenne WY, 82007
Phone: (307) 638-5585

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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	1559	75
Casing	Inner	8.625	8.097	24	STC	0	1553	0
Casing	Outer	16	15.25	65	n/a	0	60	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Cement Pump	PPC11250	Linn, Andrew		130
Light Duty Pickups	3	Roush, James		130
Cement Chemical	403	Busheri, Hamza		130
Bulk Trailer	512			
Bulk Trailer	E391	McNeal, Lonnie	Richey, Steven	130

1.3 Timing

Event	Date/Time
Call Out	7/22/2017 11:30
Depart Facility	7/22/2017 14:30
On Location	7/22/2017 16:00
Rig Up Iron	7/22/2017 16:20
Job Started	7/22/2017 20:56
Job Completed	7/22/2017 21:55
Rig Down Iron	7/22/2017 22:20
Depart Location	7/22/2017 23:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.2 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	1 hours
Calculated Displacement	96 bbls
Actual Displacement	96 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	25 bbls
Well Topped Out	No

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	24
Yield Point	21
10 sec. SGS	5
10 min. SGS	22
30 min. SGS	42
Filtrate	0.35
Flow Line Temp.	90

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	9.2 lb/gal
Well Fluid Density Out of Well	9.2 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	82 °F
BHST	106 °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 (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		124.00	49.10	533
1	4	Water	DisplacementFinal	8.33			42.00		95.00	0

1.10 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	CREW CALLOUT	7/22/2017	11:30					BJ CALLED WITH A RTS OF 17:00 LARAMIE SURFACE JOB
2	JOURNEY MANAGEMENT	7/22/2017	14:00					PRE CONVOY MEETING WITH CREW
3	DEPART FACILITY	7/22/2017	14:15					BJ CREW DEPARTING FACILITY
4	ARRIVE LOCATION	7/22/2017	16:00					ARRIVE LOCATION
5	STEACS BRIEFING	7/22/2017	16:05					STEACS BRIEFING WITH BJ CREW
6	SPOT BULK TRUCK	7/22/2017	16:20					SPOT EQUIPMENT
7	RIG UP EQUIPMENT	7/22/2017	16:25					RIG UP EQUIPMENT
8	W.O.R.	7/22/2017	17:00					WAIT ON RIG, RUNNING CASING
9	PIPE ON BOTTOM	7/22/2017	20:25					PIPE ON BOTTOM
10	RIG CIRCULATING	7/22/2017	20:26					RIG CIRCULATING
11	SAFETY MEETING	7/22/2017	20:28					SAFETY MEETING WITH RIG CREW AND COMPANY REP
12	RIG UP CEMENT HEAD	7/22/2017	20:49					RIG UP CEMENT HEAD TO CASING
13	BREAK CIRCULATION	7/22/2017	20:56	8.34	3	5	275	BREAK CIRCULATION
14	TEST LINES	7/22/2017	20:58	8.34				TEST LINES 3000 PSI
15	FRESH WATER SPACER	7/22/2017	21:00	8.34	5	35	220	FRESH WATER SPACER AHEAD
16	BATCH UP LEAD	7/22/2017	21:10	12				BATCH UP LEAD SLURRY @ 12.0 PPG
17	LEAD SLURRY	7/22/2017	21:12	12	7	86	474	LEAD SLURRY DOWNHOLE
18	LEAD SLURRY	7/22/2017	21:18	12	7		465	50 BBLS GONE LEAD SLURRY @ 12.0 PPG
19	BATCH UP TAIL SLURRY	7/22/2017	21:27	12.5				BATCH UP TAIL SLURRY @ 12.5 PPG
20	TAIL SLURRY	7/22/2017	21:28	12.5	6	49	306	TAIL SLURRY @ 12.5 PPG DOWHOLE
21	SHUT DOWN DROP TOP PLUG	7/22/2017	21:37					SHUTDOWN DROP TOP PLUG
22	DISPLACEMENT	7/22/2017	21:38	8.34	5	86	215	START DISPLACEMENT
23	DISPLACEMENT	7/22/2017	21:45	8.34	8		517	50 BBLS GONE DISPLACEMENT
24	SLOW RATE	7/22/2017	21:52	8.34	2	10	434	SLOW RATE TO BUMP PLUG
25	BUMP PLUG	7/22/2017	21:54	8.34			465	LAND TOP PLUG
26	CASING TEST	7/22/2017	21:54				1100	PRESSURED UP TO 1100 PSI HELD 1 MIN



27	BLEED PRESSURE	7/22/2017	21:55				0	BLEED PRESSURE, CHECK FLOATS
28	RIG DOWN MEETING	7/22/2017	22:00					RIG DOWN MEETING WITH BJ CREW
29	RIG DOWN EQUIPMENT	7/22/2017	22:20					RIG DOWN ALL EQUIPMENT
30	CONVOY MEETING	7/22/2017	22:50					CONVOY MEETING BEFORE DEPARTING LOCATION
31	DEPART LOCATION	7/22/2017	23:00					DEPART LOCATION
32	OTHER	7/22/2017	00:00					FULL RETURNS THROUGH OUT JOB, 25 BBLS CMT TO SURFACE LANDED TOP PLUG PRESSURED UP TO 1100 PSI BLEED PRESSURE FLOATS HOLDING. 0.5 BBLS TO SURFACE



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	72 °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	80 mg/L	0-500 mg/L
Carbonates	100 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

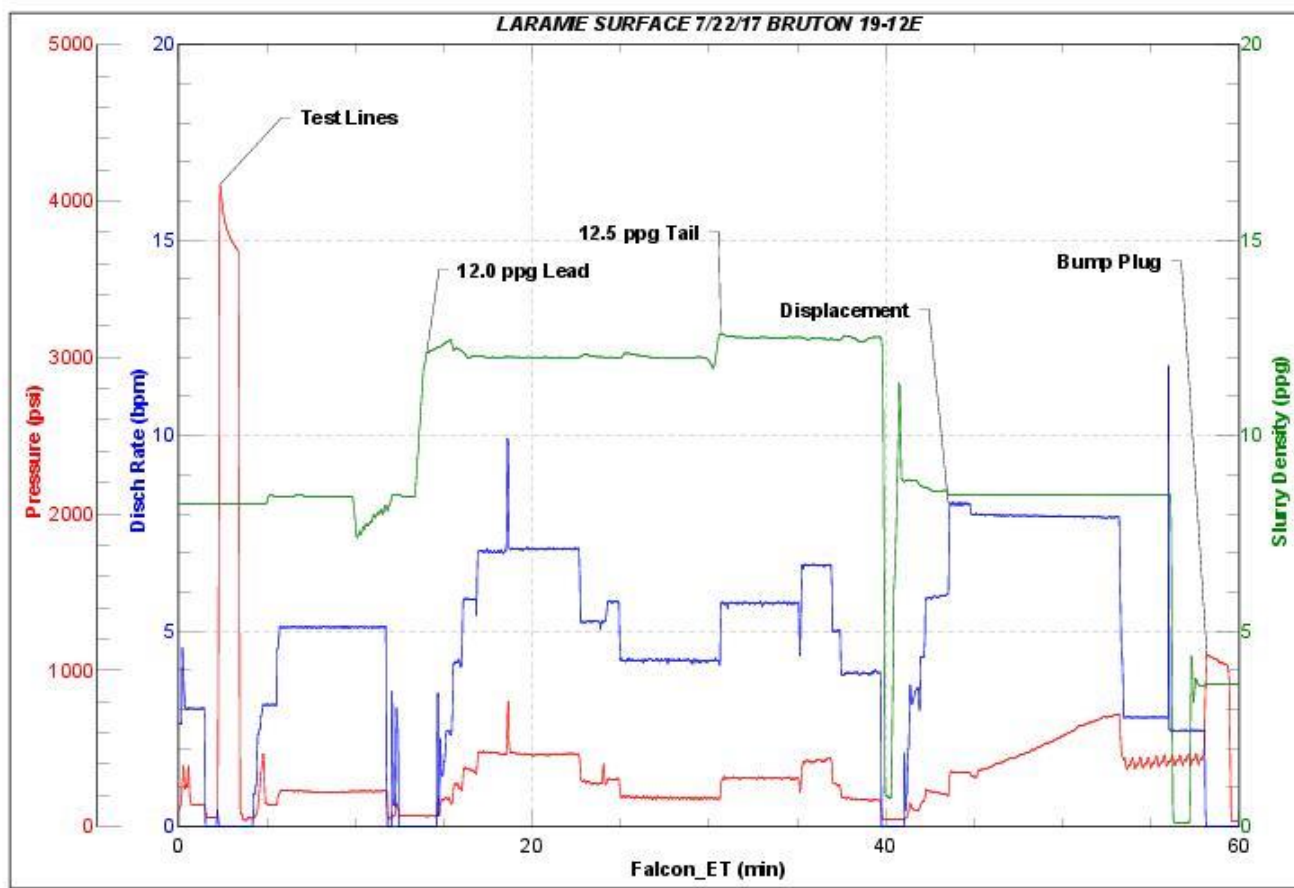


JobMaster Program Version 4.02C1

Job Number: 1050

Customer: LARAMIE ENERGY

Well Name: BRUTON 19-12E



BJ Services

Job Start: Saturday, July 22, 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	1552	0
Casing	Inner	4.5	4	11.6	LTC	0	8345	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1524	8352	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Cement Pump	PPC11250	McClure, Christian	Linn, Andrew	120
Silo	6 (Silo)			120
Light Duty Pickups	2	Helton, Shane		120
Cement Chemical	403	Gonzalez, Omar		120
Bulk Trailer	E466	Johnson, Brandon		120
Silo	7 (silo)			120

1.3 Timing

Event	Date/Time
Call Out	7/26/2017 12:10
Depart Facility	7/26/2017 13:50
On Location	7/26/2017 16:00
Rig Up Iron	7/26/2017 16:15
Job Started	7/26/2017 23:45
Job Completed	7/27/2017 02:00
Rig Down Iron	7/27/2017 02:15
Depart Location	7/27/2017 00:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.7 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	900 bbls
Rig Circulation Time	1.5 hours
Calculated Displacement	128.29 bbls
Actual Displacement	127 bbls
Total Spacer to Surface	3 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	32
Yield Point	32
10 sec. SGS	10
10 min. SGS	23
30 min. SGS	57
Filtrate	0.71
Flow Line Temp.	123

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	178 °F
BHST	240 °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		896.00	314.00	1024
1	3	ALTCem P70-X1	Tail	13.50	1.90	9.55		401.00	135.00	6199
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		128.29	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	RTS	7/26/2017	20:00					Customer requested crew at 20:00
2	Yard Call	7/26/2017	13:10					Yard Call
3	Journey Management	7/26/2017	13:35					Journey Management
4	Depart Facility	7/26/2017	13:50					Depart Facility
5	Arrive on Location	7/26/2017	16:00					Arrive on Location
6	Steacs Briefing	7/26/2017	16:15					Steacs Briefing prior to rig up
7	WOR	7/26/2017	16:45					Wait on Rig
8	Casing on Bottom	7/26/2017	23:00					Casing on Bottom
9	Pre Job Safety Meeting	7/27/2017	23:30					Pre Job Safety Meeting
10	Rig up Cement Head	7/27/2017	23:40					Rig Up Cement Head
11	Load Lines	7/27/2017	23:45	8.34		3		Load Lines
12	Test Lines	7/27/2017	23:48	8.34			5000	Pressure Test Line
13	Start Spacer	7/27/2017	23:55	11	5	37	538	Start Weighted Spacer
14	Start Lead Slurry	7/27/2017	00:12	12.7	6.5	50	594	50 Bbls Lead Cement
15	Lead Slurry	7/27/2017	00:20	12.7	6.5	100	592	100 Bbls Lead Cement
16	Lead Slurry	7/27/2017	00:28	12.7	6.6	150	592	150 Bbls Lead Cement
17	Lead Slurry	7/27/2017	00:35	12.7	6.5	200	597	200 Bbls Lead Cement
18	Lead Slurry	7/27/2017	00:43	12.7	6.5	250	603	250 Bbls Lead Cement
19	Lead Slurry	7/27/2017	00:50	12.7	5	300	407	300 Bbls Lead Cement
20	Lead Slurry	7/27/2017	00:54	12.7	5	322	409	322 Bbls Lead Cement
21	Tail Slurry	7/27/2017	00:57	13.5	6.4		1009	Start Tail Cement
22	Tail Slurry	7/27/2017	01:05	13.5	6.5	50	1046	50 Bbls Tail Cement
23	Tail Slurry	7/27/2017	01:15	13.5	5	100	480	100 Bbls Tail Cement
24	Tail Slurry	7/27/2017	01:20	13.5	3	136		Slowed Rate
25	Shut down	7/27/2017	01:23					Wash Pumps and line
26	Drop Plug	7/27/2017	01:30	8.34	7.6		520	Start Displacement
27	Displacement	7/27/2017	01:38	8.34	7.6	50	1313	50 Bbls Displacement
28	Displacement	7/27/2017	01:45	8.34	5.3	100	1748	100 Bbls Displacement
29	Displacement	7/27/2017	01:48	8.34	2.8	120	1824	120 Bbls Displacement slow rate
30	Land plug	7/27/2017	01:50	8.34		127	3193	Land Plug & Casing Test
31	Check Float	7/27/2017	02:00					Good 1.25 Bbls Back

3 Water Analysis

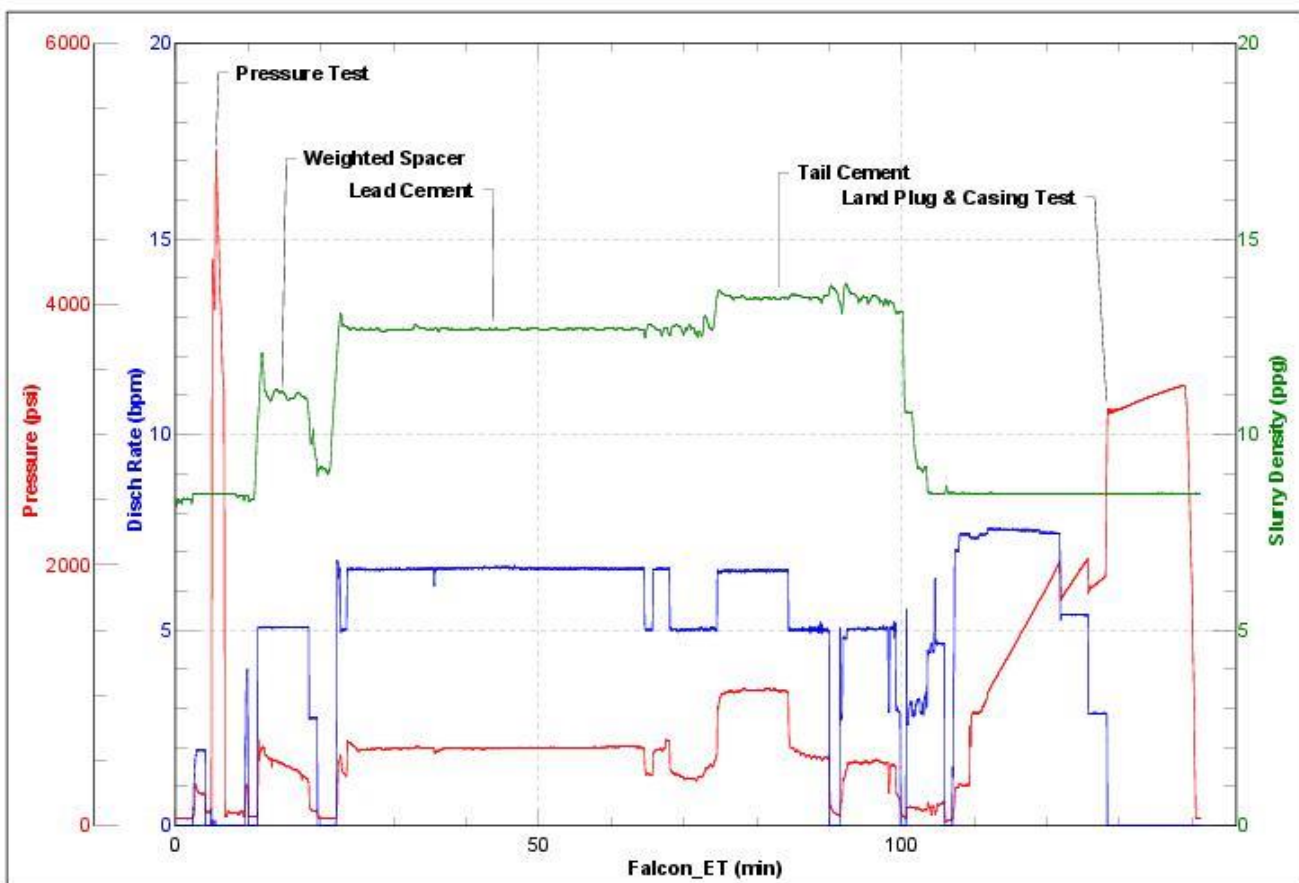
Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	78.8 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	29 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	N/A mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

4 Pump Diagrams



JobMaster Program Version 4.02C1

Job Number:
Customer: Laramie Energy
Well Name: Bruton 19-12E



BJ Services

Job Start: Wednesday, July 26, 2017