



Laramie Energy

End of Well Cement Report

Bruton 19-17E 05-077-10367
S:30 T:9S R:93W Mesa CO

CallSheet #: 1026 (Surface)
Proposal #: 13500



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

Sales Office 475 17th St. Suite 460 Denver Co., 80202
Phone: (303) 296-1158



Table of Contents

Surface Post Job Report	3
1 Job Details & Summary.....	3
1.1 Geometry	3
1.2 Equipment / People	3
1.3 Timing.....	3
1.4 General Job Information	3
1.5 Well Fluid Details	3
1.6 Job Details	3
1.7 Job Details (cont.).....	3
1.8 Circulation	3
1.9 Job Execution Information	4
1.10 Job Fluid Details	4
2 Job Logs.....	5
3 Water Analysis	6
4 Pump Diagrams.....	7
Production Post Job Report	8
1 Job Details & Summary.....	8
1.1 Geometry	8
1.2 Equipment / People	8
1.3 Timing.....	8
1.4 General Job Information	8
1.5 Well Fluid Details	8
1.6 Job Details	8
1.7 Job Details (cont.).....	8
1.8 Circulation	8
1.9 Job Execution Information	9
1.10 Job Fluid Details	9
2 Job Logs.....	10
3 Water Analysis	12
4 Pump Diagrams.....	12

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	Employee #2	Mileage
Bulk Trailer	E391	Turek, Chad		130
Bulk Trailer	512			130
Cement Pump	PPC11250	Linn, Andrew		130
Light Duty Pickups	2	McVay Jr., Jerry	Roush, James	130
Cement Chemical	403	Busheri, Hamza		130

1.3 Timing

Event	Date/Time
Call Out	7/18/2017 11:00
Depart Facility	7/18/2017 13:15
On Location	7/18/2017 15:00
Rig Up Iron	7/18/2017 15:10
Job Started	7/18/2017 19:00
Job Completed	7/18/2017 20:55
Rig Down Iron	7/18/2017 21:25
Depart Location	7/18/2017 22:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.2 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	165 bbls
Rig Circulation Time	1 hours
Calculated Displacement	96 bbls
Actual Displacement	96 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	20 bbls
Well Topped Out	No

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	20
Yield Point	15
10 sec. SGS	5
10 min. SGS	18
30 min. SGS	42
Filtrate	0.95
Flow Line Temp.	92

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 (sks)	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	1024
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	Call Out	7/18/2017	11:00					Call Out
2	Arrive Yard	7/18/2017	11:30					Arrive Yard
3	Depart Yard	7/18/2017	13:15					Depart Rifle Yard
4	Arrive Location, Laramie	7/18/2017	15:00					Arrive Location, Laramie Bruton 19- 17E-697
5	Pre-rig up, Safety Meeting	7/18/2017	15:05					Pre-rig-up Safety Meeting
6	Begin Rig-Up	7/18/2017	15:10					Begin Rig-Up
7	Rig-up Complete	7/18/2017	15:40					Rig-up Complete
8	Load Plugs/WOR	7/18/2017	17:50					Load Plugs/WOR
9	Pre-job Safety Meeting with Rig Crew	7/18/2017	18:50					Pre-job Safety Meeting with Rig Crew
10	Start Job/Rig-up Cement Head	7/18/2017	19:00					Start Job/Rig-up Cement Head
11	Drop Bottom Plug/Load line, 5bbls Fresh Water	7/18/2017	19:06	8.33	3	5	120	Drop Bottom Plug/Load Line, 5bbls Fresh Water
12	Test Line, 3000psi	7/18/2017	19:08					Test Line, 3000psi
13	Pressure Test Complete/Continue Fresh Water Spacer	7/18/2017	19:10	8.33	5			Pressure Test Complete, Continue Fresh Water Spacer Downhole, 10bbls
14	Fresh Water Spacer Downhole	7/18/2017	19:18	8.33	5	10	165	Fresh Water Spacer Downhole, 15bbls
15	Fresh Water Complete	7/18/2017	19:18	8.33	5	25		Fresh Water Spacer Complete/40bbls
16	Batch Lead Cement	7/18/2017	19:20	12				Batch Lead Cement
17	Lead Cement Downhole	7/18/2017	19:22	12	5	10	240	Lead Cement Downhole
18	Lead Downhole Complete/Batch Tail Cement	7/18/2017	19:46	12.5	4	76	165	Lead Downhole Complete, 86bbls/Batch up Tail Cement Downhole
19	Tail Downhole Complete/Shut down	7/18/2017	20:00	12.5	4	49	165	Tail Downhole Complete/Shut down
20	Drop Top Plug/Begin Displacement/Wash-up Pump	7/18/2017	20:04	8.33	3			Drop Top Plug/Begin Displacement, Fresh Water/Wash-up Pum
21	Displacement/Open Bottom Valve	7/18/2017	20:07	8.33	5	10	120	Displacement, 10bbls/Open Bottom Valve
22	Displacement, Fresh Water to Surface	7/18/2017	20:13	8.33	7	42	472	Displacement, Fresh Water to Surface, 52bbls

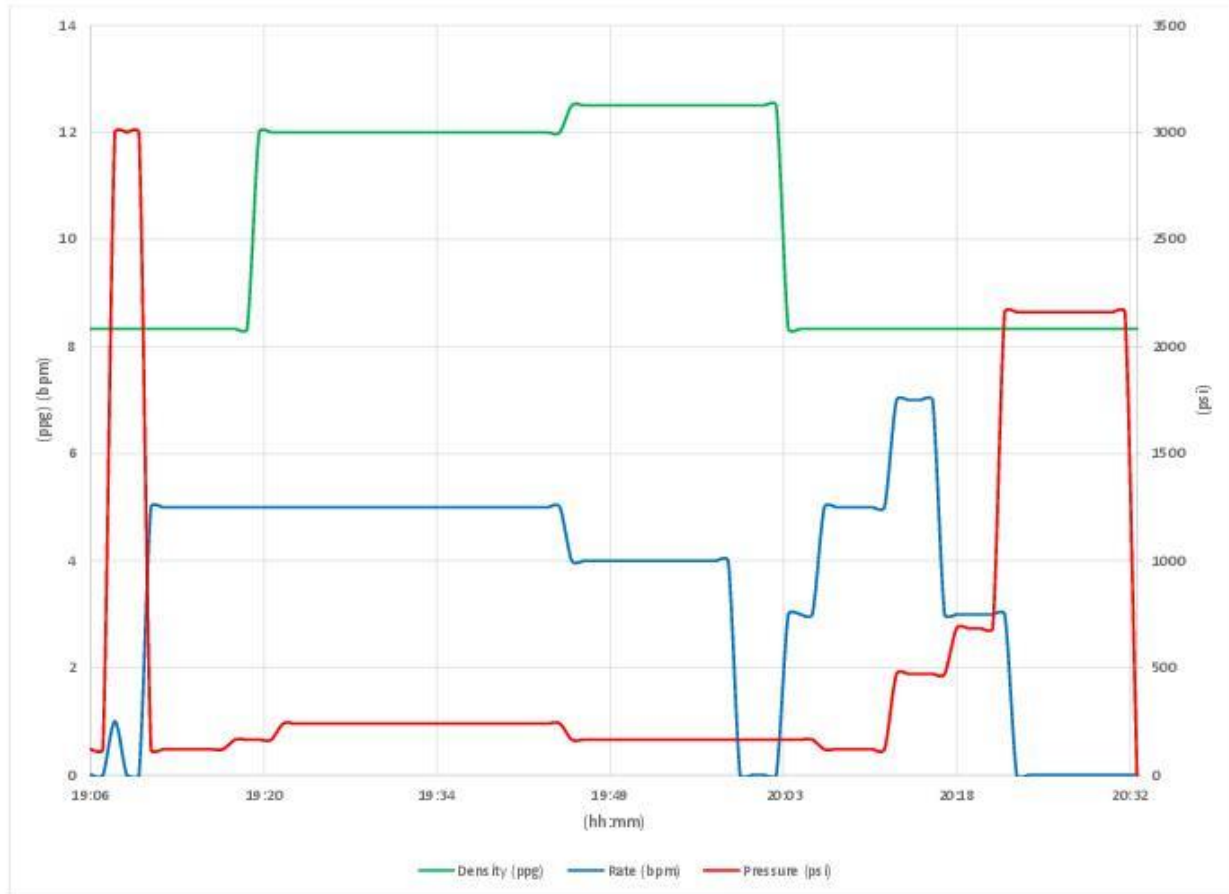


23	Displacement, Cement to Surface	7/18/2017	20:17	8.33	7	23	685	Displacement, 75bbls
24	Displacement/Land Plug/Casing Test	7/18/2017	20:22	8.33	3	21	2161	Displacement, 96bbls, Land Plug/Casing Test, 2161psi
25	Bleed Off Pressure/Casing Test Complete/Floats Held/1bbl back	7/18/2017	20:32					Bleed Off Pressure/Casing Test Complete/Floats Held/1bbl back
26	Rig Wash-Up Line Over to Celler to Pump 20bbls Sugar at Customer Request	7/18/2017	20:40					Rig Wash-Up Line Over to cellar to Pump 20bbls Sugar at Customer Request
27	Job Complete	7/18/2017	20:55					Job Complete
28	Rig-Down Iron Complete	7/18/2017	21:05					Rig-Down Iron Complete
29	Rig-Down Iron Complete	7/18/2017	21:25					Rig-Down Iron Complete
30	Depart Location	7/18/2017	22:00					Depart Location

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	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



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	7889	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1524	7889	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E466	Busheri, Hamza	Richey, Steven	130
Silo	7 (silo)			
Silo	6 (Silo)			
Cement Pump	PCP11250	Linn, Andrew	McNeal, Lawrence	130
Light Duty Pickups	3	Roush, James		130

1.3 Timing

Event	Date/Time
Call Out	7/21/2017 11:30
Depart Facility	7/21/2017 14:00
On Location	7/21/2017 15:45
Rig Up Iron	7/21/2017 16:00
Job Started	7/21/2017 18:52
Job Completed	7/21/2017 21:02
Rig Down Iron	7/21/2017 21:20
Depart Location	7/21/2017 22:30

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	400 bbls
Rig Circulation Time	1.5 hours
Calculated Displacement	121 bbls
Actual Displacement	120.5 bbls
Total Spacer to Surface	6 bbls
Total CMT to Surface	0 bbls

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	0.32
Flow Line Temp.	91

1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	3000 units
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	9.4 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	178 °F
BHST	239 °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		814.00	286.07	1024
1	3	ALTCem P70-X1	Tail	13.50	1.90	9.55		401.00	135.66	5739
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		122.00	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	CREW CALLOUT	7/21/2017	11:30					BJ CREW CALLED OUT FOR LARAMIE PROD. JOB
2	JOURNEY MANAGEMENT	7/21/2017	13:45					JOURNEY MANAGEMENT MEETING
3	BJ CREW DEPART FACILITY	7/21/2017	14:00					DEPART FACILITY
4	ARRIVE LOCATION	7/21/2017	15:45					ARRIVE LOCATION
5	STEACS BRIEFING	7/21/2017	15:55					STEACS BRIEFING WITH CREW
6	SPOT EQUIPMENT	7/21/2017	16:10					SPOT TRUCKS
7	RIG UP EQUIPMENT	7/21/2017	16:15					RIG UP EQUIPMENT
8	W.O.R.	7/21/2017	17:00					RIG RUNNING CASING
9	PIPE ON BOTTOM	7/21/2017	17:30					PIPE ON BOTTOM
10	RIG CIRCULATING	7/21/2017	17:31					RIG CIRCULATING
11	SAFETY MEETING	7/21/2017	18:46					SAFETY MEETING WITH RIG CREW
12	RIG UP CEMENT HEAD TO WELL	7/21/2017	18:00					RIG UP CEMENT HEAD TO WELL
13	BREAK CIRCULATION	7/21/2017	18:52	8.34	3	5	275	BREAK CIRCULATION
14	TEST LINES	7/21/2017	18:56					TEST LINES 5000
15	BATCH UP SPACER	7/21/2017	19:00	11				SPACER @ 11 PPG
16	SPACER	7/21/2017	19:04	11	6	40	540	SPACER @ 11 PPG
17	BATCH UP LEAD	7/21/2017	19:21	12.7				BATCH UP LEAD SLURRY @ 12.7 PPG
18	LEAD	7/21/2017	19:24	12.7	7	286	554	LEAD SLURRY @ 12.7 PPG DOWNHOLE
19	LEAD	7/21/2017	19:30	12.7	7		464	50 BBLS GONE LEAD SLURRY @ 12.7 PPG
20	LEAD	7/21/2017	19:37	12.7	7		480	100 BBLS GONE LEAD SLURRY
21	LEAD	7/21/2017	19:44	12.7	7		479	150 BBLS GONE LEAD SLURRY
22	LEAD	7/21/2017	19:52	12.7	7		489	200 BBLS GONE LEAD SLURRY
23	LEAD	7/21/2017	19:58	12.7	7		496	250 BBLS GONE LEAD SLURRY
24	BATCH UP TAIL SLURRY	7/21/2017	20:06	13.5				BATCH UP TAIL SLURRY @ 13.5 PPG
25	TAIL	7/21/2017	20:08	13.5	7	136	633	TAIL SLURRY @ 13.5 PPG DOWN HOLE
26	TAIL	7/21/2017	20:12	13.5	7		746	50 BBLS GONE TAIL SLURRY
27	TAIL	7/21/2017	20:20	13.5	6		445	100 BBLS GONE TAIL SLURRY
28	SHUTDOWN WASH PUMPS AND LINES	7/21/2017	20:30	8.34	4	10	55	SHUTDOWN WASH PUMPS AND LINES
29	DROP TOP PLUG	7/21/2017	20:33					KICK OUT TOP PLUG
30	START DISPLACEMENT	7/21/2017	20:34	8.34	6	111	190	START DISPLACEMENT



31	DISPLACEMENT	7/21/2017	20:40	8.34	8		1366	50 BBLS GONE DISPLACEMENT
32	DISPLACEMENT	7/21/2017	20:46	8.34	8		2159	100 BBLS GONE DISPLACEMENT
33	SLOW RATE	7/21/2017	20:49	8.34	2	10	1747	SLOW RATE TO BUMP PLUG
34	BUMP PLUG	7/21/2017	20:52				1865	BUMP PLUG
35	CASING TEST	7/21/2017	20:53				3065	3000 PSI CASING TEST 10 MINS.
36	BLEED PRESSURE	7/21/2017	21:03					BLEED PRESSURE CHECK FLOATS
37	RIG DOWN MEETING	7/21/2017	21:15					RIG DOWN MEETING
38	CONVOY MEETING	7/21/2017	22:20					PRE CONVOY MEETING
39	DEPART LOCATION	7/21/2017	22:30					DEPART LOCATION
40	OTHER	7/21/2017	00:00					GOOD RETURNS THROUGHTOUT JOB. 6 BBLS SPACER TO SURFACE. FLOATS HELD 1.5 BBLS BACK

3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	68 °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

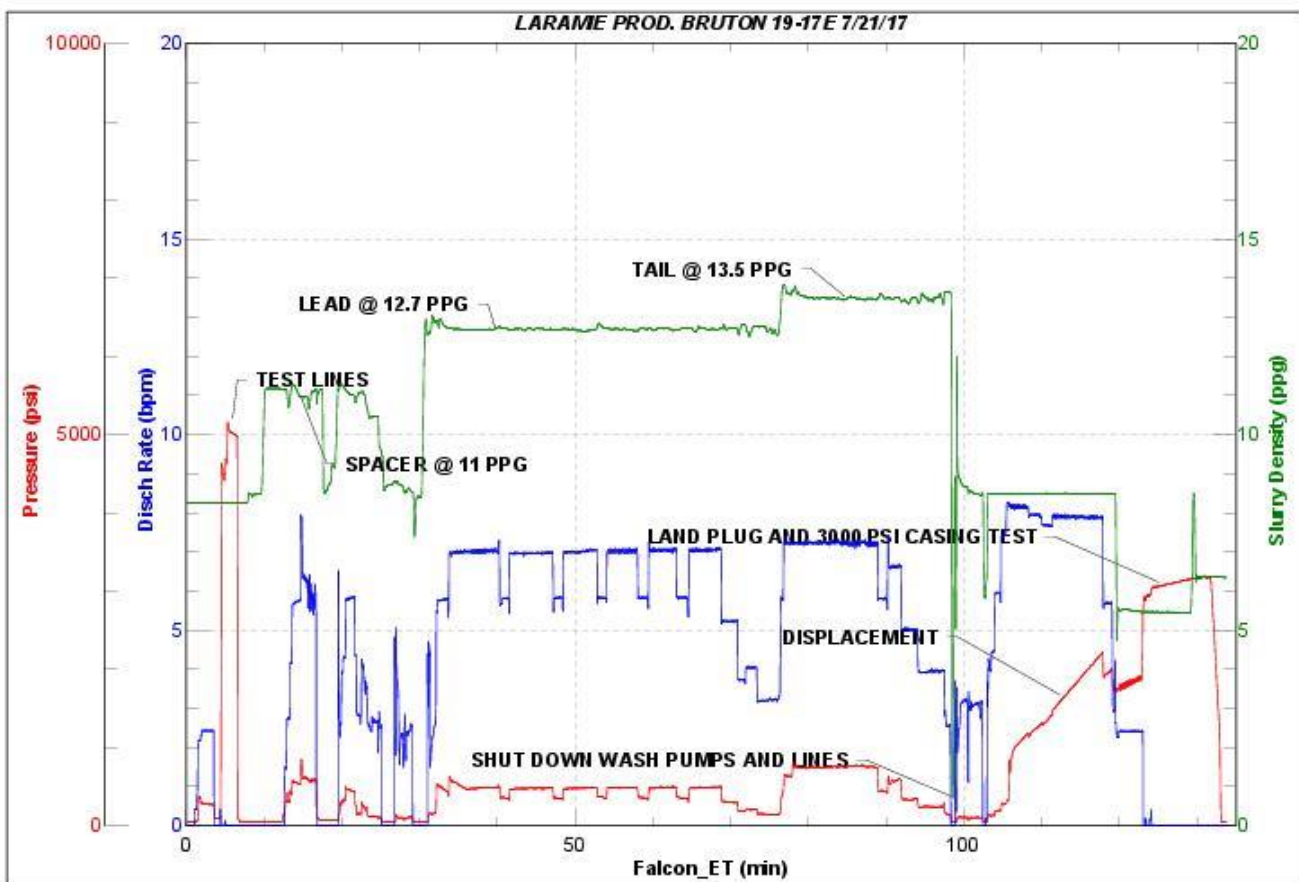


JobMaster Program Version 4.02C1

Job Number: 1040

Customer: LARAMIE ENERGY

Well Name: BRUTON 19-17E



BJ Services

Job Start: Friday, July 21, 2017