



Laramie Energy

End of Well Cement Report

Nichols 0994-24-10E 05-077-10390

S:24 T:9S R:94W Mesa CO

Quote #: 07149/07151

| Execution #: 04087/04235



Laramie Energy

Attention: Mr. Aaron Duncan | (303) 339-4913 | aduncan@laramie-energy.com

Laramie Energy | 1401 17th St, Suite 1400 | Denver, CO 80202

Dear Mr. Duncan,

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,

Gage Putnam
Field Engineer I | (307) 887-4243 | Gage.Putnam@BJServices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 632-2412

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

Cementing Treatment



Start Date	2/26/2018	Well	Nichols 0994-24-10E
End Date	2/26/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	MATT SETTLES	API	05-077-10390
Service Supervisor	SHAUN CLARK	Formation	
Field Ticket No.	Surface	Rig	H&P 290
District	Rifle, CO	Type of Job	Surface

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Previous Casing	15.25	16.00	65.00	60.00	0.00		
Open Hole	11.00			1,581.00	75.00		
Casing	8.10	8.63	24.00	1,570.00		J-55	ST&C

Shoe Length (ft): 47

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	1,527.00
Bottom Plug Size	8.625	Max Casing Pressure - Rated (psi)	10,140.00
Top Plug Used?	Yes	Max Casing Pressure - Operated (psi)	3,000.00
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	8.625	Job Pumped Through	No Manifold
Centralizers Used	Yes	Top Connection Thread	8RD
Centralizers Quantity	10.00	Top Connection Size	8.625
Centralizers Type	Bow		
Landing Collar Depth (ft)	1,570		

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	No	10 sec SGS	
Circulation Time (min)	60.00	10 min SGS	2.00
Circulation Rate (bpm)	6.00	30 min SGS	11.00
Circulation Volume (bbls)	360.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	9.50		
PV Mud In	12		
YP Mud In	10		

TEMPERATURE

Ambient Temperature (°F)	25.00	Slurry Cement Temperature (°F)	90.00
Mix Water Temperature (°F)	80.00	Flow Line Temperature (°F)	

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Planned Top of Fluid (Ft)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Fresh Water	8.3300			0.00				40.0000
Lead Slurry	BJCem S100.3.01D	12.0000	2.5329	14.89	0.00	1,024.00	191	480.0000	85.5000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2282	12.62	1,024.00	500.00	107	237.0000	42.1000
Displacement Final	Water	8.3300			0.00			0.0000	94.5000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	Foam Preventer, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.01D	Foam Preventer, FP-25	0.3000	BWOB
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
2/26/2018 6:00 PM	Fresh Water	5.50	40.00	270.00		
2/26/2018 6:30 PM	BJCem S100.3.01D	5.50	85.50	270.00		
2/26/2018 6:39 PM	BJCem S100.3.01D	5.50	42.10	276.00		
2/26/2018 6:50 PM	Water	10.00	94.50	565.00		

	Min	Max	Avg
Pressure (psi)	0.00	3,000.00	500.00
Rate (bpm)	0.00	10.00	5.50

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	37.00
Calculated Displacement Volume (bbls)	97.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	96.00	Amount of Spacer to Surface	40.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	0.50
Bump Plug Pressure (psi)	1,600.00	Total Volume Pumped (bbls)	266.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Partial	Lost Circulation During Cement Job	No



Customer Name LARMIE ENERGY
Well Name NICHOLS 24-10E
Job Type Surface

District Rifle
Supervisor SHAUN CLARK
Engineer GAGE PUTNAM

Seq No.	Start Date	Start Time	Category	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	2/26/2018	13:00	Mobilization	Callout						BJ CREW CALLED OUT WITH A RTS OF 15:00 PM
2	2/26/2018	13:05	Mobilization							JOURNEY MANAGEMENT WITH BJ CREW
3	2/26/2018	13:10	Mobilization	Leave Location						LEAVE lower pad
4	2/26/2018	13:15	Mobilization	Arrive on Location						ARRIVE ON LOCATION
5	2/26/2018	13:20	Operational							STEACS BREIFING WITH BJ CREW
6	2/26/2018	13:30	Operational	Spot Units						SPOT TRUCKS
7	2/26/2018	14:00	Operational	Rig Up						RIG UP ALL EQUIPMENT
8	2/26/2018	16:20	StandBy	Customer						BJ ON STANDBY, RIG RUNNING CASING
9	2/26/2018	16:00	Operational	Prime Up						PIPE ON BOTTOM, RIG TO CIRCULATE
10	2/26/2018	17:30	Operational	Safety Meeting						SAFTEY MEETING WITH BJ CREW, COMPANY, AND RIG CREW
11	2/26/2018	17:35	Operational	Rig Up						RIG UP CEMENT HEAD TO CASING
12	2/26/2018	17:58	Operational	Start Pumping	Cement Pump Truck	8.34				BREAK CIRCULATION
13	2/26/2018	18:03	Operational	Pressure Test	Cement Pump Truck					TEST LINES 2000
14	2/26/2018	18:07	Operational	Pump Spacer	Cement Pump Truck	8.34			274	FRESH WATER SPACER
16	2/26/2018	18:17	Operational	Pump Spacer	Cement Pump Truck	8.34			280	FRESH WATER SPACER
17	2/26/2018	18:19	Operational	Pump Lead Cement	Cement Pump Truck					BATCH UP LEAD CEMENT @ 12.0 PPG (191 SXS Y- 2.53 MW- 14.89)
18	2/26/2018	18:22	Operational	Pump Lead Cement	Cement Pump Truck	12		86		LEAD CEMENT @ 12.0 PPG DOWNHOLE
19	2/26/2018	18:25	Operational	Pump Lead Cement	Cement Pump Truck	12	5.5	10	486	10 BBLS GONE LEAD SLURRY
20	2/26/2018	18:30	Operational	Pump Lead Cement	Cement Pump Truck	12	5.5	50	270	50 BBLS GONE LEAD SLURRY
24	2/26/2018	18:35	Operational	Pump Lead Cement	Cement Pump Truck	12	5.5	83	226	83 BBLS GONE LEAD SLURRY
25	2/26/2018	18:39	Operational	Pump Tail Cement	Cement Pump Truck	12.5		42		BATCH UP TAIL SLURRY @ 12.5 PPG (107 SXS Y- 2.22 MW-12.62)
26	2/26/2018	18:39	Operational	Pump Tail Cement	Cement Pump Truck	12.5	4.1	2	220	TAIL CEMENT @ 12.5 PPG DOWN HOLE
	2/26/2018	18:43	Operational	Pump Tail Cement	Cement Pump Truck	12.5	4.1	10	276	10 BBLS GONE TAIL SLURRY
27	2/26/2018	18:45	Operational	Pump Tail Cement	Cement Pump Truck	12.5	4.1	42	276	42 BBLS GONE TAIL SLURRY
28	2/26/2018	18:50	Operational	Pump Displacement	Cement Pump Truck			97.3		DROP TOP PLUG START DISPLACEMENT
30	2/26/2018		Operational	Pump Displacement	Cement Pump Truck	8.34	4	10	500	10 BBLS GONE DISPLACEMENT
31	2/26/2018	18:59	Operational	Pump Displacement	Cement Pump Truck	8.34	10	50	1250	50 BBLS GONE DISPLACEMENT
		19:00	Operational	Pump Displacement			10	60	1381	60 BBL GONE CEMENT TO SFC
32	2/26/2018	19:03	Operational	Pump Displacement	Cement Pump Truck	8.34	2.2	90	533	90 BBLS GONE DISPLACEMENT
33	2/26/2018	19:05	Operational	Pump Displacement	Cement Pump Truck	8.34	2.2	96	564	SLOW RATE TO BUMP PLUG
34	2/26/2018	19:07	Operational	Land Plug	Cement Pump Truck			96.5	1600	BUMP PLUG PSI
	2/26/2018	19:17	Operational	Other (See comments)	Cement Pump Truck					Casing test 10 min @ 1600psi
35	2/26/2018	19:19	Operational	Check Floats						BLEED PRESSURE, CHECK FLOATS 0.5 BBLS BACK
54	2/26/2018	19:30	Operational	Safety Meeting						RIG DOWN MEETING WITH BJ CREW
55	2/26/2018	20:00	Operational	Clean Pumps and Lines						START WASH UP OF PUMP AND RIG DOWN EQUIPMENT
56	2/26/2018	20:45	Operational	Safety Meeting						JOURNEY MANAGEMENT WITH BJ CREW
57	2/26/2018	21:00	Mobilization	Leave Location						LEAVE LOCATION
58										
59										FCP-564 PSI, BUMP PLUG- 1600 PSI, BLEED PRESSURE FLOATS HOLDING- .5 BBLS

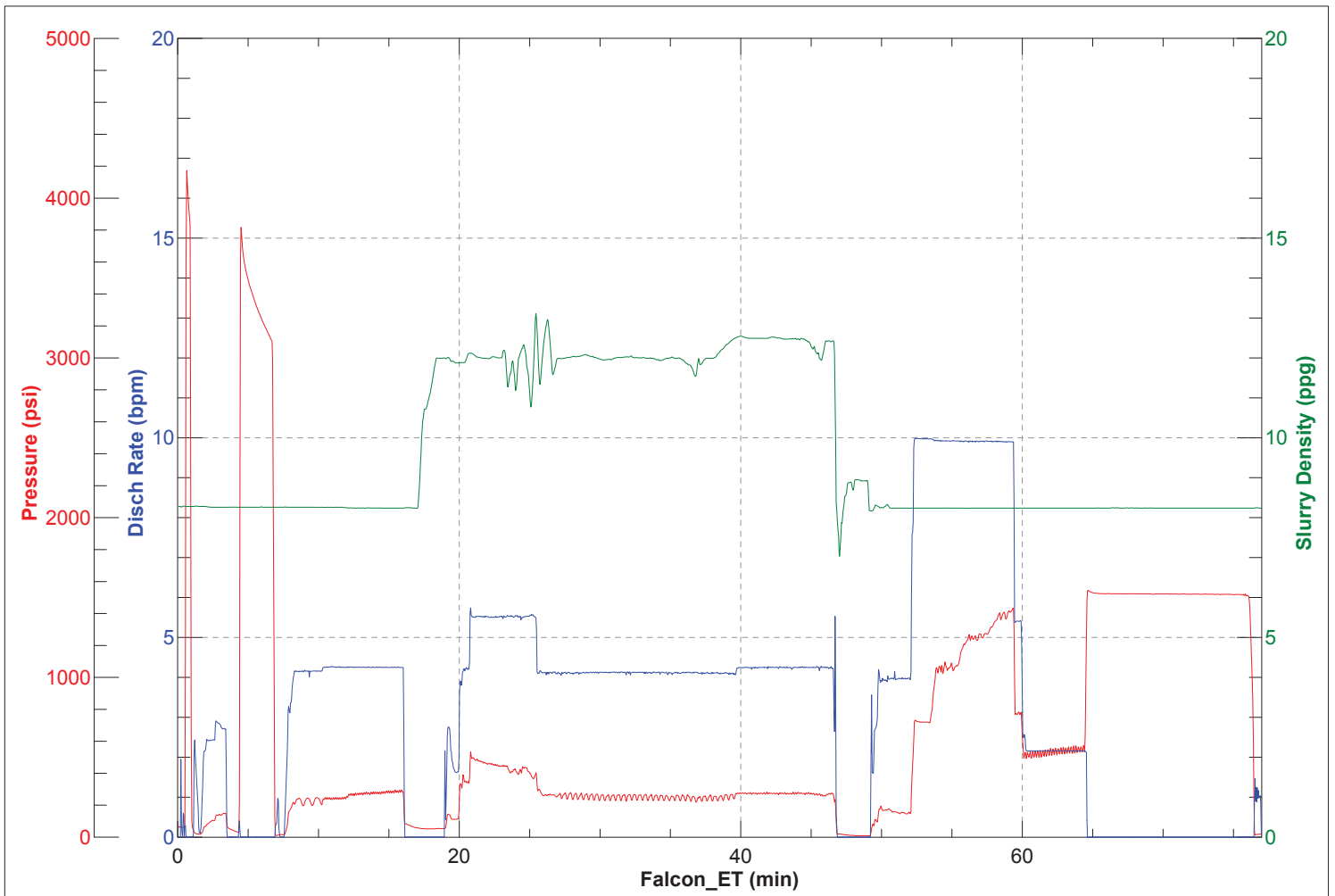


JobMaster Program Version 4.02C1

Job Number:

Customer:

Well Name:



Cementing Treatment



Start Date	3/5/2018	Well	Nichols 0994-24-10E
End Date	3/6/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Roger Foster	API	05-077-10390
Service Supervisor	Shaun Clark	Formation	-
Field Ticket No.	Production	Rig	H&P 290
District	Rifle, CO	Type of Job	Long String

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Casing	4.00	4.50	11.60	8,281.00		L-80	LT&C
Previous Casing	8.10	8.63	24.00	1,524.00		J-55	ST&C
Open Hole	8.88			8,288.00	10.00		

Shoe Length (ft): 86

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	8,194.50
Bottom Plug Size	4.500	Max Tubing Pressure - Rated (psi)	-
Top Plug Used?	Yes	Max Tubing Pressure - Operated (psi)	-
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	10,280.00
Top Plug Size	4.500	Max Casing Pressure - Operated (psi)	5,000.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	105.00	Job Pumped Through	No Manifold
Centralizers Type	Bow	Top Connection Thread	8RD
Landing Collar Depth (ft)	8,195	Top Connection Size	4.5

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	10 sec SGS	5.00
Circulation Time (min)	60.00	10 min SGS	8.00
Circulation Rate (bpm)	6.00	30 min SGS	12.00
Circulation Volume (bbls)	360.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	Yes
Mud Density In (ppg)	9.40	Gas Units	600
Mud Density Out (ppg)	-		
PV Mud In	15		
PV Mud Out	-		
YP Mud In	15		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	19.00	Slurry Cement Temperature (°F)	90.00
Mix Water Temperature (°F)	80.00	Flow Line Temperature (°F)	62.00

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Planned Top of Fluid (Ft)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	11.00			0.00				60.00
Lead Slurry	BJCem P100.3.01R	12.70	1.9791	11.12	1,024.00	4,600.00	792	1,563	278.40
Tail Slurry	BJCem P70.6.01R	13.50	1.8512	9.35	5,624.00	2,650.00	507	938	166.90
Displacement Final	Water + ResCare +Biocide	8.33			0.00				127.30

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-7C	0.3000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	179.9700	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	GELLANT WATER, GW-86	0.8000	PPB
Lead Slurry	BJCem P100.3.01R	Foam Preventer, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01R	RETARDER, R-3	0.5000	BWOB
Lead Slurry	BJCem P100.3.01R	DISPERSANT, CD-31	0.1000	BWOB
Lead Slurry	BJCem P100.3.01R	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01R	GELLANT WATER, GW-86	0.1000	BWOB
Lead Slurry	BJCem P100.3.01R	BONDING AGENT, BA-60	0.3000	BWOB
Tail Slurry	BJCem P70.6.01R	SAND, S-8, Silica Flour, 200 Mesh	25.0000	BWOB
Tail Slurry	BJCem P70.6.01R	Flyash (Rockies)	20.0000	PCT
Tail Slurry	BJCem P70.6.01R	FLUID LOSS, FL-24	0.4000	BWOB
Tail Slurry	BJCem P70.6.01R	EXTENDER, BENTONITE	6.0000	BWOB
Tail Slurry	BJCem P70.6.01R	CEMENT, CLASS G	70.0000	PCT
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-60	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	Foam Preventer, FP-25	0.3000	BWOB
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-90	10.0000	PCT
Tail Slurry	BJCem P70.6.01R	RETARDER, R-3	0.2000	BWOB
Displacement Final	Water + ResCare +Biocide	CLAY STABILIZER ResCare CS	0.0800	GPB

Cementing Treatment



TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/6/2018 1:10 AM	IntegraGuard EZ Spacer	5.00	60.00	410.00
3/6/2018 1:50 AM	BJCem P100.3.01R	5.00	278.40	350.00
3/6/2018 2:50 AM	BJCem P70.6.01R	5.00	166.90	420.00
3/6/2018 3:28 AM	Water + ResCare +Biocide	10.00	127.30	1,500.00

	Min	Max	Avg
Pressure (psi)	0.00	5,000.00	1,200.00
Rate (bpm)	0.00	10.00	5.50

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	127.40	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	127.00	Amount of Spacer to Surface	0.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	1.00
Bump Plug Pressure (psi)	3,000.00	Total Volume Pumped (bbls)	632.00
Were Returns Planned at Surface	No	Top Out Cement Spotted	No
Cement returns During Job	None	Lost Circulation During Cement Job	Yes

Customer Name LARMIE ENERGY
 Well Name NICHOLS 24-10E
 Job Type Long String

District Rifle
 Supervisor Shaun Clark
 Engineer ZEN KEITH



Seq No.	Start Date	Start Time	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	3/5/2018	17:30	Callout						CREW CALLED OUT RTS 2100 HRS
2	3/5/2018	18:10	Hold Steacs/Leave yard						Leave BJ Yard
3	3/5/2018	20:00	Arrive location						ARRIVED AT LOCATION
4	3/5/2018	20:10	Hold Steacs						Hold Steacs
5	3/5/2018	21:00	Spot trucks/ Rig up						Spot trucks/Rig up
6	3/6/2018	0:00	Wait on casing run						BJ on standby waiting on rig
7	3/6/2018	0:00	On bottom w casing						Rig on bottom with casing
8	3/6/2018	0:30	Hold Pre job sfty mtng						Hold pre job saftey meeting with rig crew
9	3/6/2018	1:00	Stab Head						Stab head
10	3/6/2018	1:10	Fill Lines		8.33	2	5		Fill lines
11	3/6/2018	1:15	Pressure test						Pressure test to 5000 psi
12	3/6/2018	1:29	Pump weighted Spcr		8.3	5	10	410	10 BBL 11 PPG spacer
13	3/6/2018	1:40	Pump weighted Spcr		8.3	5	50	273	50 BBL spacer gone
14	3/6/2018	1:45	Pump weighted Spcr		8.3	5	60	300	60 BBL spacer gone
15	3/6/2018	1:45	Issue	Cement Bin					Primary product valve broke on silo in closed position, We bled off, opened valve using valve bar and used a secondary valve to control flow.
16	3/6/2018	1:50	Batch up Cement		12.7		278		Batch up Lead cement to 12.7ppg (792 sacks/Y-1.98/MW-11.1)
17	3/6/2018	1:52	Pump Lead @ 12.7ppg		12.7	5	10	302	10 BBL Lead gone
18	3/6/2018	2:04	Pump Lead @ 12.7ppg		12.7	5	50	261	50 BBL lead gone
19	3/6/2018	2:11	Pump Lead @ 12.7ppg		12.7	5	100	300	100 BBL Lead gone
20	3/6/2018	2:22	Pump Lead @ 12.7ppg		12.5	5	150	260	150 BBL Lead gone
21	3/6/2018	2:32	Pump Lead @ 12.7ppg		12.7	5	200	270	200 BBL Lead gone
22	3/6/2018	2:43	Pump Lead @ 12.7ppg		12.7	2.7	250	313	250 BBL lead gone
23	3/6/2018	2:50	Bring up Tail @13.5ppg		13.5	5	167	405	Bring on Tail @13.5 ppg (507 sacks / Y- 1.85 / MW- 9.34)
24	3/6/2018	2:51	Pump Tail		13.5	5	10	325	Pump 10 BBL Tail
25	3/6/2018	2:55	Pump Tail		13.5	5	50	378	Pump 50 BBL Tail
26	3/6/2018	3:05	Pump Tail		13.5	5	100	420	Pump 100 swap to tail off Bulk truck
27	3/6/2018	3:10	Pump Tail		13.5	5	150	480	Pump 150 BBL tail
28	3/6/2018	3:12	End Cement		13.3	2.2	160	465	Shut down on cement
29	3/6/2018	3:13	Drop Plug/Wash Lines						Wash lines drop plug
30	3/6/2018	3:25	Displacement				127.4		Displacement
31	3/6/2018	3:28	Start Displacement		8.5	4	10	520	Start displacement w/ Res care and biocycle
32	3/6/2018	3:32	Pump Displacement		8.5	10	50	1550	Pump 50 BBL displacement
33	3/6/2018	3:33	Lost Circulation		8.5	10	57		Lost circulation at 57 bbls into displacement
34	3/6/2018	3:38	Pump Displacement		8.5	10	100	2200	Pump 100 BBL displacement
35	3/6/2018	3:39	Slow rate to bump		8.5	4	110	1777	Pump 110 BBL displacement , slow rate to bump
36	3/6/2018	3:41	Bump Plug		8.5	4	127	3200	Pump 127 Bumped plug to 3000
37	3/6/2018	3:41	Casing test						brought pressure to 3200 held for 10 min / FCP 2000
38	3/6/2018	4:01	Check Floats						Bleed off / 1 BBL back
39	3/6/2018	4:05	Hold Rig Down Steacs						Rig down meeting with BJ crew
40	3/6/2018	5:30	Rig down						Rig down
41	3/6/2018	5:45	Journey Management						Discuss Journey management
42	3/6/2018	6:00	End Job						End Job
43	3/6/2018	6:00	Leave location						Leave location



JobMaster Program Version 4.02C1
Job Number:
Customer:
Well Name:

