



Laramie Energy

End of Well Cement Report

Nichols 0994-24-12E 05-077-10385

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

Quote #: 08365/08367

| Execution #: 04796/04892



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	3/18/2018	Well	Nichols 0994-24-12E
End Date	3/18/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Matt Settles	API	05-077-10385
Service Supervisor	Glen Gilliam	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			1,559.00	75.00		
Casing	8.10	8.63	24.00	1,549.00		J-55	ST&C

Shoe Length (ft): 48

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Bottom Plug Provided By	-	Tool Depth (ft)	1,501.00
Bottom Plug Size	-	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)	3,390.00
Top Plug Size	8.625	Max Casing Pressure - Operated (psi)	2,000.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	20.00	Job Pumped Through	No Manifold
Centralizers Type	Bow	Top Connection Thread	8 ROUND
Landing Collar Depth (ft)	1,549	Top Connection Size	8.625

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	-
Circulation Time (min)	15.00	10 min SGS	-
Circulation Rate (bpm)	10.00	30 min SGS	-
Circulation Volume (bbls)	150.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	-	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	-		
PV Mud Out	-		
YP Mud In	-		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	35.00	Slurry Cement Temperature (°F)	63.00
Mix Water Temperature (°F)	72.00	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	8.33			0.00				40.00
Lead Slurry	BJCem S100.3.01D	12.00	2.5329	14.89	0.00	1,024.00	191	480.00	85.50
Tail Slurry	BJCem S100.3.01D	12.50	2.2282	12.62	1,024.00	500.00	107	237.00	42.10
Displacement Final	Water	8.33			0.00			0.00	94.50

Cementing Treatment



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

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/18/2018 4:02 PM	Fresh Water	4.00	40.00	212.00
3/18/2018 4:13 PM	BJCem S100.3.01D	4.00	85.50	268.00
3/18/2018 4:28 PM	BJCem S100.3.01D	3.00	42.10	110.00
3/18/2018 4:42 PM	Water	4.00	94.50	357.00

	Min	Max	Avg
Pressure (psi)	110.00	357.00	236.75
Rate (bpm)	3.00	4.00	3.75

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	26.00
Calculated Displacement Volume (bbls)	96.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	96.00	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	0.50
Bump Plug Pressure (psi)	689.00	Total Volume Pumped (bbls)	96.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Full	Lost Circulation During Cement Job	No

Customer Name LARAMIE District Rifle
 Well Name NICHOLS 24-12E Supervisor GLEN GILLIAM
 Job Type Surface Engineer GAGE PUTNAM



Seq No.	Start Date	Start Time	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	3/18/2018	10:00	CALLOUT						BJ CREW CALLED OUT WITH AN RTS OF 14:00
2	3/18/2018	11:00	ON LOCATION						BJ CREW ON LOCATION
3	3/18/2018	12:00	STEACS/ RIG UP						STEACS/ RIG UP WITH BJ CREW
4	3/18/2018	13:00	RIG UP						RIG UP EQUIPMENT FOR SURFACE JOB/ STEACS JOB OPERATIONS
5	3/18/2018	13:30	DOWN TIME						BJ CREW DOWN, RIG RUNNING CASING
6	3/18/2018	15:25	PIPE ON BOTTOM						PIPE ON BOTTOM RIG CIRCULATING
7	3/18/2018	15:35	SAFETY MEETING						SAFETY MEETING WITH RIG CREW ON JOB OPERATIONS
8	3/18/2018	15:45	STAB HEAD						BJ CREW STABS HEAD
9	3/18/2018	15:54	FILL LINES		8.33	2.5	5	90	FILL LINES 5 BBLS FRESH WATER
10	3/18/2018	15:58	TEST LINES						TEST LINES AT 3000 PSI
11	3/18/2018	16:02	SPACER		8.33	4	35	212	35 BBLS FRESH WATER SPACER
12	3/18/2018	16:11	BATCH UP LEAD		12				BATCH UP LEAD CEMENT AT 12 PPG
13	3/18/2018	16:13	LEAD DOWN HOLE		12	4		268	LEAD CEMENT DOWN HOLE AT 12 PPG
14	3/18/2018	16:23	50 BBLS GONE		12	6	50	377	50 BBLS LEAD CEMENT GONE
15	3/18/2018	16:28	BATCH UP TAIL		12.5				BATCH UP TAIL CEMENT AT 12.5 PPG
16	3/18/2018	16:28	TAIL DOWN HOLE		12.5	3		110	TAIL CEMENT DOWN HOLE AT 12.5 PPG
17	3/18/2018	16:33	20 BBLS GONE		12.5	4	20	235	20 BBLS TAIL CEMENT DOWN HOLE
18	3/18/2018	16:42	DROP TOP PLUG						DROP TOP PLUG
19	3/18/2018	16:43	DISPLACEMENT		8.33	4		357	KICK OUT PLUG, START DISPLACEMENT
20	3/18/2018	16:50	50 BBLS GONE		8.33	8	50	826	50 BBLS GONE DISPLACEMENT
21	3/18/2018	16:52	70 BBLS GONE		8.33	7	70	856	70 BBLS GONE DISPLACEMENT, CEMENT TO SURFACE 26 BBLS TOTAL
22	3/18/2018	17:00	BUMP PLUG		8.33	2.5	96	689	BUMP PLUG, FCP-689 PSI TOOK TO 1740 PSI HELD 10 MINS
23	3/18/2018	17:10	CHECK FLOATS						FLOATS HELD 0.5 BBLS BACK
24	3/18/2018	17:11	STEACS/ RIG DOWN						STEACS/ RIG DOWN WITH BJ CREW
25	3/18/2018	17:15	RIG DOWN						BJ CREW RIGS DOWN EQUIPMENT
26	3/18/2018	18:15	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON CONVOY BACK TO DISTRICT
27	3/18/2018	18:30	AAR/ JOB COMPLETE						AAR WITH BJ CREW ON JOB OPERATIONS/ RIG DOWN/ RIG UP
28	3/18/2018	18:45	DEPART LOCATION						BJ CREW DEPARTS LOCATION
29	3/18/2018		***MISC***						BUMPED PLUG 689 PSI TOOK TO 1740 PSI HELD FOR 10 MINS. FLOATS HELD 0.5 BBLS BACK, 26 BBLS OF CEMENT TO SURFACE, NO ISSUES DURING JOB

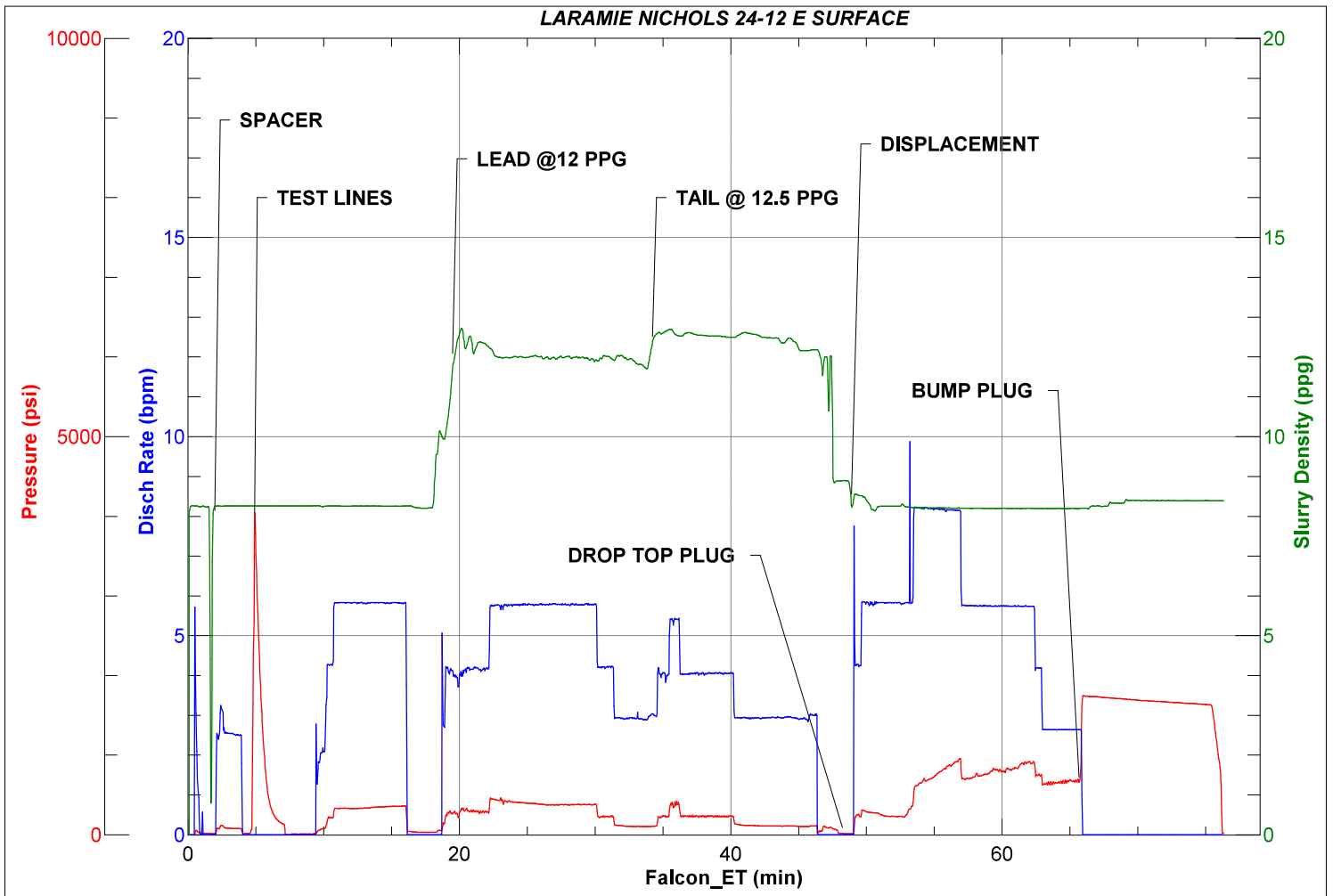


JobMaster Program Version 4.02C1

Job Number: 3958

Customer: LARAMIE

Well Name: NICHOLS 24-12 E



Cementing Treatment



Start Date	3/20/2018	Well	Nichols 0994-24-12E
End Date	3/21/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Matt Settles	API	05-077-10385
Service Supervisor	Francisco Castillo	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
Previous Casing	8.02	8.63	28.00	1,549.00		J-55	ST&C
Open Hole	8.88			7,648.00	10.00		
Casing	4.00	4.50	11.60	7,642.00		L-80	LT&C

Shoe Length (ft): 87

HARDWARE

Bottom Plug Used?	Yes	Max Casing Pressure - Rated (psi)	10,690.00
Bottom Plug Provided By	Non BJ	Max Casing Pressure - Operated (psi)	8,552.00
Bottom Plug Size	4.500	Pipe Movement	None
Top Plug Used?	Yes	Job Pumped Through	
Top Plug Provided By	Non BJ	Top Connection Thread	8RD
Top Plug Size	4.500	Top Connection Size	4.5
Centralizers Used	Yes		
Centralizers Type	Bow		
Landing Collar Depth (ft)	7,555		

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	BJ	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	10 sec SGS	3.00
Circulation Time (min)	75.00	10 min SGS	5.00
Circulation Rate (bpm)	11.00	30 min SGS	8.00
Circulation Volume (bbls)	825.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	9.50		
Mud Density Out (ppg)	9.50		
PV Mud In	11		
PV Mud Out	11		
YP Mud In	11		
YP Mud Out	11		

TEMPERATURE

Ambient Temperature (°F)	27.00	Slurry Cement Temperature (°F)	81.00
Mix Water Temperature (°F)	80.00	Flow Line Temperature (°F)	118.00

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	11.0000			0.00				60.0000
Lead Slurry	BJCem P100.3.01R	12.7000	1.9791	11.12	1,024.00	4,606.00	795	1,562.0000	279.0000
Tail Slurry	BJCem P70.6.01R	13.5000	1.8512	9.35	5,630.00	2,050.00	393	727.0000	129.0000
Displacement Final	Water + ResCare +Biocide	8.3300			0.00			0.0000	117.0000

Fluid Type	Fluid Name	Component	Concentration	UOM
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Cementing Treatment



Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB
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	GELLANT WATER, GW-86	0.8000	PPB
Lead Slurry	BJCem P100.3.01R	DISPERSANT, CD-31	0.1000	BWOB
Lead Slurry	BJCem P100.3.01R	Foam Preventer, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01R	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01R	BONDING AGENT, BA-60	0.3000	BWOB
Lead Slurry	BJCem P100.3.01R	GELLANT WATER, GW-86	0.1000	BWOB
Lead Slurry	BJCem P100.3.01R	RETARDER, R-3	0.5000	BWOB
Tail Slurry	BJCem P70.6.01R	CEMENT, CLASS G	70.0000	PCT
Tail Slurry	BJCem P70.6.01R	EXTENDER, BENTONITE	6.0000	BWOB
Tail Slurry	BJCem P70.6.01R	FLUID LOSS, FL-24	0.4000	BWOB
Tail Slurry	BJCem P70.6.01R	Foam Preventer, FP-25	0.3000	BWOB
Tail Slurry	BJCem P70.6.01R	RETARDER, R-3	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	Flyash (Rockies)	20.0000	PCT
Tail Slurry	BJCem P70.6.01R	SAND, S-8, Silica Flour, 200 Mesh	25.0000	BWOB
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-60	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-90	10.0000	PCT
Displacement Final	Water + ResCare +Biocide	CLAY STABILIZER ResCare CS	0.0800	GPB

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
3/21/2018 12:19 AM	IntegraGuard EZ Spacer	6.00	60.00	533.00		SPACER
3/21/2018 12:30 AM	BJCem P100.3.01R	5.70	279.00	471.00		LEAD CEMENT
3/21/2018 1:19 AM	BJCem P70.6.01R	5.70	129.00	421.00		TAIL CEMENT
3/21/2018 2:03 AM	Water + ResCare +Biocide	9.00	117.00	2,744.00		DISPLACEMENT

Cementing Treatment



	Min	Max	Avg
Pressure (psi)	53.00	2,744.00	1,398.00
Rate (bpm)	3.00	9.00	6.00

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	117.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	117.00	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)	1,742.00	Total Volume Pumped (bbls)	585.00
Were Returns Planned at Surface	No	Top Out Cement Spotted	No
Cement returns During Job	Full	Lost Circulation During Cement Job	No

Customer Name LARAMIE District RIFLE
 Well Name NICHOLS 24-12E Supervisor JAVIER CASTILLO
 Job Type LONG STRING Engineer GAGE PUTNAM



Seq No.	Start Date	Start Time	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	3/20/2018	16:00	CALL OUT						ON LOCATION AT 23:00HRS 3/20/18
2	3/20/2018	18:45	MEETING						STEACS JOURNEY MANAGEMENT MEETING WITH BJ CREW
3	3/20/2018	19:00	LEAVE YARD						LEAVE YARD
4	3/20/2018	21:00	ARRIVE ON LOC.						ARRIVE ON LOCATION, RIG RUNNING CASING
5	3/20/2018	21:15	MEETING						STEACS SAFETY MEETING
6	3/20/2018	21:20	RIG UP						RIG UP PUMPING IRON STAYING AWAY FROM RED ZONE, RIG UP WATER HOSES, RIG UP BULK HOSES
7	3/20/2018	21:50	COMPLETE						RIG UP COMPLETE
9	3/20/2018	21:55	LAND CASING						RIG LANDED CASING
10	3/20/2018	22:00	CIRCULATE						RIG CIRCULED WELL AT 118BPM TILL 23:15 HRS
11	3/20/2018	23:15	MEETING						PRE-JOB SAFETY MEETING WITH RIG CREW
12	3/21/2018	0:07	FILL LINES		8.34	3	5	53	DROP BOTTOM PLUG, FILL PUMPING LINES
19	3/21/2018	0:10	TEST LINES					5000	PRESSURE TEST PUMPING IRON
20	3/21/2018	0:19	SPACER		11	5.7	60	533	CD SPACER
21	3/21/2018	0:30	LEAD CEMENT		12.7				BEGIN LEAD CEMENT 796SKS/279BBLS AT 12.7, 1.97, 11.12
22	3/21/2018	0:39	LEAD CEMENT		12.7	5.7	50	447	50BBLS LEAD CEMENT PUMPED
23	3/21/2018	0:45	LEAD CEMENT		12.7	5.7	50	461	100BBLS LEAD CEMENT PUMPED
24	3/21/2018	0:57	LEAD CEMENT		12.7	5.7	50	471	150BBLS LEAD CEMENT PUMPED
25	3/21/2018	1:05	LEAD CEMENT		12.7	5.7	50	461	200BBLS LEAD CEMENT PUMPED
26	3/21/2018	1:14	LEAD CEMENT		12.7	5.7	50	450	250BBLS LEAD CEMENT PUMPED
27	3/21/2018	1:18	LEAD CEMENT		12.7	2.7	29	131	279BBLS TOTAL OF LEAD CEMENT PUMPED
28	3/21/2018	1:19	TAIL CEMENT		13.5				BEGIN TAIL CEMENT 393SKS/129BBLS, AT 13.5, 1.85, 9.33
29	3/21/2018	1:29	TAIL CEMENT		13.5	4	50	421	50BBLS TAIL CEMENT PUMPED
30	3/21/2018	1:41	TAIL CEMENT		13.5	4	79	383	129BBLS TOTAL OF TAIL CEMENT PUMPED
31	3/21/2018	1:48	SHUTDOWN						WASH PUMP AND LINES TO THE PIT, DROP TOP PLUG
32	3/21/2018	2:03	DISPLACEMENT		8.34				BEGIN DISPLACEMENT FRESH WATER + RESCARE + BIOCID
33	3/21/2018	2:10	DISPLACEMENT		8.34	9	50	1800	50BBLS DISPLACEMENT PUMPED
34	3/21/2018	2:17	DISPLACEMENT		8.34	9	57	2744	107BBLS DISPLACEMENT PUMPED
35	3/21/2018	2:19	SLOW RATE		8.34	2.5	10	2100	SLOW RATE ON LAST 10BBLS OF DISPLACEMENT
36	3/21/2018	2:24	LAND PLUG					3200	BUMPED TOP PLUG, CIRCULATION THROUGH OUT JOB
37	3/21/2018	2:34	CHECK FLOATS					3300	FLOATS HELD, 1 BBLS FLOW BACK
38	3/21/2018	2:40	MEETING						RIG DOWN SAFETY MEETING
39	3/21/2018	2:45	RIG DOWN						WASH UP AND PICKLE PUMP, RIG DOWN BJ EQUIPMENT
40	3/21/2018	3:45	COMPLETE						RIG DOWN COMPLETE
41	3/21/2018	3:50	MEETING						AAR JOURNEY MANAGEMENT MEETING
42	3/21/2018	4:00	LEAVE LOCATION						BJ CREW LEAVE LOCATION
43	3/21/2018	4:05							CALCULATED TOP OF TAIL 5,308FT, RETURNS THROUGH OUT JOB
44	3/21/2018	4:10							THANK YOU FOR YOUR BUSINESS FROM JAVIER AND CREW



JobMaster Program Version 4.02C1
Job Number: 4032
Customer: LARAMIE
Well Name: NICHOLS 24-12E

LARAMIE 4 1/2 PRODUCTION

