



Laramie Energy

End of Well Cement Report

Nichols 0994-24-12W 05-077-10382

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

Quote #:

| Execution #:



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	3/15/2018	Well	Nichols 0994-24-12W
End Date	3/15/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Matt Settles	API	05-077-10382
Service Supervisor	Wendell Youngberg	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			1,571.00	75.00		
Casing	8.10	8.63	24.00	1,561.00		J-55	ST&C

Shoe Length (ft): 48

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	1,531.00
Bottom Plug Size	8.625	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)	2,000.00
Top Plug Size	8.625	Max Casing Pressure - Operated (psi)	2,950.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	17.00	Job Pumped Through	No Manifold
Centralizers Type	Bow	Top Connection Thread	8rd
Landing Collar Depth (ft)	1,565	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)	30.00	10 min SGS	-
Circulation Rate (bpm)	6.00	30 min SGS	-
Circulation Volume (bbls)	180.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	9.20	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	-		
PV Mud Out	-		
YP Mud In	-		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	34.00	Slurry Cement Temperature (°F)	81.00
Mix Water Temperature (°F)	77.00	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	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
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
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
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

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/15/2018 7:48 AM	Fresh Water	5.00	40.00	327.00
3/15/2018 8:02 AM	BJCem S100.3.01D	5.00	85.50	321.00
3/15/2018 8:20 AM	BJCem S100.3.01D	5.00	42.10	230.00
3/15/2018 8:31 AM	Water	10.00	94.50	836.00

	Min	Max	Avg
Pressure (psi)	0.00	1,630.00	430.00
Rate (bpm)	0.00	10.00	5.00

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	25.00
Calculated Displacement Volume (bbls)	96.00	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	1.00
Bump Plug Pressure (psi)	1,630.00	Total Volume Pumped (bbls)	264.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Full	Lost Circulation During Cement Job	No



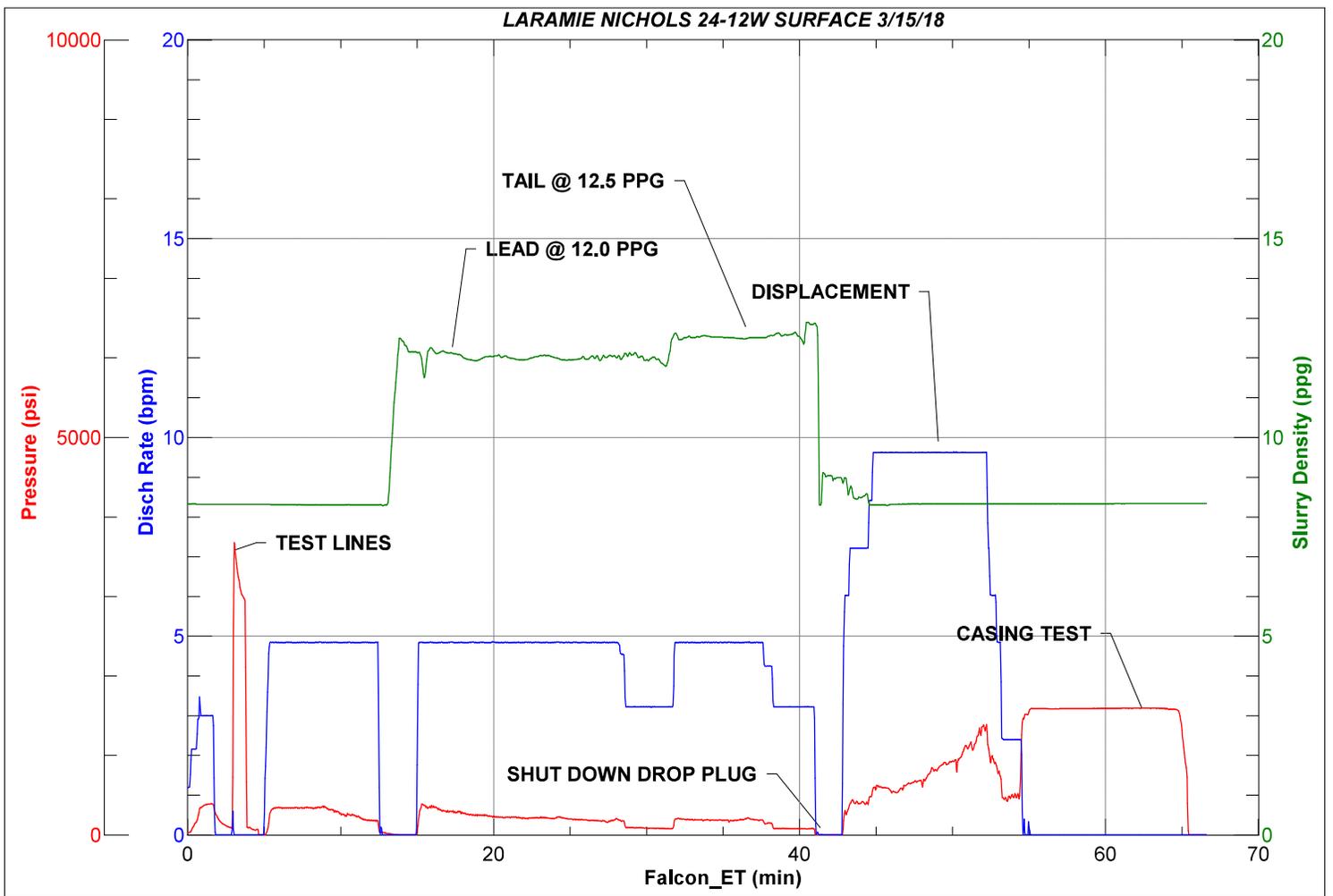
Customer Name LARAMIE
 Well Name NICHOLS 0994-24-12W
 Job Type Surface

District Rifle
 Supervisor JAMES ROUSH
 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	3/15/2018	4:00	Mobilization	Callout						BJ CREW CALLED OUT WITH A RTS OF 06:00 AM 3/15/18
2	3/15/2018	4:30	Mobilization							JOURNEY MANAGEMENT WITH BJ CREW
3	3/15/2018	4:45	Mobilization	Leave Location						LEAVE DISTRICT
4	3/15/2018	5:45	Mobilization	Arrive on Location						ARRIVE ON LOCATION
5	3/15/2018	5:50	Operational							STEACS BRIEFING WITH BJ CREW
6	3/15/2018	6:00	Operational	Spot Units						SPOT TRUCKS
7	3/15/2018	6:15	Operational	Rig Up						RIG UP ALL EQUIPMENT
8	3/15/2018	6:45	StandBy	Customer						BJ ON STANDBY, RIG RUNNING CASING
9	3/15/2018	7:00	Operational	Prime Up						PIPE ON BOTTOM, RIG TO CIRCULATE
10	3/15/2018	7:30	Operational	Safety Meeting						SAFTEY MEETING WITH BJ CREW, COMPANY, AND RIG CREW
11	3/15/2018	7:45	Operational	Rig Up						RIG UP CEMENT HEAD TO CASING
12	3/15/2018	7:48	Operational	Start Pumping		8.34	2	5	82	BREAK CIRCULATION
13	3/15/2018	7:51	Operational	Pressure Test						TEST LINES 3000
14	3/15/2018	7:53	Operational	Pump Spacer		8.34	5	35	327	FRESH WATER SPACER
17	3/15/2018	8:00	Operational	Pump Lead Cement		12				BATCH UP LEAD CEMENT @ 12.0 PPG (191 SXS Y- 2.53 MW- 14.89)
18	3/15/2018	8:02	Operational	Pump Lead Cement		12	5	86	321	LEAD CEMENT @ 12.0 PPG DOWNHOLE
19	3/15/2018	8:13	Operational	Pump Lead Cement		12	5		216	50 BBLs GONE LEAD SLURRY
25	3/15/2018	8:19	Operational	Pump Tail Cement		12.5				BATCH UP TAIL SLURRY @ 12.5 PPG (107 SXS Y- 2.22 MW-12.62)
26	3/15/2018	8:20	Operational	Pump Tail Cement		12.5	5	42	230	TAIL CEMENT @ 12.5 PPG DOWN HOLE
28	3/15/2018	8:31	Operational	Pump Displacement				86		DROP TOP PLUG START DISPLACEMENT
30	3/15/2018	8:36	Operational	Pump Displacement		8.34	10		836	50 BBLs GONE DISPLACEMENT
33	3/15/2018	8:40	Operational	Pump Displacement		8.34	2	10	451	SLOW RATE TO BUMP PLUG
34	3/15/2018	8:45	Operational	Land Plug						BUMP PLUG 1630 PSI
35	3/15/2018	8:55	Operational	Check Floats						BLEED PRESSURE, CHECK FLOATS 1 BBLs BACK
54	3/15/2018	9:00	Operational	Safety Meeting						RIG DOWN MEETING WITH BJ CREW
55	3/15/2018	9:10	Operational	Clean Pumps and Lines						START WASH UP OF PUMP AND RIG DOWN EQUIPMENT
56	3/15/2018	9:45	Operational	Safety Meeting						JOURNEY MANAGEMENT WITH BJ CREW
57	3/15/2018	10:00	Mobilization	Leave Location						LEAVE LOCATION
58	3/15/2018									
59	3/15/2018									FCP- 585 PSI, BUMP PLUG-1630 PSI, BLEED PRESSURE FLOATS HOLDING- 1 BBL BACK



JobMaster Program Version 4.02C1
Job Number: 3854
Customer: LARAMIE
Well Name: NICHOLS 0994-24-12W



Cementing Treatment



Start Date	3/17/2018	Well	Nichols 0994-24-12W
End Date	3/17/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Matt Settles	API	05-077-10382
Service Supervisor	Glen Gilliam	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	8.10	8.63	24.00	1,524.00		J-55	ST&C
Open Hole	8.88			7,554.00	10.00		
Casing	4.00	4.50	11.60	7,544.00		L-80	LT&C

Shoe Length (ft): 81

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	7,463.00
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)	8,552.00
Top Plug Size	4.500	Max Casing Pressure - Operated (psi)	4,000.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	97.00	Job Pumped Through	No Manifold
Centralizers Type	Bow	Top Connection Thread	8 ROUND
Landing Collar Depth (ft)	7,544	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)	45.00	10 min SGS	8.00
Circulation Rate (bpm)	10.00	30 min SGS	12.00
Circulation Volume (bbls)	450.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	9.40	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	33		
PV Mud Out	-		
YP Mud In	15		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	45.00	Slurry Cement Temperature (°F)	79.00
Mix Water Temperature (°F)	72.00	Flow Line Temperature (°F)	38.00

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	4,519.00	778	1,535.00	273.30
Tail Slurry	BJCem P70.6.01R	13.50	1.8512	9.35	5,543.00	2,050.00	393	727.00	129.40
Displacement Final	Water + ResCare +Biocide	8.33			0.00			0.00	116.80

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	GELLANT WATER, GW-86	0.8000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-7C	0.3000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	PPB
Lead Slurry	BJCem P100.3.01R	GELLANT WATER, GW-86	0.1000	BWOB
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	BONDING AGENT, BA-60	0.3000	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
Tail Slurry	BJCem P70.6.01R	CEMENT, CLASS G	70.0000	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	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	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	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)
3/17/2018 5:50 PM	IntegraGuard EZ Spacer	2.00	60.00	210.00
3/17/2018 6:07 PM	BJCem P100.3.01R	3.00	273.30	150.00
3/17/2018 6:53 PM	BJCem P70.6.01R	5.00	129.40	644.00
3/17/2018 7:34 PM	Water + ResCare +Biocide	4.00	116.80	180.00

	Min	Max	Avg
Pressure (psi)	150.00	644.00	296.00
Rate (bpm)	2.00	5.00	3.50

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	115.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	115.00	Amount of Spacer to Surface	15.00
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)	2,650.00	Total Volume Pumped (bbls)	115.00
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
 Well Name NICHOLS 24-12 W
 Job Type Long String

District Rifle
 Supervisor GLEN GILLIAM
 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	3/17/2018	9:00	CALLOUT						BJ CREW CALLED OUT TO LOCATION WITH AN RTS OF 16:00
2	3/17/2018	11:00	YARD CALL						BJ CREW YARD CALL AT 11:00 PRE-TRIP TRUCKS AND EQUIPMENT
3	3/17/2018	11:45	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON CONVOY TO LOCATION
4	3/17/2018	12:00	DEPART YARD						BJ CREW DEPARTS YARD
5	3/17/2018	14:00	ON LOCATION						BJ CREW ON LOCATION, SPOT TRUCKS
6	3/17/2018	14:05	STEACS/ RIG UP						STEACS/ RIG UP MEETING WITH BJ CREW, JOB OPERATIONS STEACS AS WELL
7	3/17/2018	14:15	RIG UP						BJ CREW RIGS UP EQUIPMENT FOR PRODUCTION JOB
8	3/17/2018	15:00	DOWN TIME						BJ CREW DOWN, RIG RUNNING CASING
9	3/17/2018	16:15	PIPE ON BOTTOM						PIPE ON BOTTOM, RIG CIRCULATED .45 HRS 450 BBLs
10	3/17/2018	16:30	SAFETY MEETING						SAFETY MEETING WITH RIG CREW ON JOB OPERATIONS
11	3/17/2018	17:35	STAB HEAD						BJ CREW STABS HEAD
12	3/17/2018	17:43	FILL LINES		8.33	3	5	152	FILL LINES WITH 5 BBLs FRESH WATER
13	3/17/2018	17:48	BATCH UP SPACER		11				BATCH UP SPACER AT 11 PPG
14	3/17/2018	17:50	SPACER DOWN HOLE		11	2		210	SPACER DOWN HOLE AT 11 PPG
15	3/17/2018	18:01	50 BBLs GONE		11	4	50	186	50 BBLs GONE SPACER
16	3/17/2018	18:05	BATCH UP LEAD		12.7				BATCH UP LEAD CEMENT AT 12.7 PPG
17	3/17/2018	18:07	LEAD DOWN HOLE		12.7	3		150	LEAD CEMENT DOWN HOLE AT 12.7 PPG
18	3/17/2018	18:16	50 BBLs GONE		12.7	5.5	50	470	50 BBLs LEAD CEMENT GONE
19	3/17/2018	18:24	100 BBLs GONE		12.7	5.5	100	465	100 BBLs LEAD CEMENT GONE
20	3/17/2018	18:33	150 BBLs GONE		12.7	5.5	150	463	150 BBLs LEAD CEMENT GONE
21	3/17/2018	18:41	200 BBLs GONE		12.7	5.5	200	457	200 BBLs LEAD CEMENT GONE
22	3/17/2018	18:51	250 BBLs GONE		12.7	4	250	270	250 BBLs LEAD CEMENT GONE
23	3/17/2018	18:53	BATCH UP TAIL		13.5				BATCH UP TAIL CEMENT AT 13.5 PPG
24	3/17/2018	18:53	TAIL DOWN HOLE		13.5	5		644	TAIL CEMENT DOWN HOLE AT 13.5 PPG
25	3/17/2018	19:02	50 BBLs GONE		13.5	5.5	50	634	50 BBLs TAIL CEMENT GONE
26	3/17/2018	19:15	100 BBLs GONE		13.5	4	100	395	100 BBLs TAIL CEMENT GONE
27	3/17/2018	19:24	SHUT DOWN						SHUT DOWN WASH PUMPS AND LINES
28	3/17/2018	19:34	DROP PLUG						DROP TOP PLUG, START DISPLACEMENT
29	3/17/2018	19:34	DISPLACEMENT		8.33	4		180	KICK OUT PLUG, START DISPLACEMENT
30	3/17/2018	19:41	50 BBLs GONE		8.33	10	50	2335	50 BBLs GONE DISPLACEMENT
31	3/17/2018	19:46	100 BBLs GONE		8.33	7	100	2458	100 BBLs GONE DISPLACEMENT/ SPACER TO SURFACE 15 BBLs
32	3/17/2018	19:57	BUMP PLUG		8.33	2	115	2650	BUMP PLUG FCP- 2650 TOOK TO 3025 PSI HELD FOR 10 MINS
33	3/17/2018	20:07	CHECK FLOATS						FLOATS HELD 1 BBL BACK
34	3/17/2018	20:10	STEACS/ RIG DOWN						STEACS/ RIG DOWN WITH BJ CREW
35	3/17/2018	20:15	RIG DOWN						BJ CREW RIGS DOWN EQUIPMENT
36	3/17/2018	21:00	AAR						AAR WITH BJ CREW ON JOB OPERATIONS/ RIG DOWN/ RIG UP
37	3/17/2018	21:15	JOB COMPLETE						JOB COMPLETE
38	3/17/2018		***MISC***						BUMPED PLUG FCP 2650 PSI TOOK TO 3025 PSI, HELD FOR 10 MINS, 15 BBLs OF SPACER TO SURFACE/ FLOATS HELD 1.0 BBLs BACK.



JobMaster Program Version 4.02C1

Job Number: 3941

Customer: LARAMIE

Well Name: NICHOLS 24-12 W

