



Laramie Energy

End of Well Cement Report

Nichols 0994-24-11E 05-077-10397

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

Quote #: 07480/07633

I Execution #: 04237/04473



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	3/6/2018	Well	Nichols 0994-24-11E
End Date	3/7/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Roger Foster	API	05-077-10397
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			1,580.00	75.00		
Casing	8.10	8.63	24.00	1,570.00		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)	1,522.00
Bottom Plug Size	8.625	Max Casing Pressure - Rated (psi)	3,390.00
Top Plug Used?	Yes	Max Casing Pressure - Operated (psi)	2,000.00
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	8 ROUND
Centralizers Quantity	20.00	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	Yes	Flare Prior to/during the Cement Job	No
Circulation Time (min)	30.00	Gas Present	No
Circulation Rate (bpm)	10.00		
Circulation Volume (bbls)	300.00		
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	10.00	Slurry Cement Temperature (°F)	100.00
Mix Water Temperature (°F)	85.00	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	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	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	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	IntegraSeal CELLO	0.1300	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, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
3/7/2018 2:15 AM	Fresh Water	6.00	40.00	443.00		
3/7/2018 2:24 AM	BJCem S100.3.01D	3.00	85.50	154.00		
3/7/2018 2:39 AM	BJCem S100.3.01D	3.00	42.10	113.00		
3/7/2018 2:51 AM	Water	6.00	95.00	356.00		

	Min	Max	Avg
Pressure (psi)	113.00	443.00	266.50
Rate (bpm)	3.00	6.00	4.50

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	30.00
Calculated Displacement Volume (bbls)	95.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	95.00	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)	525.00	Total Volume Pumped (bbls)	95.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	Yes
Cement returns During Job	Full	Lost Circulation During Cement Job	No

Customer Name	LARAMIE ENERGY	District	Rifle
Well Name	NICHOLS 24-11 E	Supervisor	GLEN GILLIAM
Job Type	Surface	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	3/6/2018	17:00	CALLOUT						BJ CREW CALLED OUT WITH AN RTS OF 22:00
2	3/6/2018	18:30	YARD CALL TIME						BJ CREW HAS YARD TIME AT 18:30
3	3/6/2018	18:45	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON JOURNEY TO LOCATION
4	3/6/2018	19:00	DEPART YARD						BJ CREW DEPARTS YARD
5	3/6/2018	20:30	ON LOCATION						BJ CREW ARRIVES ON LOCATION AND SPOTS EQUIPMENT
6	3/6/2018	20:45	STEACS RIG UP						STEACS RIG UP WITH BJ CREW
7	3/6/2018	21:00	RIG UP						BJ CREW RIGS UP EQUIPMENT
8	3/6/2018	21:45	DOWN TIME						BJ CREW DOWN, RIG RUNNING CASING, STEACS MEETING FOR PUMPING JOB WITH BJ CREW
9	3/7/2018	1:00	PIPE ON BOTTOM						PIPE ON BOTTOM RIG CIRCULATING 10 BPM 0.5 HRS
10	3/7/2018	1:40	SAFETY MEETING						SAFETY MEETING WITH RIG CREW ON JOB PROCEDURES
11	3/7/2018	1:55	STAB HEAD						BJ CREW STABS HEAD TO WELL
12	3/7/2018	2:08	FILL LINES		8.33	3.5	5	327	FILL LINES WITH 5 BBLS FRESH WATER
13	3/7/2018	2:11	TEST LINES						TEST LINES AT 3000 PSI
14	3/7/2018	2:15	SPACER		8.33	6	35	433	FRESH WATER SPACER 35 BBLS
15	3/7/2018	2:22	BATCH UP LEAD		12				BATCH UP LEAD CEMENT AT 12 PPG
16	3/7/2018	2:24	LEAD DOWN HOLE		12	3		154	LEAD CEMENT DOWN HOLE AT 12 PPG
17	3/7/2018	2:35	50 BBLS GONE		12	6	50	360	50 BBLS LEAD CEMENT GONE, 75 BBLS TOTAL
18	3/7/2018	2:39	BATCH UP TAIL		12.5				BATCH UP TAIL CEMENT AT 12.5 PPG
19	3/7/2018	2:39	TAIL DOWN HOLE		12.5	3		113	TAIL CEMENT DOWN HOLE AT 12.5 PPG
20	3/7/2018	2:44	20 BBLS GONE		12.5	5	20	235	20 BBLS TAIL CEMENT GONE/ 42 BBLS TOTAL
21	3/7/2018	2:49	SHUT DOWN						SHUT DOWN, DROP TOP PLUG, START DISPLACEMENT
22	3/7/2018	2:51	DISPLACEMENT		8.33	6		356	KICK OUT PLUG, START DISPLACEMENT
23	3/7/2018	3:00	50 BBLS GONE		8.33	7	50	760	50 BBLS GONE DISPLACEMENT
24	3/7/2018	3:02	CEMENT TO SURFACE		8.33	7	65	755	65 BBLS GONE DISPLACEMENT, CEMENT TO SURFACE
25	3/7/2018	3:07	BUMP PLUG		8.33	3	95	525	BUMP PLUG, FCP-525 PSI TOOK TO 1728 PSI, HELD FOR 10 MINS
26	3/7/2018	3:17	CHECK FLOATS						FLOATS HELD 0.5 BBLS BACK/ JOB COMPLETE
27	3/7/2018	3:20	STEACS/ RIG DOWN						STEACS RIG DOWN WITH BJ CREW
28	3/7/2018	3:25	RIG DOWN						BJ CREW RIGS DOWN EQUIPMENT AND GETS READY TO CONVOY BACK TO DISTRICT
29	3/7/2018	5:15	AAR						AAR WITH BJ CREW ON JOB OPERATIONS
30	3/7/2018	5:30	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON CONVOY BACK TO DISTRICT
31	3/7/2018	6:30	DEPART LOCATION						BJ CREW DEPARTS LOCATION
32	3/7/2018		***MISC***						BUMP PLUG, FCP-525 PSI TOOK TO 1728 PSI, HELD FOR 10 MINS, FLOATS HELD 0.5 BBLS BACK, 30 BBLS CEMENT TO SURFACE. NO ISSUES DURING JOB.



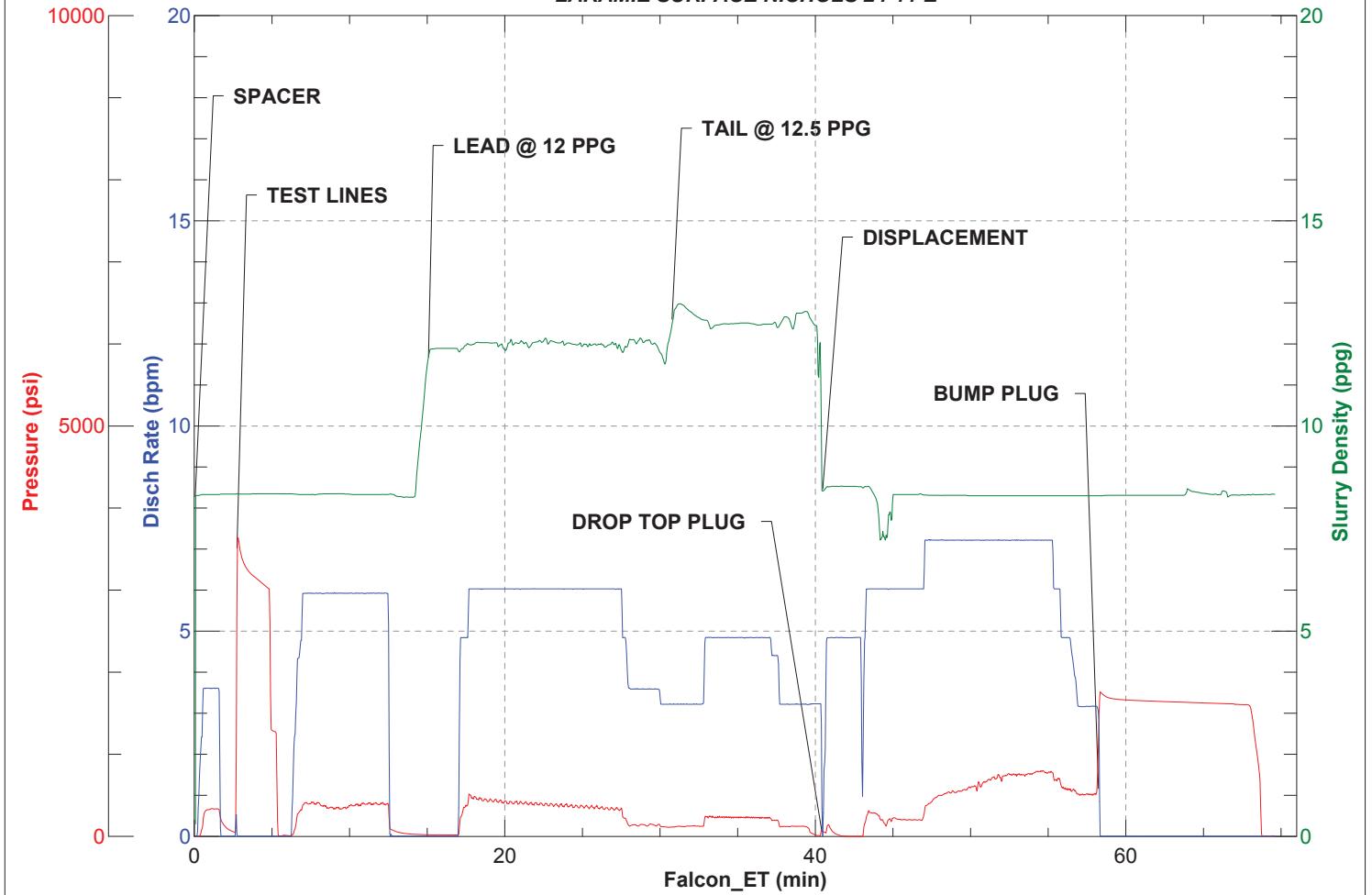
JobMaster Program Version 4.02C1

Job Number: 3538

Customer: LARAMIE

Well Name: NICHOLS 24-11 E

LARAMIE SURFACE NICHOLS 24-11 E



Cementing Treatment



Start Date	3/10/2018	Well	Nichols 0994-24-11E
End Date	3/11/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	ROGER FOSTER	API	05-077-10397
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	1,570.00		J-55	ST&C
Open Hole	8.88			7,673.00	10.00		
Casing	4.00	4.50	11.60	7,663.00		P-110	LT&C

Shoe Length (ft): 87

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	7,576.00
Bottom Plug Size	4.500	Max Casing Pressure - Rated (psi)	8,552.00
Top Plug Used?	Yes	Max Casing Pressure - Operated (psi)	4,000.00
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	4.500	Job Pumped Through	No Manifold
Centralizers Used	Yes	Top Connection Thread	8 ROUND
Centralizers Quantity	105.00	Top Connection Size	4.5
Centralizers Type	Bow		
Landing Collar Depth (ft)	7,663		

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	5.00
Circulation Time (min)	210.00	10 min SGS	9.00
Circulation Rate (bpm)	10.00	30 min SGS	17.00
Circulation Volume (bbls)	1,800.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.10	Gas Units	0
Mud Density Out (ppg)	10.10		
PV Mud In	23		
PV Mud Out	23		
YP Mud In	22		
YP Mud Out	22		

TEMPERATURE

Ambient Temperature (°F)	25.00	Slurry Cement Temperature (°F)	72.00
Mix Water Temperature (°F)	68.00	Flow Line Temperature (°F)	108.00

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	4,597.00	792	1,562.0000	278.2000
Tail Slurry	BJCem P70.6.01R	13.5000	1.8512	9.35	5,621.00	2,050.00	393	727.0000	129.4000
Displacement Final	Water + ResCare +Biocide	8.3300			0.00			0.0000	118.0000

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	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	GELLANT WATER, GW-86	0.8000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	PPB
Lead Slurry	BJCem P100.3.01R	RETARDER, R-3	0.5000	BWOB
Lead Slurry	BJCem P100.3.01R	Foam Preventer, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01R	GELLANT WATER, GW-86	0.1000	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	DISPERSANT, CD-31	0.1000	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	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	CEMENT, CLASS G	70.0000	PCT
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

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
3/11/2018 7:40 AM	IntegraGuard EZ Spacer	5.00	60.00	687.00		
3/11/2018 8:04 AM	BJCem P100.3.01R	6.00	278.20	463.00		
3/11/2018 8:50 AM	BJCem P70.6.01R	5.50	129.40	774.00		
3/11/2018 9:24 AM	Water + ResCare +Biocide	10.00	118.00	782.00		

Cementing Treatment



	Min	Max	Avg
Pressure (psi)	463.00	782.00	676.50
Rate (bpm)	5.00	10.00	6.63

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	118.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	117.00	Amount of Spacer to Surface	2.00
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)	2,545.00	Total Volume Pumped (bbls)	117.00
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 ENERGY	District	Rifle
Well Name	NICHOLS 24-11 E	Supervisor	GLEN GILLIAM
Job Type	Long String	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	3/10/2018	19:00	CALLOUT						BJ CREW CALLED OUT TO LOCATION WITH AN RTS OF 3-11-18 24:00
2	3/10/2018	20:00	YARD CALL						BJ CREW YARD CALL OF 20:00
3	3/10/2018	20:15	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON CONVOY ROUTE TO LOCATION
4	3/10/2018	20:30	DEPART YARD						BJ CREW DEPARTS YARD
5	3/10/2018	22:30	ON LOCATION						BJ CREW ARRIVES ON LOCATION, AAR, SPOT EQUIPMENT
6	3/10/2018	22:45	STEACS/ RIG UP						STEACS/ RIG UP WITH BJ CREW ON HAZARDS AND RIG UP STANDARDS
7	3/10/2018	23:00	RIG UP						BJ CREW RIGS UP EQUIPMENT ACCORDING TO BJ STANDARDS
8	3/10/2018	0:15	DOWN TIME						RIG RUNNING CASING, PIPE STUCK 00:45
9	3/11/2018	5:00	PIPE ON BOTTOM						PIPE ON BOTTOM, RIG CIRCULATING 10 BPM 2.5hrs
10	3/11/2018	7:05	SAFETY MEETING						SAFETY MEETING WITH RIG CREW
11	3/11/2018	7:20	STAB HEAD						BJ CREW STABS HEAD
12	3/11/2018	7:26	FILL LINES		8.33	2.5	5	286	FILL LINES 5 BBLS FRESH WATER
13	3/11/2018	7:29	TEST LINES						TEST LINES AT 5000 PSI
14	3/11/2018	7:33	BATCH UP SPACER		11				BATCH UP SPACER AT 11 PPG
15	3/11/2018	7:40	SPACER DOWN HOLE		11	5		687	SPACER DOWN HOLE AT 11 PPG
16	3/11/2018	7:50	50 BBLS GONE		11	3	50	387	50 BBLS SPACER GONE
17	3/11/2018	7:58	BATCH UP LEAD		12.7				BATCH UP LEAD CEMENT AT 12.7 PPG
18	3/11/2018	8:04	LEAD DOWN HOLE		12.7	6		463	LEAD CEMENT DOWN HOLE AT 12.7 PPG
19	3/11/2018	8:10	50 BBLS GONE		12.7	5.5	50	467	50 BBLS LEAD GONE
20	3/11/2018	8:18	100 BBLS GONE		12.7	5.5	100	512	100 BBLS LEAD GONE
21	3/11/2018	8:27	150 BBLS GONE		12.7	5.5	150	441	150 BBLS LEAD GONE
22	3/11/2018	8:35	200 BBLS GONE		12.7	5.5	200	475	200 BBLS LEAD GONE
23	3/11/2018	8:47	250 BBLS GONE		12.7	3	250	137	250 BBLS LEAD GONE
24	3/11/2018	8:50	BATCH UP TAIL		13.5				BATCH UP TAIL CEMENT AT 13.5 PPG
25	3/11/2018	8:51	TAIL DOWN HOLE		13.5	5.5		774	TAIL CEMENT DOWN HOLE AT 13.5 PPG
26	3/11/2018	8:57	50 BBLS GONE		13.5	5.5	50	710	50 BBLS GONE TAIL CEMENT
27	3/11/2018	9:08	100 BBLS GONE		13.5	5.5	100	700	100 BBLS GONE TAIL CEMENT
28	3/11/2018	9:15	SHUT DOWN						SHUT DOWN WASH PUMPS AND LINES
29	3/11/2018	9:22	DROP PLUG						DROP TOP PLUG
30	3/11/2018	9:23	DISPLACEMENT		8.33	2.5		42	START DISPLACEMENT, WALK UP RATE ACCORDING TO COMPANY MAN
31	3/11/2018	9:33	50 BBLS GONE		8.33	8	50	1460	50 BBLS GONE DISPLACEMENT
32	3/11/2018	9:39	100 BBLS GONE		8.33	6	100	2424	100 BBLS GONE DISPLACEMENT
33	3/11/2018	9:43	BUMP PLUG		8.33	3	117	2545	BUMP PLUG, 117 BBLS DISPLACEMENT, TOOK TO 3168 PSI HELD 10 MINS
34	3/11/2018	9:53	CHECK FLOATS						FLOATS HELD 1.0 BBLS BACK/ 2 BBLS OF SPACER BACK TO SURFACE
35	3/11/2018	10:00	STEACS/ RIG DOWN						STEACS/ RIG DOWN WITH BJ CREW
36	3/11/2018	10:10	RIG DOWN						BJ CREW RIGS DOWN EQUIPMENT ON LOCATION
37	3/11/2018	10:45	AAR MEETING						AAR MEETING WITH BJ CREW ON JOB OPERATIONS AND RIG DOWN
38	3/11/2018	11:15	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON CONVOY TO LOCATION
39	3/11/2018	11:30	DEPARTS LOCATION						BJ CREW DEPARTS LOCATION
40	3/11/2018		***MISC***						BUMP PLUG, FCP 2545 PSI TOOK TO 3168 PSI HELD FOR 10 MINS, GOOD TEST, FLOATS HELD 1.0 BBLS BACK, 2.0 BBLS OF SPACER BACK TO SURFACE.



JobMaster Program Version 4.02C1
Job Number: 3706
Customer: LARAMIE
Well Name: NICHOLS 24-11 E

