



Laramie Energy

End of Well Cement Report

Nichols 0994-24-20W 05-077-10401

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

Quote #: 11692/11780

I Execution #: 06656/06775



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	5/13/2018	Field Ticket#	FT-06656-F6V5C50202-25325
End Date	5/13/2018	Well	Nichols 0994-24-20W
Client	LARAMIE ENERGY	API#	05-077-10401
Client Field Rep.	Matt Settles	Well Classification	-
Service Sup.	Francisco Castillo	County	MESA
District	Rifle, CO	State/Province	CO
Type of Job	Surface	Formation	-
Execution ID	EXC-06656-F6V5C502	Rig	H&P 290
Project ID	PRJ1006688		

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			1,540.00	40.00		
Casing	8.02	8.63	28.00	1,534.00		J-55	ST&C

Shoe Length (ft): 45

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	1,489.00
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)	3,930.00
Top Plug Size	8.625	Max Casing Pressure - Operated (psi)	3,144.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	-	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8RD
Landing Collar Depth (ft)	1,489	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)	7.00	30 min SGS	-
Circulation Volume (bbls)	210.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.30	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	21		
PV Mud Out	-		
YP Mud In	21		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	52.00	Slurry Cement Temperature (°F)	65.00
Mix Water Temperature (°F)	60.00	Flow Line Temperature (°F)	125.00

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	Fresh Water	8.33			0.00				40.00
Lead Slurry	BJCem S100.3.01D	12.00	2.5329	14.89	0.00	1,030.00	154	397.00	69.00
Tail Slurry	BJCem S100.3.01D	12.50	2.2282	12.62	1,030.00	500.00	87	192.00	34.20
Displacement Final	Water	8.33			0.00			0.00	91.00

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	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	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	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
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	IntegraSeal CELLO	0.1300	LBS/SK

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
5/13/2018 1:12 AM	Fresh Water	5.00	40.00	265.00	SPACER
5/13/2018 2:20 AM	BJCem S100.3.01D	5.00	69.00	263.00	LEAD CEMENT
5/13/2018 2:34 AM	BJCem S100.3.01D	5.00	34.00	283.00	TAIL CEMENT
5/13/2018 2:44 AM	Water	7.50	91.00	797.00	DISPLACEMENT

	Min	Max	Avg
Pressure (psi)	78.00	797.00	437.50
Rate (bpm)	2.00	7.50	4.75

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	20.00
Calculated Displacement Volume (bbls)	91.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	91.00	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)	300.00	Total Volume Pumped (bbls)	234.00
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 24-20W Supervisor JAVIER CASTILLO
 Job Type SURFACE Engineer GAGE PUTNAM



Seq No.	Start Date	Start Time	Event	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	5/12/2018	22:00	RUN CASING					RIG BEGAN TO RUN CASING
2	5/13/2018	1:10	LAND CASING					RIG LANDED CASING
3	5/13/2018	1:30	MEETING					PRE JOB SAFETY MEETING
4	5/13/2018	1:43	FILL LINES	8.34	2	5	78	DROP BOTTOM PLUG, FILL LINES
5	5/13/2018	2:03	TEST LINES				3300	PRESSURE TEST PUMPING LINES
6	5/13/2018	2:12	SPACER	8.34	5	35	265	FRESH WATER SPACER
7	5/13/2018	2:20	LEAD CEMENT	12	5	69	263	LEAD CEMENT, 154SKS/69BBLS AT 12.0PPG, 2.53YIELD, 14.89GAL/SK
8	5/13/2018	2:34	TAIL CEMENT	12.5	5	34	283	TAIL CEMENT, 87SKS/34BBLS AT 12.5PPG, 2.22YIELD, 12.62GAL/SK
9	5/13/2018	2:42	SHUTDOWN					DROP TOP PLUG
10	5/13/2018	2:44	DISPLACEMENT	8.34	7.5	81	797	FRESH WATER DISPLACEMENT
11	5/13/2018	2:55	SLOW RATE	8.34	2.5	10	457	SLOW RATE
12	5/13/2018	2:59	BUMP PLUG				1885	LAND TOP PLUG, BRING PSI UP TO 1600 PSI TO TEST CASING
13	5/13/2018	3:09	RELEASE PSI					RELEASE PSI, CHECK FLOATS, FLOATS HELD, 0.5BBLS FLOW BACK
14	5/13/2018	3:15	MEETING					RIG DOWN SAFETY MEETING
15	5/13/2018	3:20	RIG DOWN					PICKLE PUMP AND RIG DOWN BJ EQUIPMENT
16	5/13/2018	4:00	COMPLETE					RIG DOWN COMPLETE
17	5/13/2018	4:15	MEETING					AAR JOURNEY MANAGEMENT MEETING
18	5/13/2018	4:30	LEAVE LOCATION					BJ CREW LEAVE LOCATION
19	5/13/2018	4:31						CALCULATED TOP OF TAIL 843 FT, 20 BBLS CEMENT TO SURFACE
20	5/13/2018	4:32						FULL RETURNS THROUGH OUT JOB
								THANK YOU FOR YOUR BUSINESS FROM JAVIER AND CREW

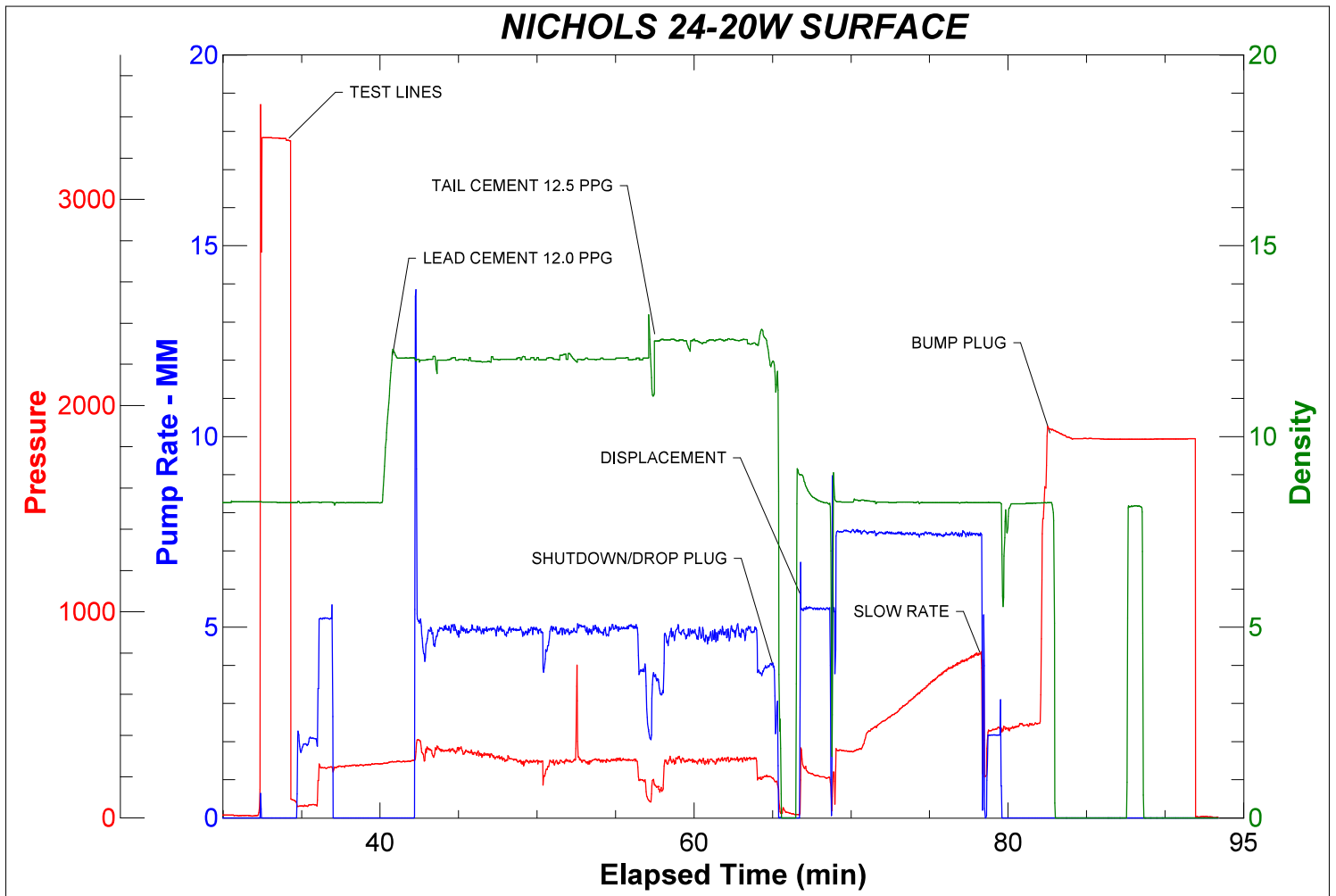


JobMaster Program Version 4.02C1

Job Number: 5410

Customer: LARAMIE

Well Name: NICHOLS 24-20W



Cementing Treatment



Start Date	5/16/2018	Field Ticket#	FT-06775-B9J0H40202-44786
End Date	5/16/2018	Well	Nichols 0994-24-20W
Client	LARAMIE ENERGY	API#	05-077-10401
Client Field Rep.	Roger Foster	Well Classification	-
Service Sup.	Francisco Castillo	County	MESA
District	Rifle, CO	State/Province	CO
Type of Job	Long String	Formation	-
Execution ID	EXC-06775-B9J0H402	Rig	H&P 290
Project ID	PRJ1006807		

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Previous Casing	8.02	8.63	28.00	1,530.00		J-55	ST&C
Open Hole	7.88			6,011.00	40.00		
Open Hole	7.88			8,015.00	39.00		
Casing	4.00	4.50	11.60	8,009.00		L-80	LT&C

Shoe Length (ft): 84

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	7,925.00
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)	10,690.00
Top Plug Size	4.500	Max Casing Pressure - Operated (psi)	8,552.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	124.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8RD
Landing Collar Depth (ft)	7,925	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	-
Circulation Time (min)	60.00	10 min SGS	-
Circulation Rate (bpm)	8.00	30 min SGS	-
Circulation Volume (bbls)	495.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.00	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	18		
PV Mud Out	-		
YP Mud In	34		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	38.00	Slurry Cement Temperature (°F)	63.00
Mix Water Temperature (°F)	57.00	Flow Line Temperature (°F)	102.00

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	1.9849	11.10	1,030.00	4,981.00	784	1,550.00	275.90
Tail Slurry	BJCem P70.6.01R	13.50	1.8561	9.31	6,011.00	2,051.00	346	657.00	114.00
Displacement Final	Water + ResCare +Biocide	8.33			0.00			0.00	123.00

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	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	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
Lead Slurry	BJCem P100.3.01R	IntegraSeal PHENO	0.5000	LBS/SK
Lead Slurry	BJCem P100.3.01R	RETARDER, R-3	0.5000	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
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	IntegraSeal CELLO	0.2500	LBS/SK
Tail Slurry	BJCem P70.6.01R	CEMENT, CLASS G	70.0000	PCT
Tail Slurry	BJCem P70.6.01R	IntegraSeal PHENO	0.5000	LBS/SK
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	SAND, S-8, Silica Flour, 200 Mesh	25.0000	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-60	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	RETARDER, R-3	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-90	10.0000	PCT
Tail Slurry	BJCem P70.6.01R	IntegraSeal CELLO	0.2500	LBS/SK
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)	Comments
5/16/2018 12:27 AM	IntegraGuard EZ Spacer	5.50	60.00	237.00	SPACER
5/16/2018 12:42 AM	BJCem P100.3.01R	5.50	276.00	365.00	LEAD
5/16/2018 1:37 AM	BJCem P70.6.01R	5.50	114.00	463.00	TAIL
5/16/2018 2:05 AM	Water + ResCare +Biocide	7.00	123.00	2,741.00	DISPLACEMENT

	Min	Max	Avg
Pressure (psi)	237.00	2,741.00	1,489.00
Rate (bpm)	4.00	7.00	5.50

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	25.00
Calculated Displacement Volume (bbls)	123.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	123.00	Amount of Spacer to Surface	60.00
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)	2,315.00	Total Volume Pumped (bbls)	573.00
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 24-20W Supervisor JAVIER CASTILLO
 Job Type LONG STRING Engineer GAGE PUTNAM



Seq No.	Start Date	Start Time	Event	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	5/15/2018	18:00	CALL OUT					ON LOCATION AT 23:00 HRS
2	5/15/2018	19:20	MEETING					STEACS JOURNEY MANAGEMENT MEETING WITH BJ CREW
3	5/15/2018	19:30	LEAVE YARD					LEAVE YARD
4	5/15/2018	21:20	ARRIVE ON LOC.					ARRIVE ON LOCATION, RIG LANDING CASING
5	5/15/2018	21:30	MEETING					STEACS SAFETY MEETING
6	5/15/2018	21:35	RIG UP					RIG UP BJ EQUIPMENT
7	5/15/2018	22:15	COMPLETE					RIG UP COMPLETE
9	5/15/2018	23:00	LAND CASING					RIG LANDED CASING
10	5/15/2018	23:05	CIRCULATE					RIG CIRCULATED WELL
11	5/16/2018	0:05	MEETING					PRE-JOB SAFETY MEETING WITH RIG CREW
12	5/16/2018	0:20	FILL LINES	8.34	2	5	370	DROP BOTTOM PLUG, FILL PUMPING LINES
19	5/16/2018	0:23	TEST LINES				5600	PRESSURE TEST PUMPING IRON
20	5/16/2018	0:27	SPACER	11	4	60	237	WEIGHTED SPACER
21	5/16/2018	0:42	LEAD CEMENT	12.7				BEGIN LEAD CEMENT 784 SKS/276BBLs AT 12.7, 1.98, 11.10
22	5/16/2018	0:50	LEAD CEMENT	12.7	5.5	50	360	50BBLs LEAD CEMENT PUMPED
23	5/16/2018	1:01	LEAD CEMENT	12.7	5.5	50	365	100BBLs LEAD CEMENT PUMPED
24	5/16/2018	1:09	LEAD CEMENT	12.7	5.5	50	363	150BBLs LEAD CEMENT PUMPED
25	5/16/2018	1:18	LEAD CEMENT	12.7	5.5	50	365	200BBLs LEAD CEMENT PUMPED
26	5/16/2018	1:27	LEAD CEMENT	12.7	5.5	76	345	276BBLs LEAD CEMENT PUMPED
28	5/16/2018	1:37	TAIL CEMENT	13.5				BEGIN TAIL CEMENT 346SKS/114BBLs, AT 13.5, 1.85, 9.31
29	5/16/2018	1:46	TAIL CEMENT	13.5	5.5	50	461	50BBLs TAIL CEMENT PUMPED
30	5/16/2018	1:55	TAIL CEMENT	13.5	5.5	64	463	114BBLs TOTAL OF TAIL CEMENT PUMPED
31	5/16/2018	2:00	SHUTDOWN					WASH PUMP AND LINES TO THE PIT, DROP TOP PLUG
32	5/16/2018	2:05	DISPLACEMENT	8.34				BEGIN DISPLACEMENT FRESH WATER + RESCARE + BIOCIDES
33	5/16/2018	2:14	DISPLACEMENT	8.34	9	50	2121	50BBLs DISPLACEMENT PUMPED
34	5/16/2018	2:20	DISPLACEMENT	8.34	7	63	2741	113BBLs DISPLACEMENT PUMPED
35	5/16/2018	2:22	SLOW RATE	8.34	2.5	10	2315	SLOW RATE ON LAST 10BBLs OF DISPLACEMENT
36	5/16/2018	2:27	LAND PLUG				3300	BUMPED TOP PLUG, CIRCULATION THROUGH OUT JOB
37	5/16/2018	2:37	CHECK FLOATS				3400	FLOATS HELD, 1 BBLs FLOW BACK
38	5/16/2018	2:40	MEETING					RIG DOWN SAFETY MEETING
39	5/16/2018	2:45	RIG DOWN					WASH UP PUMP, RIG DOWN BJ EQUIPMENT
40	5/16/2018	3:00	COMPLETE					RIG DOWN COMPLETE
41	5/16/2018	3:30	MEETING					AAR JOURNEY MANAGEMENT MEETING
42	5/16/2018	3:45	LEAVE LOCATION					BJ CREW LEAVE LOCATION
43	5/16/2018	3:46						CALCULATED TOP OF TAIL 5,226FT, RETURNS THROUGH OUT JOB
44	5/16/2018	3:11						GOT 25 BBLs CEMENT TO SURFACE
45	5/16/2018	3:11						THANK YOU FOR YOUR BUSINESS FROM JAVIER AND CREW



JobMaster Program Version 4.02C1
Job Number: 5504
Customer: LARAMIE
Well Name: NICHOLS 24-20W

LARAMIE 4 1/2 PRODUCTION

