



Laramie Energy

End of Well Cement Report

Nichols 0994-24-08E 05-077-10412

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

Quote #: 02333/2387

I Execution #: 01253/01380



Laramie Energy

Attention: Mr. Aaron Duncan | 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,
Zen Keith
Field Engineer III | (307) 757-7178 | Zen.Keith@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	11/25/2017	Well	Nichols 0994-24-08E
End Date	11/25/2017	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Roger Foster	API	05-077-10412
Service Supervisor	Paul Linn III	Formation	-
Field Ticket No.	FT-01253-X4Q8C70202-57815	Rig	H&P 290
District	Rifle, CO	Type of Job	Surface

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Previous Casing	15.25	16.00	65.00	60.00	60.00	0.00		
Open Hole	11.00			1,554.00	1,554.00	75.00		
Casing	8.10	8.63	24.00	1,544.00	1,544.00		J-55	ST&C

Shoe Length (ft): 40

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	1,500.62
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)	1,370.00
Top Plug Size	8.625	Max Casing Pressure - Operated (psi)	1,096.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	17.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8 RND.
Landing Collar Depth (ft)	1,484	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	9.00
Circulation Time (min)	45.00	10 min SGS	39.00
Circulation Rate (bpm)	10.00	30 min SGS	58.00
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)	9.30	Gas Units	0
Mud Density Out (ppg)	9.30		
PV Mud In	46		
PV Mud Out	46		
YP Mud In	25		
YP Mud Out	25		

TEMPERATURE

Ambient Temperature (°F)	38.00	Slurry Cement Temperature (°F)	60.00
Mix Water Temperature (°F)	63.80	Flow Line Temperature (°F)	

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Fresh Water	8.3300					40.0000
Lead Slurry	S100-12	12.0000	2.5329	14.89	191	480.0000	86.0600
Tail Slurry	S100-12	12.5000	2.2282	12.62	107	237.0000	42.1000
Displacement Final	Water	8.3300				0.0000	95.4300

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Lead Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.00	BWOB
Lead Slurry	S100-12	IntegraSeal CELLO	0.13	LBS/SK
Lead Slurry	S100-12	CEMENT, ASTM TYPE III	100.00	PCT
Lead Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.00	LBS/SK
Lead Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.00	LBS/SK
Lead Slurry	S100-12	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	S100-12	IntegraSeal CELLO	0.13	LBS/SK
Tail Slurry	S100-12	CEMENT EXTENDER, GYPSUM, A-10	5.00	BWOB
Tail Slurry	S100-12	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.00	LBS/SK
Tail Slurry	S100-12	CEMENT, ASTM TYPE III	100.00	PCT
Tail Slurry	S100-12	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.00	LBS/SK
Tail Slurry	S100-12	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
11/26/2017 2:14 PM	Fresh Water	3.50	40.00	107.00
11/26/2017 2:24 PM	S100-12	5.50	86.06	313.00
11/26/2017 2:38 PM	S100-12	5.00	42.50	250.00
11/26/2017 2:48 PM	Water	7.00	94.50	309.00

	Min	Max	Avg
Pressure (psi)	37.00	2,071.00	352.00
Rate (bpm)	2.00	7.00	5.00

Cementing Treatment



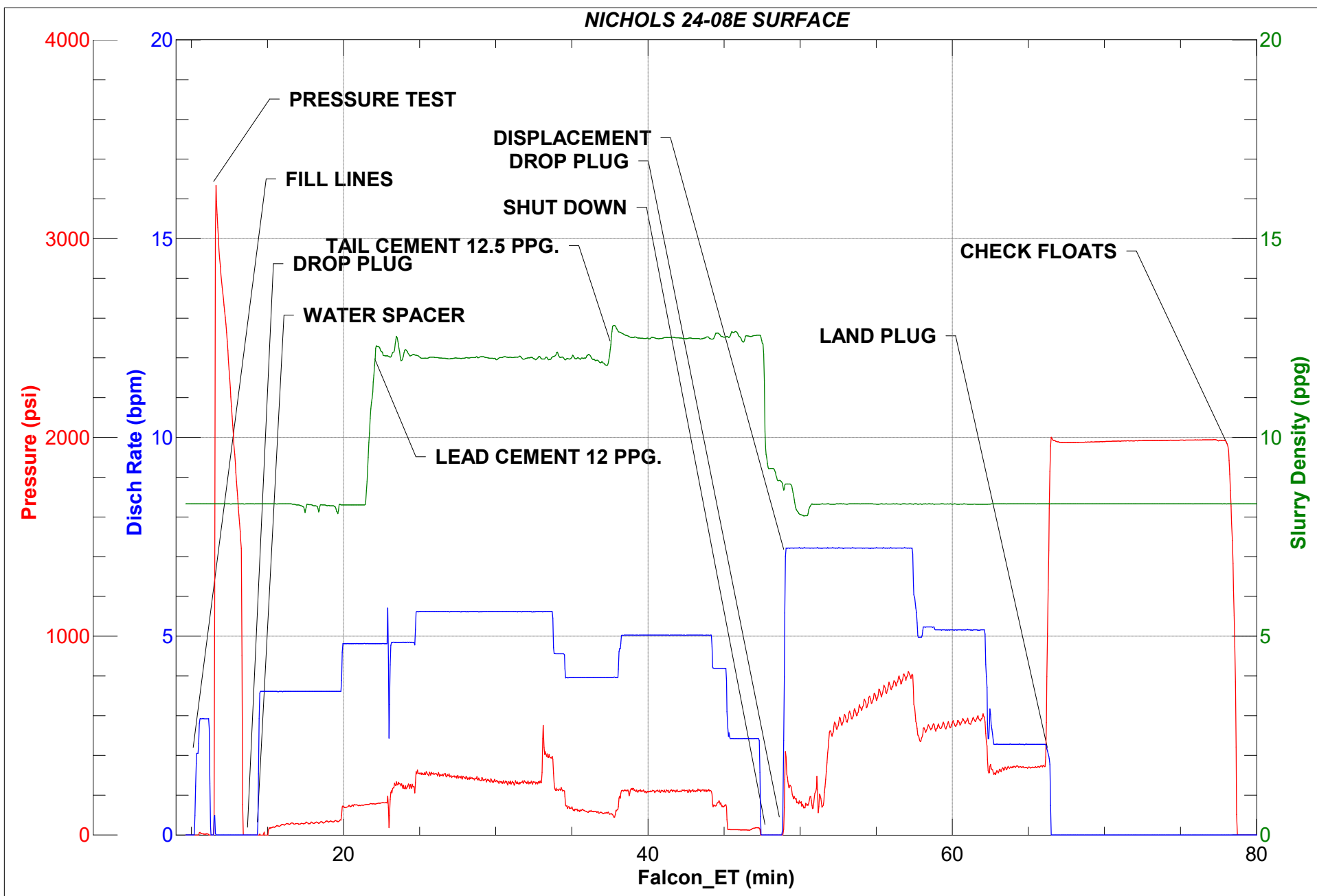
DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	20.00
Calculated Displacement Volume (bbls)	95.44	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	95.00	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)	436.00	Total Volume Pumped (bbls)	264.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Partial	Lost Circulation During Cement Job	No

Customer Name LARAMIE District Rifle
 Well Name NICHOLS 24-08E Supervisor ANDREW LINN
 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	11/26/2017	6:30	CALL OUT						CALL OUT ON LOCATION TIME OF 11:30. PUMP AND CURTAIN SIDE AND PICKUP ALREADY ON LOCATION.
2	11/26/2017	7:45	CREW ON LOCATION						BULK TRUCK ARRIVED ON LOCATION
3	11/26/2017	8:00	SITE ASSESSMENT						SITE ASSESSMENT
4	11/26/2017	8:15	STEACS						PRE RIG UP SAFETY MEETING WITH ALL BJ CEMENT CREW
5	11/26/2017	8:30	SPOT EQUIPMENT						SPOT IN BULK TRUCK
6	11/26/2017	8:45	RIG UP						RIG UP ALL GROUND EQUIPMENT
7	11/26/2017	13:30	STEACS						PRE JOB SAFETY MEETING WITH RIG CREW AND ALL BJ SERVICES CEMENT CREW
8	11/26/2017	13:45	RIG UP						LOAD PLUG CONTAINER, STAB PLUG CONTAINER AND HOOK UP LINES.
9	11/26/2017	14:00	FILL LINES		8.33	2	5	37	5 BBLs. OF FRESH WATER TO FILL LINES
10	11/26/2017	14:06	PRESSURE TEST					3333	PRESSURE TEST TO 3333 PSI.
11	11/26/2017	14:11	DROP PLUG						DROP BOTTOM PLUG
12	11/26/2017	14:14	SPACER		8.33	4	6	107	FRESH WATER SPACER
13	11/26/2017	14:22	SPACER		8.33	4	40	198	FRESH WATER SPACER
14	11/26/2017	14:22	LEAD		12	5.5	5	313	LEAD CEMENT 12 PPG. 2.53 FT3/SK. 14.89 GAL./SK. FOR A TOTAL OF 86.06 BBLs. OF LEAD CEMENT REQUIRING 67.71 BBLs OF MIX WATER. HEIGHT OF LEAD IS 444.22 FT. TOP OF LEAD IS 0 FT.
15	11/26/2017	14:32	LEAD		12	5.5	50	419	WEIGHT VERIFIED WITH MUD SCALE.
16	11/26/2017	14:37	LEAD		12	4	75	150	LEAD CEMENT
17	11/26/2017	14:38	TAIL		12.5	5	5	250	FINISHED PUMPING LEAD CEMENT
18	11/26/2017	14:46	TAIL		12.5	5	42.6	237	TAIL CEMENT 12.5 PPG. 2.23 FT3/SK. 12.62 GAL./SK. FOR A TOTAL OF 45.5 BBLs. OF TAIL CEMENT REQUIRING 32.15 BBLs OF MIX WATER. HEIGHT OF TAIL IS 1099.78 FT. TOP OF TAIL IS 444.22 FT.
19	11/26/2017	14:46	SHUT DOWN						WEIGHT VERIFIED WITH MUD SCALE.
20	11/26/2017	14:47	DROP PLUG						FINISHED PUMPING TAIL CEMENT
21	11/26/2017	14:48	DISPLACEMENT		8.33	7	10	309	SHUT DOWN
22	11/26/2017	14:55	DISPLACEMENT		8.33	7	50	823	DROP TOP PLUG VERIFIED BY DRILLER
23	11/26/2017	14:57	DISPLACEMENT		8.33	5	60	549	FRESH WATER DISPLACEMENT
24	11/26/2017	14:59	CEMENT TO SURFACE						FRESH WATER DISPLACEMENT
25	11/26/2017	15:01	SLOW RATE		8.33	5	85	660	FRESH WATER DISPLACEMENT
26	11/26/2017	15:04	DISPLACEMENT		8.33	2	95	436	20 BBLs OF CEMENT TO SURFACE. ADDED 50 LBS. CALCIUM CHLORIDE TO CEMENT AT SURFACE PER COMPANY MAN.
27	11/26/2017	15:05	LAND PLUG					2071	SLOWED RATE TO 2 BBLs / MIN TO LAND PLUG
28	11/26/2017	15:06	CASING TEST					2071	FRESH WATER DISPLACEMENT
29	11/26/2017	15:18	CHECK FLOATS						LANDED PLUG AT 436 PSI. TOOK TO 2071 PSI
30	11/26/2017	15:25	STEACS						HELD 2071 PSI FOR TEN MINS.
31	11/26/2017	15:35	RIG DOWN						FLOATS HELD 1 BBL. BACK
32	11/26/2017	15:35	WASH PUMP & LINES						PRE RIG DOWN SAFETY MEETING WITH RIG CREW
33	11/26/2017	15:55	STEACS						RIG DOWN RIG FLOOR
34	11/26/2017	16:05	RIG DOWN						WASH PUMPS AND LINES INTO CELLAR
35	11/26/2017	16:30	AAR						PRE RIG DOWN SAFETY MEETING WITH ALL BJ CEMENT CREW
36	11/26/2017	16:40	STEACS						RIG DOWN ALL EQUIPMENT
37	11/26/2017	16:55	DEPART LOCATION						AFTER ACTION REVIEW
									PRE CONVOY SAFETY MEETING
									DEPART FROM LOCATION FOR RIFLE YARD. THANK YOU FOR USING BJ SERVICES, ANDREW LINN AND CREW.



Cementing Treatment



Start Date	11/18/2017	Well	Nichols 0994-24-08E
End Date	2/28/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep		API	05-077-10412
Service Supervisor		Formation	
Field Ticket No.	Production	Rig	
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			7,627.00	10.00		
Casing	4.00	4.50	11.60	7,615.90		L-80	LT&C

Shoe Length (ft): 80

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	7,615.90
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	120.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	8 rnd
Landing Collar Depth (ft)	7,529	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	10.00
Circulation Time (min)	90.00	10 min SGS	52.00
Circulation Rate (bpm)	10.00	30 min SGS	77.00
Circulation Volume (bbls)	900.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	9.10	Gas Units	0
Mud Density Out (ppg)	9.10		
PV Mud In	28		
PV Mud Out	28		
YP Mud In	28		
YP Mud Out	28		

TEMPERATURE

Ambient Temperature (°F)	23.00	Slurry Cement Temperature (°F)	51.00
Mix Water Temperature (°F)	49.00	Flow Line Temperature (°F)	99.00

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	CD Spacer	11.0000					60.0000
Lead Slurry	P100-X2	12.7000	1.9775	11.11	781	1,543.0000	274.7000
Tail Slurry	P70-X1	13.5000	1.9033	9.59	381	725.0000	129.0000
Displacement Final	Freshwater with Clay Stabilizer	8.3300				0.0000	117.0000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	CD Spacer	R-6 LOW TEMP RETARDER 50 LB BAG BJS	1.40	PPB
Spacer / Pre Flush / Flush	CD Spacer	SAND, S-8, Silica Flour, 200 Mesh	179.97	PPB
Spacer / Pre Flush / Flush	CD Spacer	Spacer Surfactant, SS-247, (BJS Only)	0.80	GPB
Spacer / Pre Flush / Flush	CD Spacer	GELLANT WATER, GW-86	0.80	PPB
Lead Slurry	P100-X2	CEMENT, ASTM TYPE III	100.00	PCT
Lead Slurry	P100-X2	R-6 LOW TEMP RETARDER 50 LB BAG BJS	0.50	BWOB
Lead Slurry	P100-X2	DISPERSANT, CD-31	0.10	BWOB
Lead Slurry	P100-X2	BONDING AGENT, BA-60	0.30	BWOB
Lead Slurry	P100-X2	GELLANT WATER, GW-86	0.10	BWOB
Lead Slurry	P100-X2	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	P70-X1	AXE-20	10.00	PCT
Tail Slurry	P70-X1	R-6 LOW TEMP RETARDER 50 LB BAG BJS	0.30	BWOB
Tail Slurry	P70-X1	BONDING AGENT, BA-60	0.20	BWOB
Tail Slurry	P70-X1	CEMENT, CLASS G	70.00	PCT
Tail Slurry	P70-X1	FLUID LOSS, FL-24, (BJS Only)	0.40	BWOB
Tail Slurry	P70-X1	Flyash (Rockies)	20.00	PCT
Tail Slurry	P70-X1	SAND, S-8, Silica Flour, 200 Mesh	25.00	BWOB
Tail Slurry	P70-X1	EXTENDER, BENTONITE	6.00	BWOB
Tail Slurry	P70-X1	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Displacement Final	Freshwater with Clay Stabilizer	CLAY STABILIZATION, ResCare CS	0.08	GPB

Cementing Treatment



TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
11/29/2017 11:35 PM	CD Spacer	6.00	60.00	532.00		
11/29/2017 11:58 PM	P100-X2	6.00	274.70	652.00		
11/30/2017 1:06 AM	P70-X1	6.00	129.00	534.00		
11/30/2017 1:33 AM	Freshwater with Clay Stabilizer	10.00	117.00	892.00		

	Min	Max	Avg
Pressure (psi)	0.00	5,000.00	2,500.00
Rate (bpm)	2.00	10.00	7.00

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	116.77	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	116.77	Amount of Spacer to Surface	10.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	1.50
Bump Plug Pressure (psi)	1,565.00	Total Volume Pumped (bbls)	602.00
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
 Well Name Nichols 0994-24-08E
 Job Type Long String

District Rifle
 Supervisor Allen Tippetts
 Engineer _____



Seq No.	Start Date	Start Time	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	11/29/2017	15:30	Call Out						BJ Service cement crew called out for Laramie Energy. On location time 21:30
2	11/29/2017	18:00	STEACS						STEACS briefing with crew to cover journey management. Discuss directions, driving condtions, weather, convory order, safety concerns, pre-trip inspections, and reasons to stop trip.
3	11/29/2017	18:30	Depart Facility						Depart Rifle Yard for Laramie Energy
4	11/29/2017	19:15	Inspection						Vehicle inspection at De Beque
5	11/29/2017	20:30	Arrive At Location						BJ Services crew arrive at Laramie Energy.
6	11/29/2017	20:45	STEACS						STEACS briefing with BJ Services crew. Discuss job procedures, safety concerns, rig-up procedures, SWA, muster points, contingency plans, and job/task assignments
7	11/29/2017	20:55	Rig-Up						Rig-Up surface equipment
8	11/29/2017	22:00	STEACS						STEACS briefing with BJ Services crew rig crew, and company rep. Discuss job procedures, safety concerns, rig-up procedures, SWA, muster points, contingency plans, and job/task assignments
9	11/29/2017	22:30	Rig-Up						Finial Rig-up of surface equipment
10	11/29/2017	23:15	Pump Water		8.33	2	5	523	Pump 5 barrels fresh water ahead to fill pumps and lines
11	11/29/2017	23:18	Pressure Test						Pressure test surface equipment to 3000 PSI
12	11/29/2015	23:21	Release Pressure						Release pressure. Good Test
13	11/29/2017	23:25	Pump Water		8.33	2	15	521	Pump 15 barrels fresh water
14	11/29/2017	23:35	Pump Spacer		11	6	60	532	Mix and pump 60 barrels spacer
15	11/29/2017	23:58	Pump Lead Cement		12.7	6	275.41	652	Mix and pump 275.41 Barrels (781 sks) lead cement @ 12.7 PPG 1.97 YLD, 11.11 GAL/ SK
16	11/30/2017	0:18	Shutdown						Shutdown. Compressor trialer lost belt. Rigging up secondary Bulk Truck
17	11/30/2017	0:23	On Line		12.7	6			Pump remaing lead cement
18	11/30/2017	1:06	Pumt Tail Cement		13.5	6	128.93	534	Mix and pump 128.93 Barrels (381 sks) tail cement @ 13.5 PPG, 1.90 YLD, 9.59 GAL/SK
19	11/30/2017	1:27	Shutdown						Shutdown wash pumps and lines to pit. Drop plug. Plug witnessed by company rep.
20	11/30/2017	1:33	Pump Displacement		8.33	10	116.77	892	Pump 116.77 barrels fresh water displacement with clay stablizer
21	11/30/2017	1:41	Slow Rate		8.33	10			Slow rate to 2 barrels / min with 105 barrels away
22	11/30/2017	1:42	Land Plug					1525	Land plug with 116.77 barrels displacement away. Finial circulating pressure 1525 PSI Pressure casing to 3000PSI hold for 10 min.
23	11/30/2017	1:53	Release Pressure						Release pressure. Good Test
24	11/30/2017	2:15	STEACS						STEACS briefing with BJ Services crew. Discuss job procedures, safety concerns, rig-down procedures, SWA, muster points, contingency plans, and job/task assignments
25	11/30/2017	2:30	Rig-Down						Rig-Down all surface equipment
26	11/30/2017	3:00	End Job						End Job. Crew staying on location.
27									
28									7-8 min shutdown due to equipment falure during job. Compressor trailer lost drive belts. Plugs bumped, floats holding with 1.5 barrels returned to truck.
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JobMaster Program Version 4.02C1

Job Number: 1199

Customer: Laranie Energy

Well Name: Nichols 0994-24-08E

