

HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

For: Laramie

Date: Tuesday, August 21, 2018

Buzzard Creek Unit 993-21-10E Surface PJR

API #: 05-077-10522

Sincerely,

Grand Junction Cement Engineering

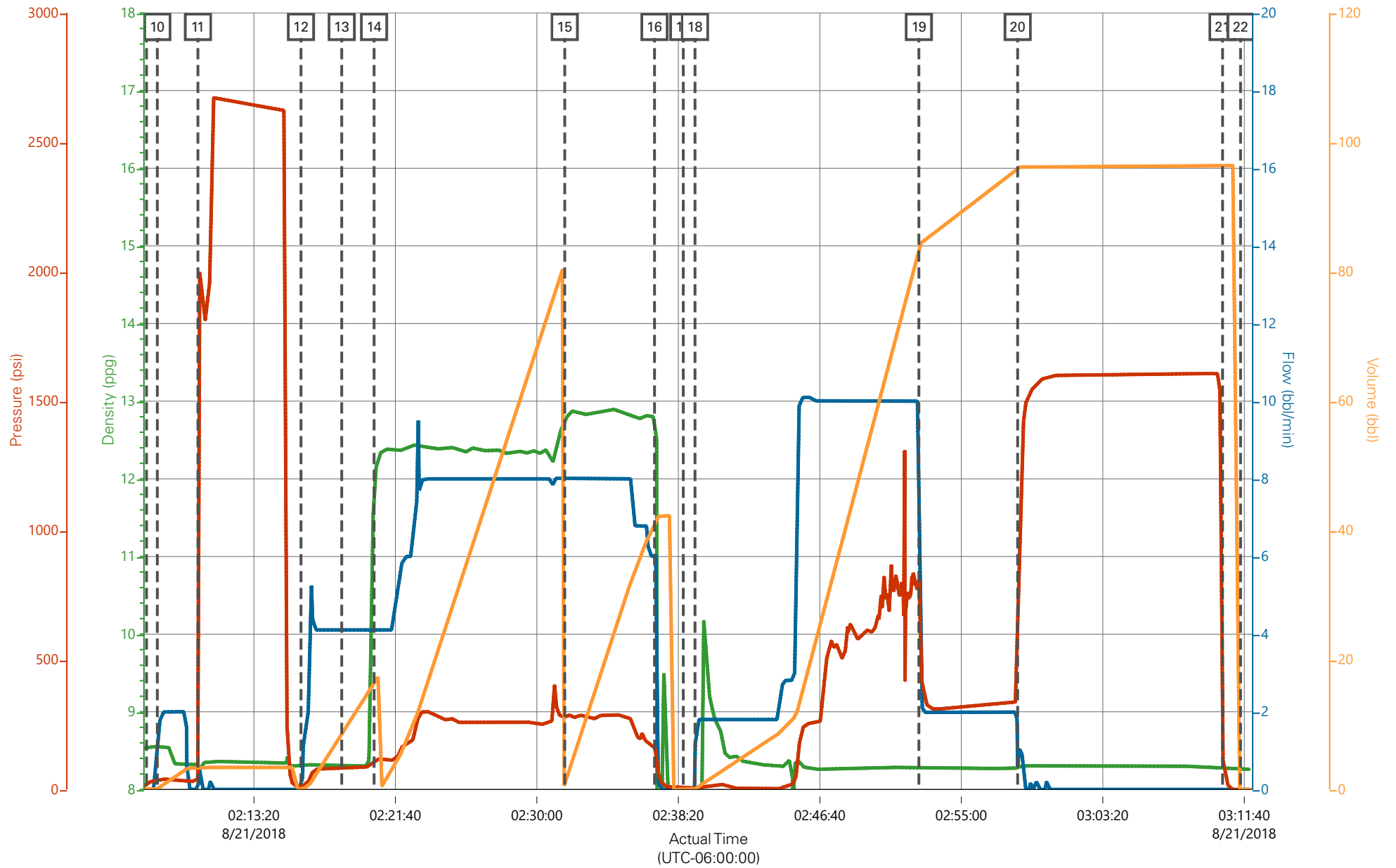
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	8/20/2018	16:00:00						Requested on Location @ 22:00
Event	2	Pre-Convoy Safety Meeting	8/20/2018	18:00:00						
Event	3	Crew Leave Yard	8/20/2018	18:05:00						1 Elite, 1 660', 1 pickup
Event	4	Arrive At Loc	8/20/2018	22:00:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	8/20/2018	22:05:00						JSA completed - Customer offered/received SDS - water test pH 7.0, CI <200, temp 80 degrees
Event	6	Pre-Rig Up Safety Meeting	8/20/2018	22:10:00						
Event	7	Rig-Up Equipment	8/20/2018	22:20:00						DME iron to ground manifold, standpipe, hardline to pit. Water hose to upright, bulkhose to 660.
Event	8	Pre-Job Safety Meeting	8/20/2018	22:30:00						All HES personnel, rig crew, and company rep.
Event	9	Start Job	8/21/2018	02:07:00						TD 1565', TP 1555', SJ 45.48', OH 11", Csg 8.5/8" 32 lb/ft J-55, Mud 8.9 ppg.
Event	10	Fill Lines	8/21/2018	02:07:39		8.33	2	38	5	Fresh Water
Event	11	Test Lines	8/21/2018	02:10:02				2670		Held pressure 2 minutes
Event	12	Pump Spacer	8/21/2018	02:16:06		8.33	4	120	15	Fresh Water
Event	13	Check Weight	8/21/2018	02:18:30						Density verified via mud cup

Event	14	Pump Lead Cement	8/21/2018	02:20:25	12.3	8	300	77.6	177 Sacks, 12.3 ppg, 2.46 Yield, 14.17 gal/sk
Event	15	Pump Tail Cement	8/21/2018	02:31:38	12.8	8	290	38.8	100 sks, 12.8 ppg, 2.18 Yield, 12.11 gal/sk
Event	16	Shutdown	8/21/2018	02:36:56					Wash up on plug
Event	17	Drop Top Plug	8/21/2018	02:38:37					Co-Rep Verify Plug Launched
Event	18	Pump Displacement	8/21/2018	02:39:19	8.33	10	800	91.9	Fresh Water
Event	19	Slow Rate	8/21/2018	02:52:30	8.33	2	350	81	Slow Rate 10 bbls to Calculated Displacement
Event	20	Bump Plug	8/21/2018	02:58:19			1603		Plug Bumped at 350 psi, Brought up to 1603 psi, 10 min casing test
Event	21	Check Floats	8/21/2018	03:10:23					Floats held – 1.5 bbl back to the truck
Event	22	End Job	8/21/2018	03:11:27					Good returns throughout job. 21 bbl of cement to surface
Event	23	Pre-Rig Down Safety Meeting	8/21/2018	03:16:57					40lbs sugar, HES top & bottom plugs used, 0 add hours,
Event	24	Rig-Down Equipment	8/21/2018	03:20:00					
Event	25	Pre-Convoy Safety Meeting	8/21/2018	03:40:00					
Event	26	Crew Leave Location	8/21/2018	03:45:00					Thanks for using Halliburton Cement, Chris Martinez and crew.

Laramie BCU 993-21-10E 8 5/8" Surface



HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

For: Laramie

Date: Friday, August 24, 2018

BCU-993-21-10E Production PJR

API #: 05-077-10522

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

1.1 Job Event Log

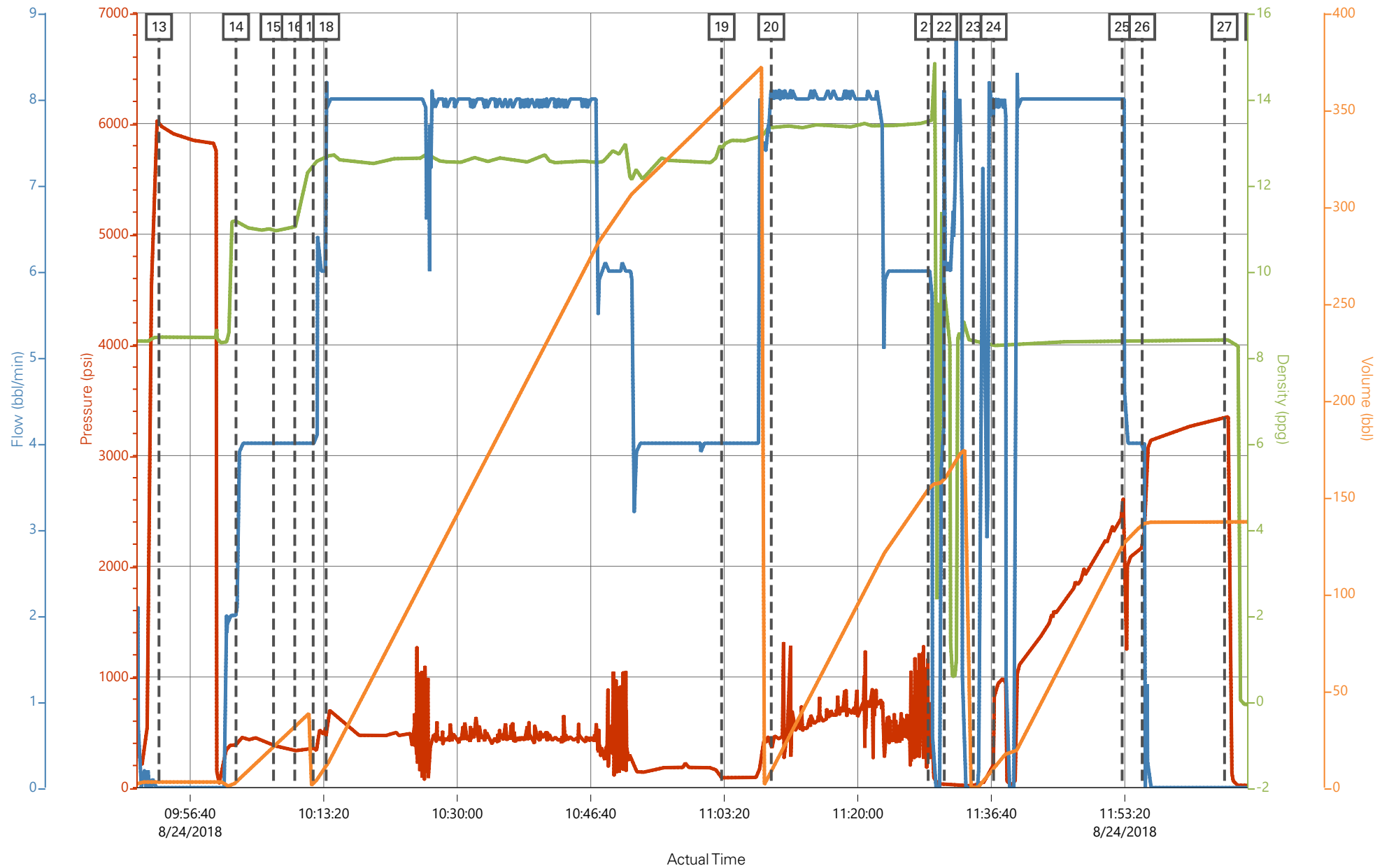
Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Pump Stg Tot (bbl)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	8/24/2018	02:00:00	USER					REQUESTED ON LOCATION TIME 08:00
Event	2	Pre-Convoy Safety Meeting	8/24/2018	03:35:00	USER					WITH HES, JSA COMPLETED, 1 F-550, 1 ELITE CEMENTING UNIT, 1 660 BULK TRUCK
Event	3	Arrive At Loc	8/24/2018	05:30:00	USER					RIG RUNNING CASING, UPON HES ARRIVAL
Event	4	Assessment Of Location Safety Meeting	8/24/2018	05:45:00	USER					WITH HES, JSA COMPLETED, SDS OFFERED FOR ALL HES MATERIALS
Event	5	Pre-Rig Up Safety Meeting	8/24/2018	06:00:00	USER					WITH HES, 1 LINE RAN TO THE FLOOR, 1 LINE RAN TO THE PIT, MANIFOLD ON THE GROUND, 1 4.5 IN QUICK-LATCH PLUG CONTAINER
Event	6	Rig-Up Equipment	8/24/2018	06:10:00	USER					
Event	7	Water Test	8/24/2018	06:20:00	USER					TEMP 75 DEG F, PH 8.0, CHLOR 0
Event	8	Comment	8/24/2018	06:30:00	USER					TD 8473 FT, CSG SET AT 8463 FT, TP 8468 4.5 IN 11.6 LB/FT P-110, HOLE 7.875 IN, SHOE 86.73 FT, SURFACE SET AT 1555 FT 8.625 IN 24 LB/FT J-55
Event	9	Comment	8/24/2018	06:40:00	USER					RIG CIRCULATION, 900 BBL, 10 BBL/MIN, 470 PSI, MWT 9.4 LB/GAL WBM, PIPE WAS STATIC, RAT HOLE LENGTH 10FT
Event	10	Pre-Job Safety Meeting	8/24/2018	09:30:00	USER	9.00	8.39	0.00	0.00	WITH HES, LARAMIE ENERGY, AND HP 522
Event	11	Start Job	8/24/2018	09:47:21	COM4	18.00	8.36	0.00	0.00	
Event	12	Fill Lines	8/24/2018	09:48:00	USER	36.00	8.37	0.00	0.00	5 BBL FRESH WATER, RETURNS AT 3

BBL AWAY

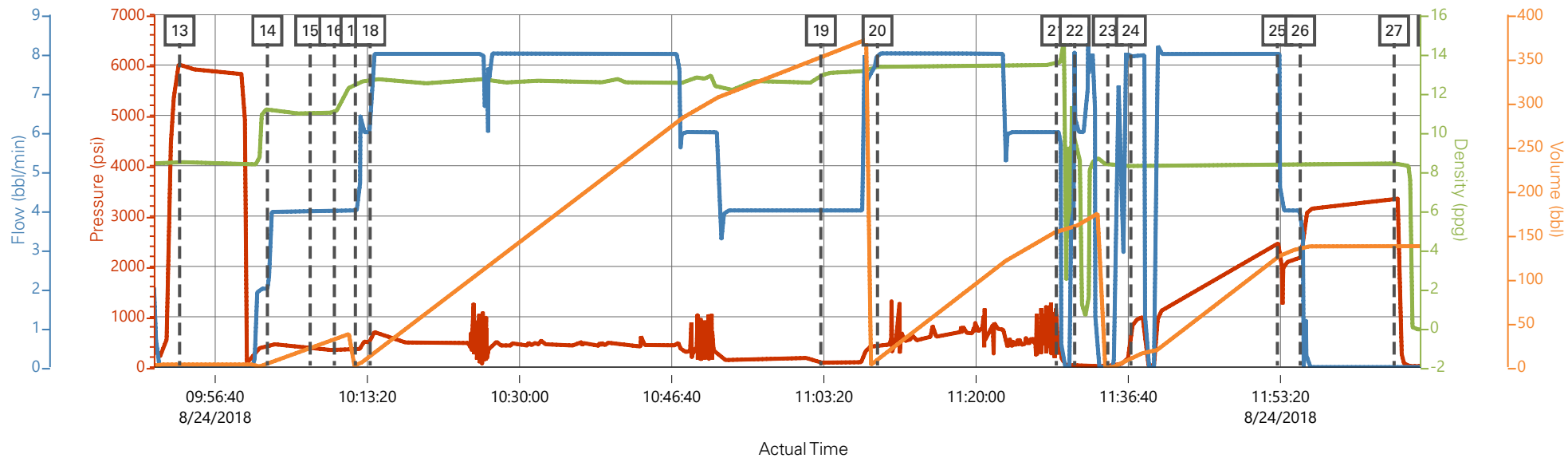
Event	13	Test Lines	8/24/2018	09:52:46	USER	6000.00	8.47	2.90	0.00	LOW TEST AT 800 PSI, HIGH TEST AT 6000 PSI, PRESSURE HOLDING
Event	14	Pump Tuned Spacer III	8/24/2018	10:02:23	USER	377.00	11.15	2.50	2.00	MIXED AT 11 LB/GAL, 40 BBL, 4.86 FT3/SK, 31.9 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	15	Check Weight	8/24/2018	10:07:04	COM4	380.00	10.95	20.60	4.00	
Event	16	Drop Bottom Plug	8/24/2018	10:09:43	USER	333.00	11.01	31.20	4.00	PLUG LAUNCHED, CUSTOMER WITNESSED
Event	17	Pump Lead Cement	8/24/2018	10:12:01	USER	363.00	12.46	2.10	4.00	MIXED AT 12.5 LB/GAL (NEOCEM), 848 SKS, 1.94 FT3/SK, 9.59 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	18	Check Weight	8/24/2018	10:13:38	COM4	451.00	12.63	10.80	6.00	
Event	19	Pump Tail Cement	8/24/2018	11:03:00	USER	82.00	12.85	351.20	4.00	MIXED AT 13.3 LB/GAL, (THERMOCEM) 408 SKS, 1.74 FT3/SK, 7.80 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	20	Check Weight	8/24/2018	11:09:12	COM4	445.00	13.33	8.10	8.00	
Event	21	Shutdown	8/24/2018	11:28:47	USER	449.00	13.52	153.90	6.00	
Event	22	Clean Lines	8/24/2018	11:30:48	USER	41.00	9.54	159.10	7.60	WASHED PUMPS AND LINES TO THE CELLAR
Event	23	Drop Top Plug	8/24/2018	11:34:25	USER	17.00	8.36	0.00	0.00	PLUG LAUNCHED, CUSTOMER WITNESSED
Event	24	Pump Displacement	8/24/2018	11:36:57	USER	594.00	8.25	10.50	7.90	FRESH WATER, 1 GAL MMCR, 5 GAL CLA WEB, 5 LBS BE-6 ADDED
Event	25	Slow Rate	8/24/2018	11:53:00	USER	2441.00	8.39	124.70	8.00	SLOWED AT 120 BBL AWAY TO 4 BBL/MIN
Event	26	Bump Plug	8/24/2018	11:55:30	USER	2171.00	8.38	135.70	4.00	PLUG BUMPED AT CALCULATED DISPLACEMENT, 1537 PSI

Event	27	Check Floats	8/24/2018	12:05:47	USER	3348.00	8.40	137.00	0.00	FLOATS HOLDING, PERFORMED A 10 MIN CASING TEST 3343PSI, PRESSURE HOLDING, 1.5 BBL RETURNED TO THE TANKS
Event	28	End Job	8/24/2018	12:10:00	USER	18.00	-0.07	137.00	0.00	GOOD CIRCULATION, NO ADD HOURS, RIG USED 40 LBS SUGAR, RIG USED TOP AND BOTTOM PLUGS
Event	29	Pre-Rig Down Safety Meeting	8/24/2018	12:20:00	USER	30.00	8.31	153.70	2.10	WITH HES, JSA COMPLETED
Event	30	Rig Down Lines	8/24/2018	12:45:00	USER					
Event	31	Pre-Convoy Safety Meeting	8/24/2018	13:15:00	USER					WITH HES, JSA COMPLETED
Event	32	Comment	8/24/2018	13:20:00	USER					SPACER 40 BBL TUNED SPACER III, LEAD CEMENT 293 BBL, TAIL CEMENT 126.4 BBL, FINAL DISPLACEMENT 130 BBL, 40 BBL CEMENT CIRCULATED TO SURFACE, ESTIMATED TOP OF TAIL CEMENT 5387 FT.
Event	33	Crew Leave Location	8/24/2018	13:30:00	USER					THANKS FOW USING HALLIBURTON, JOHN KEANE AND CREW

LARAMIE ENERGY - BCU-993-21-10E - 4.5 IN. PRODUCTION



LARAMIE ENERGY - BCU-993-21-10E - 4.5 IN. PRODUCTION



PS Pump Press (psi) DH Density (ppg) Comb Pump Rate (bbl/min) Pump Stg Tot (bbl)

Description	Actual Time	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	
13 Test Lines	09:52:46	6000.00	8.47	0.00	2.90	
14 Pump Tuned Spacer III	10:02:23	377.00	11.15	2.00	2.50	
15 Check Weight	10:07:04	380.00	10.95	4.00	20.60	
16 Drop Bottom Plug	10:09:43	333.00	11.01	4.00	31.20	
17 Pump Lead Cement	10:12:01	363.00	12.46	4.00	2.10	
18 Check Weight	10:13:38	451.00	12.63	6.00	10.80	
19 Pump Tail Cement	11:03:00	82.00	12.85	4.00	351.20	
20 Check Weight	11:09:12	445.00	13.33	8.00	8.10	
21 Shutdown	11:28:47	449.00	13.52	6.00	153.90	
22 Clean Lines	11:30:48	41.00	9.54	7.60	159.10	
23 Drop Top Plug	11:34:25	17.00	8.36	0.00	0.00	
24 Pump Displacement	11:36:57	594.00	8.25	7.90	10.50	
25 Slow Rate	11:53:00	2441.00	8.39	8.00	124.70	
26 Bump Plug	11:55:30	2171.00	8.38	4.00	135.70	

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Created: 2018-08-24 02:17:34, (UTC-06:00), Version: 4.5.139

Edit

Customer : Laramie Energy LLC

Job Date : 8/24/2018

Well : BCU-993-21-10E

Representative : MATT SETTLES

Sales Order # : 905082942

ELITE 4 : JOHN KEANE / KEVIN REED

Job Information

Request/Slurry	2495908/1	Rig Name	H&P 522	Date	20/AUG/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-10E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8526 ft	BHST	101°C / 213°F
Hole Size	7.875 in	Depth TVD	7717 ft	BHCT	61°C / 142°F
Pressure	4702 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.9 lbm/gal
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Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		NeoCem				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.945	ft3/sack
						Water Requirement	9.614	gal/sack
						Total Mix Fluid	9.614	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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Operation Test Results Request ID 2495908/1

Thickening Time - ON-OFF-ON

22/AUG/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:min)	Termination Bc
142	4702	49	4:45	5:37	6:50	15	59	15	22	19:45	92

Total sks = 848

CS1830, Trailer 8678, 424 sks

CS1831, Trailer 8476, 424 sks

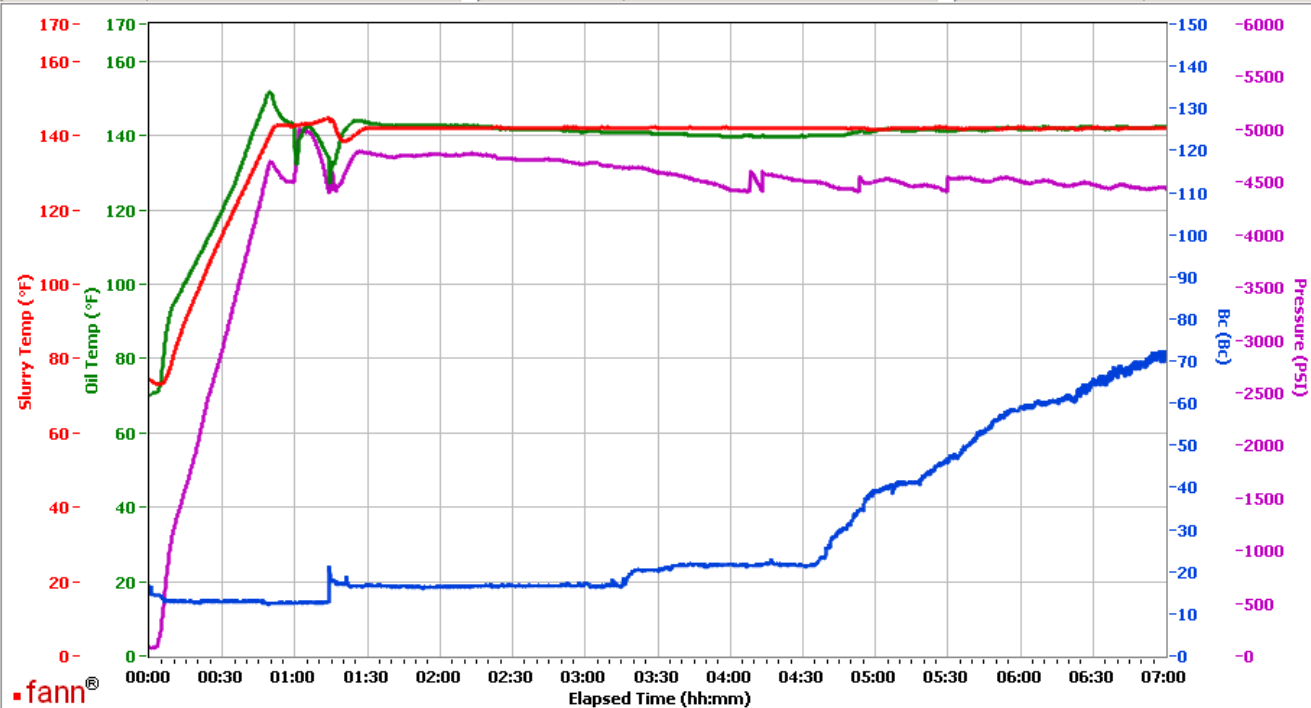
Deflected 13-- > 22-- > 18 after 1 minute.50% of slurry was set and balled up around paddle when test was taken off. Temps started oscillating around 4:50.

Grand Junction Colorado

Fields	Values
Project Name	GJ2495908-1 LARAMIE BULK PRODUCTION
Test ID	35744785 - TT
Request ID	2495908-1
Tested by	CT
Customer	LARAMIE ENERGY
Well No	BCU 0993-21-10E
Rig	H&P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I-II
Cement Weight	Standard
Test Date	08/21/18
Test Time	07:02 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:45m
40.00 Bc	05h:02m
50.00 Bc	05h:37m
70.00 Bc	06h:50m
100.00 Bc	NaN
00h:30m	71.63
01h:00m	71.63
01h:30m	71.63



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TIJ89YN\GJ2495908-1 LARAMIE BULK PRODUCTION LEAD[1].tdms

Comments CS1830, TRAILER 8678, 424 SKS - CS1831, TRAILER 8476, 424 SKS

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Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2495909/1	Rig Name	H&P 522	Date	20/AUG/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-10E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8526 ft	BHST	101°C / 213°F
Hole Size	7.875 in	Depth TVD	7717 ft	BHCT	61°C / 142°F
Pressure	4702 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.9 lbm/gal
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Cement Information - Tail Design



Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
		ThermCem				Slurry Density	13.3 lbm/gal
						Slurry Yield	1.736 ft3/sack
						Water Requirement	7.787 gal/sack
						Total Mix Fluid	7.787 gal/sack

Water Source Field (Fresh)
Water

Water Chloride

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Operation Test Results Request ID 2495909/1

Thickening Time - ON-OFF-ON

22/AUG/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
142	4702	49	3:51	4:10	4:22	4:41	14	59	15	15

Total sks = 408

CS1835 TR#8658 408 SKS

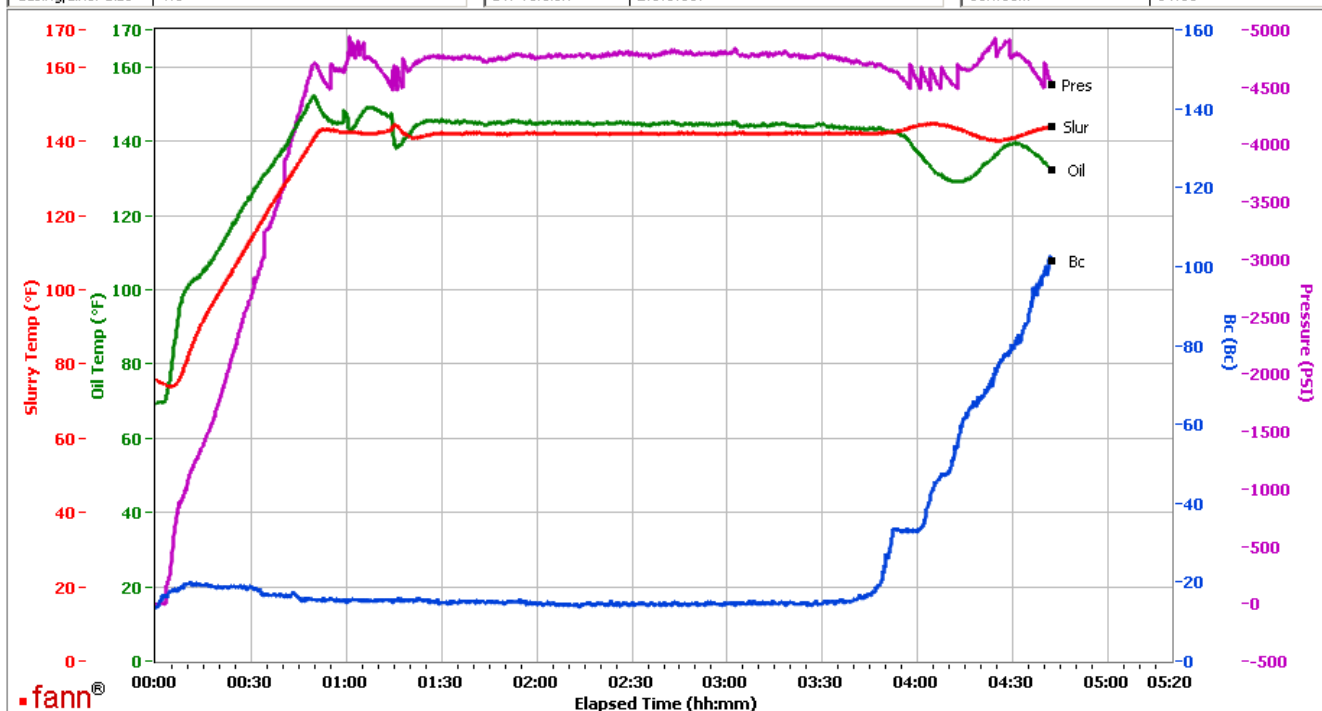
No deflection. Please note heat of hydration started around 3:50.

Grand Junction, Colorado

Fields	Values
Project Name	GJ2495909-1 LARAMIE PRODUCTION BULK
Test ID	35754787
Request ID	GJ2495909-1 TT
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	BCU 0993-21-10E
Rig	H&P 522
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	08/22/18
Test Time	05:13 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:51m
40.00 Bc	04h:03m
50.00 Bc	04h:10m
70.00 Bc	04h:22m
100.00 Bc	04h:41m
00h:30m	18.56
01h:00m	15.36
01h:30m	14.88



Data File C:\Documents and Settings\M290\Desktop\Test Data\GJ2495909-1 LARAMIE PRODUCTION BULK TAIL.tdms

Comments CS1835 TR#8658 408 SKS

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