

HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC

Date: Thursday, April 19, 2018

GUNDERSON 994-13-16E

API # 5-077-10532-00

GUNDERSON 994-13-16E Surface

Job Date: Sunday, April 15, 2018

Sincerely,

Grand Junction Cement Engineering

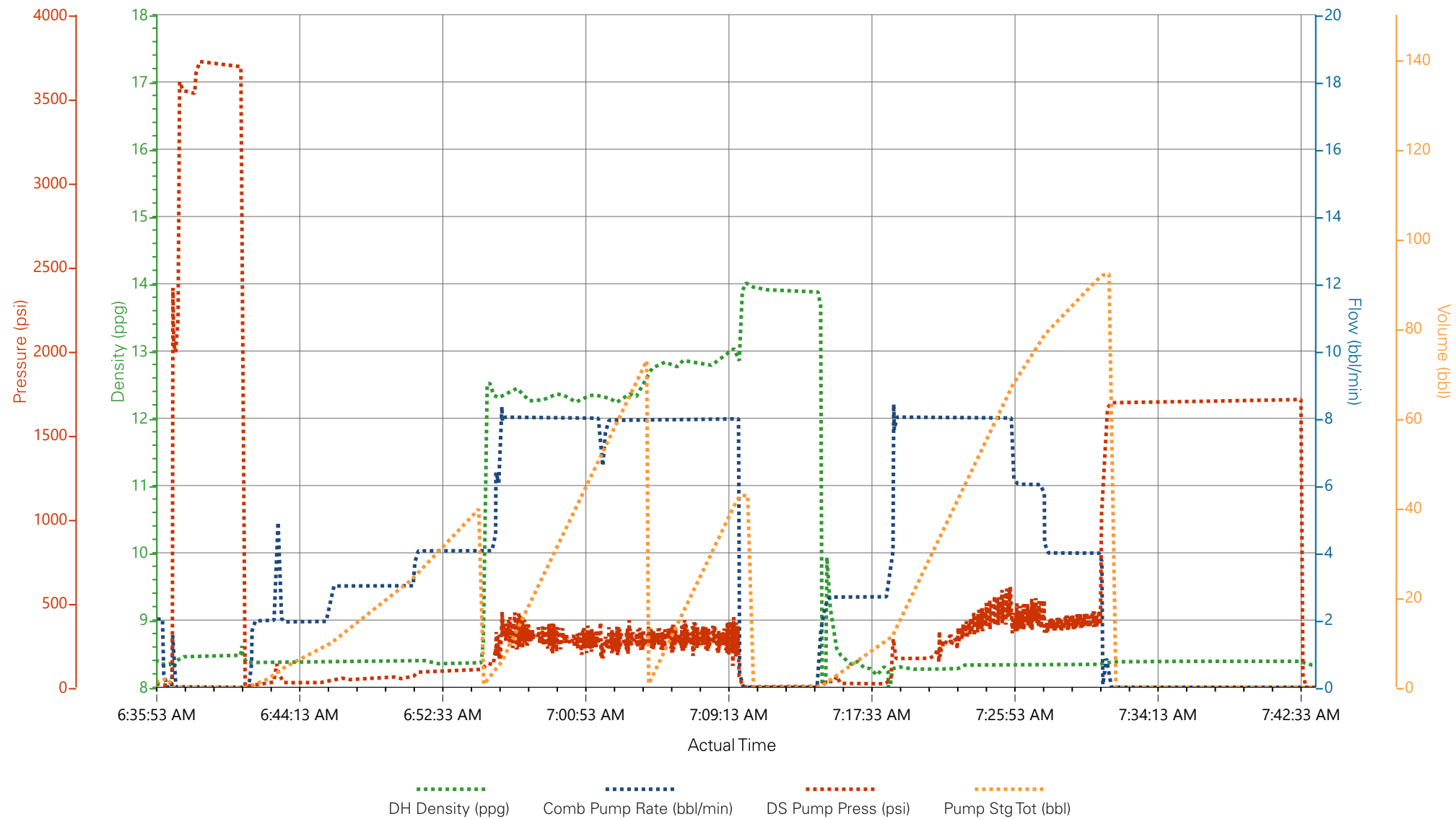
1.0 Real-Time Job Summary

1.1 Job Event Log

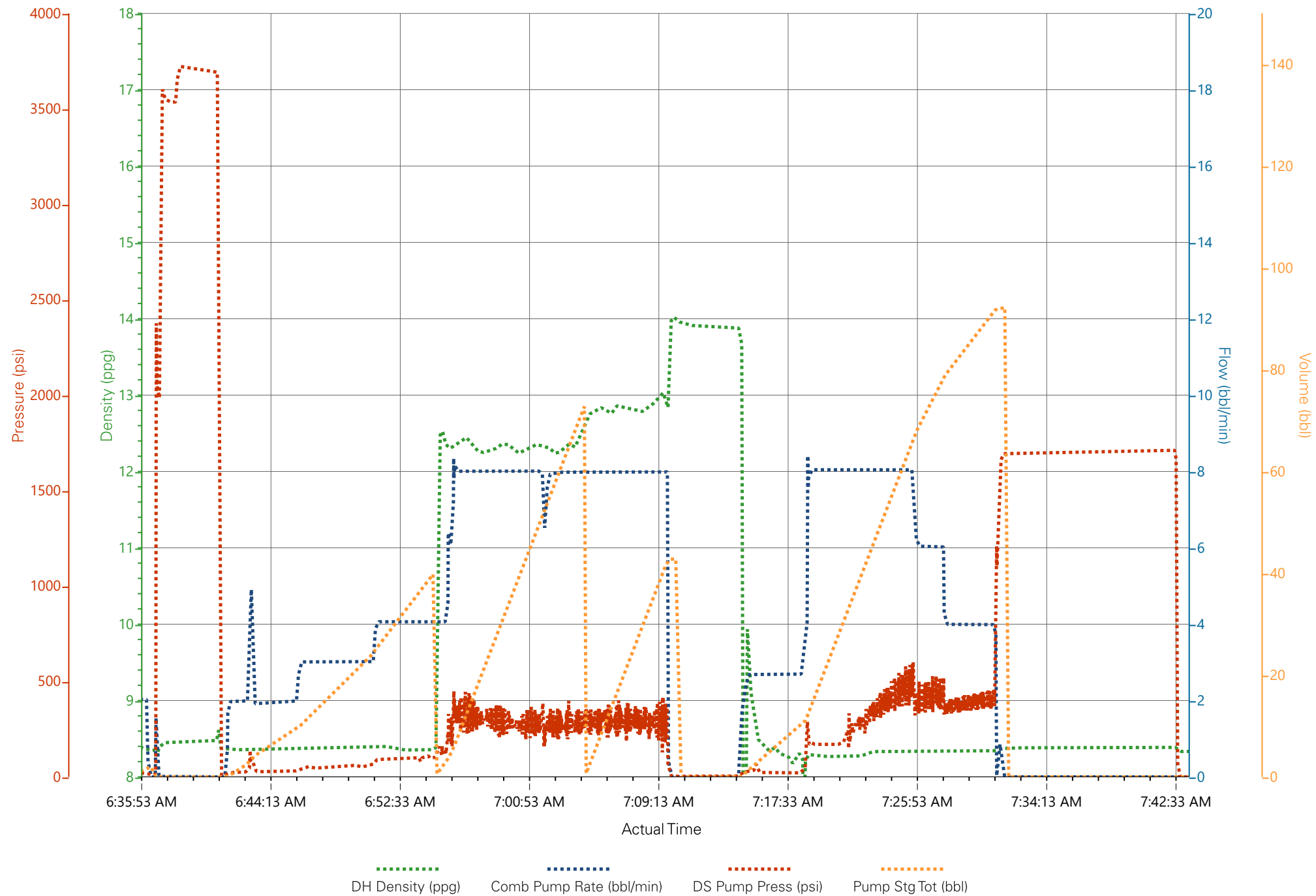
Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Driv-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	4/15/2018	13:30:00	USER					
Event	2	Pre-Convoy Safety Meeting	4/15/2018	16:15:00	USER					JSA COMPLETE
Event	3	CREW LEAVE YARD	4/15/2018	16:20:00	USER					
Event	4	Arrive At Loc	4/15/2018	17:30:00	USER					RIG ON BOTTOM WITH CASING
Event	5	Assessment Of Location Safety Meeting	4/15/2018	17:45:00	USER					
Event	6	Pre-Rig Up Safety Meeting	4/15/2018	18:00:00	USER					JSA COMPLETE
Event	7	Rig-Up Equipment	4/15/2018	18:05:00	USER					
Event	8	Other	4/15/2018	18:19:00	USER					TP- 1572, TD-1582, S.J.-45.49, HOLE-11
Event	9	Pre-Job Safety Meeting	4/15/2018	18:20:00	USER					
Event	10	Prime Pumps	4/15/2018	18:35:00	RTD Import					FRESH WATER
Event	11	Drop Bottom Plug	4/15/2018	18:36:27	USER					AWAY
Event	12	Test Lines	4/15/2018	18:37:26	RTD Import	8.33		3686.00	0	PSI TEST TO 3686 PSI
Event	13	Pump Spacer 1*	4/15/2018	18:41:00	RTD Import	8.33	4.00	100.00	40	FRESH WATER

Event	14	Pump Lead Cement*	4/15/2018	18:55:26	RTD Import	12.3	8.00	365.00	73.2	167 SKS VARICEM, 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	15	Pump Tail Cement*	4/15/2018	19:04:28	RTD Import	12.8	8.00	302	42.3	109 SKS VARICEM, 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	16	Shutdown	4/15/2018	19:09:59	RTD Import					TO DROP TOP PLUG, WASH UP ON TOP OF PLUG
Event	17	Drop Top Plug	4/15/2018	19:14:23	RTD Import					AWAY
Event	18	Pump Displacement*	4/15/2018	19:14:43	RTD Import	8.33	8.00	440	97.1	FRESH WATER, GOOD CIRCULATION THROUGHOUT JOB, NO PIPE MOVEMENT, 34 BBLS CMT TO SURFACE
Event	19	Slow Rate	4/15/2018	19:27:53	USER	8.33	4.00	400	87	TO BUMP PLUG
Event	20	Bump Plug	4/15/2018	19:31:26	RTD Import		4.00	440	97.1	PLUG BUMPED
Event	21	Other	4/15/2018	19:32:14	RTD Import			1693		CASING TEST TO 1693 PSI HELD FOR 10 MINS
Event	22	Check Floats	4/15/2018	19:42:41	USER			1693		FLOATS HELD 0.5 BBLS BACK TO TRUCK
Event	23	End Job	4/15/2018	19:43:00	USER					
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	4/15/2018	20:00:00	USER					JSA COMPLETE
Event	25	Rig-Down Equipment	4/15/2018	20:45:00	USER					
Event	26	Crew Leave Location	4/15/2018	21:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

LARAMIE ENERGY - GUNDERSON 994-13-16E - 8 5/8 SURFACE CASING



LARAMIE ENERGY - GUNDERSON 994-13-16E - 8 5/8 SURFACE CASING



HALLIBURTON

iCem[®] Service

Laramie Energy LLC

For: Laramie Energy

Date: Thursday, April 19, 2018

Gunderson 0994-13-16E Production PJR

API #: 05-077-10532

Sincerely,

Grand Junction Cement Engineering

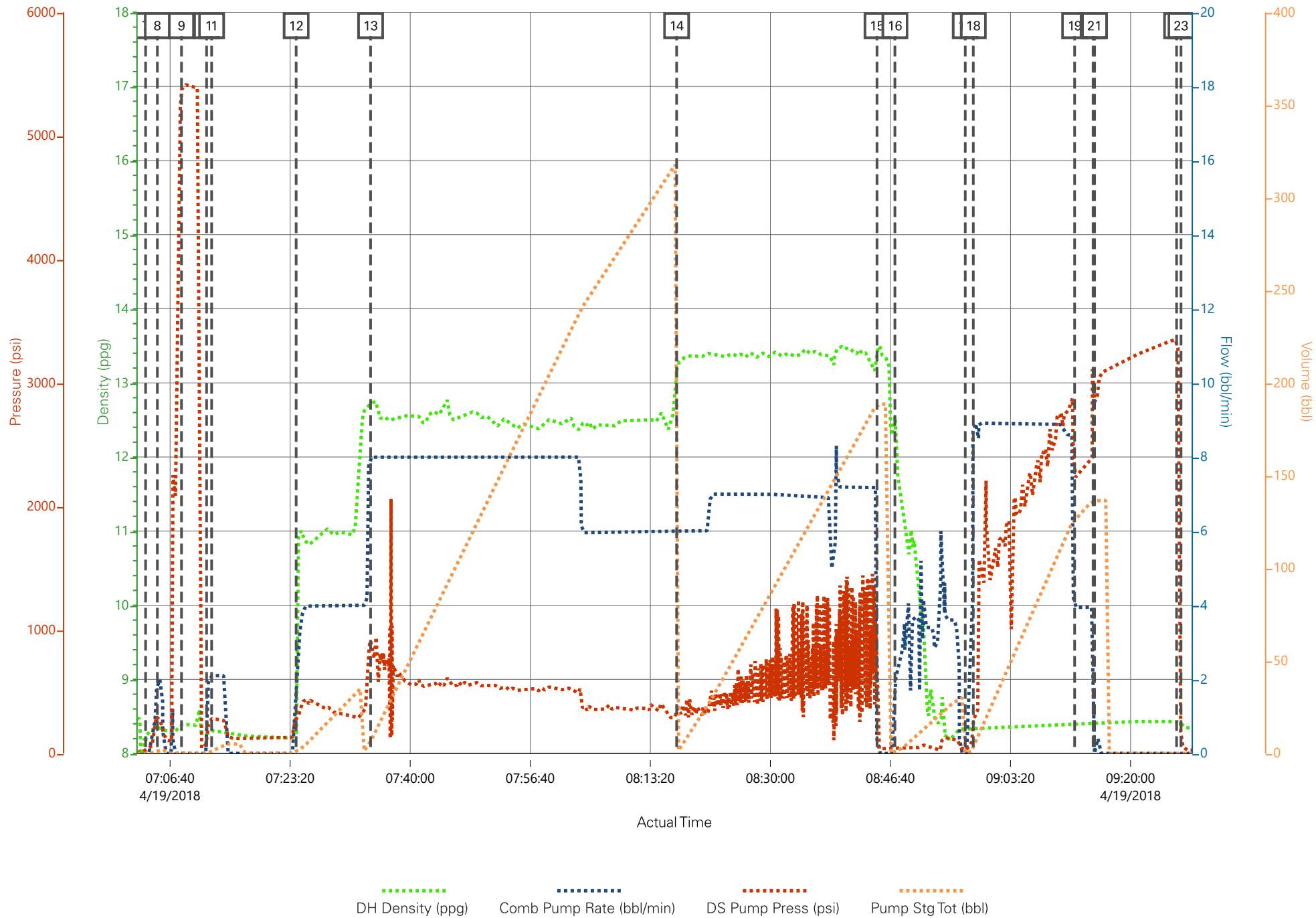
2.0 Real-Time Job Summary

2.1 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	PRE-CONVOY	4/18/2018	01:10:00	USER					
Event	2	CALL OUT	4/18/2018	22:30:00	USER					
Event	3	ARRIVE AT LOC	4/19/2018	02:30:00	USER					RIG RUNNING CASING
Event	4	Pre-Rig Up Safety Meeting	4/19/2018	04:00:00	USER					JSA COMPLETE
Event	5	Comment	4/19/2018	05:30:00	USER					WATER TEST: PH-7, TEMP-55, CL-0
Event	6	Pre-Job Safety Meeting	4/19/2018	06:45:00	USER					JSA COMPLETE
Event	7	Start Job	4/19/2018	07:03:16	COM4					
Event	8	Prime Pumps	4/19/2018	07:04:54	COM4	8.33	2.00	289.00	0.80	FRESH WATER
Event	9	Test Lines	4/19/2018	07:08:15	COM4			5379.00		5379 PSI
Event	10	Drop Bottom Plug	4/19/2018	07:11:44	USER					AWAY
Event	11	Pump Spacer 1	4/19/2018	07:12:26	COM4	8.33	2.10	288.00	1.20	FRESH WATER TO ESTABLISH CIRCULATION
Event	12	Pump Spacer 2	4/19/2018	07:24:10	COM4	11.00	4.00	285.00	40	TUNED SPACER 11 PPG, 4.86 FT3/SK, 31.9 GAL/SK
Event	13	Pump Lead Cement	4/19/2018	07:34:30	COM4	12.5	8.00	550.0	298.5	864 SKS NEOCEM 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	14	Pump Tail Cement	4/19/2018	08:16:59	COM4	13.3	8.00	560.0	153.7	499 SKS THERMACEM 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK
Event	15	Shutdown	4/19/2018	08:44:48	COM4					TO WASH PUMPS AND LINES FROM CMT HEAD ON

										FLOOR, AND DROP TOP PLUG	
Event	16	Clean Lines	4/19/2018	08:47:17	COM4					FROM MANIFOLD ON FLOOR	
Event	17	Drop Top Plug	4/19/2018	08:57:03	COM4					AWAY	
Event	18	Pump Displacement	4/19/2018	08:58:10	COM4	8.33	9.00	2830	135.5	FRESH WATER WITH 5 GAL CLA WEB, 1 GAL MMCR, 5 GAL BIOCID (3RD PARTY)	
Event	19	SLOW RATE	4/19/2018	09:12:14	COM4	8.33	4.00	2199.00	125.50	SLOW RATE TO BUMP PLUG	
Event	20	Bump Plug	4/19/2018	09:14:48	COM4				2320	135.5	PLUG BUMPED, 1 BBLS BACK TO TRUCK
Event	21	CASING TEST	4/19/2018	09:15:00	USER				3070		AFTER PLUG WAS BUMPED, DID A CASING TEST TO 3070 PSI AND HELD FOR 10 MINS. TEST GOOD
Event	22	Check Floats	4/19/2018	09:26:23	USER	8.33	0.00	3355.00	0.00		
Event	23	End Job	4/19/2018	09:27:00	USER						40 BBLS SPACER TO SURFACE, NO PIPE MOVEMENT, GOOD CIRCULATION THROUGHOUT JOB.
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	4/19/2018	10:00:00	USER						JSA COMPLETE
Event	25	Rig-Down Equipment	4/19/2018	10:10:00	USER						
Event	26	Crew Leave Location	4/19/2018	11:00:00	USER						THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

LARAMIE ENERGY - GUNDERSON 994-13-16E - 4.5 PRODUCTION CASING



Job Information

Request/Slurry	2467036/1	Rig Name	H&P 522	Date	13/APR/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 0994-13-16E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8828 ft	BHST	121°C / 250°F
Hole Size	7.875 in	Depth TVD	8197 ft	BHCT	82°C / 180°F
Pressure	5038 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	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2467036/1

Thickening Time - ON-OFF-ON

15/APR/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
180	5038	42	2:53	3:03	3:34	9:03	12	52	15	22

Total sks = 864

CS0873, Trailer 8678, 432 sks

CS0875, Trailer 2878, 432 sks

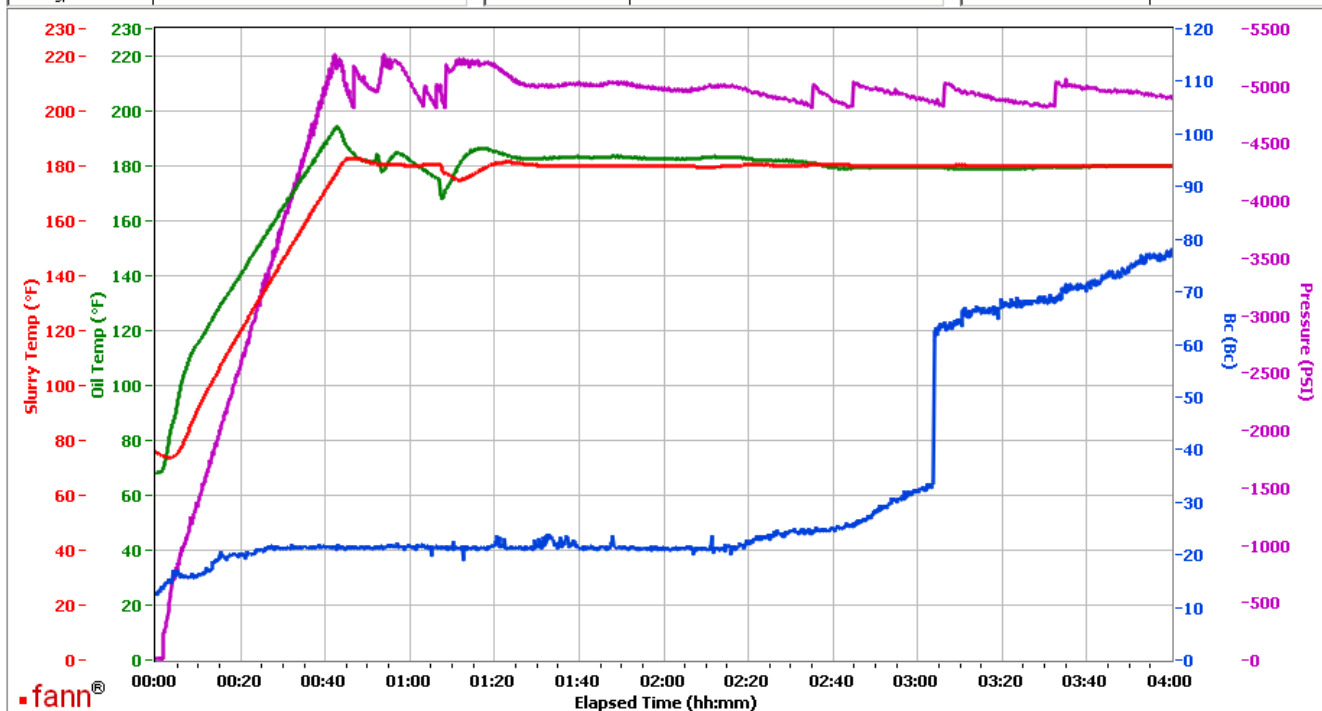
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Grand Junction Colorado

Fields	Values
Project Name	2467036-1 LARAMIE BULK PRODUCTION LE
Test ID	35416121 - TT
Request ID	2467036-1
Tested by	CT
Customer	LARAMIE ENERGY
Well No	GUNDERSON 0994-13-16E
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	04/14/18
Test Time	05:38 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:53m
40.00 Bc	03h:03m
50.00 Bc	03h:03m
70.00 Bc	03h:34m
100.00 Bc	09h:03m
00h:30m	21.19
01h:00m	21.49
01h:30m	21.45



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Comments CS0873, TRAILER 8678, 432 SKS - CS0875, TRAILER 2878, 432 SKS

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2467037/1	Rig Name	H&P 522	Date	13/APR/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 0994-13-16E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8828 ft	BHST	121°C / 250°F
Hole Size	7.875 in	Depth TVD	8197 ft	BHCT	82°C / 180°F
Pressure	5038 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	
		ThermaCem				Slurry Density	13.3 lbm/gal
						Slurry Yield	1.733 ft3/sack
						Water Requirement	7.799 gal/sack
						Total Mix Fluid	7.799 gal/sack
						Water Source	Field (Fresh) Water
						Water Chloride	N/A

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Operation Test Results Request ID 2467037/1

Thickening Time - ON-OFF-ON

15/APR/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)
180	5038	42	4:30	4:34	4:40	4:45	5	52	15

Total sks = 499

CS0874, Trailer 1513, 399 sks

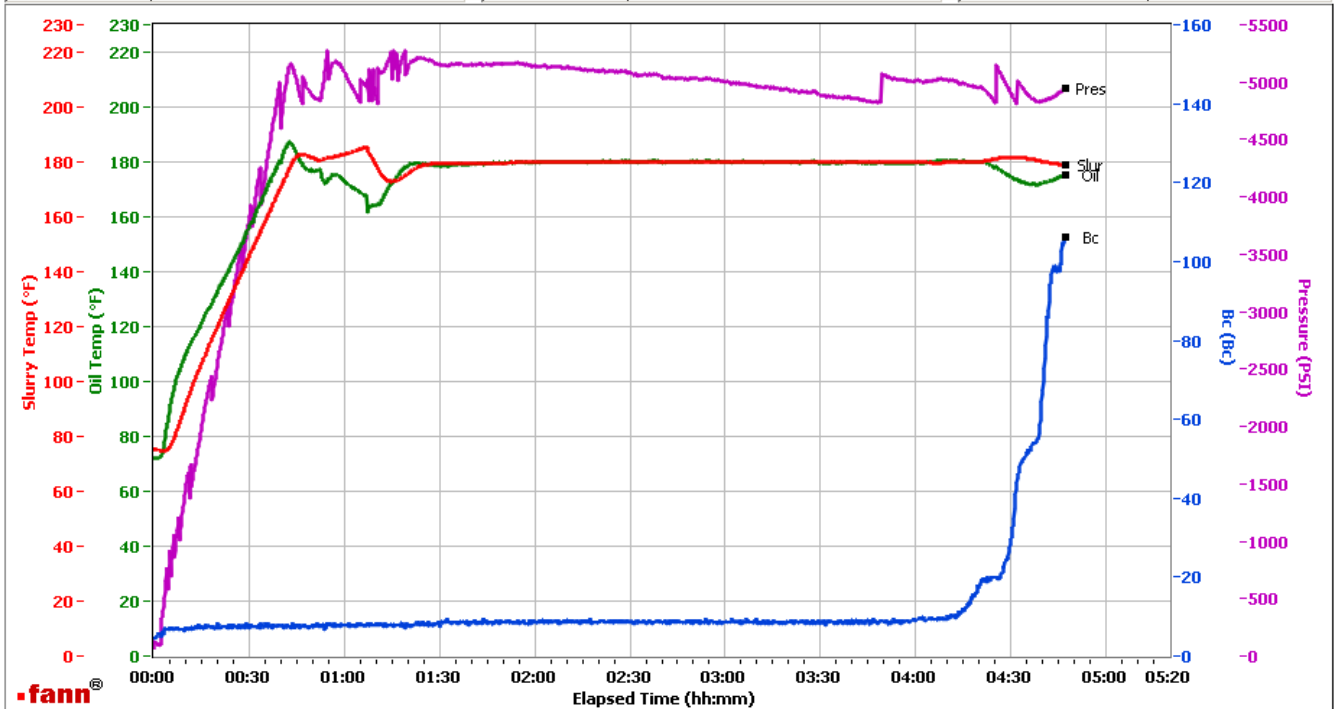
CS0876, Trailer 7304, 100 sks

Grand Junction Colorado

Fields	Values
Project Name	2467037-1 LARAMIE BULK PRODUCTION TA
Test ID	35416123 - TT
Request ID	2467037-1
Tested by	CT
Customer	LARAMIE ENERGY
Well No	GUNDERSON 0994-13-16E
Rig	H&P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	05/22/11
Test Time	06:14 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	04h:30m
40.00 Bc	04h:31m
50.00 Bc	04h:34m
70.00 Bc	04h:40m
100.00 Bc	04h:45m
00h:30m	7.59
01h:00m	7.93
01h:30m	7.58



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Comments CS0874, TRAILER 1513, 399 SKS - CS0876, TRAILER 7304, 100 SKS

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