

HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC EBUS

For: Aaron Duncan

Date: Sunday, February 25, 2018

GUNDERSON 994-13-05W Surface PJR

API # 05-077-10537-00

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)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	2/25/2018	02:00:00	USER					REQUESTED ON LOCATION @ 08:00
Event	2	Pre-Convoy Safety Meeting	2/25/2018	05:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	2/25/2018	06:00:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCKS, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	2/25/2018	07:45:00	USER					RIG LANDED CASING WHEN HES ARRIVED
Event	5	Assessment Of Location Safety Meeting	2/25/2018	08:00:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7.0, CHLORIDES- 0, TEMP- 65F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	2/25/2018	08:05:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	2/25/2018	08:10:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	2/25/2018	08:45:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 9 BPM FOR .5HR PRIOR TO JOB, PRESSURE @135 PSI
Event	9	Start Job	2/25/2018	09:05:00	COM6					TD-1561', TP-1551', SJ-47.7', CSG-8.625" 28# J55, OH-11", MUD-9.1PPG
Event	10	Prime Lines	2/25/2018	09:05:46	USER	8.33	.5	34	2	8.33 PPG FRESH WATER

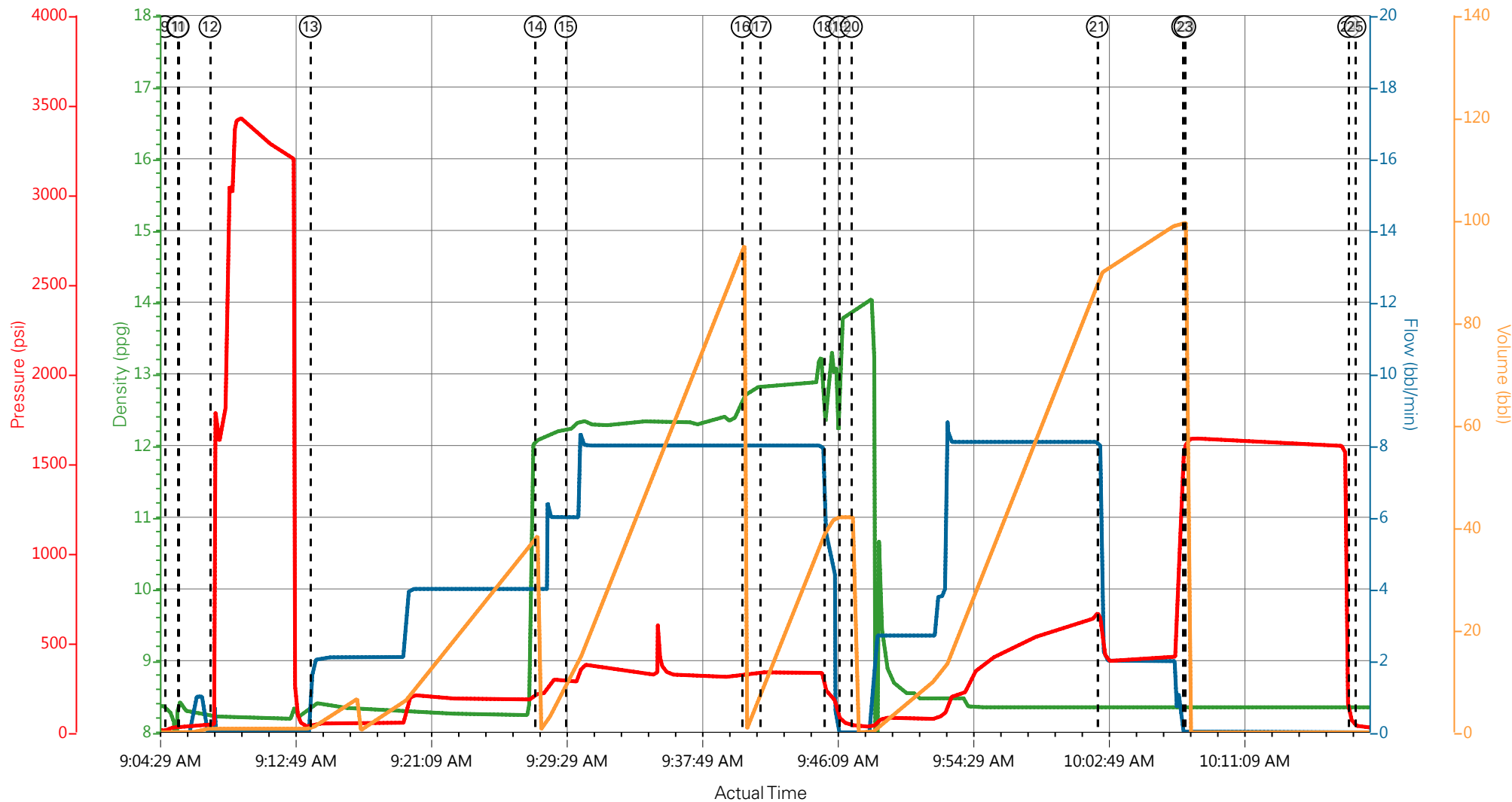
Event	11	Drop Bottom Plug	2/25/2018	09:05:49	USER					VERIFIED BY FLAG INDICATOR
Event	12	Test Lines	2/25/2018	09:07:45	COM6	8.33	0	3272	0	ALL LINES HELD PRESSURE AT 3272 PSI
Event	13	Pump H2O Spacer	2/25/2018	09:13:55	COM6	8.33	4	200	40	FRESH WATER
Event	14	Pump Lead Cement	2/25/2018	09:27:45	COM6	12.3	8	345	86.3	197 SKS VARICEM GJ5 CMT 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	15	Check weight	2/25/2018	09:29:38	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Pump Tail Cement	2/25/2018	09:40:28	COM6	12.8	8	330	42.3	109 SKS VARICEM GJ5 CMT 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	17	Check weight	2/25/2018	09:41:35	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Shutdown	2/25/2018	09:45:32	USER					END OF CEMENT, WASH UP ON TOP OF PLUG.
Event	19	Drop Top Plug	2/25/2018	09:46:28	USER					VERIFIED BY FLAG INDICATOR
Event	20	Pump Displacement	2/25/2018	09:47:12	COM6	8.4	8	680	93.8	FRESH WATER
Event	21	Slow Rate	2/25/2018	10:02:19	USER	8.4	2	390	83.8	SLOW RATE TO 2 BPM TO BUMP PLUG
Event	22	Bump Plug	2/25/2018	10:07:33	COM6					LAND PLUG AT 430 PSI, BROUGHT UP TO 1600 PSI AND HELD FOR TEN MINS FOR CASING TEST
Event	23	Casing Test	2/25/2018	10:07:42	USER	8.33	0	1600	0	HELD 1600PSI FOR TEN MINS
Event	24	Check Floats	2/25/2018	10:17:46	USER					FLOATS HELD, 1 BBL BACK TO TRUCK
Event	25	End Job	2/25/2018	10:18:10	COM6					RETURNS THROUGHOUT JOB, 43 BBLS CMT TO SURFACE, USED 40 POUNDS OF SUGAR
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	2/25/2018	10:20:00	USER					ALL HES PRESENT
Event	27	Rig-Down Equipment	2/25/2018	10:25:00	USER					ALL HES PRESENT
Event	28	Pre-Convoy Safety	2/25/2018	11:00:00	USER					ALL HES PRESENT

Meeting

Event	29	Crew Leave Location	2/25/2018	11:10:00	USER
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THANK YOU FOR CHOOSING HALLIBURTON
CEMENT, SHAWN BLOSSOM AND CREW

LARAMIE GUNDERSON 994-13-05W



- | | | | | |
|---|--------------------------|--------------------|----------------------|---|
| ① Call Out | ⑦ Rig-Up Equipment | ⑬ Pump H2O Spacer | ⑲ Drop Top Plug | 25 End Job |
| ② Pre-Convoy Safety Meeting | ⑧ Pre-Job Safety Meeting | ⑭ Pump Lead Cement | 20 Pump Displacement | 26 Post-Job Safety Meeting (Pre Rig-Down) |
| ③ Crew Leave Yard | ⑨ Start Job | ⑮ Check weight | 21 Slow Rate | 27 Rig-Down Equipment |
| ④ Arrive At Loc | ⑩ Prime Lines | ⑯ Pump Tail Cement | 22 Bump Plug | 28 Pre-Convoy Safety Meeting |
| ⑤ Assessment Of Location Safety Meeting | ⑪ Drop Bottom Plug | ⑰ Check weight | 23 Casing Test | 29 Crew Leave Location |
| ⑥ Pre-Rig Up Safety Meeting | ⑫ Test Lines | ⑱ Shutdown | 24 Check Floats | |

▼ **HALLIBURTON** | iCem® Service

Created: 2018-02-25 03:42:30, Version: 4.2.393

Edit

Customer : LARAMIE ENERGY II LLC EBUSINESS

Job Date : 2/25/2018

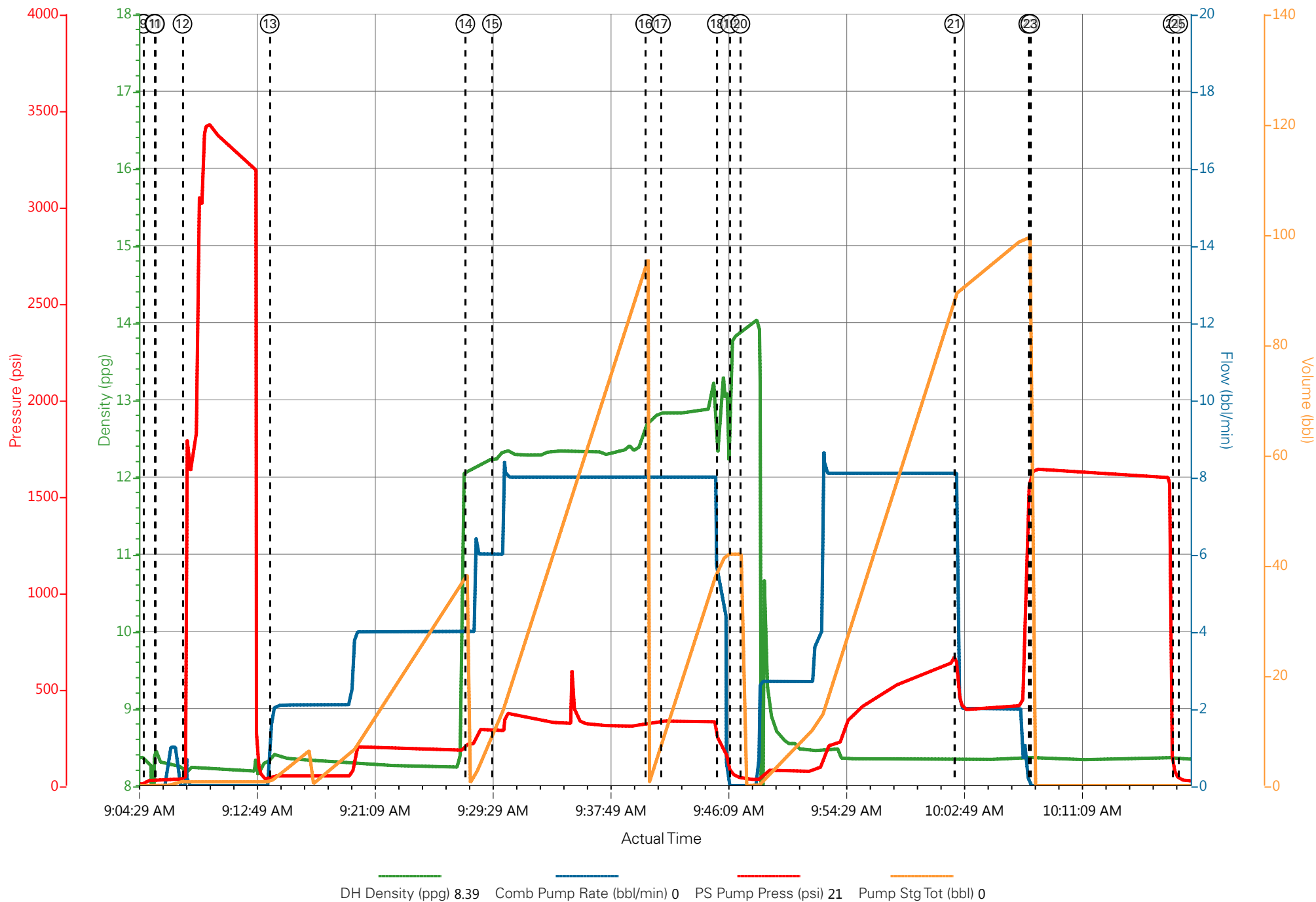
Well : GUNDERSON 994-13-05W

Representative : SHANE HEARD

Sales Order # : 904669061

ELITE 4 : ADAM A.

LARAMIE GUNDERSON 994-13-05W



HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC-EBUS

For: Aaron Duncan

Date: Tuesday, February 27, 2018

GUNDERSON 994-13-05W Production PJR

API# 05-077-10537-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

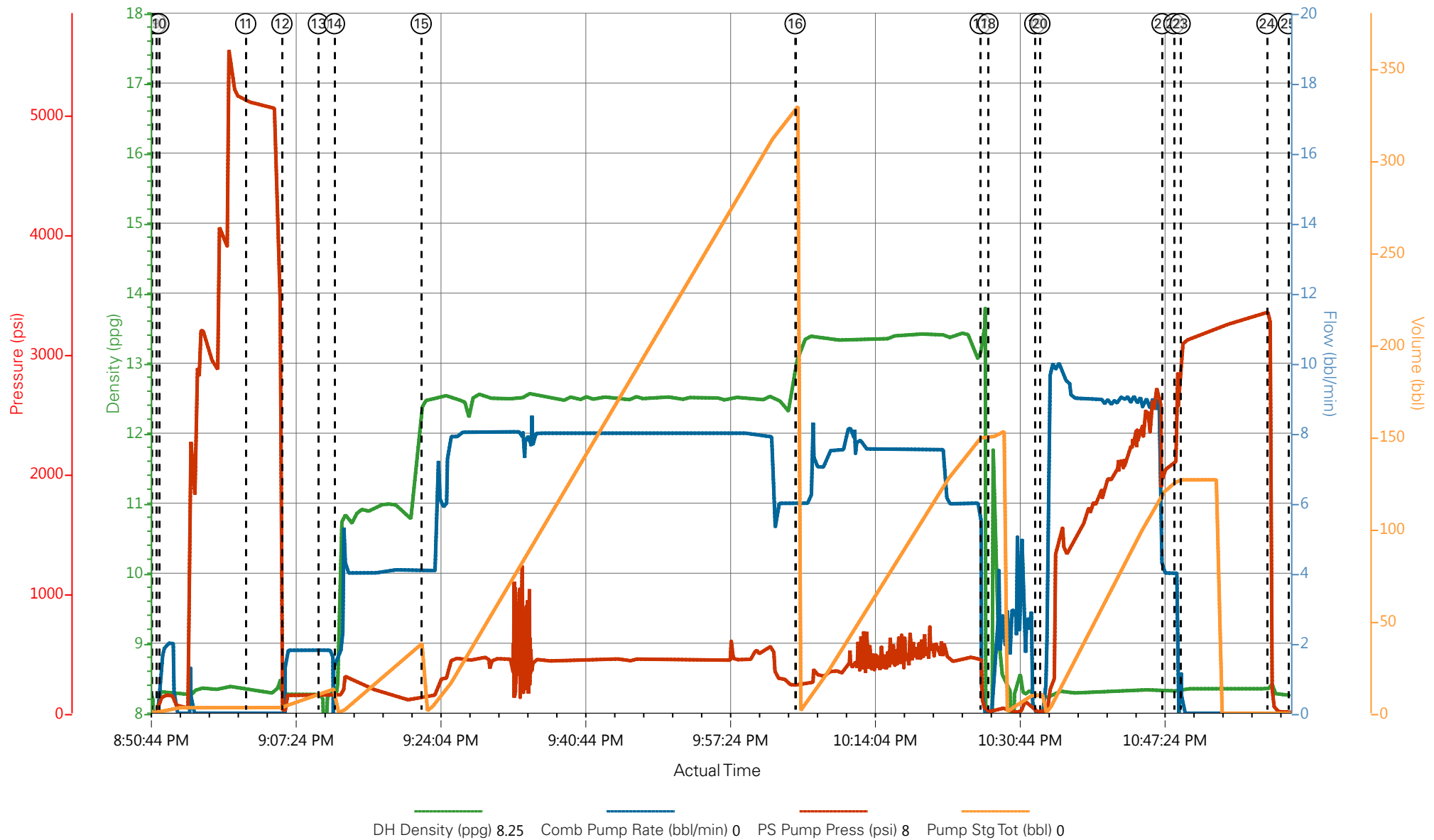
Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	2/27/2018	14:00:00	USER					CREW ON LOCATION OFF LOADING CEMENT, PUMP COMING FROM OTHER JOB
Event	2	Arrive at Location from Other Job or Site	2/27/2018	19:00:00	USER					PUMP ON LOCATION 16:00, SUPER VISOR ON LOCATION 19:00, BULK TRUCK ARRIVE 19:30
Event	3	Assessment Of Location Safety Meeting	2/27/2018	19:05:00	USER					SDS OFFERED, WATER: TEMP-62, CL-0, PH-7
Event	4	Pre-Rig Up Safety Meeting	2/27/2018	19:10:00	USER					HES PRESENT
Event	5	Rig-Up Completed	2/27/2018	20:00:00	USER					1-ELITE, 1-660 BULK TRAILER, 2-FIELD SILO, 4.5" QL, 2" PUMP IRON, 4" SUCTION HOSE
Event	6	Other	2/27/2018	20:20:00	USER					WAITED ON LAB TEST FOR 660 TRAILER UNTIL 20:20, PUMPING WAS APPROVED FOR MINIMUM PUMP OFF TIME
Event	7	Pre-Job Safety Meeting	2/27/2018	20:25:00	USER					ALL HES AND RIG CREW PRESENT
Event	8	Start Job	2/27/2018	20:51:10	USER	8.34	0.00	2.00	0.0	TD-8220', TP-8215', SJ-86.84', CSG-4.5" 11.6# P110, SCSG-8.625" 24# @ 1551', OH-7.875", MUD-9.1PPG.
Event	9	Prime Pumps	2/27/2018	20:51:40	USER	8.30	1.80	155.00	3.0	FRESH WATER
Event	10	Drop Bottom Plug	2/27/2018	20:52:00	USER					PLUG AWAY
Event	11	Test Lines	2/27/2018	21:01:59	COM5	8.33	0.00	5108.00	3.1	PRESSURE HELD ON LINES

Event	12	Pump Spacer 1	2/27/2018	21:06:09	COM5	8.26	1.80	140.00	11.0	FRESH WATER TO ESTABLISH RETURNS
Event	13	Check weight	2/27/2018	21:10:21	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	14	Pump Tuned Spacer	2/27/2018	21:12:12	COM5	11.0	4.00	207.00	40.0	TUNED SPACER III, 40 BBLS, 11.0PPG, 4.86CF/SK, 31.9GAL/SK
Event	15	Pump Lead Cement	2/27/2018	21:22:11	COM5	12.50	8.00	480.00	311.7	NEOCHEM LEAD 902SKS, 12.5PPG, 1.94CF/SK, 9.6GAL/SK
Event	16	Pump Tail Cement	2/27/2018	22:05:14	COM5	13.10	6.00	244.00	129.4	THERMACEM 420SKS, 13.3PPG, 1.73CF/SK, 7.81GAL/SK
Event	17	Shutdown	2/27/2018	22:26:32	USER					END OF CEMENT
Event	18	Clean Lines	2/27/2018	22:27:25	USER					CLEANED PUMPS AND LINES TO CELLAR
Event	19	Drop Top Plug	2/27/2018	22:32:49	COM5					PLUG AWAY
Event	20	Pump Displacement	2/27/2018	22:33:24	COM5	8.31	9.00	2625.00	126.0	FRESH WATER, 1 GAL MMCR, 5 GAL CLA-WEB ADDED, AND 5 GAL BIOCIDES PROVIDED BY RIG ADDED
Event	21	Slow Rate	2/27/2018	22:47:27	USER	8.32	4.00	2046.00	116.0	SLOW RATE LAST 10 BBLS
Event	22	Bump Plug	2/27/2018	22:48:49	COM5	8.32	4.00	2125.00	126.0	BLUG BUMPED 2125 PSI
Event	23	Casing Test	2/27/2018	22:49:32	USER	8.35	0.00	3107.00	126.7	10 MINUTE CASING TEST
Event	24	Check Floats	2/27/2018	22:59:32	USER	8.35	0.00	3222.00	0.0	FLOATS HELD 1.5 BBLS BACK
Event	25	End Job	2/27/2018	23:02:00	USER	8.25	0.00	8.00	0.0	GOOD RETURNS THROUGH OUT JOB, 40 BBLS TSIII TO SURFACE
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	2/27/2018	23:05:00	USER					ALL HES PRESENT
Event	27	Rig-Down Completed	2/27/2018	23:59:00	USER					
Event	28	Pre-Convoy Safety Meeting	2/28/2018	00:05:00	USER					ALL HES PRESENT

Event 29 Crew Leave Location 2/28/2018 00:15:00 USER

THANK YOU FOR CHOOSING HALLIBURTON,
ANDREW BRENNECKE AND CREW

LARAMIE - GUNDERSON 994-13-05W - 4.5" PRODUCTION



- | | | | | | |
|---|--------------------------|---------------------|----------------------|-----------------|---|
| ① Call Out | ⑥ Other | ⑪ Test Lines | ⑯ Pump Tail Cement | 21 Slow Rate | 26 Post-Job Safety Meeting (Pre Rig-Down) |
| ② Arrive at Location from Other Job or Site | ⑦ Pre-Job Safety Meeting | ⑫ Pump Spacer 1 | ⑰ Shutdown | 22 Bump Plug | 27 Rig-Down Completed |
| ③ Assessment Of Location Safety Meeting | ⑧ Start Job | ⑬ Check weight | ⑱ Clean Lines | 23 Casing Test | 28 Pre-Convoy Safety Meeting |
| ④ Pre-Rig Up Safety Meeting | ⑨ Prime Pumps | ⑭ Pump Tuned Spacer | ⑲ Drop Top Plug | 24 Check Floats | 29 Crew Leave Location |
| ⑤ Rig-Up Completed | ⑩ Drop Bottom Plug | ⑮ Pump Lead Cement | 20 Pump Displacement | 25 End Job | |

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Created: 2018-02-27 19:27:46, Version: 4.2.393

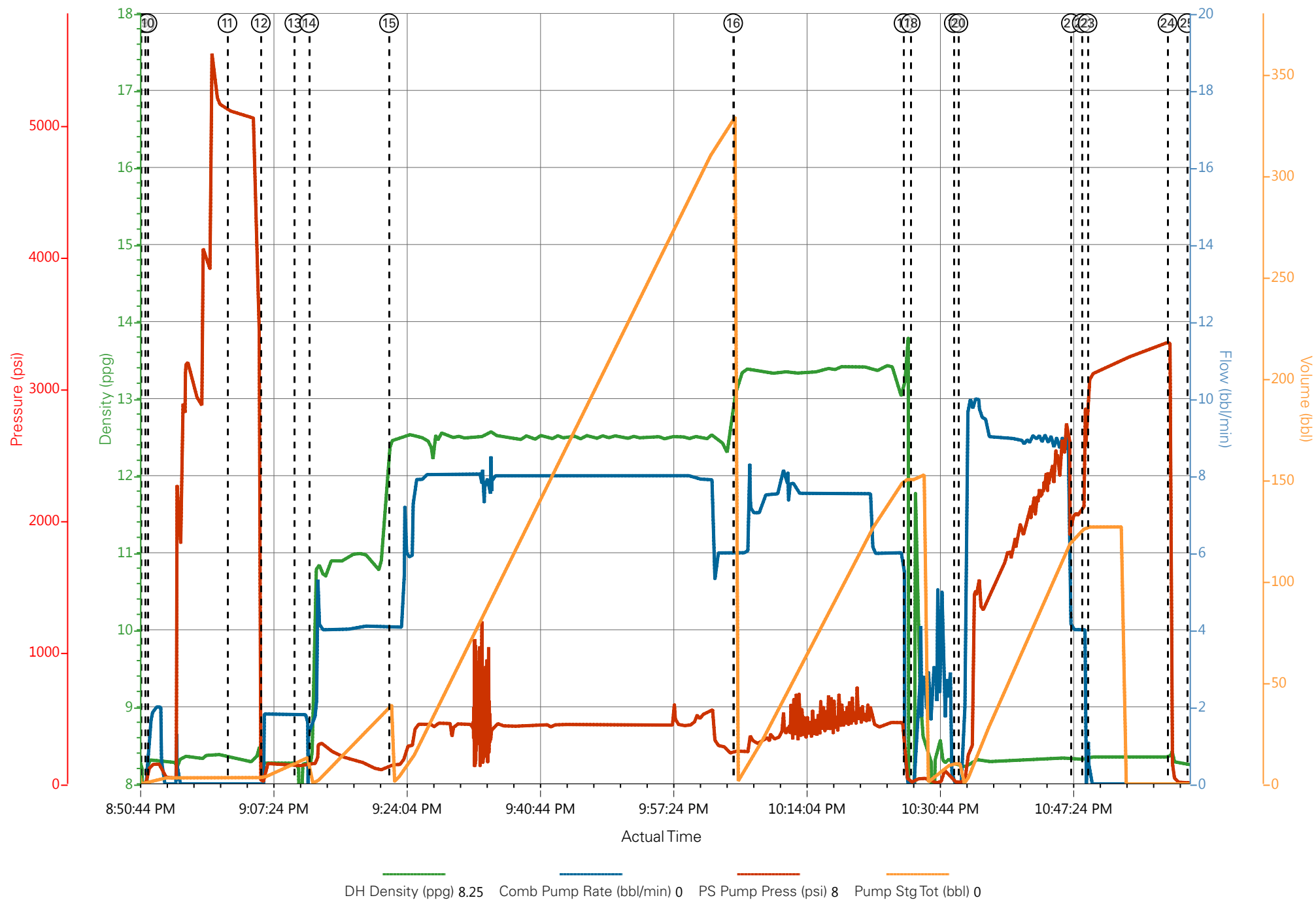
Edit

Customer : LARAMIE ENERGY II LLC
Representative : TYLER HALE

Job Date : 2/27/2018 7:33:46 PM
Sales Order # : 904674042

Well : GUNDERSON 994-13-05W
ELITE #1 : BRENNECKE/LEWIS

LARAMIE - GUNDERSON 994-13-05W - 4.5" PRODUCTION



Job Information

Request/Slurry	2456640/2	Rig Name	H&P 522	Date	25/FEB/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-13-05W

Well Information

Casing/Liner Size	4.5 in	Depth MD	8220 ft	BHST	113°C / 236°F
Hole Size	7.875 in	Depth TVD	7607 ft	BHCT	76°C / 169°F
Pressure	4625 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 2456640/2

Thickening Time - ON-OFF-ON

27/FEB/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination n time (hh:min)	Termination Bc
169	4625	48	4:31	4:36	5:44	18	58	15	23	5:56	79

CS0511, Trailer 7304, 102 sks

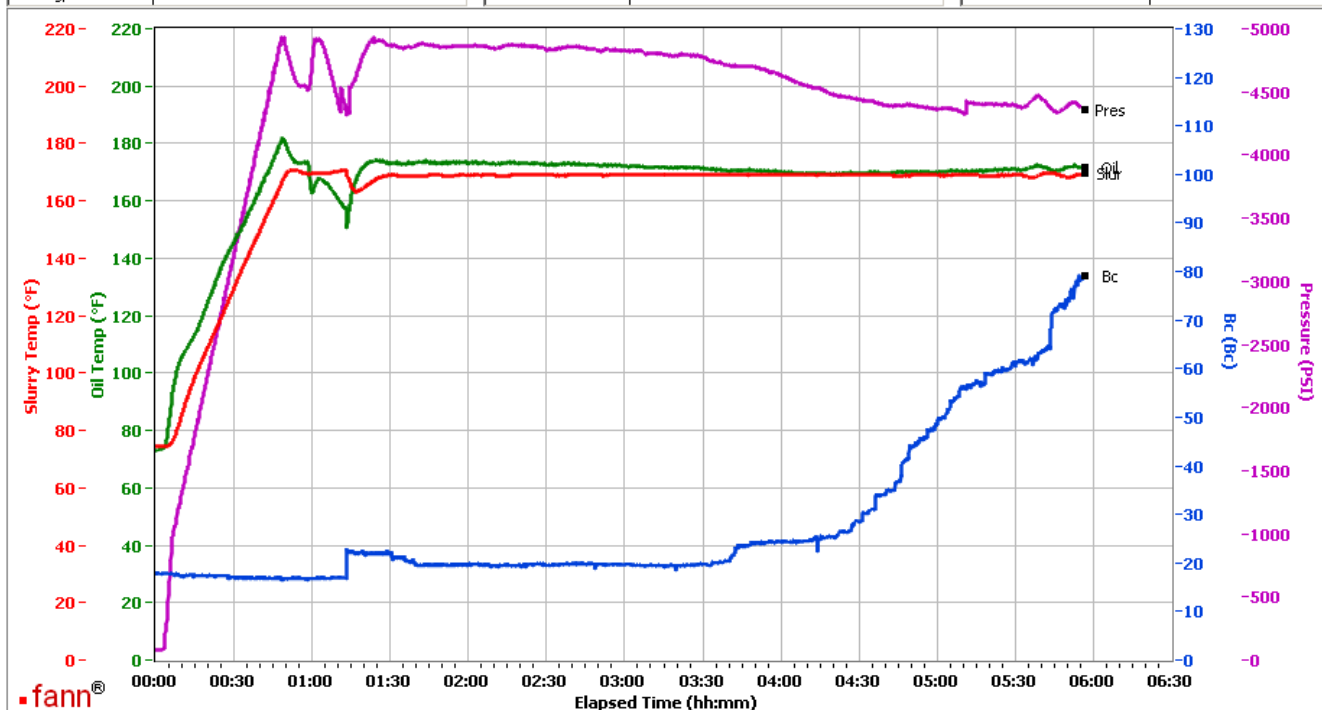
deflection: 17 - 23 to 22 after one minute.

Grand Junction Colorado

Fields	Values
Project Name	2456640-2 LARAMIE BULK PRODUCTION LE
Test ID	35291683 - TT
Request ID	2456640-2
Tested by	CT
Customer	LARAMIE ENERGY
Well No	GUNDERSON 994-13-05W
Rig	H&P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	HOLCIM TYPE I-II
Cement Weight	Standard
Test Date	02/27/18
Test Time	10:17 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:31m
40.00 Bc	04h:46m
50.00 Bc	05h:01m
70.00 Bc	05h:44m
100.00 Bc	NaN
00h:30m	16.98
01h:00m	16.59
01h:30m	21.81



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\K9YZ0P2R\GJ2456640-2 LARAMIE BULK PRODUCTION LEAD[1].tdms

Comments CS0511, TRAILER 7304, 102 SKS

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Operation Test Results Request ID 2456640/1

Thickening Time - ON-OFF-ON

27/FEB/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)
169	4625	48	4:11	4:23	4:55	11:09	14	58	15	14

Total Sks = 902

Composite:

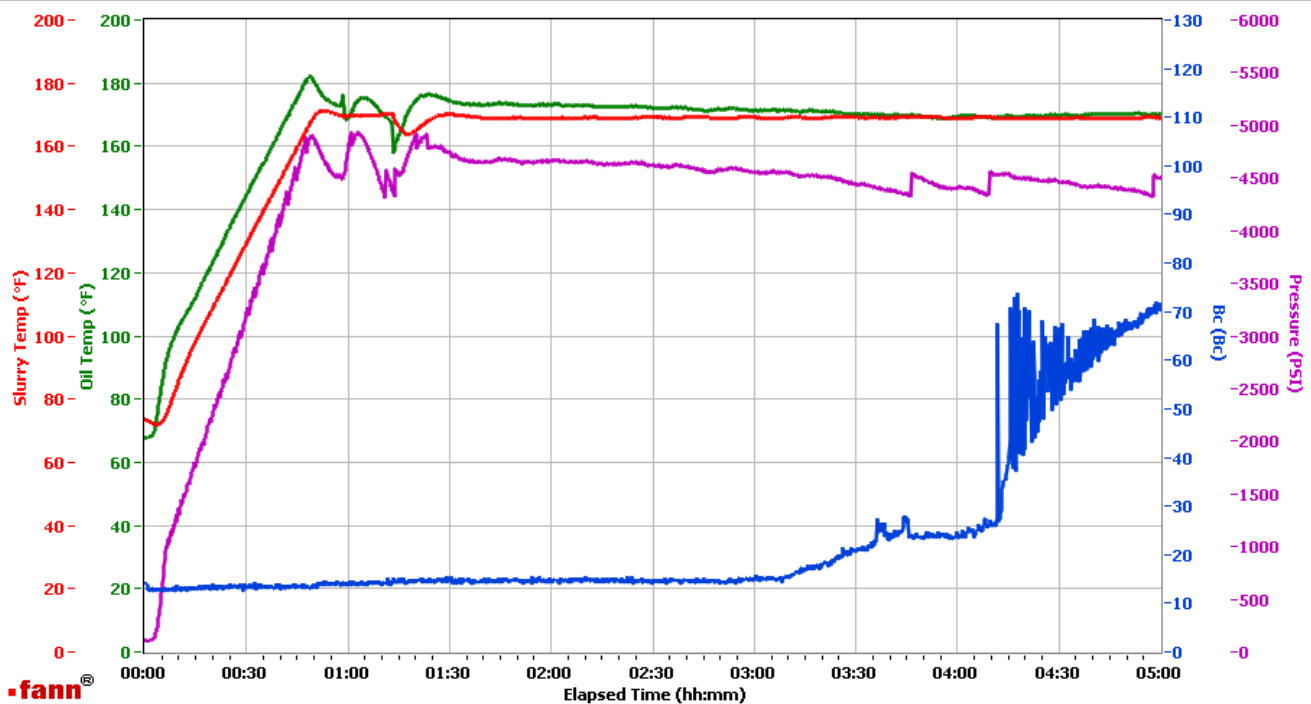
CS0503 TR#8658 400 SKS

CS0504 TR#1656 400 SKS

No deflection. Please note that results were taken from graph due to spikes during the test.

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2456640-1 LARAMIE PRODUCTION BULK	Job Type	PRODUCTION CASING	30.00 Bc	04h:11m
Test ID	35285453	Cement Type	HOLCIM TYPE I-II	40.00 Bc	04h:16m
Request ID	GJ2456640-1	Cement Weight	Standard	50.00 Bc	04h:23m
Tested by	DEBA	Test Date	02/27/18	70.00 Bc	04h:55m
Customer	LARAMIE ENERGY	Test Time	03:40 AM	100.00 Bc	11h:09m
Well No	GUNDERSON 994-13-05W	Temp. Units	degF	00h:30m	13.66
Rig	H&P 522	Pressure Units	PSI	01h:00m	14.21
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	14.72



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\OTUB09Y7\GJ2456640-1 LARAMIE PRODUCTION BULK LEAD[1].tdms

Comments COMPOSITE: CS0503 TR#8658 400 SKS AND CS0504 TR#1656 400 SKS

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2456641/1	Rig Name	H&P 522	Date	25/FEB/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-13-05W

Well Information

Casing/Liner Size	4.5 in	Depth MD	8220 ft	BHST	113°C / 236°F
Hole Size	7.875 in	Depth TVD	7607 ft	BHCT	76°C / 169°F
Pressure	4625 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 2456641/1

Thickening Time - ON-OFF-ON

27/FEB/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)
169	4625	48	3:01	3:16	3:21	3:23	21	58	15	15

Total sks = 420

CS0505 TR#8678 420 SKS

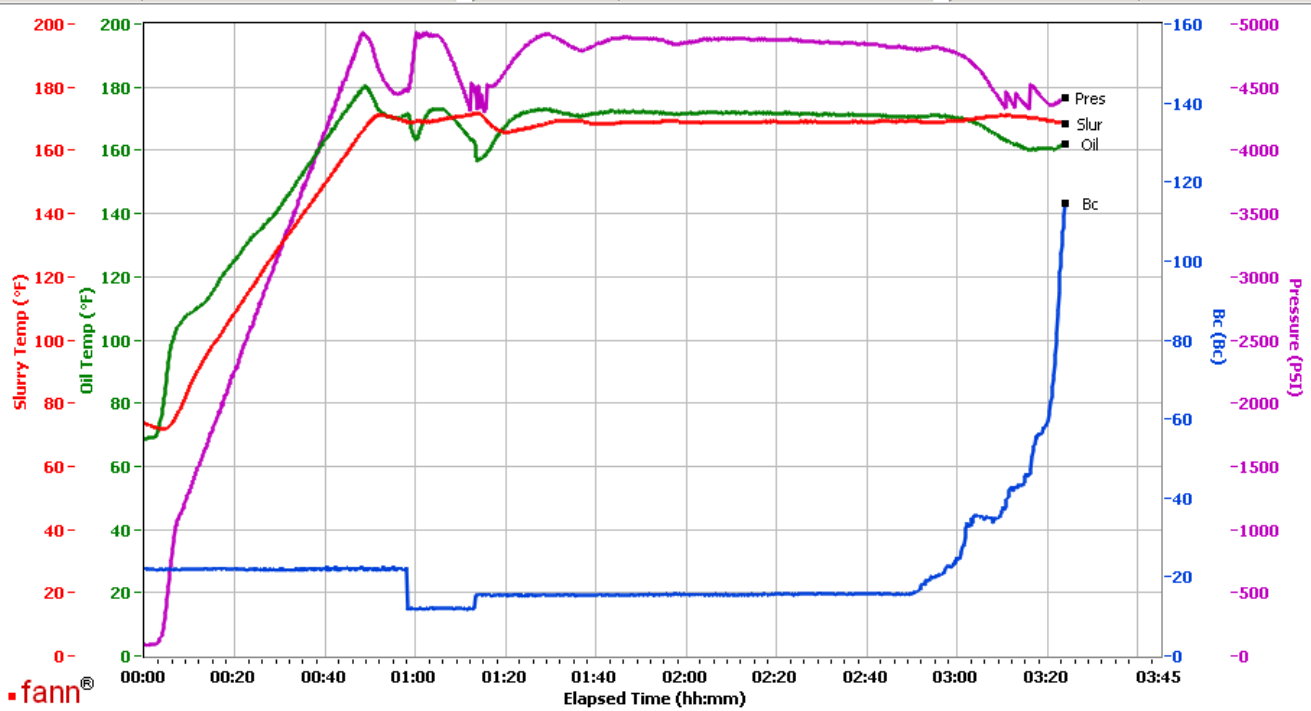
Deflected 12-- > 15. Please note heat of hydration started around 3:10.

Grand Junction Colorado

Fields	Values
Project Name	GJ2456641-1 LARAMIE PRODUCTION BULK
Test ID	35285454
Request ID	GJ2456641-1
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	GUNDERSON 994-13-05 W
Rig	H&P 522
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	02/27/18
Test Time	05:03 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:01m
40.00 Bc	03h:11m
50.00 Bc	03h:16m
70.00 Bc	03h:21m
100.00 Bc	03h:23m
00h:30m	22.24
01h:00m	11.93
01h:30m	15.51



Data File	C:\Documents and Settings\M290\Desktop\Test Data\GJ2456641-1 LARAMIE PRODUCTION BULK TAIL.tdms
Comments	CS0505 TR#8678 420 SKS

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