

HALLIBURTON

iCem[®] Service

Laramie Energy LLC

For: Laramie

Date: Thursday, July 25, 2019

CC FED 0697-03-05W Surface

API# 05-045-23934-00

Job Date: Thursday, July 25, 2019

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

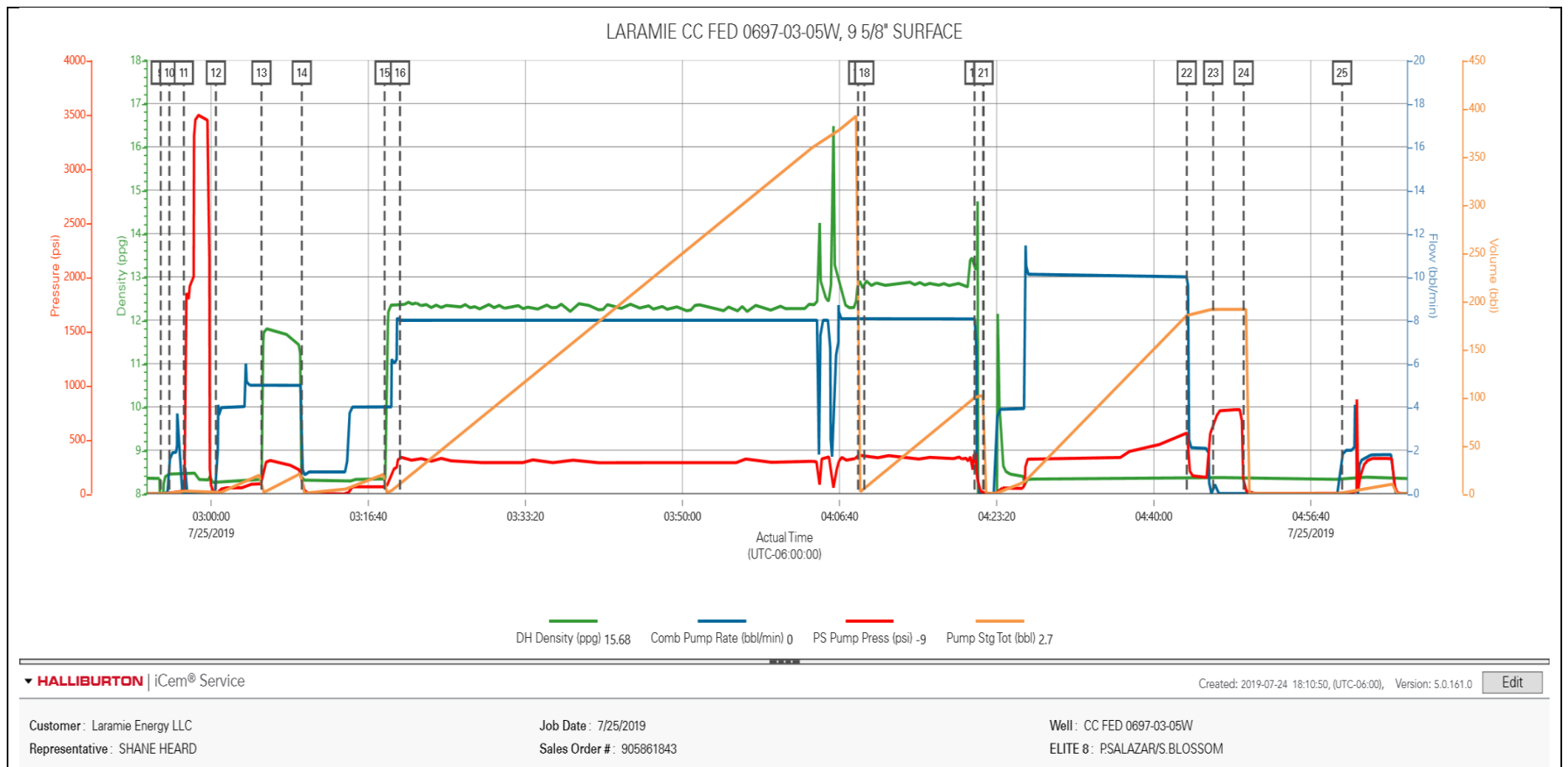
Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	7/24/2019	20:00:00	USER					REQUESTED ON LOCATION @ 02:00
Event	2	Pre-Convoy Safety Meeting	7/24/2019	21:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	7/24/2019	21:10:00	USER					1 HT 400 PUMP TRUCK, 1 TRANSPORT, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	7/24/2019	23:00:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	7/24/2019	23:05:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH-7.0, CHLORIDES-500, TEMP-70F). COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES. CALIBRATED MUD SCALES ON WATER.
Event	6	Pre-Rig Up Safety Meeting	7/24/2019	23:10:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	7/24/2019	23:15:00	USER					HES RIGGED UP 1 HT 400 PUMP TRUCK, 2 CEMENT SILOS, 1 TRANSPORT, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	7/25/2019	02:30:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT. RIG CIRCULATED @ 7.5 BPM PRIOR TO JOB. PRESSURE WAS 10 PSI.
Event	9	Start Job	7/25/2019	02:54:39	COM4					TD 2609', TP 2599', CSG 9 5/8" J-55 36#, SJ 42.23', OH 14.5", MUD 9 PPG
Event	10	Prime Lines	7/25/2019	02:55:34	USER	8.33	2	60	2	FRESH WATER
Event	11	Test Lines	7/25/2019	02:57:06	COM4			3490		ALL LINES HELD PRESSURE AT 3490 PSI

Event	12	Pump H2O Spacer	7/25/2019	03:00:30	COM4	8.33	5	80	20	20BBLS FRESH WATER
Event	13	Super Flush	7/25/2019	03:05:20	COM4	11	5	270	20	20BBLS SUPER FLUSH
Event	14	Pump H2O Spacer	7/25/2019	03:09:37	COM4	8.33	4	65	20	20BBLS FRESH WATER
Event	15	Pump Lead Cement	7/25/2019	03:18:24	COM4	12.3	8	330	370.6	878 SKS VARICEM CMT 12.3 PPG, 2.4 FT3/SK, 13.8 GAL/SK
Event	16	Check Weight	7/25/2019	03:20:02	COM4					WEIGHT VERIFIED VIA PRISSEIZED MUD SCALES
Event	17	Pump Tail Cement	7/25/2019	04:08:38	COM4	12.8	8	380	94.7	252 SKS VARICEM CMT 12.8 PPG, 2.13 FT3/SK, 11.79 GAL/SK
Event	18	Check Weight	7/25/2019	04:09:17	COM4					WEIGHT VERIFIED VIA PRISSEIZED MUD SCALES
Event	19	Shutdown	7/25/2019	04:20:59	USER					END OF CEMENT, WASH UP ON TOP OF PLUG
Event	20	Drop Top Plug	7/25/2019	04:21:54	COM4					VERIFIED BY FLAG INDICATOR
Event	21	Pump Displacement	7/25/2019	04:21:57	COM4	8.33	10	10	560	FRESH WATER
Event	22	Slow Rate	7/25/2019	04:43:30	USER	8.33	2	160	187.7	SLOW RATE TO 2 BPM TO BUMP PLUG
Event	23	Bump Plug	7/25/2019	04:46:18	COM4	8.33	2	160	197.7	LAND PLUG AT 160 PSI, BROUGHT UP TO 774 PSI
Event	24	Check Floats	7/25/2019	04:49:32	USER					FLOATS HELD, .5 BBL BACK TO TRUCK
Event	25	Clear Parasite line	7/25/2019	04:59:59	USER	8.4	2	280	10	10BBLS SUGAR WATER
Event	26	Top Out Well	7/25/2019	06:05:43	COM4	15.6	3	100	40	200 SKS TYPE I-II CMT 15.6 PPG, 1.19 FT3/SK, 5.24 GAL/SK. 5BBL OF SUPER FLUSH AHEAD.
Event	27	Other	7/25/2019	06:29:05	USER	15.6	3	100	60	100 SKS TYPE I-II CMT 15.6 PPG, 1.19 FT3/SK, 5.24 GAL/SK. 5BBL OF SUPER FLUSH AHEAD.
Event	28	Other	7/25/2019	06:44:25	USER	15.6	3	100	77.4	65 SKS TYPE I-II CMT 15.6 PPG, 1.19 FT3/SK, 5.24 GAL/SK. 5BBL OF SUPER FLUSH AHEAD.
Event	29	End Job	7/25/2019	06:49:00	COM4					NO RETURNS THROUGHOUT JOB .USED 40# OF SUGAR AND TOP PLUG. NO CEMENT TO SURFACE. TOPPED OUT WELL WITH 365 SKS AND 15BBL OF SUPER FLUSH.
Event	30	Post-Job Safety Meeting (Pre Rig-Down)	7/25/2019	06:55:00	USER					ALL HES PRESENT
Event	31	Rig-Down Equipment	7/25/2019	07:00:00	USER					ALL HES PRESENT

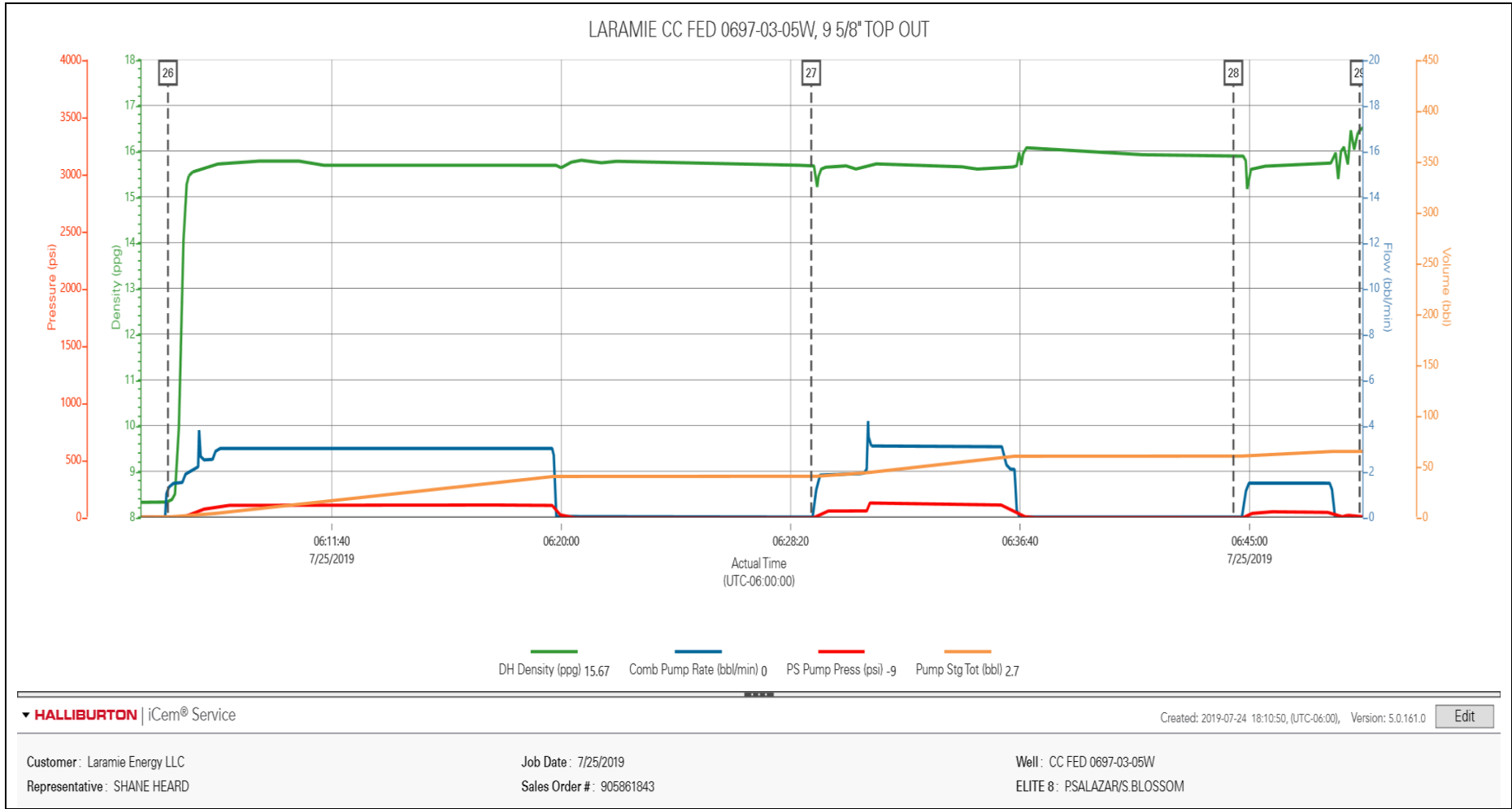
Event	32	Pre-Convoy Safety Meeting	7/25/2019	08:30:00	USER	ALL HES PRESENT
Event	33	Crew Leave Location	7/25/2019	08:45:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW.

3.0 Attachments

3.1 CHART .png



3.2 TOP OUT .png



HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

For: Aaron Duncan

Date: Monday, July 29, 2019

CC Federal 0697-03-05W Production PJR

API# 05-045-23934-00

Sincerely,

Grand Junction Cement Engineering

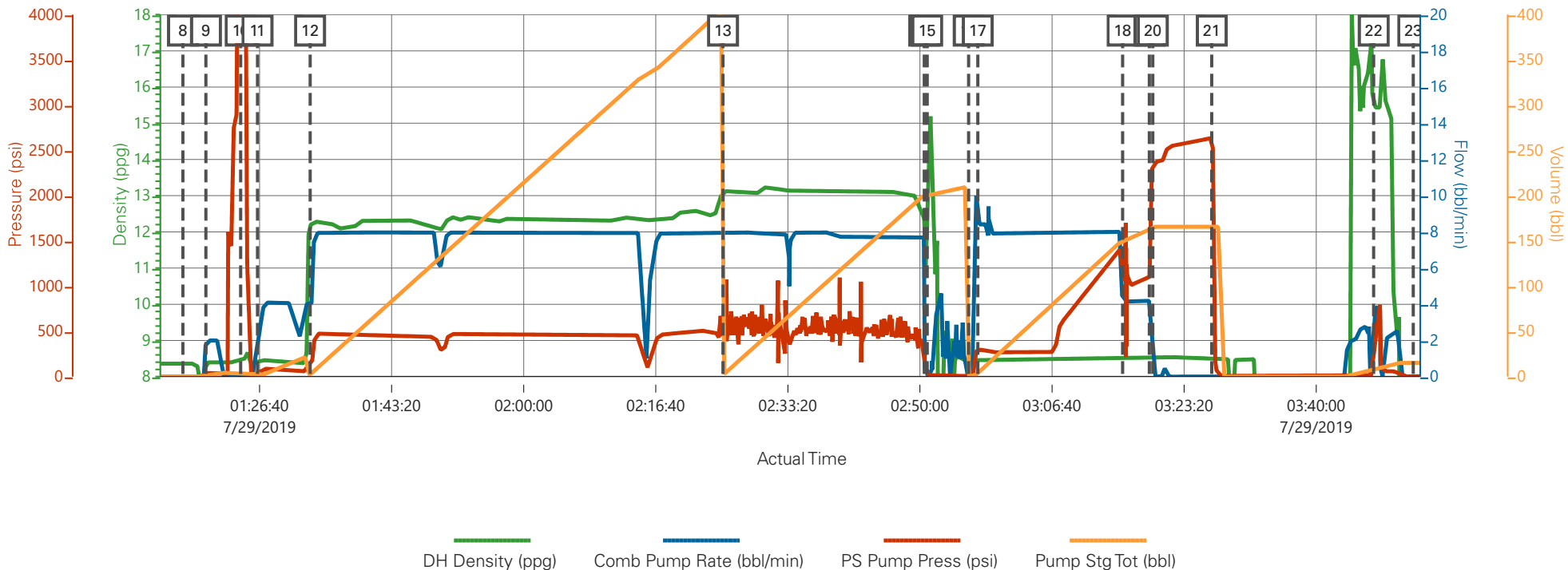
2.0 Real-Time Job Summary

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	7/28/2019	08:00:00	USER					
Event	2	PRE-CONVOY	7/28/2019	10:30:00	USER					JSA COMPLETE
Event	3	Crew Leave Yard	7/28/2019	12:00:00	USER					
Event	4	ARRIVE AT LOC	7/28/2019	12:30:00	USER					RIG RUNNING CASING, RIG HAD ISSUES WITH CIRCULATION AFTER LANDING OUT. THEY PUMPED FOR ABOUT 10 HOURS, AND +/- 4000 BBLS.
Event	5	Pre-Rig Up Safety Meeting	7/28/2019	13:00:00	USER					JSA COMPLETE
Event	6	Comment	7/28/2019	14:00:00	USER					WATER TEST: PH-7, TEMP- 69, CL-0, MUD SCALES CHECK WITH FRESH WATER PRIOR TO JOB.
Event	7	Pre-Job Safety Meeting	7/29/2019	01:00:00	USER					JSA COMPLETE
Event	8	Start Job	7/29/2019	01:17:00	USER					
Event	9	Prime Pumps	7/29/2019	01:19:54	USER	8.33	1.90	36.00	5.0	FRESH WATER, USED RED DYE.
Event	10	Test Lines	7/29/2019	01:24:17	USER			5241.00		5241 PSI
Event	11	Pump Spacer 2	7/29/2019	01:26:25	USER	8.40	4.00	100.0	20.0	MUD FLUSH
Event	12	Pump Lead Cement	7/29/2019	01:33:03	USER	12.50	8.00	466.0	357.3	1153 SKS ECONOCCEM, 12.5 PPG, 1.74FT3/SK, 9.1 GAL/SK
Event	13	Pump Tail Cement	7/29/2019	02:25:09	USER	13.00	8.00	529.0	160.8	519 SKS EXPANDACEM, 13 PPG, 1.74 FT3/SK, 7.99 GAL/SK

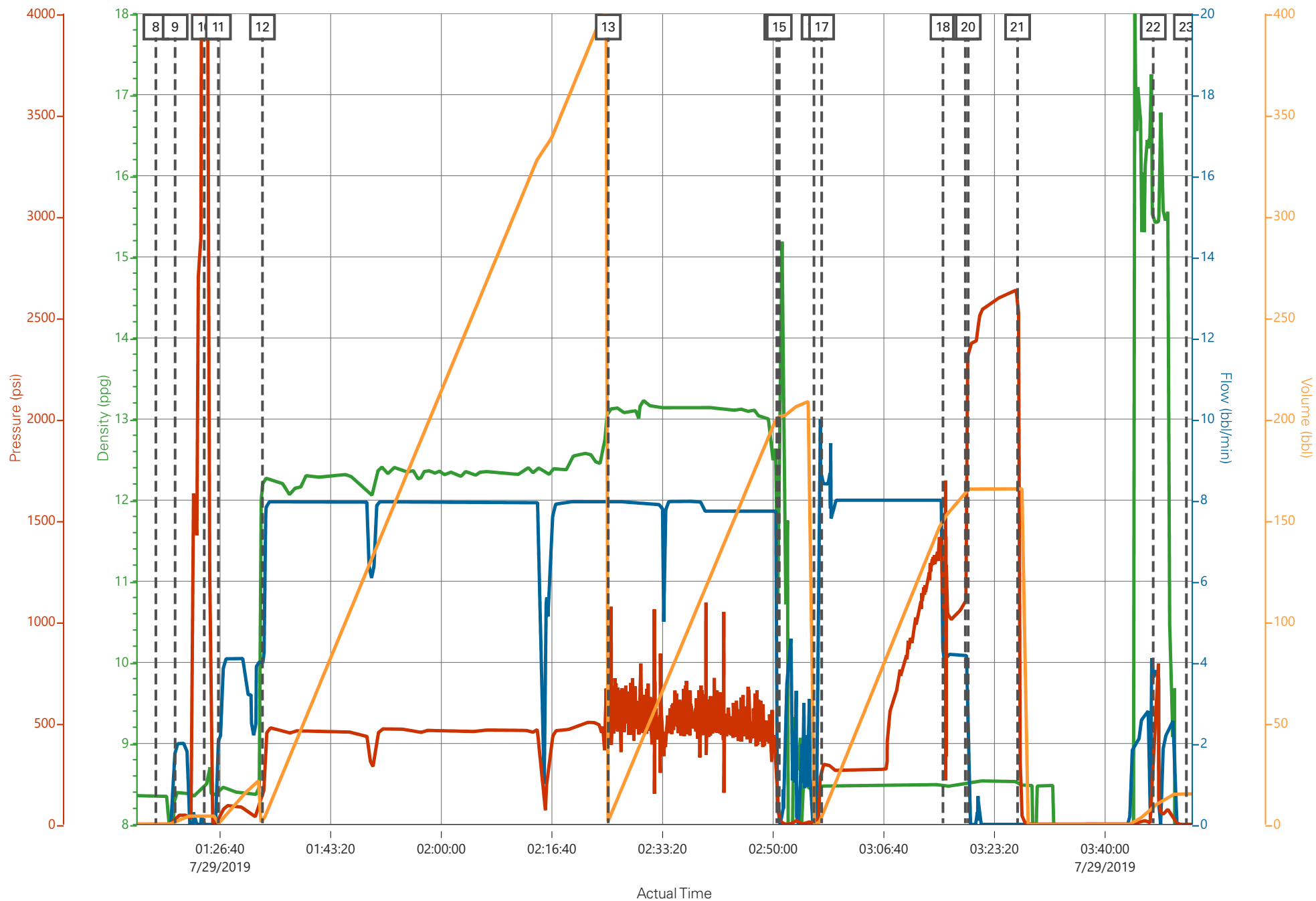
Event	14	Shutdown	7/29/2019	02:50:33	USER					TO WASH PUMPS AND LINES AND DROP TOP PLUGS
Event	15	Clean Lines	7/29/2019	02:50:55	USER					FROM MANIFOLD ON GROUND INTO CELLAR
Event	16	Drop Top Plug	7/29/2019	02:56:09	USER					AWAY X2
Event	17	Pump Displacement	7/29/2019	02:57:18	USER	8.33	8.00	1450.0	157.9	FRESH WATER WITH 5 GAL CLA WEB, 1 GAL MMCR
Event	18	SLOW RATE	7/29/2019	03:15:35	USER	8.33	4.00	1035.0	147.0	SLOW RATE TO BUMP PLUGS
Event	19	Bump Plug	7/29/2019	03:18:57	USER	8.33	4.00	1106.00	157.9	PLUGS BUMPED, 1 BBLS BACK TO TRUCK
Event	20	CASING TEST	7/29/2019	03:19:23	USER			2368.00		AFTER PLUG WAS BUMPED, DID A CASING TEST AND HELD FOR 10 MINS. TEST GOOD
Event	21	Check Floats	7/29/2019	03:26:49	USER			2640.00		FLOATS HELD, 2 BBLS BACK TO TRUCK
Event	22	Other	7/29/2019	03:47:15	USER	15.6	4.00	288.00	6.0	30 SKS NEAT CMT, 15.6 PPG, 1.18 FT3/SK, 5.23 GAL/SK PUMPED 6 BBLS DOWN PARASITE STRING
Event	23	End Job	7/29/2019	03:52:15	USER					NO PIPE MOVEMENT, GOOD CIRCULATION THROUGHOUT JOB WITH 1600 CFM OF AIR ON PARASITE STRING
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	7/29/2019	03:57:13	USER					JSA COMPLETE
Event	25	Rig-Down Equipment	7/29/2019	03:59:31	USER					
Event	26	Crew Leave Location	7/29/2019	05:29:25	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

LARAMIE ENERGY - FEDERAL CC 697-03-05W - 4.5" PRODUCTION CASING



Description	Actual Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)
8 Start Job	01:17:00	8.36	0.00	1.00	0.30
9 Prime Pumps	01:19:54	8.39	1.90	36.00	0.60
10 Test Lines	01:24:17	8.51	0.00	5217.00	4.20
11 Pump Spacer 2	01:26:25	8.39	2.10	31.00	0.50
12 Pump Lead Cement	01:33:03	12.20	4.00	150.00	2.20
13 Pump Tail Cement	02:25:09	13.09	7.90	446.00	1.90
14 Shutdown	02:50:33	12.35	7.70	321.00	200.90
15 Clean Lines	02:50:55	11.28	0.00	37.00	201.30
16 Drop Top Plug	02:56:09	8.44	0.00	4.00	0.00
17 Pump Displacement	02:57:18	8.48	8.40	309.00	3.80
18 SLOW RATE	03:15:35	8.48	4.20	1123.00	150.40
19 Bump Plug	03:18:57	8.49	4.20	1106.00	164.50
20 CASING TEST	03:19:23	8.53	0.00	2368.00	165.60
21 Check Floats	03:26:49	8.53	0.00	2640.00	165.60
22 Other	03:47:15	15.43	4.00	288.00	8.00
23 End Job	03:52:15	0.10	0.00	-7.00	15.30

LARAMIE ENERGY - FEDERAL CC 697-03-05W - 4.5" PRODUCTION CASING



DH Density (ppg)

Comb Pump Rate (bbl/min)

PS Pump Press (psi)

Pump Stg Tot (bbl)

Job Information

Request/Slurry	2572719/1	Rig Name	H&P 522	Date	25/JUL/2019
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Cascade Creek FED 0697-03-05W

Well Information

Casing/Liner Size	4.5 in	Depth MD	10265 ft	BHST	119°C / 246°F
Hole Size	8.75 in	Depth TVD	9764 ft	BHCT	80°C / 176°F
Pressure	6135 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Lead Design



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		EconoCem Lead					Slurry Density	12.5	lbm/gal
							Slurry Yield	1.74	ft3/sack
							Water Requirement	9.1	gal/sack
							Total Mix Fluid	9.1	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

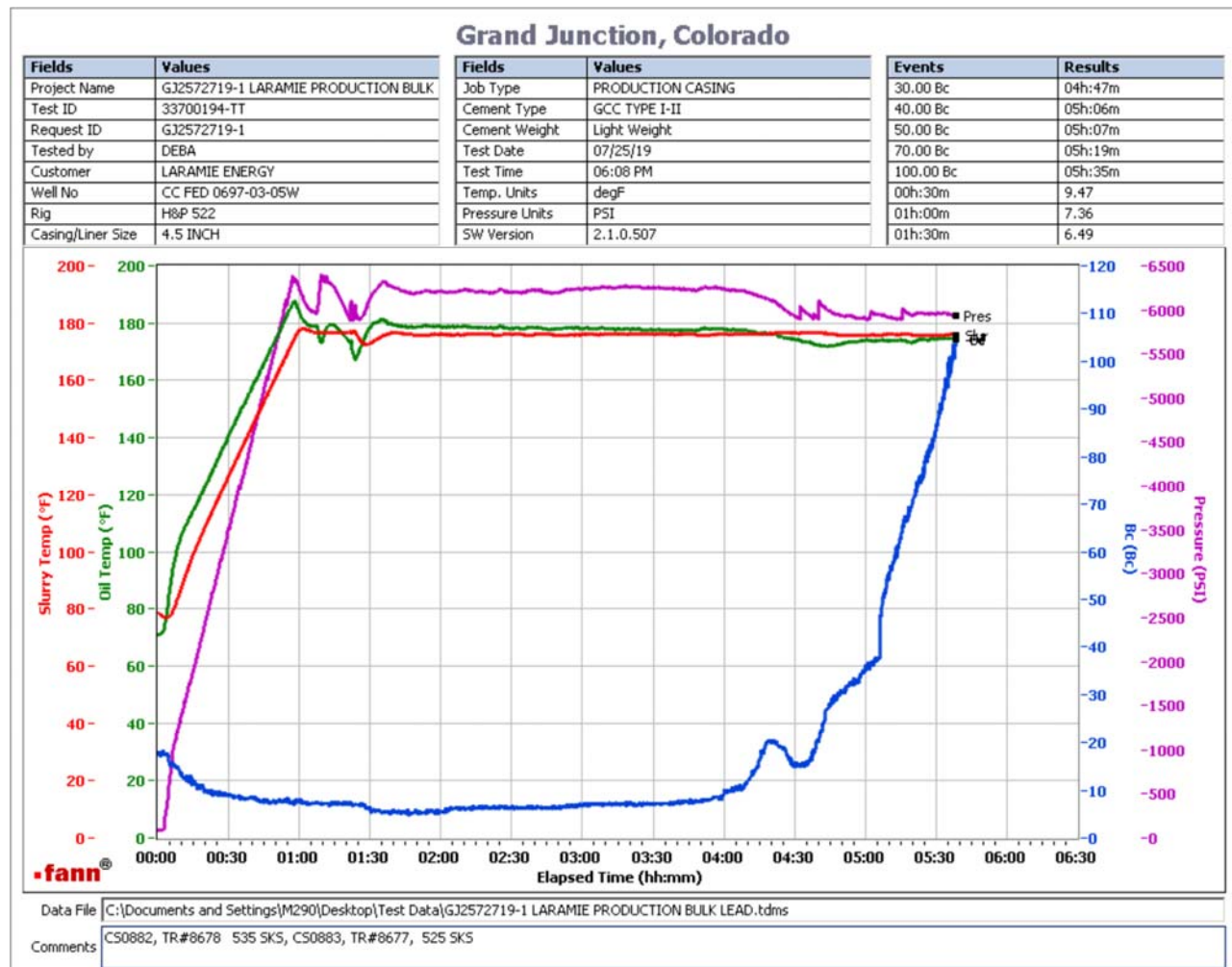
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Operation Test Results Request ID 2572719/1

Thickening Time - ON-OFF-ON, Request Test ID:36700194

26/JUL/2019

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)
176	6135	57	4:47	5:07	5:19	5:35	18	67	15	8



Total sks=1153

CS0882 TR#8658 525 SKS

CS-883 TR#8677 525 SKS

No deflection, 8Bc--> 8Bc

heat of hydration at 4:16

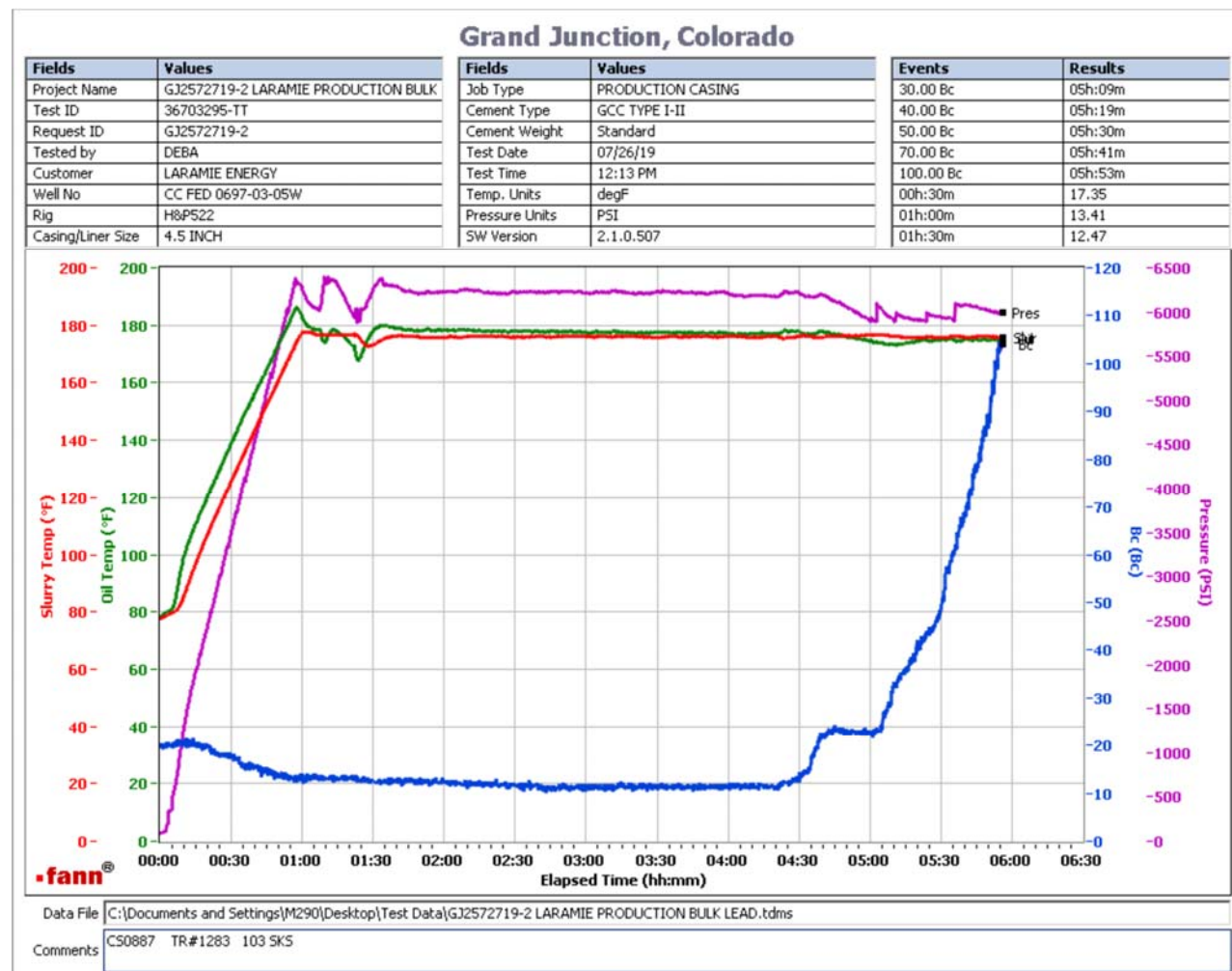
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Operation Test Results Request ID 2572719/2

Thickening Time - ON-OFF-ON, Request Test ID:36703295

26/JUL/2019

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)
176	6135	57	5:09	5:30	5:41	5:53	19	67	15	12



Total sks=1153

CS0882 TR#1283 103 SKS

no deflection, 12Bc---- > 12Bc

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Job Information					
Request/Slurry	2572720/1	Rig Name	H&P 522	Date	25/JUL/2019
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Cascade Creek FED 0697-03-05W

Well Information					
Casing/Liner Size	4.5 in	Depth MD	10265 ft	BHST	119°C / 246°F
Hole Size	8.75 in	Depth TVD	9764 ft	BHCT	80°C / 176°F
Pressure	6135 psi				

Drilling Fluid Information		
Mud Supplier Name	Mud Trade Name	Density

Cement Information - Tail Design									
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail					Slurry Density	13	lbm/gal
							Slurry Yield	1.74	ft3/sack
							Water Requirement	7.99	gal/sack
							Total Mix Fluid	7.99	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

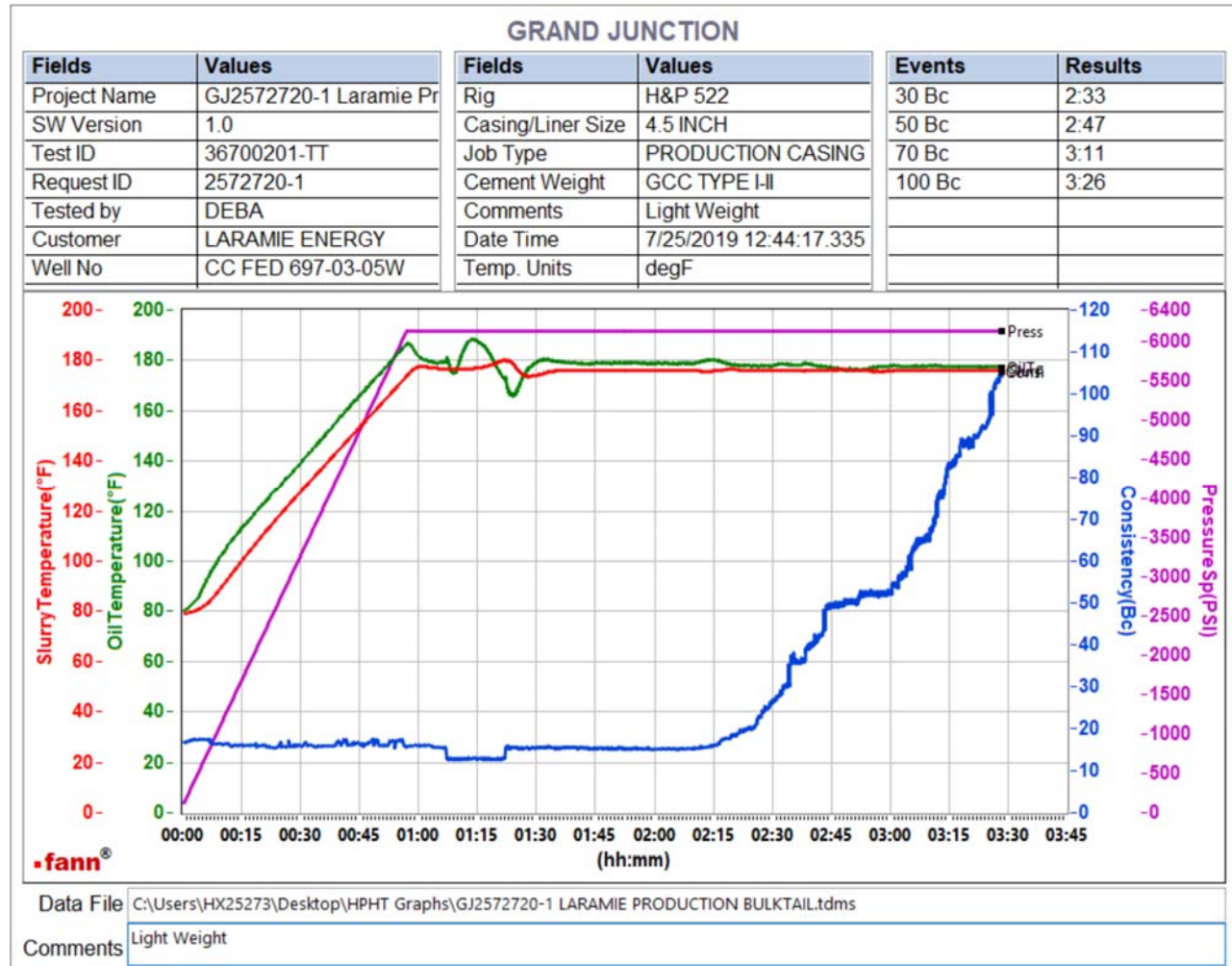
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Operation Test Results Request ID 2572720/1

Thickening Time - ON-OFF-ON, Request Test ID:36700201

26/JUL/2019

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)
176	6135	57	2:33	2:47	3:11	3:26	19	67	15	15



Total sks=519
 CS0884 TR#2878 400 SKS
 deflected from 13Bc--- > 15Bc

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Operation Test Results Request ID 2572720/2

Thickening Time - ON-OFF-ON, Request Test ID:36703290

26/JUL/2019

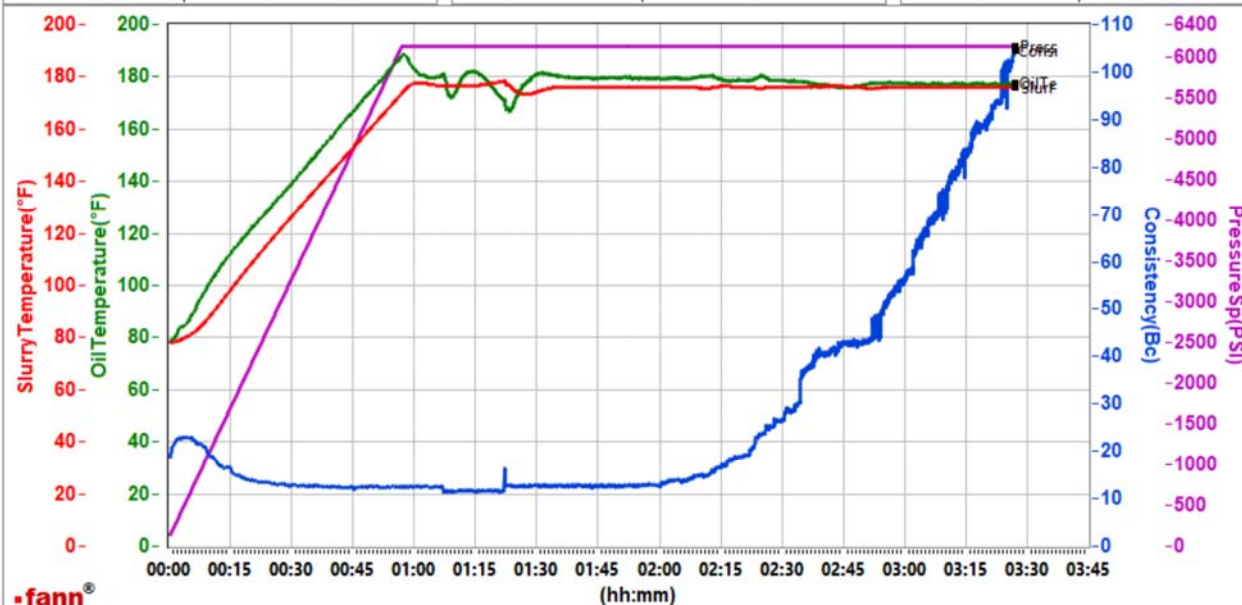
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
176	6135	57	2:34	2:54	3:07	3:24	19	67	15	19

GRAND JUNCTION

Fields	Values
Project Name	GJ2572720-2 Laramie Pr
SW Version	1.0
Test ID	36703290-TT
Request ID	2572720-2
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	CC FED 697-03-05W

Fields	Values
Rig	H&P 522
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE I-II
Comments	Light Weight
Date Time	7/26/2019 05:56:03.061
Temp. Units	degF

Events	Results
30 Bc	2:34
50 Bc	2:54
70 Bc	3:07
100 Bc	3:24



Data File C:\Users\HX25273\Desktop\HPHT Graphs\GJ2572720-2 LARAMIE PRODUCTION BULKTAIL.tdms

Comments Light Weight

Total sks=519
CS0888 TR#1283 119 SKS
deflected from 10Bc--- > 19Bc--- > 12Bc within one minute

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