

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

Rock Springs District, Colorado

**For: Aaron Duncan**

Date: Saturday, August 10, 2019

**CC Federal 0697-03-08W Surface PJR**

API# 05-045-23932-00

Sincerely,

**Grand Junction Cement Engineering**

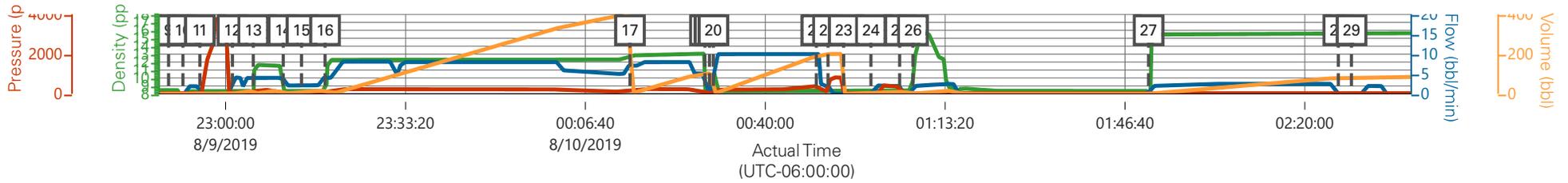
## 1.0 Real-Time Job Summary

### 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	8/9/2019	16:00:00						Requested on Location @ 23:00
Event	2	Pre-Convoy Safety Meeting	8/9/2019	17:50:00						
Event	3	Crew Leave Yard	8/9/2019	18:00:00						1 Elite, 1 Compressor tractor, 1 Transport, 1 pickup
Event	4	Arrive At Loc	8/9/2019	21:00:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	8/9/2019	21:20:00						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 67 degrees
Event	6	Pre-Rig Up Safety Meeting	8/9/2019	21:30:00						
Event	7	Rig-Up Equipment	8/9/2019	21:40:00						1 hardline to cement head in cellar, water hoses to both uprights, bulk hoses to silo's.
Event	8	Pre-Job Safety Meeting	8/9/2019	22:22:23						All HES personnel, rig crew, and company rep
Event	9	Start Job	8/9/2019	22:49:26						TD 2581', TP 2571, SJ 42.23', OH 14 3/4", Csg 9.625" 36 lb/ft J-55, Mud 8.4 ppg
Event	10	Fill Lines	8/9/2019	22:52:05		8.33	2	48	5	Fresh Water
Event	11	Test Lines	8/9/2019	22:55:14				3888		No Leaks
Event	12	Pump Spacer	8/9/2019	23:01:16		8.33	4	65	15	Fresh Water
Event	13	Pump Spacer	8/9/2019	23:05:08		11.7	4	171	20	Super Flush
Event	14	Pump Spacer	8/9/2019	23:10:41		8.33	4	61	20	Fresh Water

Event	15	Check Weight	8/9/2019	23:14:04					Density Verified via Mud Scales
Event	16	Pump Lead Cement	8/9/2019	23:18:25	12.3	8	256	370.6	878 Sks 12.3 ppg 2.37 yield 13.74 gal/sk
Event	17	Pump Tail Cement	8/10/2019	00:14:56	12.8	8	275	94.7	252 Sks 12.8 ppg 2.11 yield 11.75 gal/sk
Event	18	Shutdown	8/10/2019	00:28:50					Wash up on top of plug
Event	19	Drop Top Plug	8/10/2019	00:29:40					Customer verified top plug launched
Event	20	Pump Displacement	8/10/2019	00:30:23	8.33	10	440	195.5	Fresh Water
Event	21	Slow Rate	8/10/2019	00:49:28	8.33	2	100	185	Slow Rate 10 bbls to Calculated Displacement
Event	22	Bump Plug	8/10/2019	00:51:38			821		Plug Bumped at 100 psi, Brought up to 821 psi
Event	23	Check Floats	8/10/2019	00:54:32					Floats held – 1 bbl back to the truck
Event	24	Pump Spacer	8/10/2019	00:59:36	8.33	2	300	10	Pump 10 bbl of sugar water down parasite line.
Event	25	Shutdown	8/10/2019	01:04:55					
Event	26	Clean Lines	8/10/2019	01:07:23					wash up pump to pit
Event	27	Pump Cement	8/10/2019	01:51:03	15.6	2.5	120	78.4	370 sks, 15.6, 1.19 Yield, 5.24 gal/sk
Event	28	Shutdown	8/10/2019	02:26:13					
Event	29	End Job	8/10/2019	02:28:38					No returns throughout job, pipe was not reciprocated during job.
Event	30	Pre-Rig Down Safety Meeting	8/10/2019	03:10:00					40 lbs sugar, No add hours
Event	31	Rig-Down Equipment	8/10/2019	03:20:00					
Event	32	Pre-Convoy Safety Meeting	8/10/2019	03:50:00					
Event	33	Crew Leave Location	8/10/2019	04:00:00					Thank you for using Halliburton – Chris Martinez and crew.

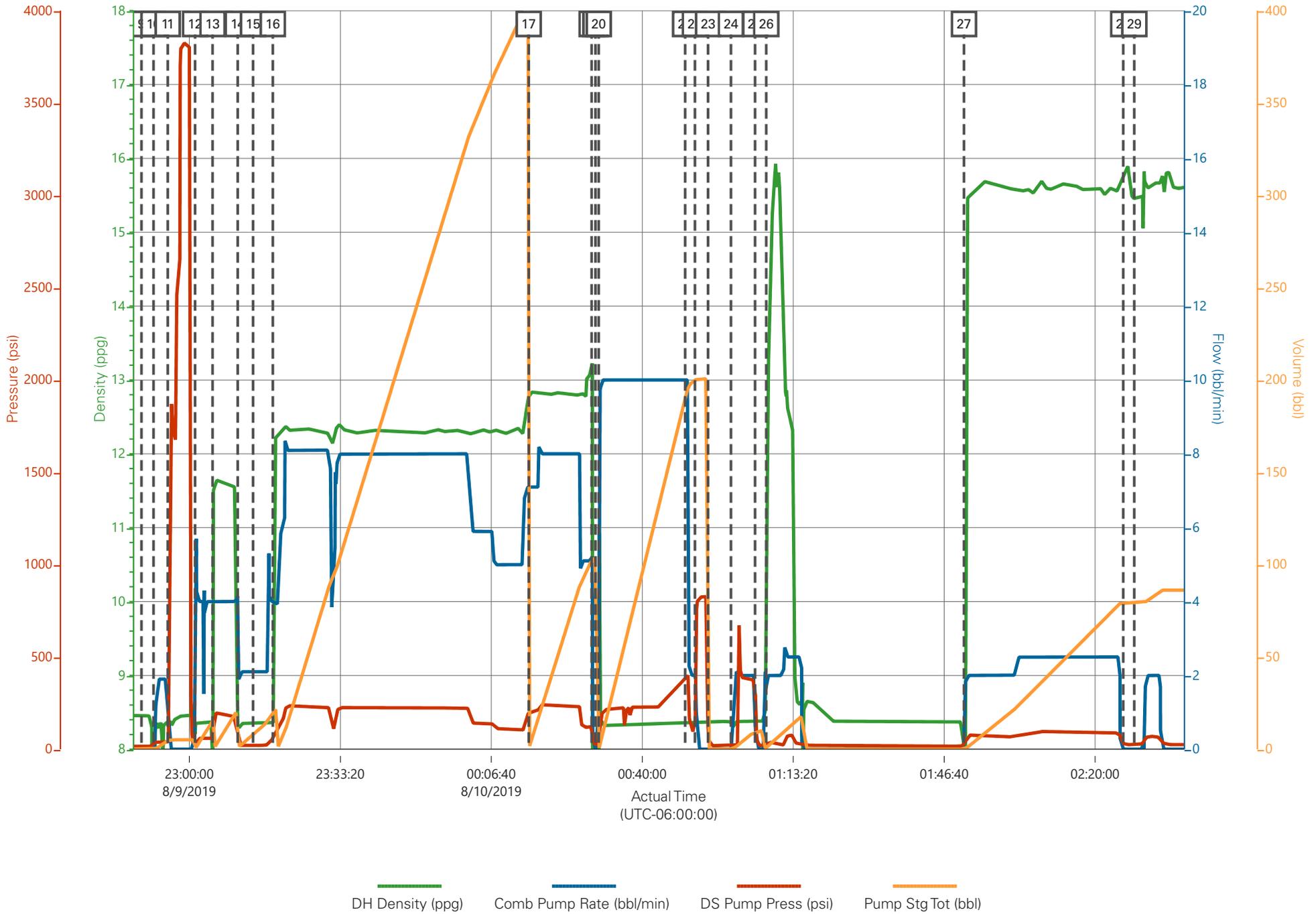
# Laramie, CC 697-03-08W, 9 5/8' Surface



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

Description	Actual Time (UTC-06:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)
9 Start Job	22:49:26	8.46	0.00	14.00	0.00
10 Fill Lines	22:52:05	0.03	0.00	20.00	0.00
11 Test Lines	22:55:14	8.37	1.90	39.00	5.00
12 Pump Spacer	23:01:16	8.20	1.30	22.00	0.20
13 Pump Spacer	23:05:08	7.60	4.00	51.00	15.30
14 Pump Spacer	23:10:41	8.32	4.20	63.00	0.60
15 Check Weight	23:14:04	8.36	2.10	22.00	8.00
16 Pump Lead Cement	23:18:25	8.36	4.00	52.00	19.00
17 Pump Tail Cement	00:14:56	12.77	7.10	200.36	405.36
18 Shutdown	00:28:50	13.04	5.10	125.00	102.40
19 Drop Top Plug	00:29:40	0.00	0.00	20.00	103.50
20 Pump Displacement	00:30:23	0.00	1.00	25.00	0.10
21 Slow Rate	00:49:28	8.37	10.00	387.00	189.80
22 Bump Plug	00:51:38	8.36	2.00	96.00	200.00
23 Check Floats	00:54:32	8.36	0.00	103.00	0.00
24 Pump Spacer	00:59:36	8.38	0.00	16.00	0.00
25 Shutdown	01:04:55	8.37	2.00	380.00	9.90
26 Clean Lines	01:07:23	10.12	2.00	26.00	0.70
27 Pump Cement	01:51:03	1.39	0.00	20.00	0.00
28 Shutdown	02:26:13	15.80	0.00	28.00	79.30
29 End Job	02:28:38	15.46	0.00	24.00	79.30

# Laramie, CC 697-03-08W, 9 5/8' Surface



# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

**For: Aaron Duncan**

Date: Tuesday, August 13, 2019

**Federal CC 0697-03-08W Production PJR**

API# 05-045-23932-00

Sincerely,

**Grand Junction Cement Engineering**

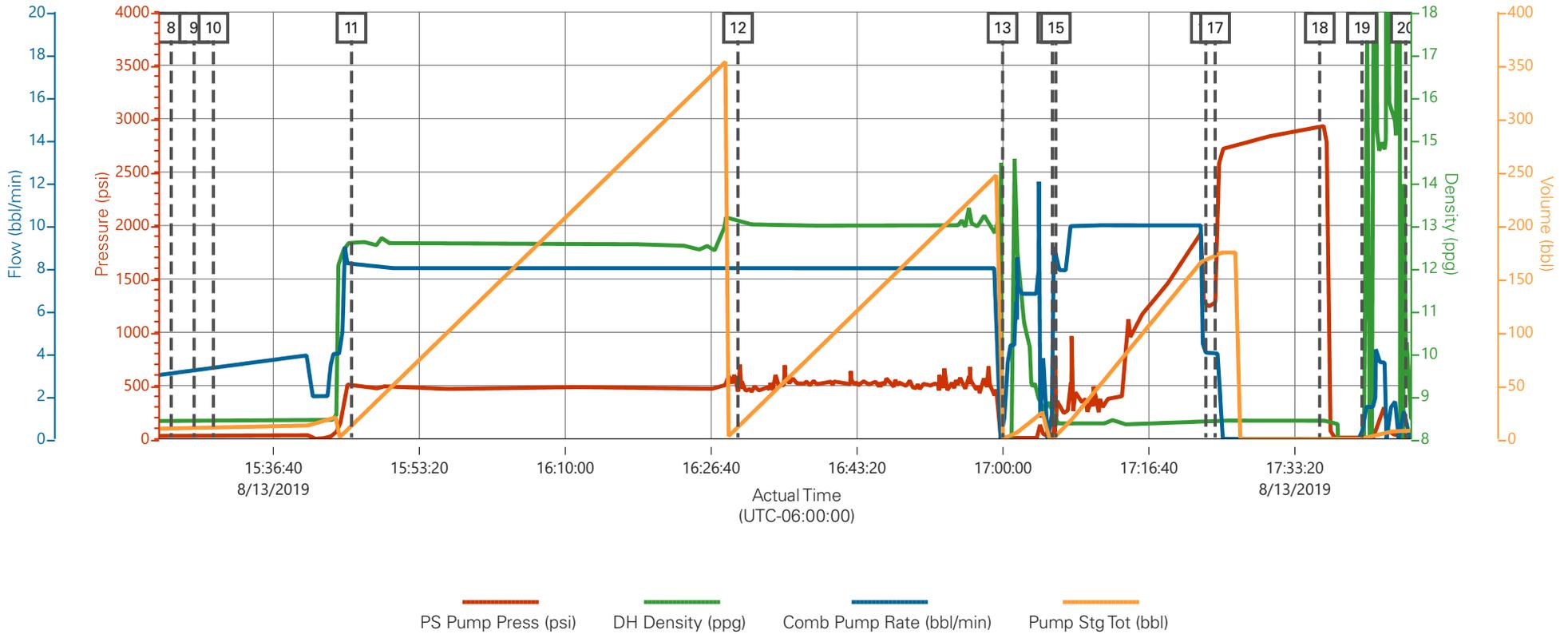
## 2.0 Real-Time Job Summary

### 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	8/13/2019	06:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	8/13/2019	07:45:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	8/13/2019	08:00:00	USER					
Event	4	Arrive At Loc	8/13/2019	10:00:00	USER					JOURNEY MANAGEMENT CLOSED OUT. RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	8/13/2019	10:30:00	USER					
Event	6	Pre-Rig Up Safety Meeting	8/13/2019	11:00:00	USER					JSA COMPLETE
Event	7	Rig-Up Equipment	8/13/2019	11:10:00	USER					2 SILOS, 1 ELITE, 1 BULK TRUCKS, 2 UPRIGHT WATER TANKS  WATER TEST: PH-7, CL-0, TEMP-69
Event	8	Other	8/13/2019	12:30:00	USER					WELL INFO: 4.5 11.6# SET AT 10536, TD-10546, S.J.-45.41, HOLE- 8 3/4, MUD#- 9.0, 9 5/8 32.3# SET @ 2600
Event	9	Other	8/13/2019	12:35:00	USER					MUD SCALES CHECKED WITH WATER PRIOR TO JOB.
Event	10	Pre-Job Safety Meeting	8/13/2019	15:04:12	USER					JSA COMPLETE
Event	11	Start Job	8/13/2019	15:25:00	USER					

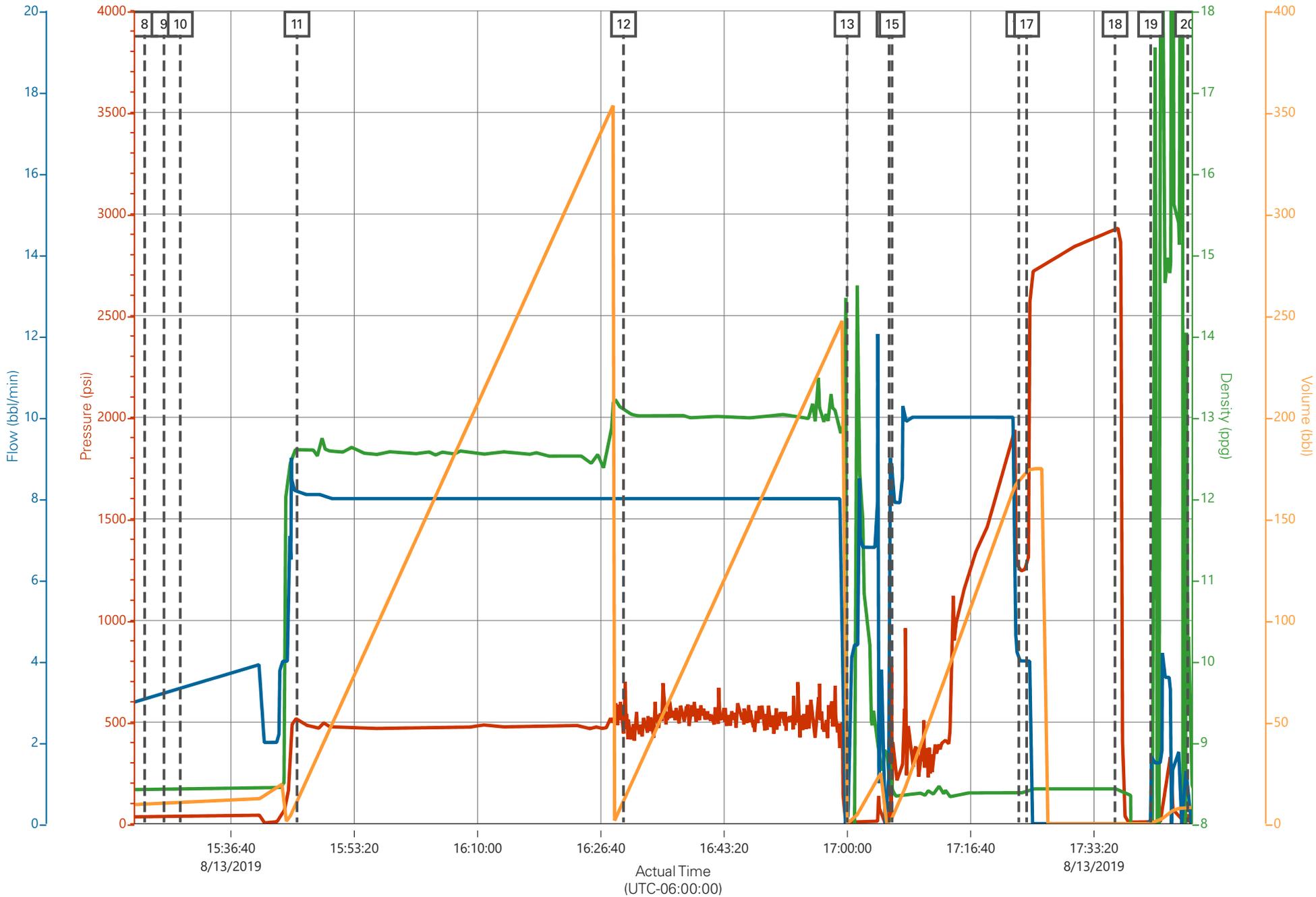
Event	12	Test Lines	8/13/2019	15:27:37	USER				5758	5758 PSI, MY CHART STOPPED WORKING FOR THE PSI TEST, BUT IT WAS A GOOD TEST. I FIXED IT ONCE I CAME OFF THE FLOOR
Event	13	Pump Spacer	8/13/2019	15:29:50	USER	8.40	4.00	93.0	20.00	MUD FLUSH
Event	14	Pump Lead Cement	8/13/2019	15:45:36	USER	12.50	8.00	517.00	348.3	1124 SKS ECONOCEM, 12.5 PPG, 1.74 FT3/SK, 9.1 GAL/SK
Event	15	Pump Tail Cement	8/13/2019	16:29:44	USER	13.00	8.00	446.00	195.8	632 SKS EXPANDACEM, 13 PPG, 1.74 FT3/SK, 7.99 GAL/SK
Event	16	Shutdown	8/13/2019	16:59:57	USER					TO WASH UP PUMPS AND LINES, AND DROP TOP PLUGS
Event	17	Drop Top Plug	8/13/2019	17:05:38	USER					2 TOP PLUGS AWAY
Event	18	Pump Displacement	8/13/2019	17:06:02	USER	8.40	10.00	1900.0	163.7	FRESH WATER WITH 5 GAL CLA WEB, 1 GAL MMCR
Event	19	Slow Rate	8/13/2019	17:23:10	USER	8.40	4.00	1227.00	153.0	TO BUMP PLUGS
Event	20	Bump Plug	8/13/2019	17:24:13	USER	8.40	4.00	1288.00	163.7	PLUGS BUMPED, CASING TEST FOR 10 MINS, 2800 PSI
Event	21	Check Floats	8/13/2019	17:36:10	USER			2925.00		FLOATS HELD, 1.5 BBLS BACK TO TRUCK
Event	22	Standby - Other - see comments	8/13/2019	17:40:59	USER	15.60	2.00	28.0	6.00	PUMP PARASITE STRING 30 SKS NEAT CMT, 15.6 PPG, 1.19 FT3/SK, 5.24 GAL/SK
Event	23	End Job	8/13/2019	17:46:00	USER					CAUGHT CIRCULATION AT 63 GONE IN LEAD CMT, GOOD CIRCULATION AFTER THAT WHILE AIR WAS ON, NO PIPE MOVEMENT, NO SPACER TO SURFACE
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	8/13/2019	17:50:00	USER					JSA COMPLETE
Event	25	Crew Leave Location	8/13/2019	19:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

# Laramie CC Federal 0697-03-08W Production



Description	Actual Time (UTC-06:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)
8 Start Job	15:25:00	37.32	8.43	3.07	8.73
9 Test Lines	15:27:37	38.64	8.43	3.21	9.14
10 Pump Spacer	15:29:50	39.76	8.43	3.33	9.48
11 Pump Lead Cement	15:45:36	517.00	12.62	8.20	11.00
12 Pump Tail Cement	16:29:44	446.00	13.10	8.00	11.20
13 Shutdown	16:59:57	9.00	-1.78	0.00	0.00
14 Drop Top Plug	17:05:38	37.00	8.61	3.90	0.20
15 Pump Displacement	17:06:02	177.00	8.46	7.90	2.90
16 Slow Rate	17:23:10	1227.00	8.38	4.00	168.70
17 Bump Plug	17:24:13	1293.00	8.38	4.00	172.90
18 Check Floats	17:36:10	2925.00	8.43	0.00	0.00
19 Standby - Other - see comments	17:40:59	5.00	-0.11	0.10	0.00
20 End Job	17:46:00	45.00	9.60	1.30	8.40

# Laramie CC Federal 0697-03-08W Production



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

### Job Information

<b>Request/Slurry</b>	2575677/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	07/AUG/2019
<b>Submitted By</b>	Patrick Ealey	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Laramie Energy	<b>Location</b>	Garfield	<b>Well</b>	CC Federal 0697-03-08W

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10643 ft	<b>BHST</b>	123°C / 254°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	10240 ft	<b>BHCT</b>	89°C / 193°F
<b>Pressure</b>	6468 psi				

### Drilling Fluid Information

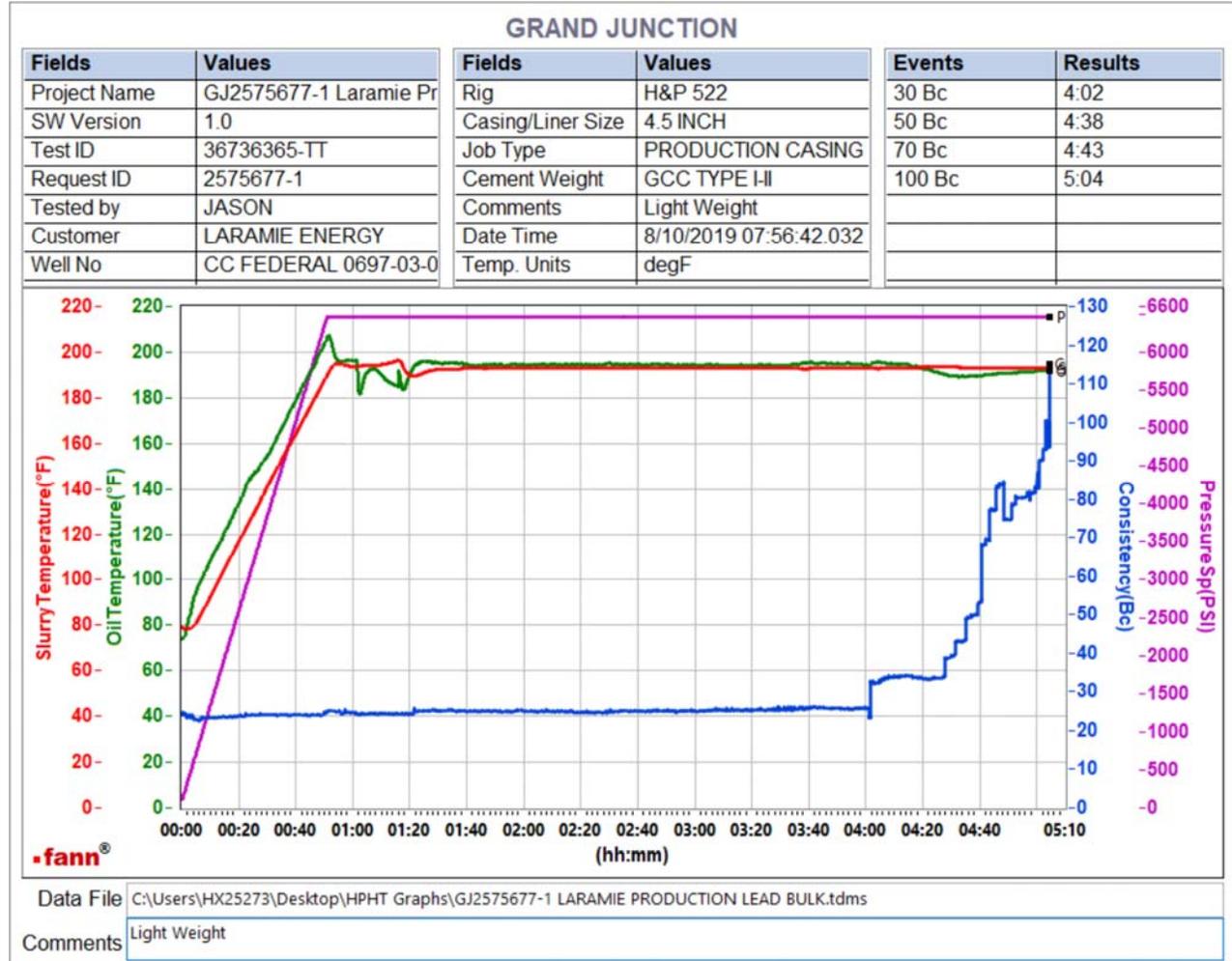
<b>Mud Supplier Name</b>		<b>Mud Trade Name</b>		<b>Density</b>	
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### Cement Information - Lead Design

<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>	<b>Cement Properties</b>		
		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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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)
193	6468	51	4:02	4:38	4:43	5:04	24	61	15	24



Total sks=1124  
 CS0934 TR 8658 500 SKS  
 CS0935 TR 2878 500 SKS  
 no deflection, 24Bc--- > 24Bc  
 heat of hydration at 4:21

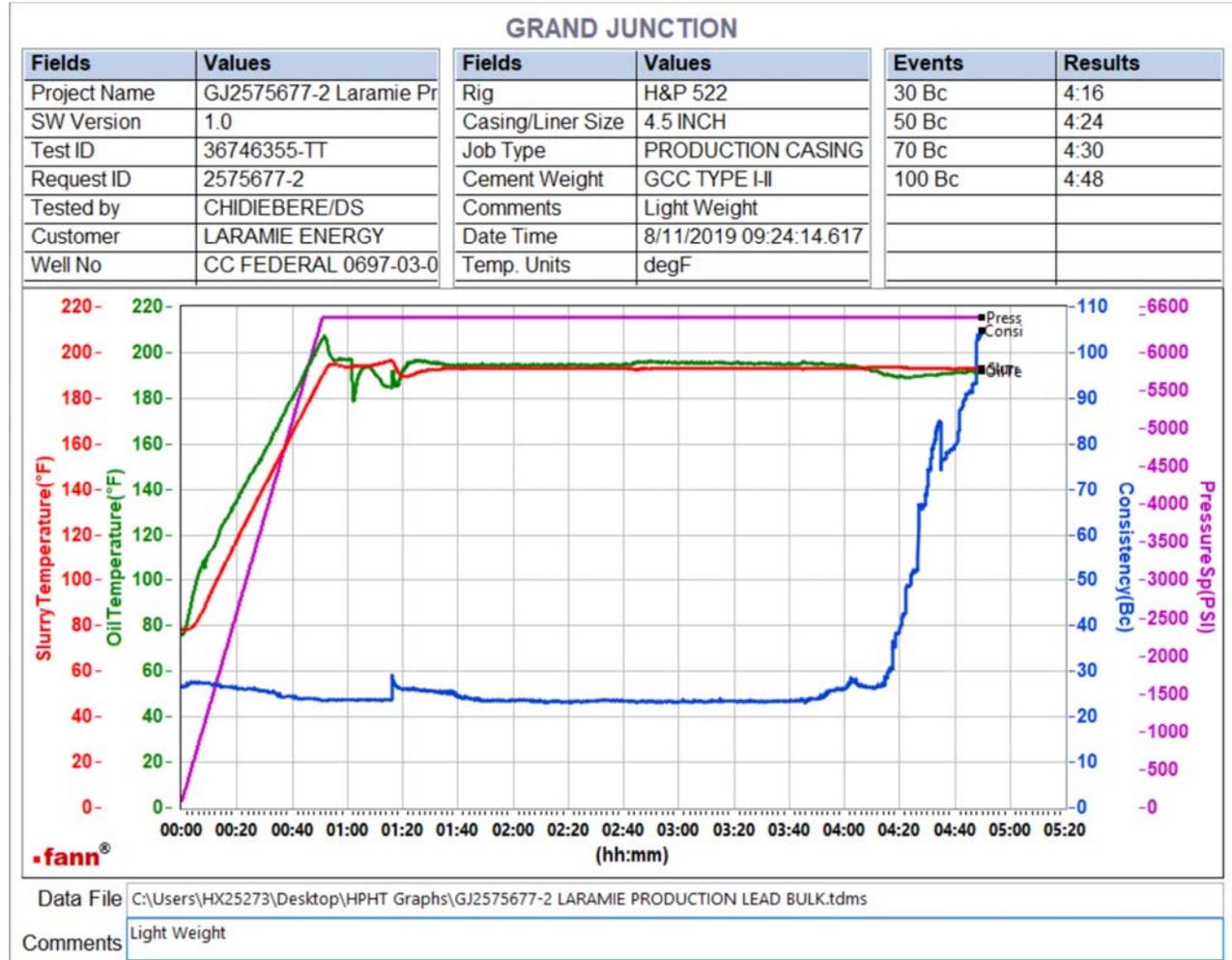
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**Operation Test Results Request ID 2575677/2**

**Thickening Time - ON-OFF-ON, Request Test ID:36746355**

**12/AUG/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)
193	6468	51	4:16	4:24	4:30	4:48	26	61	15	28



Total sks=1124  
 CS0939 TR#5692 124 sks  
 deflected from 23Bc--- > 28Bc--- > 26Bc within one minute.  
 Heat of hydration at 4:08

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### Job Information

<b>Request/Slurry</b>	2575678/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	07/AUG/2019
<b>Submitted By</b>	Patrick Ealey	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Laramie Energy	<b>Location</b>	Garfield	<b>Well</b>	CC Federal 0697-03-08W

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10643 ft	<b>BHST</b>	123°C / 254°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	10240 ft	<b>BHCT</b>	89°C / 193°F
<b>Pressure</b>	6468 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>		<b>Mud Trade Name</b>		<b>Density</b>	
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### 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>	<b>Cement Properties</b>		
		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		

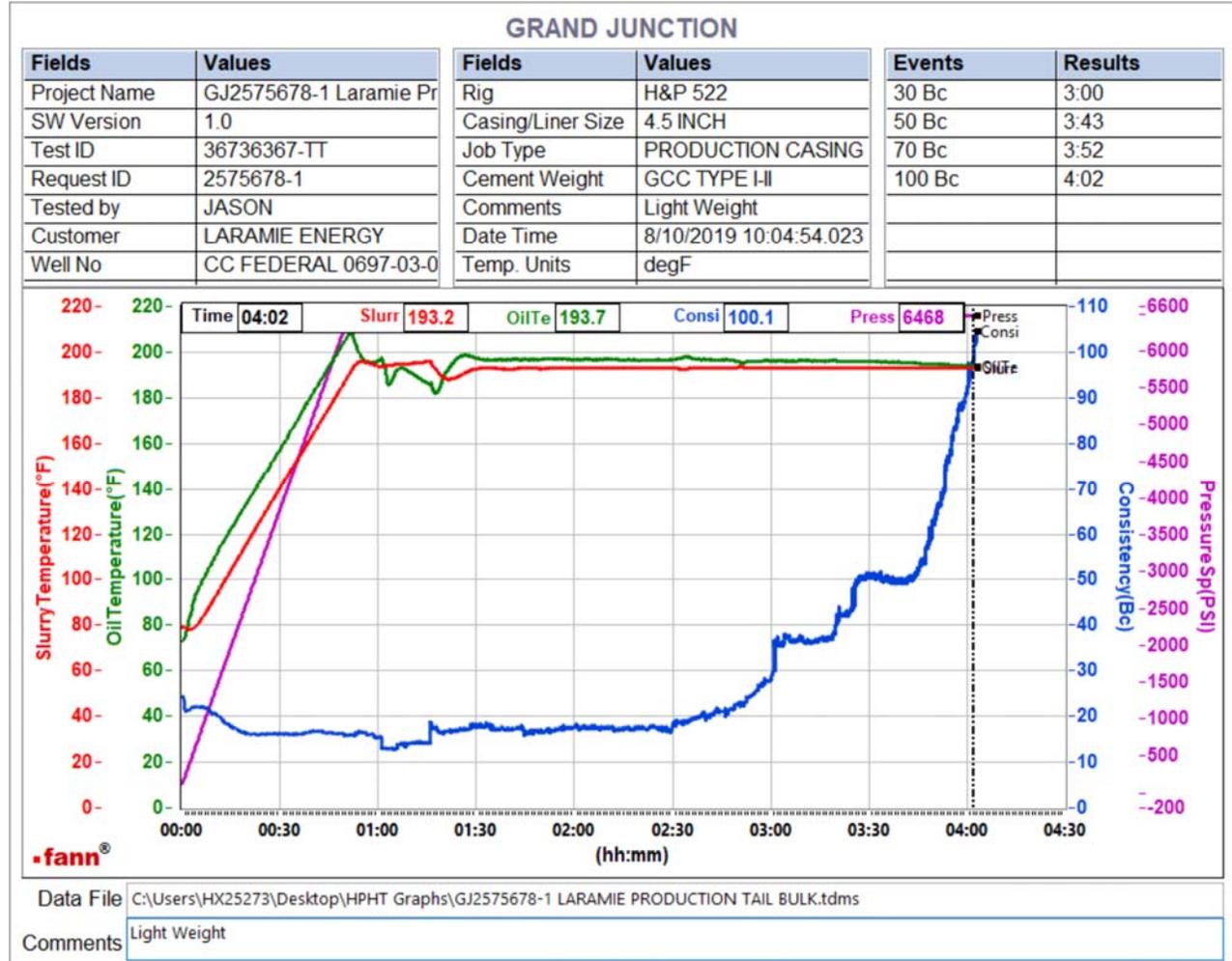
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**Operation Test Results Request ID 2575678/1**

**Thickening Time - ON-OFF-ON, Request Test ID:36736367**

**11/AUG/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)
193	6468	51	3:00	3:43	3:52	4:02	24	61	15	19



Total sks=632  
 CS0936 TR 8476 400 SKS  
 CS0937 TR 6813 232 SKS  
 Deflected from 14Bc--- > 19Bc --- > 17Bc within one minute

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