

HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC

For: Chuck Mallary

Date: Monday, July 17, 2017

Gunderson BCU 20-08E Surface PJR

API# 05-077-10356-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

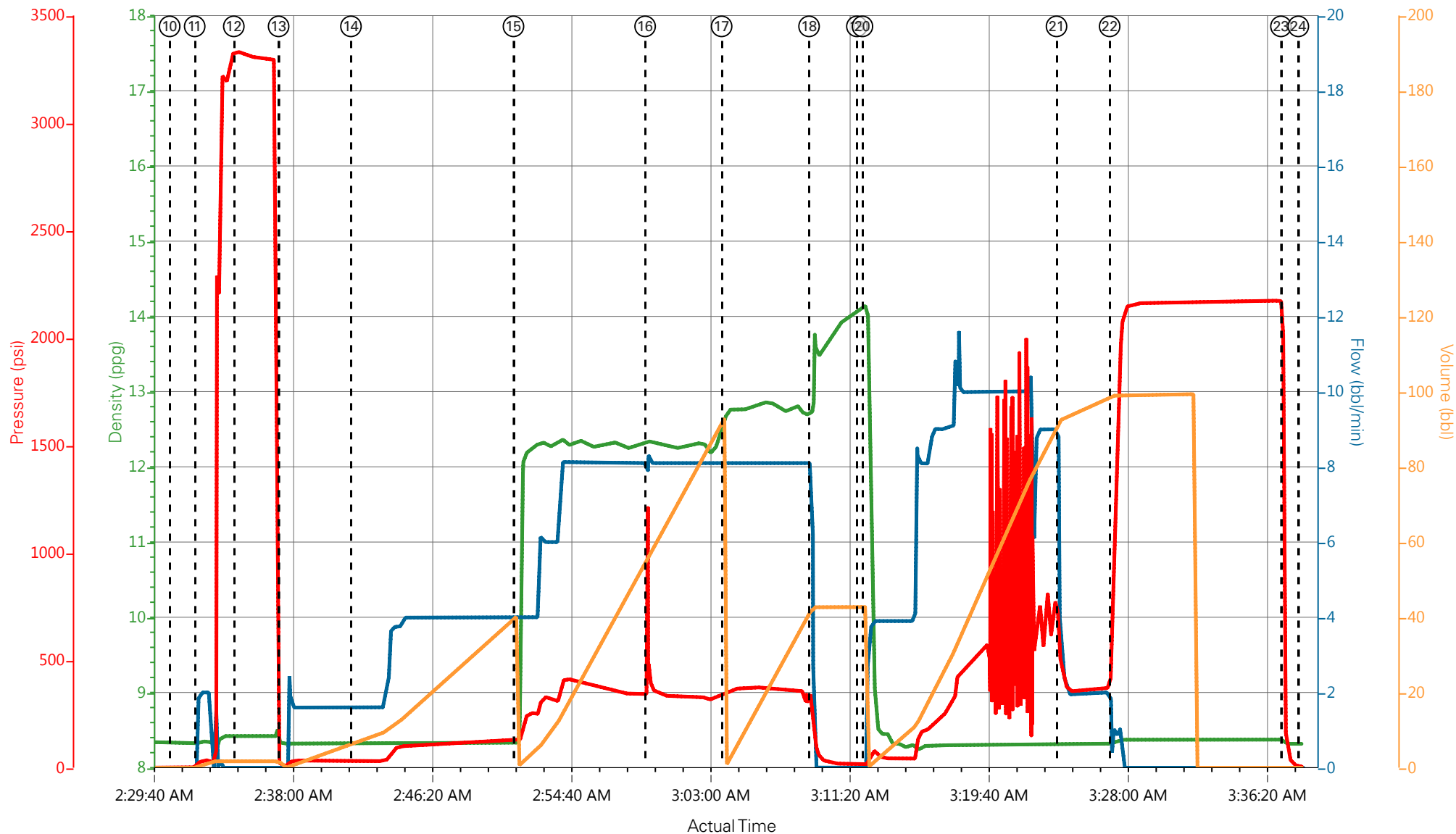
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pass-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	7/16/2017	19:00:00	USER					ALL HES CALLED OUT
Event	2	Pre-Convoy Safety Meeting	7/16/2017	21:30:00	USER					JOURNEY CREATED, ALL HES IN ATTENDANCE
Event	3	Crew Leave Yard	7/16/2017	22:00:00	USER					HES CREW ROLLED FROM PREVIOUS JOB, PUMP TRUCK WAS LEFT IN THE FIELD, 1-F-550 PICKUP, 1-ELITE PUMP TRUCK
Event	4	Arrive At Loc	7/17/2017	00:01:00	USER					HES ARRIVED 1 HOUR EARLY, HES REP WENT AND SPOKE WITH COMPANY REP PRIOR TO SPOTTING EQUIPMENT
Event	5	Assessment Of Location Safety Meeting	7/17/2017	00:15:00	USER					RIG WAS RUNNING CASING, HES REP SPOTTED EQUIPMENT AND HELD SAFETY MEETING
Event	6	Pre-Rig Up Safety Meeting	7/17/2017	00:30:00	USER					JSA FILLED OUT AND REVIEWED, ALL HES IN ATTENDANCE FOR SAFETY MEETING
Event	7	Rig-Up Equipment	7/17/2017	00:45:00	USER					RIG-UP IRON TO THE STAND PIPE, WATER HOSES TO THE FRESH WATER UPRIGHT AND TO THE RIG TANK, BULK TRUCK TO PUMP TRUCK
Event	8	Rig-Up Completed	7/17/2017	01:30:00	USER					RIG-UP COMPLETED SAFELY
Event	9	Pre-Job Safety Meeting	7/17/2017	02:15:00	USER					ALL HES, RIG CREW AND COMPANY REP IN ATTENDANCE FOR SAFETY MEETING
Event	10	Start Job	7/17/2017	02:30:48	COM5					TD: 1564FT TP: 1554FT SJ: 44.66FT OH: 11" CSG: 8.625 24# J-55 MUD WT: 9.5 WTR TEST: TEMP- 55 CHLOR-0 PH-7

Event	11	Fill Lines	7/17/2017	02:32:17	USER	8.34	2	35	2	FILL LINES TO PRESSURE TEST, 2BBLs OF WATER AHEAD TOP PRESSURE WAS 35PSI
Event	12	Test Lines	7/17/2017	02:34:38	COM5			3333		PRESSURE TEST LINES TO 3333PSI, PRESSURE TEST OK
Event	13	Fresh Water Spacer	7/17/2017	02:37:19	COM5	8.34	4	125	40	40BBL FRESH WATER SPACER PUMPED AT 4BBLs/MIN
Event	14	Check weight	7/17/2017	02:41:39	COM5	12.3				VERIFIED WEIGHT OF FIRST TUB OF CEMENT
Event	15	Pump Lead Cement	7/17/2017	02:51:23	COM5	12.3	8	350	86.3	197SKS OF VARICEM CEMENT (86.3BBLs) 12.3PPG 2.46YIELD 14.17GAL/SK WEIGHT OF CEMENT VERIFIED VIA MUD SCALES THROUGHOUT LEAD CEMENT
Event	16	Pressure Up	7/17/2017	02:59:16	USER		8	476.00	56	BOTTOM PLUG LANDED, PRESSURED UP TO APPROX. 476PSI
Event	17	Pump Tail Cement	7/17/2017	03:03:51	COM5	12.8	8	370	42.3	109SKS OF VARICEM CEMENT (42.3BBLs) 12.8PPG 2.18YIELD 12.11GAL/SK WEIGHT OF CEMENT VERIFIED VIA MUD SCALES THROUGHOUT TAIL CEMENT
Event	18	Shutdown	7/17/2017	03:09:05	USER	12.8		350	42.3	SHUTDOWN END OF CEMENT, HES WASHED UP ON TOP, READY TANKS FOR DISPLACEMENT
Event	19	Drop Top Plug	7/17/2017	03:11:57	COM5					TOP PLUG AWAY NO PROBLEMS
Event	20	Pump Displacement	7/17/2017	03:12:17	COM5	8.34	10	770	85.9	HES WASHED UP ON TOP OF THE PLUG, FRESH WATER DISPLACEMENT
Event	21	Slow Rate	7/17/2017	03:23:55	USER	8.34	2	355	10	SLOW RATE TO BUMP THE PLUG, PRESSURE PRIOR TO SLOWING WAS 770PSI, PRESSURE AFTER SLOWING TO 2BBLs/MIN WAS 355PSI
Event	22	Bump Plug	7/17/2017	03:27:06	COM5	8.34	2	368	95.9	PLUG BUMPED AT CALCULATED DISPLACEMENT, PLUG BUMPED AT 368PSI TOOK TO 2161PSI FOR 10MIN CASING TEST PER COMPANY REP
Event	23	Check Floats	7/17/2017	03:37:21	USER			2170		FLOATS HELD 1BBL BACK TO TANKS, 35BBLs OF CEMENT CIRCULATED TO SURFACE, RIG USED 40

						POUNDS OF SUGAR
Event	24	End Job	7/17/2017	03:38:24	COM5	THANK YOU FOR CHOOSING HALLIBURTON CEMENT CARL KUKUS AND CREW
Event	25	Pre-Rig Down Safety Meeting	7/17/2017	03:45:00	USER	JSA REVIEWED, ALL HES INVOLVED IN SAFETY MEETING
Event	26	Rig-Down Equipment	7/17/2017	03:50:00	USER	WASH UP AND BLOW DOWN PUMP TRUCK, RIG DOWN ALL LINES AND EQUIPMENT
Event	27	Rig-Down Completed	7/17/2017	04:15:00	USER	RIG-DOWN COMPLETED SAFELY
Event	28	Pre-Convoy Safety Meeting	7/17/2017	04:20:00	USER	JOURNEY CREATED, ALL HES INVOLVED IN SAFETY MEETING
Event	29	Crew Leave Location	7/17/2017	04:30:00	USER	1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK

LARAMIE - GUNDERSON 20-08E - 904166847 - SURFACE



Rig-Up Equipment ⑨ Pre-Job Safety Meeting ⑪ Fill Lines ⑬ Fresh Water Spacer ⑮ Pump Lead Cement ⑰ Pump Tail Cement ⑲ Drop Top Plug 21 Slow Rate 23 Check Floats 25 Pre-
 Rig-Up Completed ⑩ Start Job ⑫ Test Lines ⑭ Check weight ⑯ Pressure Up ⑱ Shutdown 20 Pump Displacement 22 Bump Plug 24 End Job 26 Rig-

▼ **HALLIBURTON** | iCem® Service

Created: 2017-07-16 22:25:17, Version: 4.2.393

Edit

Customer : LARAMIE ENERGY II LLC

Job Date : 7/17/2017 2:06:30 AM

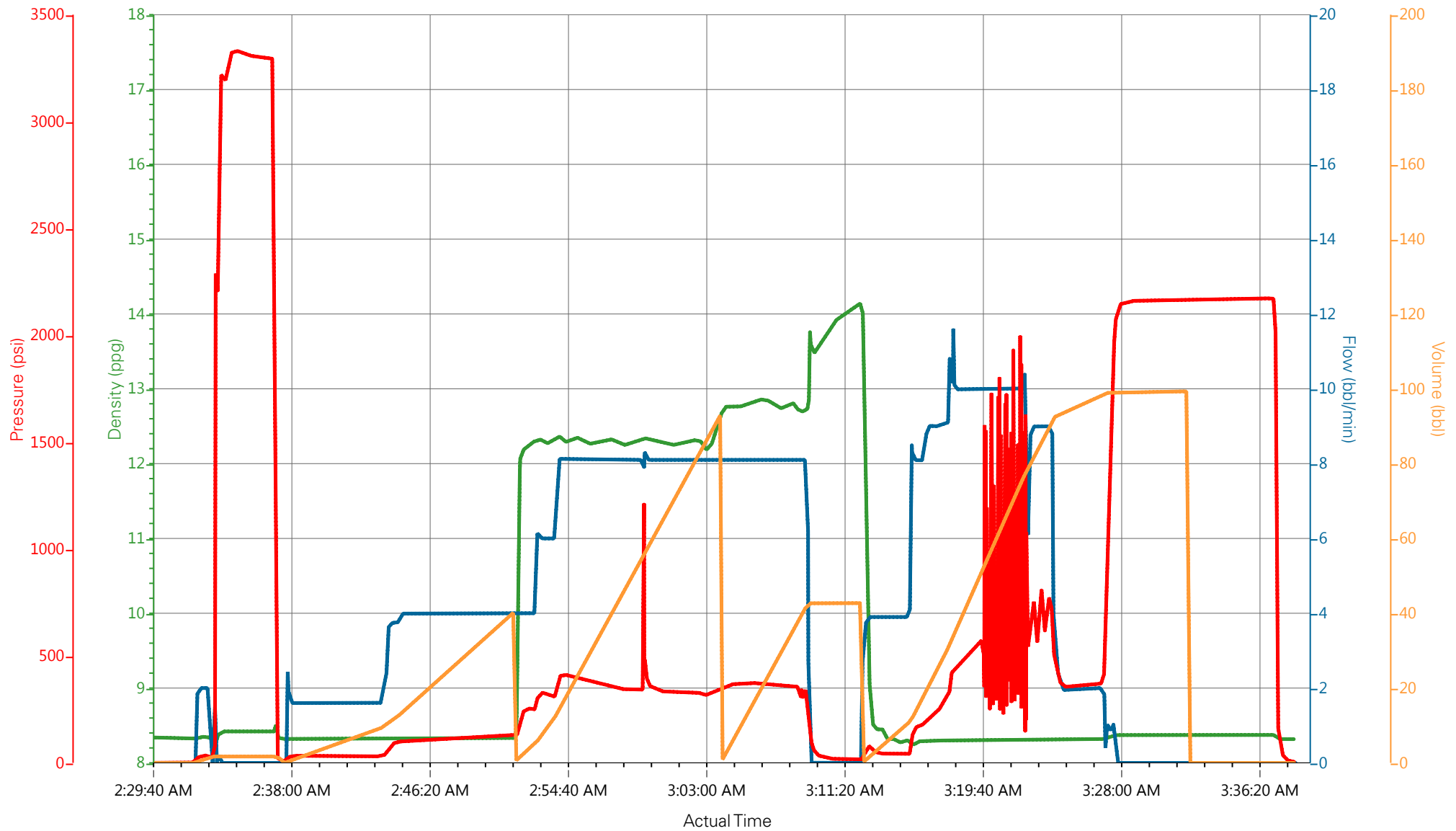
Well : GUNDERSON 20-08E

Representative : Shane Heard

Sales Order # : 904166847

Elite 1 : Dillon Martin/Carlton Kukus

LARAMIE - GUNDERSON 20-08E - 904166847 - SURFACE



DH Density (ppg) 8.32 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 4 Pump Stg Tot (bbl) 0

HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC

For: Chuck Mallery

Date: Wednesday, July 19, 2017

Gunderson BCU 20-08E Production PJR

API# 05-077-10356-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

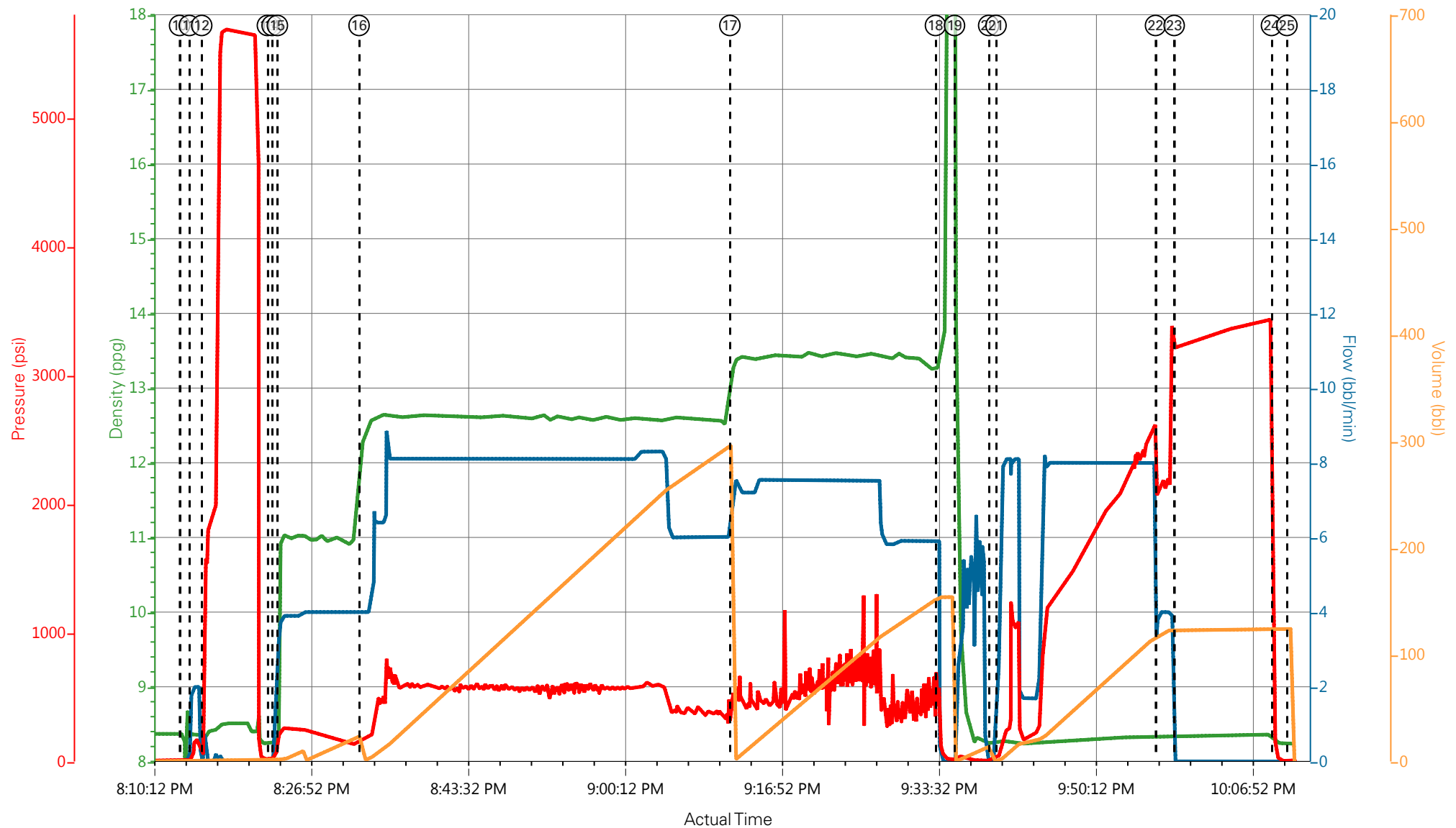
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pass-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	7/19/2017	12:00:00	USER					ALL HES CALLED OUT
Event	2	Pre-Convoy Safety Meeting	7/19/2017	12:30:00	USER					HES CREW ROLLED FROM PREVIOUS JOB, JOURNEY CREATED ALL HES INVOLVED IN SAFETY MEETING
Event	3	Crew Leave Yard	7/19/2017	16:30:00	USER					1-F-550 PICKUP, 1-660 BULK TRUCK, ELITE PUMP TRUCK STAYED IN THE FIELD
Event	4	Arrive At Loc	7/19/2017	17:30:00	USER					HES ARRIVED 30 MINS EARLY
Event	5	Assessment Of Location Safety Meeting	7/19/2017	17:45:00	USER					RIG WAS RUNNING CASING, HES REP SPOKE WITH COMPANY REP
Event	6	Pre-Rig Up Safety Meeting	7/19/2017	17:50:00	USER					SPOT EQUIPMENT, JSA FILLED OUT AND REVIEWED BY ALL HES
Event	7	Rig-Up Equipment	7/19/2017	18:00:00	USER					RIG-UP IRON TO THE STAND PIPE AND WASH UP LINE TO THE CELLAR, WATER HOSES TO BOTH THE FRESH WATER UPRIGHT AND TO THE RIG TANK, BULK SILOS AND BULK TRUCK TO PUMP TRUCK
Event	8	Rig-Up Completed	7/19/2017	19:00:00	USER					RIG-UP COMPLETED SAFELY
Event	9	Pre-Job Safety Meeting	7/19/2017	19:20:00	USER					ALL HES, RIG CREW AND COMPANY REP IN ATTENDANCE TO DISCUSS JOB PROCEDURES
Event	10	Start Job	7/19/2017	20:13:12	COM5					TD: 8030FT TP: 8020FT SJ: 90.79FT OH: 7 7/8 CSG: 4.5 11.6# I-80 SRF CSG: 8.625 24# J-55 MUD WT: 9.5 VISC: 41 WTR TEST- TEMP: 60 CHLOR:0 PH: 7
Event	11	Fill Lines	7/19/2017	20:14:14	COM5	8.34	2	195	2	FILL LINES TO PRESSURE TEST

Event	12	Test Lines	7/19/2017	20:15:33	COM5			5691		PRESSURE TEST LINES TO 5691PSI, PRESSURE TEST OK
Event	13	Check weight	7/19/2017	20:22:32	COM5	11				VERIFIED WEIGHT OF FIRST TUB OF TUNED SPACER
Event	14	Tuned Spacer	7/19/2017	20:23:02	COM5	11	4	248	40	40BBLS OF TUNED SPACER 11PPG 4.86YIELD 31.9GAL/SK WEIGHT OF TUNED SPACER VERIFIED VIA MUD SCALES THROUGHOUT TUNED SPACER
Event	15	Drop Bottom Plug	7/19/2017	20:23:35	USER					BOTTOM PLUG AWAY NO PROBLEMS
Event	16	Pump Lead Cement	7/19/2017	20:32:16	COM5	12.5	8	435	294	851SKS OF NEOCEM CEMENT (294BBLS) 12.5PPG 1.94YIELD 9.6GAL/SK WEIGHT OF CEMENT VERIFIED THROUGHOUT LEAD CEMENT
Event	17	Pump Tail Cement	7/19/2017	21:11:39	COM5	13.3	7.5	630	135.5	440 SKS OF THERMACEM CEMENT (135.5BBLS) 13.3PPG 1.73YIELD 7.81GAL/SK WEIGHT OF CEMENT VERIFIED VIA MUD SCALES THROUGHOUT TAIL CEMENT
Event	18	Shutdown	7/19/2017	21:33:29	USER					SHUTDOWN END OF CEMENT
Event	19	Clean Lines	7/19/2017	21:35:30	COM5					CLEAN LINES TO THE PIT, READY TANKS FOR DISPLACEMENT
Event	20	Drop Top Plug	7/19/2017	21:39:08	USER					TOP PLUG AWAY NO PROBLEMS
Event	21	Pump Displacement	7/19/2017	21:39:55	COM5	8.34	8	2620	112.9	FRESH WATER DISPLACEMENT WITH 1-GAL MMCR AND 5-GALS OF CLA-WEB ADDED THROUGHOUT DISPLACEMENT
Event	22	Slow Rate	7/19/2017	21:56:51	COM5	8.34	4	2215	10	SLOW RATE TO BUMP THE PLUG, PRESSURE PRIOR TO SLOWING WAS 2620PSI, PRESSURE AFTER SLOWING TO 4BBLS/MIN WAS 2200PSI
Event	23	Bump Plug	7/19/2017	21:58:50	COM5	8.35	4	2230	122.9	PLUG BUMPED AT CALCULATED DISPLACEMENT, PLUG BUMPED AT 2230PSI, HES TOOK PRESSURE TO 3136PSI FOR 10MIN CASING TEST PER COMPANY REP
Event	24	Check Floats	7/19/2017	22:09:10	COM5			3136	1.5	FLOATS HELD 1.5BBLS BACK TO TANKS, 40 BBLS OF TUNED SPACER TO SURFACE, RIG USED 40 POUNDS

						OF SUGAR
Event	25	End Job	7/19/2017	22:10:49	COM5	THANK YOU FOR CHOOSING HALLIBURTON CEMENT CARL KUKUS AND CREW
Event	26	Pre-Rig Down Safety Meeting	7/19/2017	22:15:00	USER	JSA REVIEWED, ALL HES INVOLVED IN SAFETY MEETING
Event	27	Rig-Down Equipment	7/19/2017	22:30:00	USER	WASH UP PUMP TRUCK, BLOW DOWN BULK SILOS, RIG DOWN ALL LINES AND EQUIPMENT
Event	28	Rig-Down Completed	7/19/2017	23:30:00	USER	RIG-DOWN COMPLETED SAFELY
Event	29	Pre-Convoy Safety Meeting	7/19/2017	23:45:00	USER	JOURNEY WILL BE CREATED WHEN SUPERVISOR RETURNS TO CELL SERVICE, HES CREW WILL BE WAITING IN FIELD FOR ANOTHER JOB PER COORDINATOR
Event	30	Crew Leave Location	7/19/2017	23:50:00	USER	1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK

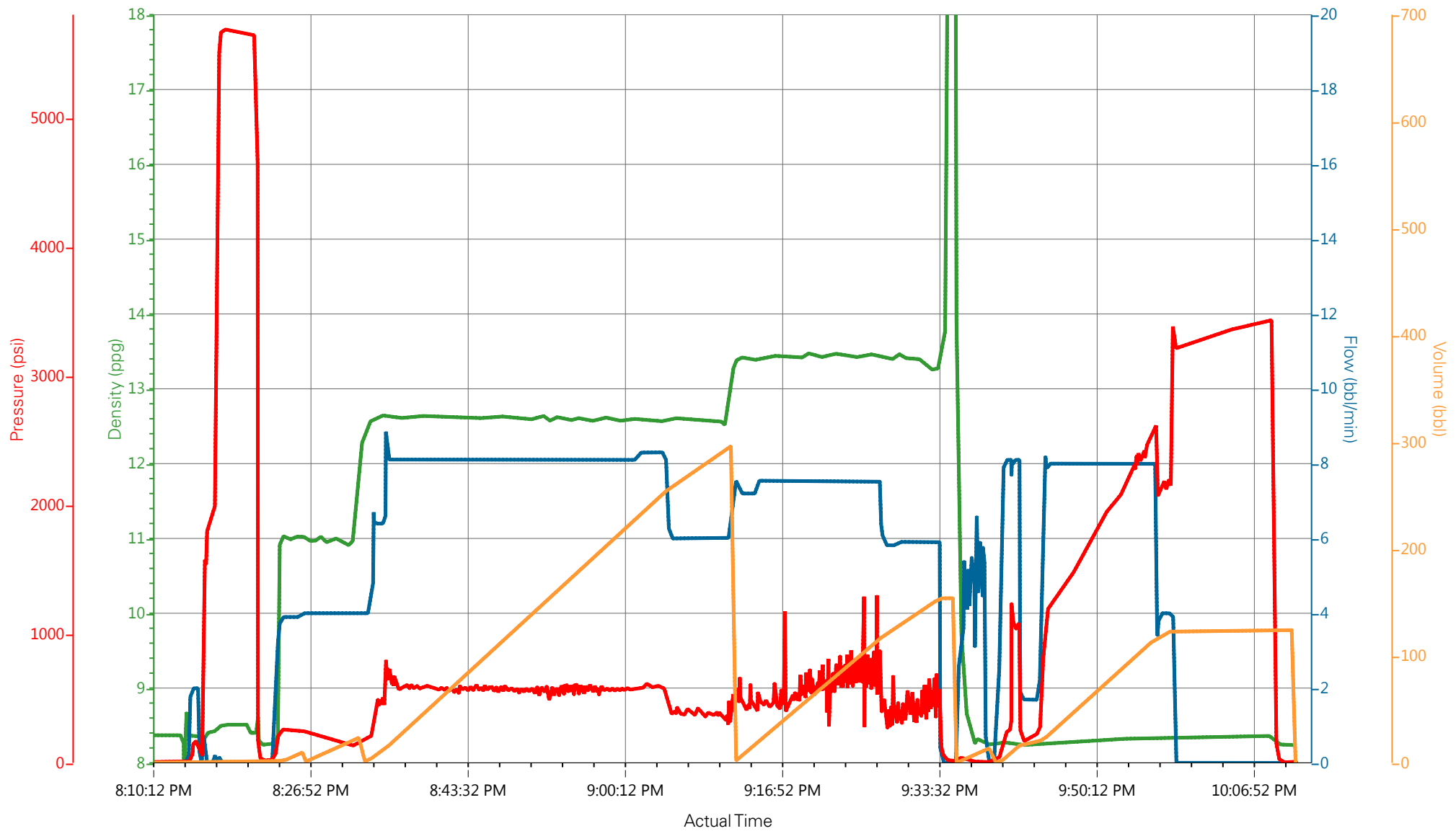
LARAMIE - GUNDERSON 20-08E - 90417195 - PRODUCTION



DH Density (ppg) 8.24 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 9 Pump Stg Tot (bbl) 0

- ① Call Out
- ② Pre-Convoy Safety Meeting
- ③ Crew Leave Yard
- ④ Arrive At Loc
- ⑤ Assessment Of Location Safety Meeting
- ⑥ Pre-Rig Up Safety Meeting
- ⑦ Rig-Up Equipment
- ⑧ Rig-Up Completed
- ⑨ Pre-Job Safety Meeting
- ⑩ Start Job
- ⑪ Fill Lines
- ⑫ Test Lines
- ⑬ Check weight
- ⑭ Tuned Spacer
- ⑮ Drop Bottom PI
- ⑯ Pump Lead Cen

LARAMIE - GUNDERSON 20-08E - 90417195 - PRODUCTION



DH Density (ppg) 8.24 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 9 Pump Stg Tot (bbl) 0

HALLIBURTON

Rockies, Grand Junction

Lab Results- Lead

Job Information

Request/Slurry	2401844/1	Rig Name	H&P 522	Date	17/JUL/2017
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson BCU 20-08E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8029 ft	BHST	113°C / 235°F
Hole Size	7.875 in	Depth TVD	7550 ft	BHCT	76°C / 168°F
Pressure	4590 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



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				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	Field (Fresh) Water	
						Water Chloride		

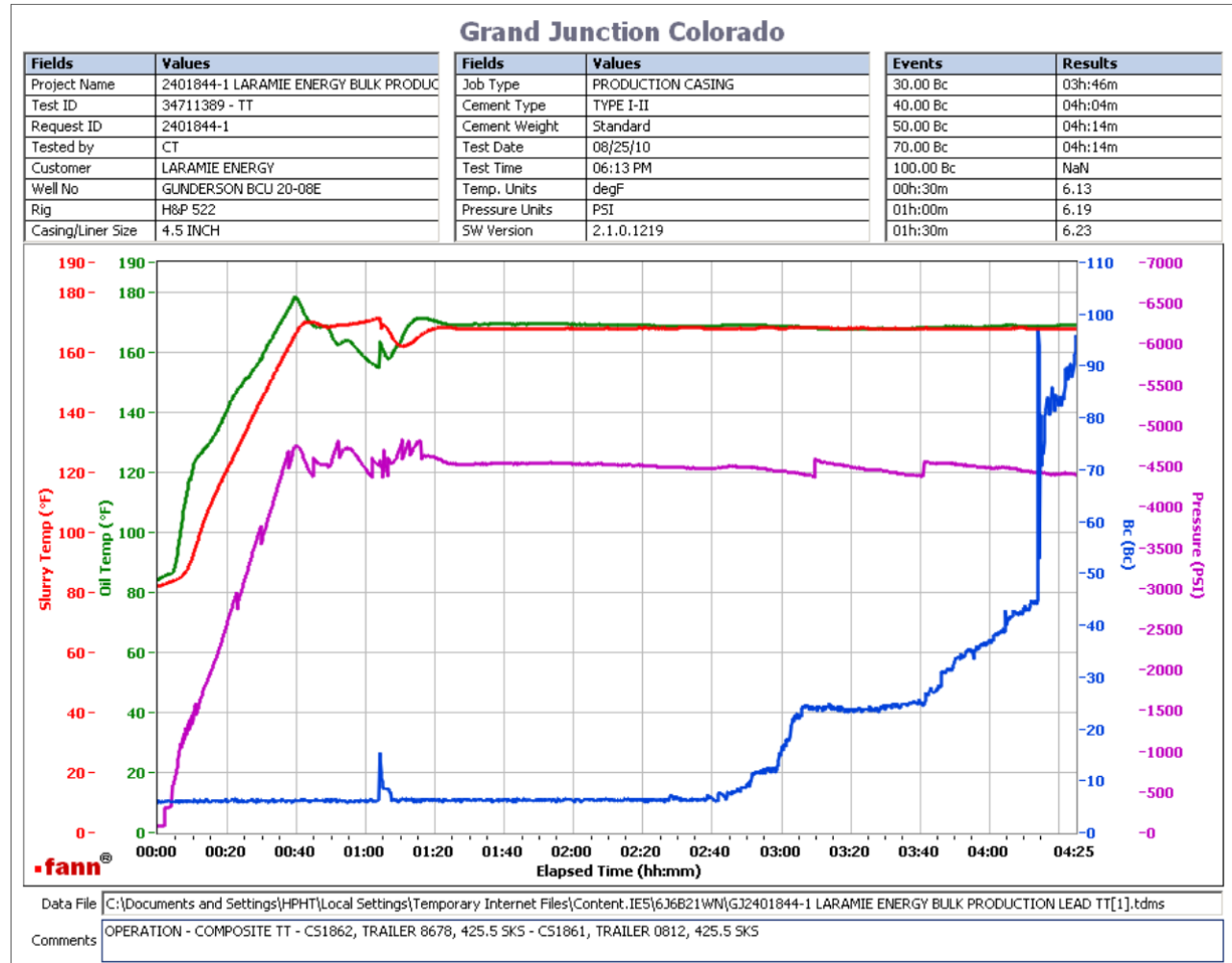
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Operation Test Results Request ID 2401844/1

Thickening Time - ON-OFF-ON

19/JUL/2017

Test Temp (°F)	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)
160	4590	39	3:46	4:04	4:14	4:25	6	49	15	17



Total sks = 851

Composite:

CS1862, Trailer 8678, 425.5 sks

CS1861, Trailer 0812, 425.5 sks

Deflection: 6 - 17 to 10 after one minute

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2401845/1	Rig Name	H&P 522	Date	17/JUL/2017
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson BCU 20-08E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8029 ft	BHST	113°C / 235°F
Hole Size	7.875 in	Depth TVD	7550 ft	BHCT	76°C / 168°F
Pressure	4590 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



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail				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		

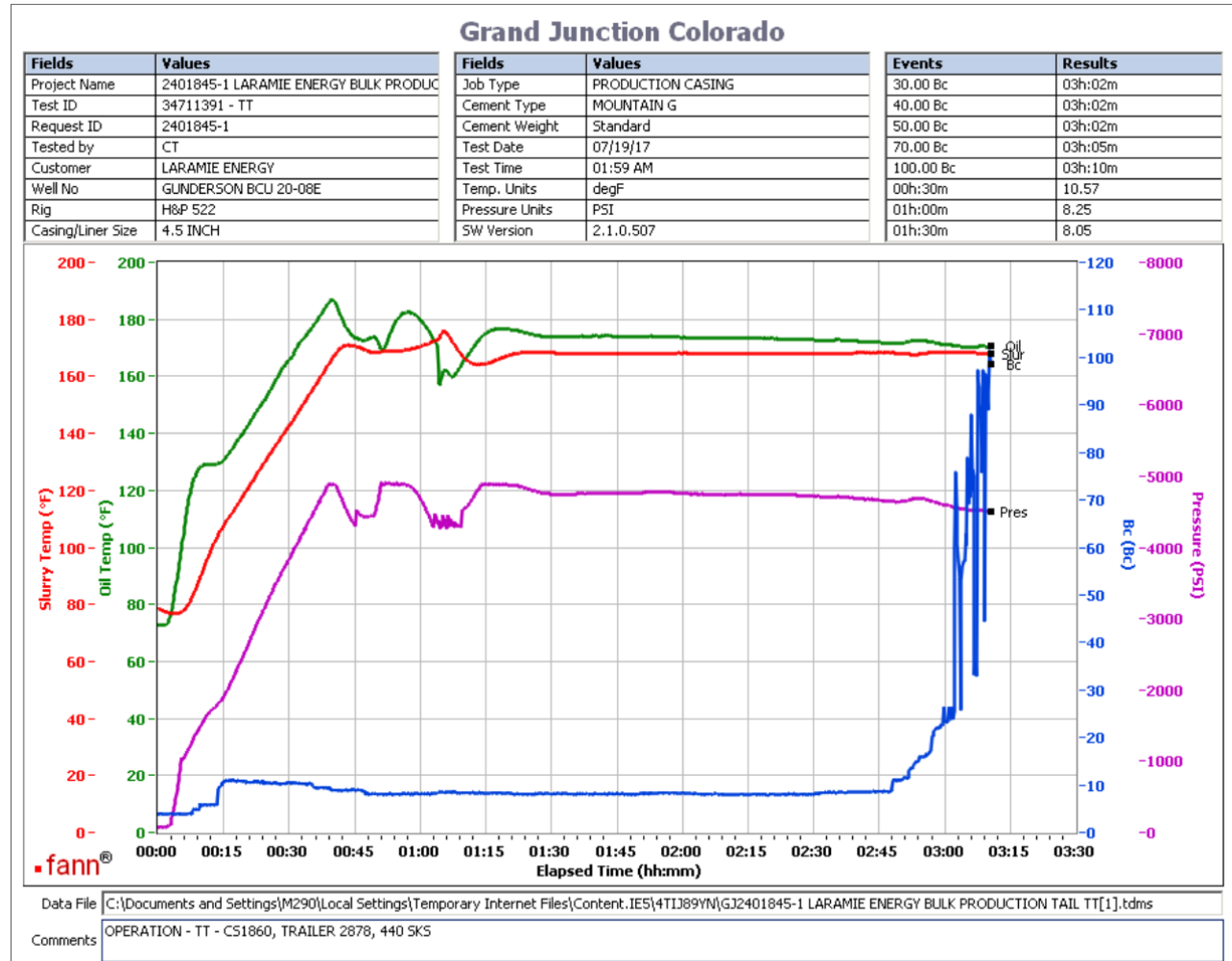
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Operation Test Results Request ID 2401845/1

Thickening Time - ON-OFF-ON

18/JUL/2017

Test Temp (°F)	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)
168	4590	39	3:02	3:02	3:05	3:10	4	49	15	8



Total sks = 440
 CS1860, Trailer 2878, 440 sks
 Deflection: 8 - 8

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