

HALLIBURTON

iCem[®] Service

Laramie Energy LLC-EBUS

United States of America, COLORADO

For: Aaron Duncan

Date: Tuesday, September 04, 2018

BCU 0993-21-08E Surface PJR

API# 05-077-10525-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

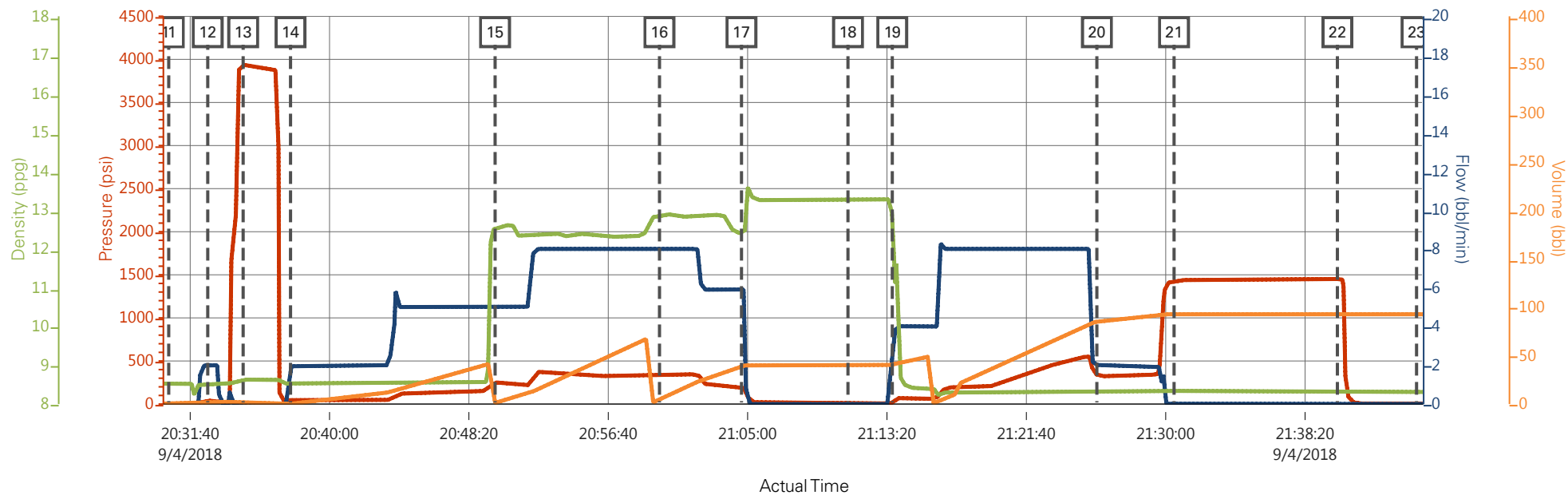
Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	DH Density (ppg)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	9/4/2018	12:00:00	USER					REQUESTED ON LOCATION TIME 18:00
Event	2	Depart Yard Safety Meeting	9/4/2018	15:40:00	USER					WITH HES, 1 F-550, 1 ELITE CEMENTING UNIT, 1 660 BULK TRUCK, JSA COMPLETED
Event	3	Arrive At Loc	9/4/2018	17:30:00	USER					RIG RUNNING CASING UPON HES, ARRIVAL
Event	4	Assessment Of Location Safety Meeting	9/4/2018	17:40:00	USER					WITH HES, JSA COMPLETED, SDS OFFERED FOR ALL HES MATERIALS
Event	5	Pre-Rig Up Safety Meeting	9/4/2018	17:50:00	USER					WITH HES, JSA COMPLETED
Event	6	Rig-Up Equipment	9/4/2018	18:00:00	USER					1 LINE RAN TO THE FLOOR, 1 8.625 IN QUICK-LATCH PLUG CONTAINER
Event	7	Other	9/4/2018	19:07:27	USER	5.00	0.00	8.54	0.00	TD 1580 FT, SET AT 1570 FT, CSG 1575 FT 8.625 IN 32 LB/FT J-55, HOLE 11 IN, SHOE 42.17 FT
Event	8	Other	9/4/2018	19:07:28	USER	5.00	0.00	8.54	0.00	RIG CIRCULATION, 300 BBL, 10 BBL/MIN, 188 PSI, RAT HOLE LENGTH 10 FT, PIPE WAS STATIC, MW 9.2 LB/GAL WBM
Event	9	Other	9/4/2018	19:08:00	USER	5.00	0.00	8.54	0.00	WATER TEST PH 7.0, CHLOR 0, TEMP 65 DEG F
Event	10	Pre-Job Safety Meeting	9/4/2018	20:15:00	USER	5.00	0.00	8.53	0.00	WITH HES, LARAMIE, AND H&P 522
Event	11	Start Job	9/4/2018	20:30:23	USER	5.00	0.00	8.53	0.00	
Event	12	Fill Lines	9/4/2018	20:32:43	USER	39.00	2.00	8.53	1.00	3 BBL FRESH WATER, RETURNS AT 2 BBL AWAY
Event	13	Test Lines	9/4/2018	20:34:50	USER	3940.00	0.00	8.63	2.30	LOW TEST AT 880 PSI, HIGH TEST AT 3940 PSI, PRESSURE HOLDING

Event	14	Pump Fresh Water Spacer	9/4/2018	20:37:40	USER	35.00	2.00	8.53	0.20	40 BBL FRESH WATER
Event	15	Pump Lead Cement	9/4/2018	20:49:54	USER	250.00	5.00	12.52	1.20	MIXED AT 12.3 LB/GAL, 167 SKS, 2.46 FT3/SK, 14,17 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	16	Pump Tail Cement	9/4/2018	20:59:44	USER	351.00	8.00	12.83	4.80	MIXED AT 12.8 LB/GAL, 94 SKS, 2.18 FT3/SK, 12.11 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	17	Shutdown	9/4/2018	21:04:38	USER	189.00	5.90	12.40	38.90	
Event	18	Drop Top Plug	9/4/2018	21:11:00	USER	7.00	0.00	13.27	40.30	PLUG LAUNCHED, CUSTOMER WITNESSED
Event	19	Pump Displacement	9/4/2018	21:13:39	USER	12.00	1.70	12.76	40.50	FRESH WATER
Event	20	Slow Rate	9/4/2018	21:25:53	USER	335.00	2.00	8.30	84.90	SLOWED AT 83 BBL AWAY TO 2 BBL/MIN
Event	21	Bump Plug	9/4/2018	21:30:30	USER	1435.00	0.00	8.33	92.60	PLUG BUMPED AT CALCULATED DISPLACEMENT, 340 PSI
Event	22	Check Floats	9/4/2018	21:40:16	USER	1451.00	0.00	8.34	92.60	FLOATS HOLDING, 1 BBL RETURNED TO THE TRUCK, PERFORMED A 10 MIN. CASING TEST AT 1450 PSI, PRESSURE HOLDING
Event	23	End Job	9/4/2018	21:45:00	USER	5.00	0.00	8.31	92.60	GOOD CIRCULATION, RIG USED HES TOP PLUG, RIG USED 40 LBS SUGAR, NO ADD HOURS
Event	24	Pre-Rig Down Safety Meeting	9/4/2018	22:10:00	USER					WITH HES, JSA COMPLETD
Event	25	Rig Down Lines	9/4/2018	22:15:00	USER					
Event	26	Pre-Convoy Safety Meeting	9/4/2018	22:25:00	USER					WITH HES, JSA COMPLETED
Event	27	Other	9/4/2018	22:30:00	USER					SPACER 40 BBL FRESH WATER, LEAD CEMENT 73.1 BBL, TAIL CEMENT 36.4 BBL, FINAL DISPLACEMENT 93.3 BBL, 20 BBL CEMENT CIRCULATED TO SURFACE, TOP OF TAIL CEMENT 1173 FT

Event 28 Crew Leave Location 9/4/2018 22:35:00 USER

THANKS FOR USING HALLIBURTON, JOHN
KEANE AND CREW

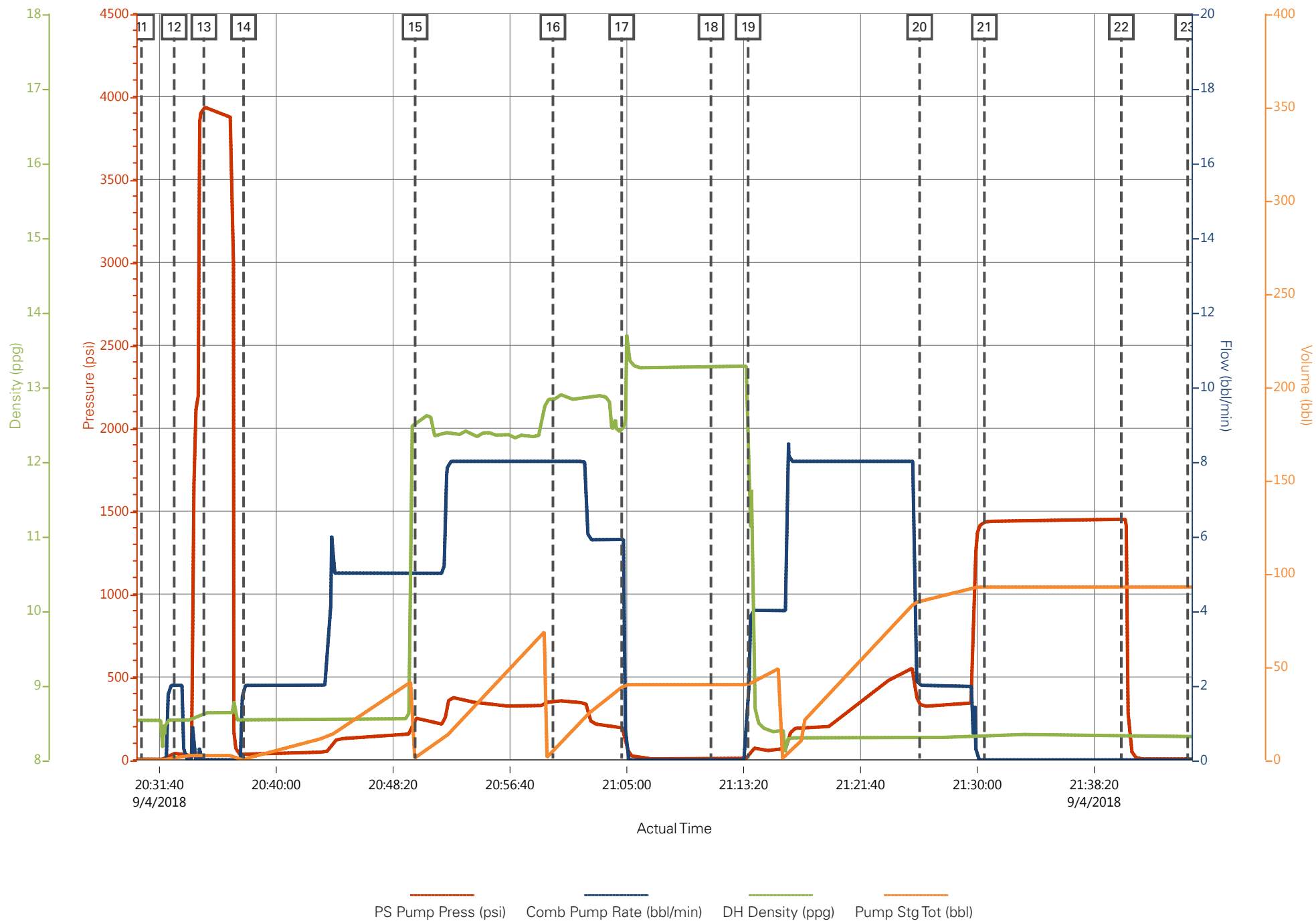
LARAMIE ENERGY - BCU-993-21-08E - SURFACE



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

Description	Actual Time	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	DH Density (ppg)	Pump Stg Tot (bbl)	
11 Start Job	20:30:23	5.00	0.00	8.53	0.00	
12 Fill Lines	20:32:43	39.00	2.00	8.53	1.00	
13 Test Lines	20:34:50	3940.00	0.00	8.63	2.30	
14 Pump Fresh Water Spacer	20:37:40	35.00	2.00	8.53	0.20	
15 Pump Lead Cement	20:49:54	250.00	5.00	12.52	1.20	
16 Pump Tail Cement	20:59:44	351.00	8.00	12.83	4.80	
17 Shutdown	21:04:38	189.00	5.90	12.40	38.90	
18 Drop Top Plug	21:11:00	7.00	0.00	13.27	40.30	
19 Pump Displacement	21:13:39	12.00	1.70	12.76	40.50	
20 Slow Rate	21:25:53	335.00	2.00	8.30	84.90	
21 Bump Plug	21:30:30	1435.00	0.00	8.33	92.60	
22 Check Floats	21:40:16	1451.00	0.00	8.34	92.60	
23 End Job	21:45:00	5.00	0.00	8.31	92.60	

LARAMIE ENERGY - BCU-993-21-08E - SURFACE



HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

For: Laramie Energy

Date: Saturday, September 08, 2018

BCU 0993-21-08E Production PJR

API #: 05-077-10516

Sincerely,

Grand Junction Cement Engineering

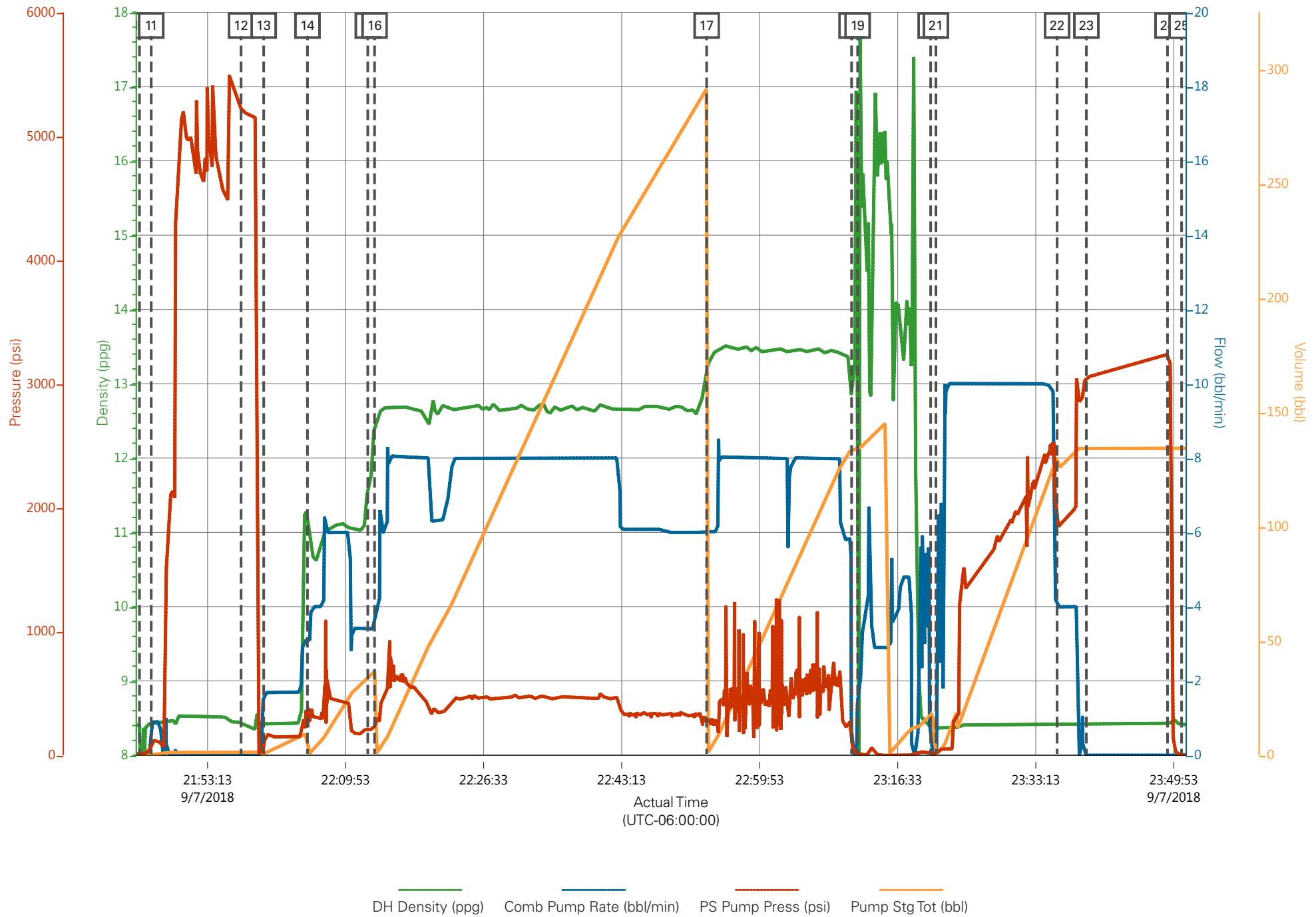
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	9/7/2018	13:30:00	USER					REQUESTED ON LOCATION @ 1930
Event	2	Pre-Convoy Safety Meeting	9/7/2018	15:15:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	9/7/2018	15:30:00	USER					1 F550, 1 PUMP TRUCK & 1 660 BULK TURCK
Event	4	Arrive at Location from Service Center	9/7/2018	17:30:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	9/7/2018	17:45:00	USER					MET WITH COMP REP AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 71F). COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	9/7/2018	18:00:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	9/7/2018	19:00:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	9/7/2018	20:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Prime Pumps	9/7/2018	20:30:00	USER					8.33 PPG FRESH WATER
Event	10	Start Job	9/7/2018	21:45:00	COM3					TD 8568', TP 8558', SJ 86.8', OH 7.875", CSG 4.5" 11.6#, MUD 9.4 PPG. RIG CIRCULATED WELL @ APPROX 10 BPM WITH 780 PSI.
Event	11	Prime Pumps	9/7/2018	21:46:25	COM3	91.00	8.33	1.00	2.00	8.33 PPG FRESH WATER
Event	12	Test Lines	9/7/2018	21:57:16	COM3	5219.00	8.33	0.50	0.50	ALL LINES HELD PRESSURE AT 5200 PSI

Event	13	Pump Spacer 1	9/7/2018	22:00:00	COM3	51.00	8.33	1.70	5.00	FRESH WATER (10), 8.33 PPG
Event	14	Pump Spacer 1	9/7/2018	22:05:17	COM3	239.00	11.00	3.10	40.00	TUNED SPACER III (40 BBL), 11 PPG
Event	15	Drop Bottom Plug	9/7/2018	22:12:34	USER					PLUG WENT, VERIFIED BY DRILLER
Event	16	Pump Lead Cement	9/7/2018	22:13:23	COM3	406.00	12.50	3.40	265.00	NEOCER CEMENT 767 SKS (265 BBLs), 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	17	Pump Tail Cement	9/7/2018	22:53:29	COM3	459.00	13.30	6.00	109.00	THERMACER CEMENT 350 SKS (109 BBLs), 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK.
Event	18	Shutdown	9/7/2018	23:10:59	USER					END OF CMT
Event	19	Clean Lines	9/7/2018	23:11:43	USER					WASH UP PUMPS AND LINES
Event	20	Drop Top Plug	9/7/2018	23:20:32	USER					PLUG WENT, VERIFIED BY CO REP
Event	21	Pump Displacement	9/7/2018	23:21:10	COM3	2468.00	8.33	10.00	122.20	8.34 PPG FRESH WATER (132.2 BBLs) 5 GAL CLA WEB & 1 GAL MMCR
Event	22	Slow Rate	9/7/2018	23:35:48	USER	1820.00	8.33	4.00	10.00	SLOW RATE TO 4 BPM PER CO REP TO LAND PLUG
Event	23	Bump Plug	9/7/2018	23:39:20	USER	1950.00	8.33	4.00	132.20	LAND PLUG AT 1950 PSI, BROUGHT UP TO 3001 PSI FOR A 10 MIN CSG TEST.
Event	24	Check Floats	9/7/2018	23:49:08	USER	3237.00	8.33	0.00	132.20	FLOATS HELD, 1 BBL BACK TO TRUCK
Event	25	End Job	9/7/2018	23:50:50	USER					GOOD RETURNS THROUGHOUT, PIPE WAS NOT RECIPROCATED DURING THE JOB, NO SIGN OF SPACER BACK TO SURFACE
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	9/7/2018	23:54:19	USER					ALL HES PRESENT
Event	27	Rig-Down Completed	9/8/2018	01:00:00	USER					ALL HES PRESENT
Event	28	Pre-Convoy Safety Meeting	9/8/2018	01:15:00	USER					ALL HES PRESENT
Event	29	Crew Leave Location	9/8/2018	01:20:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, CHRIS SMITH AND CREW

Laramie - BCU 0993-21-08E - 4.5" Production



Job Information

Request/Slurry	2498252/1	Rig Name	H&P 522	Date	31/AUG/2018
Submitted By	Aaron Woolsey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-08E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8381 ft	BHST	107°C / 225°F
Hole Size	8.75 in	Depth TVD	8354 ft	BHCT	67°C / 153°F
Pressure	5148 psi				

Drilling Fluid Information

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



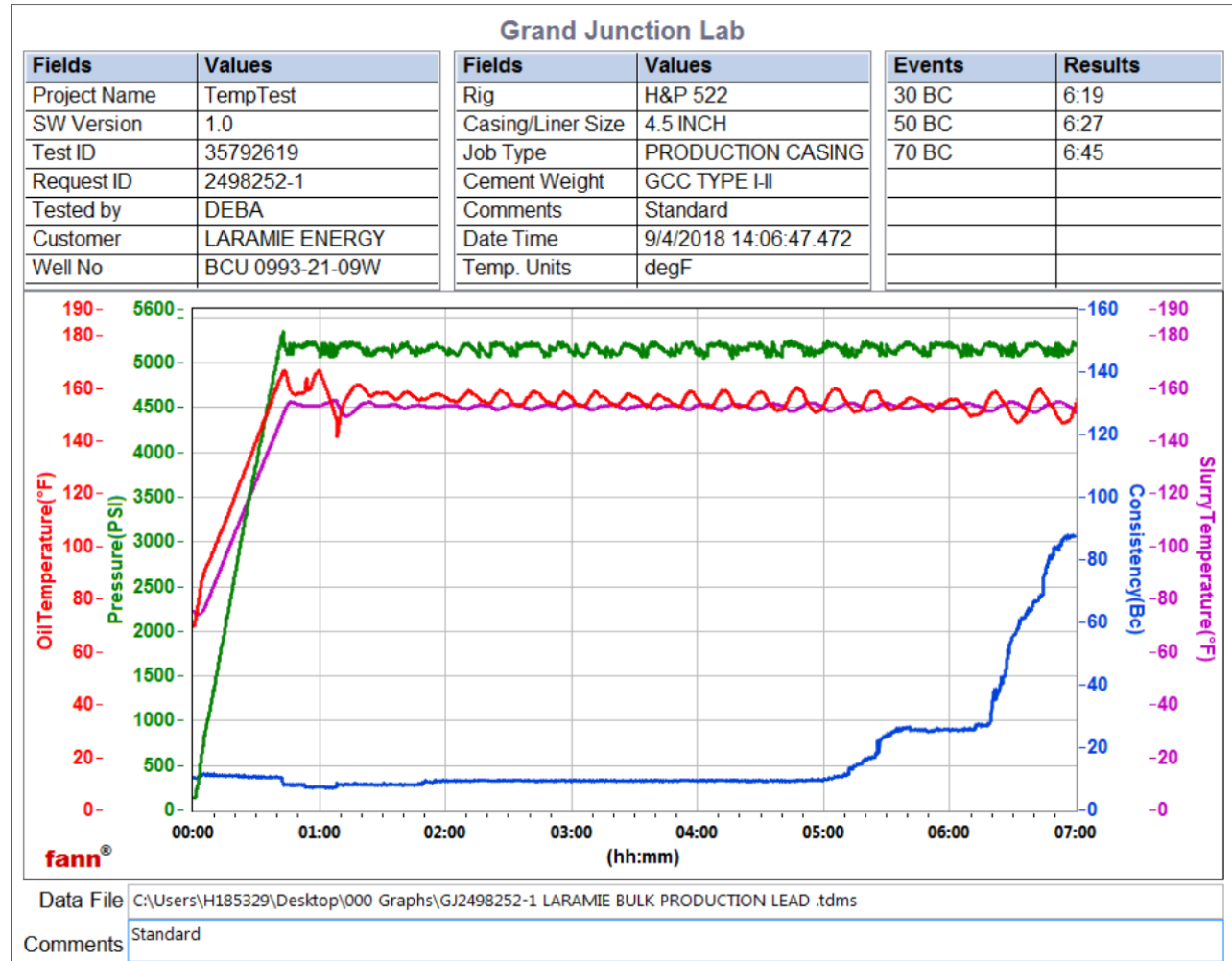
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.946	ft3/sack
						Water Requirement	9.615	gal/sack
						Total Mix Fluid	9.615	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

05/SEP/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 time (hh:min)	Termination Bc
153	5148	43	6:19	6:27	6:45	10	53	15	8	10:59	96



Total 645 SKS
 CS1939 TR#8658 322.5 SKS
 CS1941 TR#8476 322.5 sks
 deflected from 6Bc--- > 8Bc

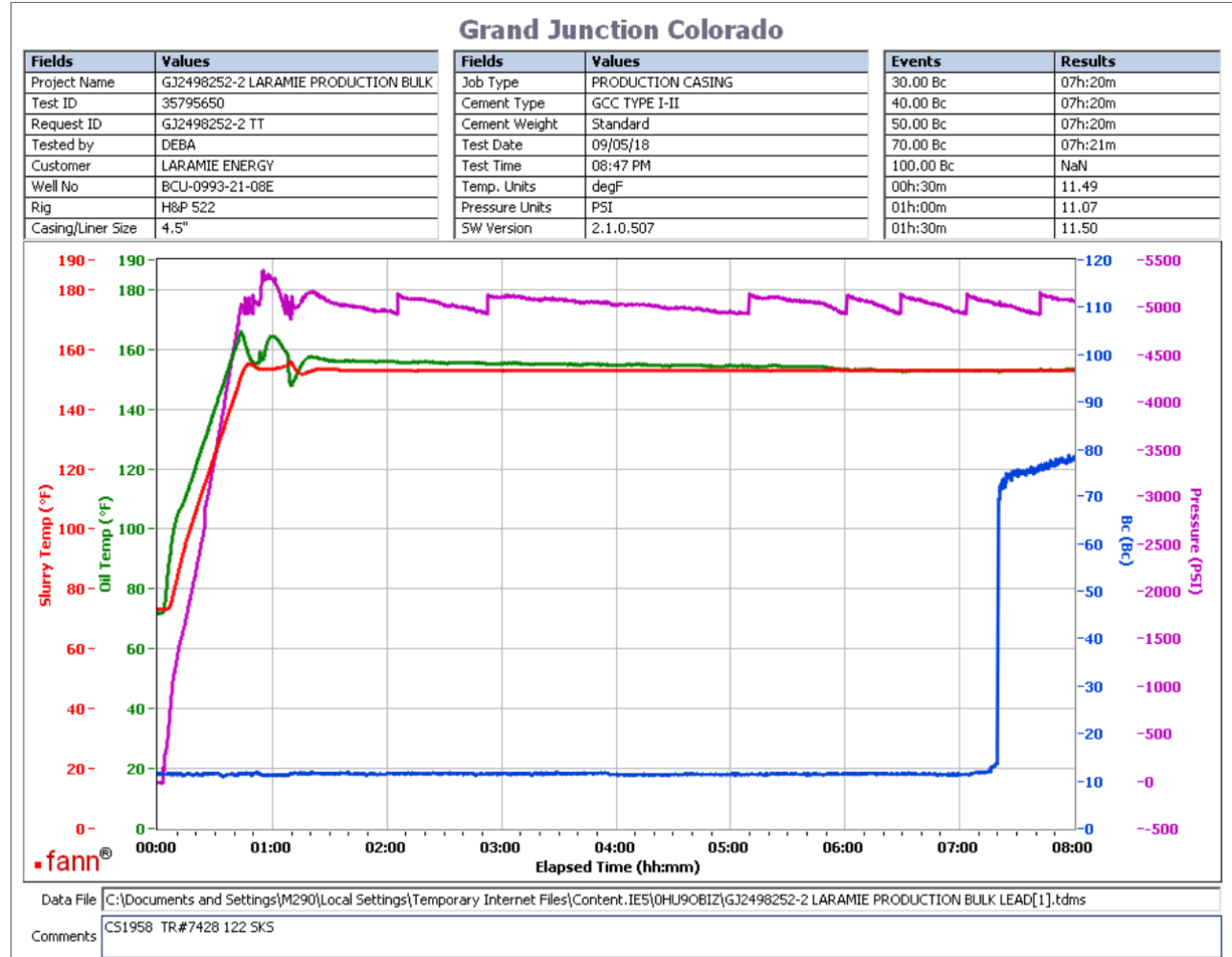
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Operation Test Results Request ID 2498252/2

Thickening Time - ON-OFF-ON

05/SEP/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:mm)	Termination Bc
153	5148	43	7:20	7:20	7:21	11	53	15	11	10:34	82



total sks=767

CS1958 TR#7428 122 SKS

Deflection: 11 - 11

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2498251/1	Rig Name	H&P 522	Date	31/AUG/2018
Submitted By	Aaron Woolsey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-08E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8381 ft	BHST	107°C / 225°F
Hole Size	8.75 in	Depth TVD	8354 ft	BHCT	67°C / 153°F
Pressure	5148 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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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	1.736	ft3/sack
						Water Requirement	7.787	gal/sack
						Total Mix Fluid	7.787	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2498251/1

Thickening Time - ON-OFF-ON

05/SEP/2018

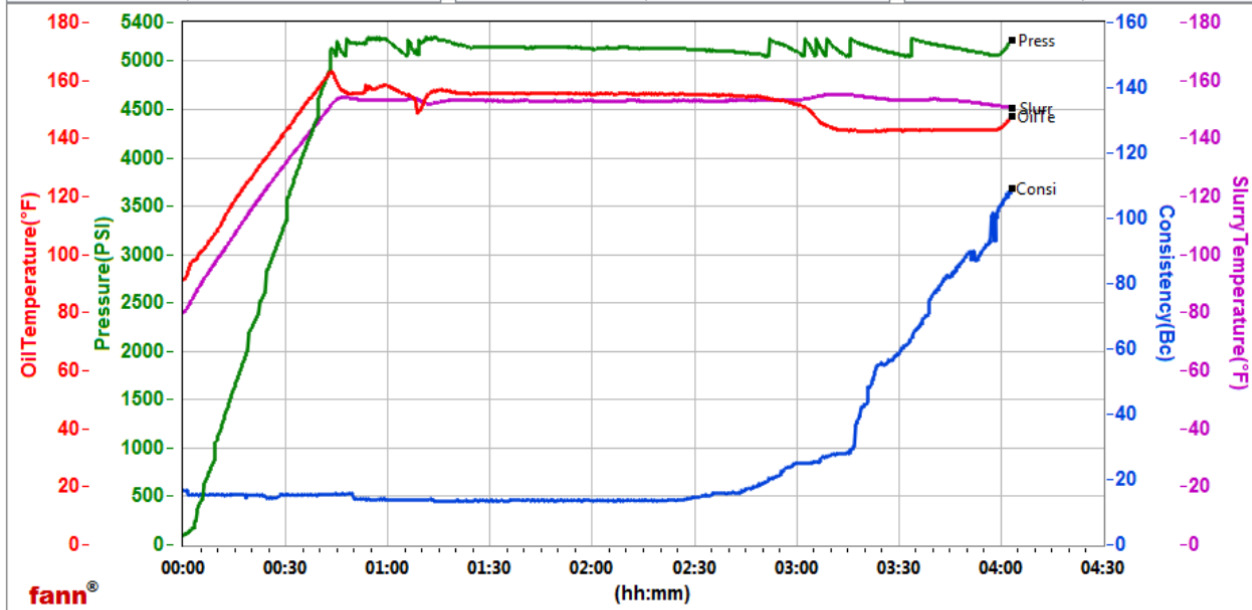
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
153	5148	43	3:16	3:22	3:38	3:57	53	15	13	13

Grand Junction

Fields	Values
Project Name	TempTest
SW Version	1.0
Test ID	GJ2498251-1 LARAMIE F
Request ID	35783450
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	BCU 0993-21-08W

Fields	Values
Rig	H&P 522
Casing/Liner Size	4.5"
Job Type	PRODUCTION CASING
Cement Weight	MOUNTAIN G
Comments	Standard
Date Time	9/4/2018 13:29:03.780
Temp. Units	degF

Events	Results
30 BC	3:16
50 BC	3:22
70 BC	3:38
100	3:57



Data File C:\Users\H185329\Desktop\000 Graphs\GJ2498251-1 LARAMIE PRODUCTION TAIL BULKms.tdms

Comments Standard

Total 360SKS
CS1940 TR#8678 360 SKS
No deflection, 13Bc--- > 13Bc

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