

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

Date: Wednesday, October 17, 2018

**BCU 0993-21-04W Surface**

Laramie BCU 993-21-04W Surface

API # 05-077-10511

Sincerely,

**Grand Junction Cement Engineering**

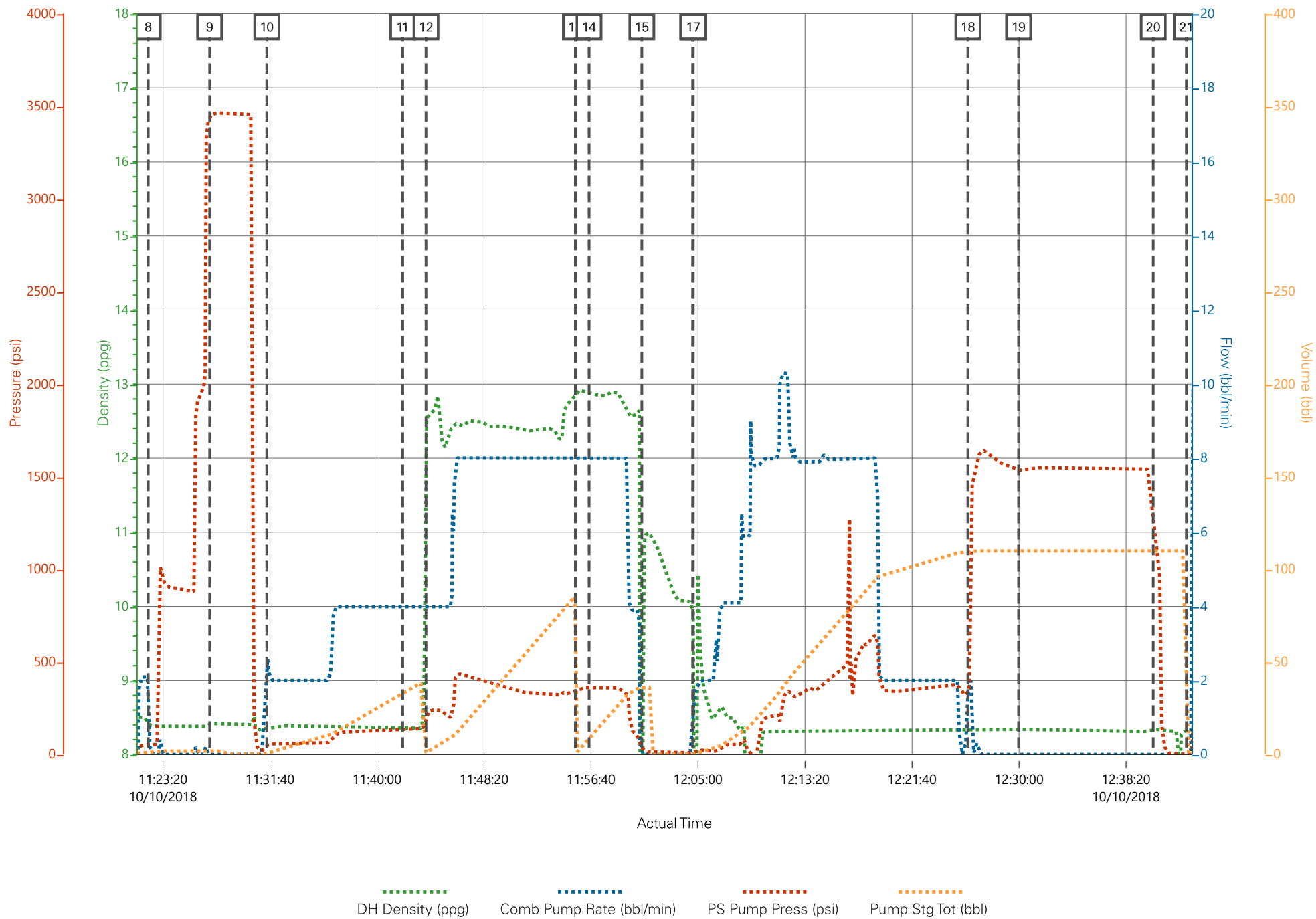
## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	10/10/2018	04:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	10/10/2018	06:45:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	10/10/2018	07:00:00	USER					
Event	4	Arrive At Loc	10/10/2018	09:00:00	USER					JOURNEY MANAGEMENT CLOSED OUT. RIG RUNNING CASING
Event	5	Other	10/10/2018	09:10:00	USER					WATER TEST: PH-7, CL-0, TEMP-58 WELL INFO: 8 5/8 32# SET AT 1584, TD-1594, S.J.-47.83, HOLE- 11, MUD#- 9.0
Event	6	Assessment Of Location Safety Meeting	10/10/2018	09:20:00	USER					
Event	7	Pre-Rig Up Safety Meeting	10/10/2018	09:50:00	USER					JSA COMPLETE
Event	8	Other	10/10/2018	10:00:00	USER					MUD SCALES CHECKED WITH WATER PRIOR TO JOB.
Event	9	Rig-Up Equipment	10/10/2018	10:10:00	USER					1 ELITE, 1 660, 1 UPRIGHT WATER TANK (400 BBLS)
Event	10	Pre-Job Safety Meeting	10/10/2018	11:00:00	USER					JSA COMPLETE
Event	11	Start Job	10/10/2018	11:22:11	COM5					

Event	12	Test Lines	10/10/2018	11:26:58	COM5			3487.00		3487 PSI TEST GOOD
Event	13	Pump Spacer	10/10/2018	11:31:25	USER	8.33	4.0	130.00	40.0	FRESH WATER
Event	14	Check Weight	10/10/2018	11:42:00	COM5					LEAD CMT WEIGHT UP GOOD, 12.3 PPG.
Event	15	Pump Lead Cement	10/10/2018	11:43:49	COM5	12.30	8.00	330.00	75.40	172 SKS VARICEM, 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	16	Pump Tail Cement	10/10/2018	11:55:27	COM5	12.80	8.00	355.00	36.9	95 SKS VARICEM, 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	17	Check Weight	10/10/2018	11:56:31	COM5					WEIGHT UP GOOD 12.8 PPG
Event	18	Shutdown	10/10/2018	12:00:38	USER					TO WASH UP ON TOP OF PLUG
Event	19	Drop Top Plug	10/10/2018	12:04:35	COM5					AWAY
Event	20	Pump Displacement	10/10/2018	12:04:38	COM5	8.33	8.00	652.00	93.6	FRESH WATER, SHUTDOWN ON CALULATED, THEN PUMPED ANOTHER BBL TO BUMP.
Event	21	Bump Plug	10/10/2018	12:26:01	COM5	8.33	2.00	360.00	94.60	PLUG BUMPED
Event	22	Other	10/10/2018	12:29:58	COM5					CASING TEST 1600 PSI FOR 10 MIN, TEST GOOD
Event	23	Check Floats	10/10/2018	12:40:27	USER			1550.00		FLOATS HELD 1 BBL BACK TO TRUCK
Event	24	End Job	10/10/2018	12:43:02	COM5					GOOD RETURNS THROUGHOUT JOB, NO PIPE MOVEMENT, 13 BBLS OF CMT TO SURFACE.
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	10/10/2018	12:55:45	USER					
Event	26	Crew Leave Location	10/10/2018	14:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

# LARAMIE ENERGY - BCU 993-21-04W - 8 5/8 SURFACE



# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

Date: Wednesday, October 17, 2018

**BCU 0993-21-04W Production**

Laramie BCU 0993-21-04W Production

API # 05-077-10511-00

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	10/13/2018	06:00:00						Requested on Location @ 12:30
Event	2	Pre-Convoy Safety Meeting	10/13/2018	08:50:00						
Event	3	Crew Leave Yard	10/13/2018	09:00:00						1 Elite, 1 660's, 1 pickup, 1 Transport
Event	4	Arrive At Loc	10/13/2018	12:30:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	10/13/2018	12:35:00						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 46 degrees
Event	6	Pre-Rig Up Safety Meeting	10/13/2018	12:40:00						
Event	7	Rig-Up Equipment	10/13/2018	12:45:00						DME iron to ground manifold, standpipe, hardline to pit. Water hoses to both upright and rig tank, bulk hoses to Silo's and 660.
Event	8	Other	10/13/2018	12:50:00						Rig Circulated 1 hrs prior to cement job at 10 bpm 1093 psi. Mud scales calibrated to drinking water prior to job.

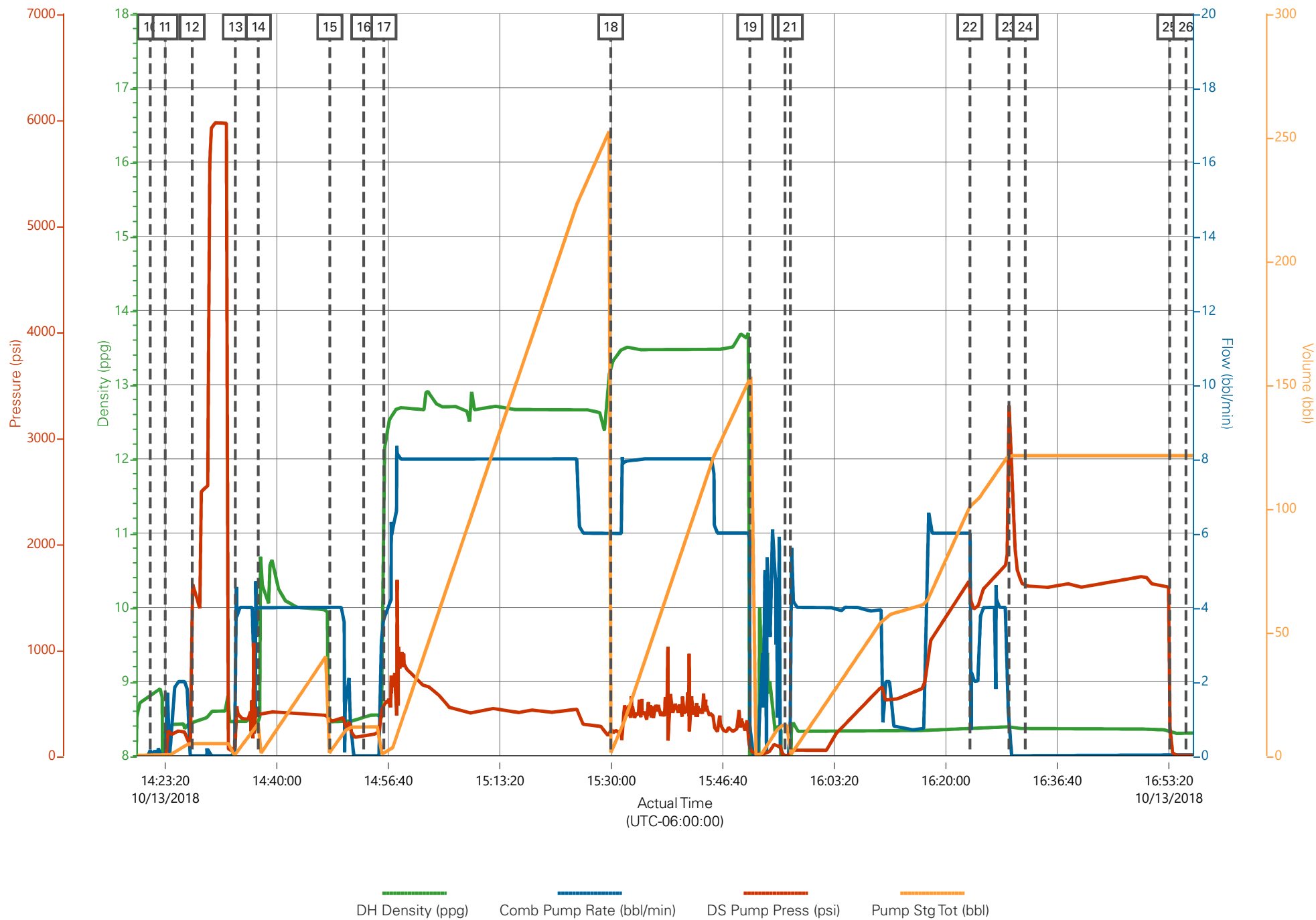
Event	9	Pre-Job Safety Meeting	10/13/2018	12:59:00						All HES personnel, rig crew, and company rep.
Event	10	Other	10/13/2018	14:21:05						TD 7727', TP 7717', SJ 80.6', OH 7 7/8", Csg 4.5" 11.6 lb/ft P-110 Prev. Csg. 8.625" 24# @ 1537', Mud 10.2 ppg.
Event	11	Other	10/13/2018	14:23:19	8.33	2	250	5		Drop Bottom Plug, Fresh Water
Event	12	Test Lines	10/13/2018	14:27:21			6098			Held pressure 2 minutes
Event	13	Pump Spacer 1	10/13/2018	14:33:48	8.33	4	480	10		Fresh Water
Event	14	Pump Spacer	10/13/2018	14:37:14	10	4	440	40		10 ppg Super Flush 101 Spacer
Event	15	Pump Spacer	10/13/2018	14:47:56	8.33	4	770	10		Fresh Water, Drop Bottom Plug
Event	16	Check Weight	10/13/2018	14:52:59						Density verified via mud cup
Event	17	Pump Lead Cement	10/13/2018	14:56:00	12.5	8	900	231.8		671 sks, 12.5 ppg, 1.94 yield, 9.59 gal/sk
Event	18	Pump Tail Cement	10/13/2018	15:29:54	13.3	8	580	113.4		366 sks, 13.3 ppg, 1.74 Yield, 7.8 gal/sk
Event	19	Shutdown	10/13/2018	15:50:42						Wash lines to pit
Event	20	Drop Top Plug	10/13/2018	15:55:56						Co-Rep Verify Plug Launched
Event	21	Pump Displacement	10/13/2018	15:56:45	8.33	8	1700	118.4		5 Gal BE-6, 1 gal MMCR, 5 gal Clay-Web
Event	22	Slow Rate	10/13/2018	16:23:35	8.33	4	1900	108		Slow Rate 10 bbls to Calculated Displacement
Event	23	Bump Plug	10/13/2018	16:29:26			3200			Plug Bumped at 1900 psi, Brought up to 3200 psi,

Pressure then dropped to  
1700 psi

Event	24	Pressure Test	10/13/2018	16:31:52	1700 psi for 10 min.
Event	25	Check Floats	10/13/2018	16:53:27	Floats held – 1 bbl back to the truck
Event	26	Other	10/13/2018	16:55:53	Good returns throughout job. Pipe was not reciprocated during job. 18 bbl of Superflush spacer to surface.
Event	27	Pre-Rig Down Safety Meeting	10/13/2018	17:13:50	40 lbs sugar, HES top and 2 bottom plugs used, 0 add hours
Event	28	Rig-Down Equipment	10/13/2018	17:16:03	
Event	29	Pre-Convoy Safety Meeting	10/13/2018	17:23:31	
Event	30	Crew Leave Location	10/13/2018	17:25:45	Thanks for using Halliburton Cement, Chris Martinez and crew.



# Laramie, BCU 993-21-04W Production



**Job Information**

<b>Request/Slurry</b>	2507465/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	09/OCT/2018
<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>	BCU 0993-21-04W

**Well Information**

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	7730 ft	<b>BHST</b>	103°C / 218°F
<b>Hole Size</b>	7.875 in	<b>Depth TVD</b>	7683 ft	<b>BHCT</b>	63°C / 146°F
<b>Pressure</b>	4678 psi				

**Drilling Fluid Information**

<b>Mud Supplier Name</b>	Baroid	<b>Mud Trade Name</b>	BARADRIL-N	<b>Density</b>	9.9 lbm/gal
--------------------------	--------	-----------------------	------------	----------------	-------------

**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>	<b>Cement Properties</b>		
		NeoCem				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	Field (Fresh) Water	
						Water Chloride		

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

# Operation Test Results Request ID 2507465/1

## Thickening Time - ON-OFF-ON

11/OCT/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)
146	4678	40	6:21	6:57	7:33	8:33	15	50	15	13

Total sks = 671

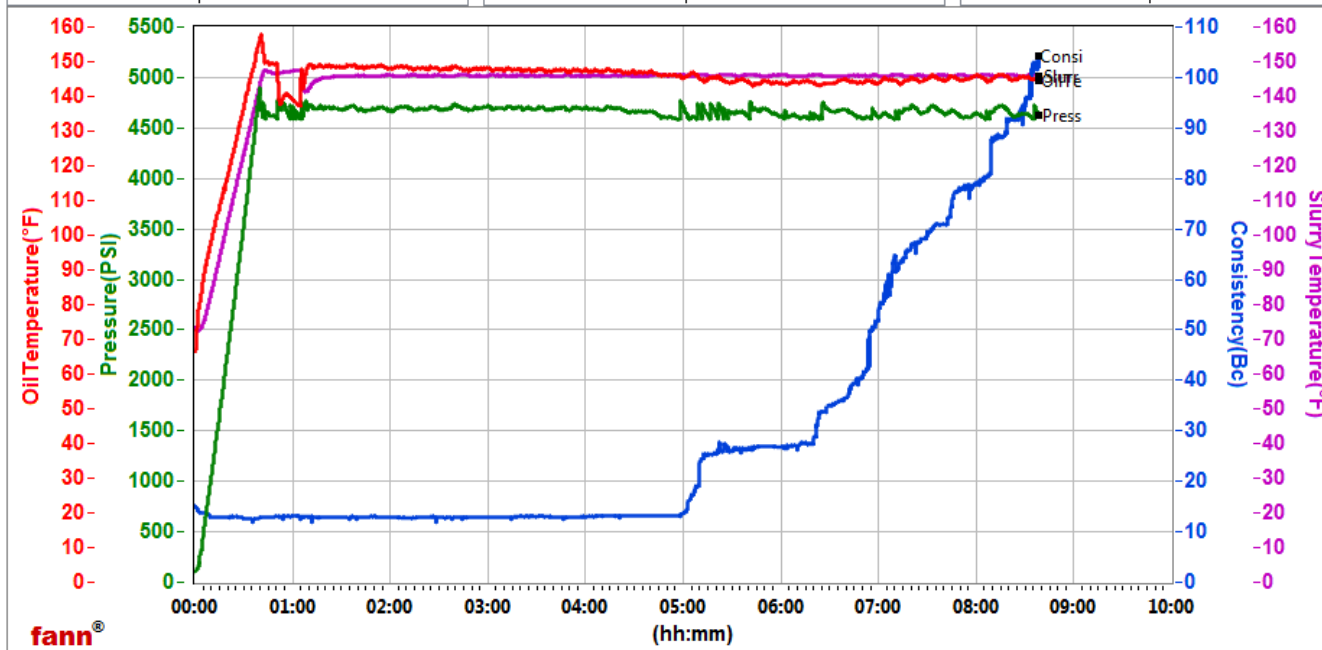
CS2262, Trailer 1513, 401 sks

CS2263, Trailer 1283, 270 sks

no deflection, 13Bc--- > 13Bc

## GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P 522		
SW Version	1.0	Casing/Liner Size	4.5 INCH		
Test ID	35886900 - TT	Job Type	PRODUCTION CASING		
Request ID	2507465-1	Cement Weight	GCC TYPE I-II		
Tested by	CT	Comments	Standard		
Customer	LARAMIE ENERGY	Date Time	10/10/2018 12:32:56.539		
Well No	BCU 0993-21-04W	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\new Graph M290\GJ2507465-1 LARAMIE BULK PRODUCTION LEAD.tdms

Comments Standard

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

Request/Slurry	2507466/1	Rig Name	H&P 522	Date	09/OCT/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-04W

### Well Information

Casing/Liner Size	4.5 in	Depth MD	7730 ft	BHST	103°C / 218°F
Hole Size	7.875 in	Depth TVD	7683 ft	BHCT	63°C / 146°F
Pressure	4678 psi				

### Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.9 lbm/gal
-------------------	--------	----------------	------------	---------	-------------

### 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	1.738 ft3/sack
						Water Requirement	7.795 gal/sack
						Total Mix Fluid	7.795 gal/sack
						Water Source	Field (Fresh) Water
						Water Chloride	

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

# Operation Test Results Request ID 2507466/1

## Thickening Time - ON-OFF-ON

11/OCT/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)
146	4678	40	3:55	3:51	4:17	4:47	16	50	15	15

Total SKS = 366

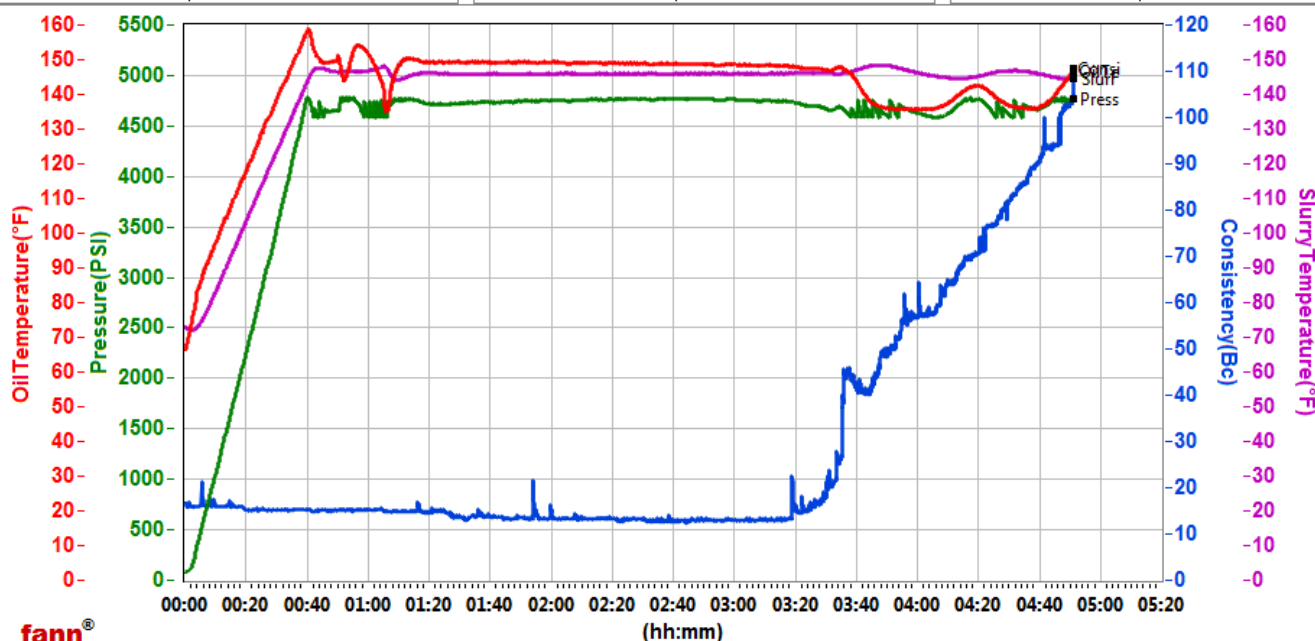
CS2264, Trailer 8476, 366 sks

no deflection, 15Bc--- > 15Bc

please see the graph, heat of hydration at 3:32

## GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P 522		
SW Version	1.0	Casing/Liner Size	4.5 INCH		
Test ID	35886902 - TT	Job Type	PRODUCTION CASING		
Request ID	2507466-1	Cement Weight	MOUNTAIN G		
Tested by	CT	Comments	Standard		
Customer	LARAMIE ENERGY	Date Time	10/10/2018 15:59:42.294		
Well No	BCU 0993-21-04W	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\new Graph M290\GJ2507466-1 LARAMIE BULK PRODUCTION TAIL.tdms

Comments Standard

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.