

HALLIBURTON

iCem[®] Service

TEP ROCKY MOUNTAIN LLC-EBUS

For: Terra

Date: Friday, March 23, 2018

PA 424-24 Production

API#05-045-23645

Sincerely,

Grand Junction Cement Engineering

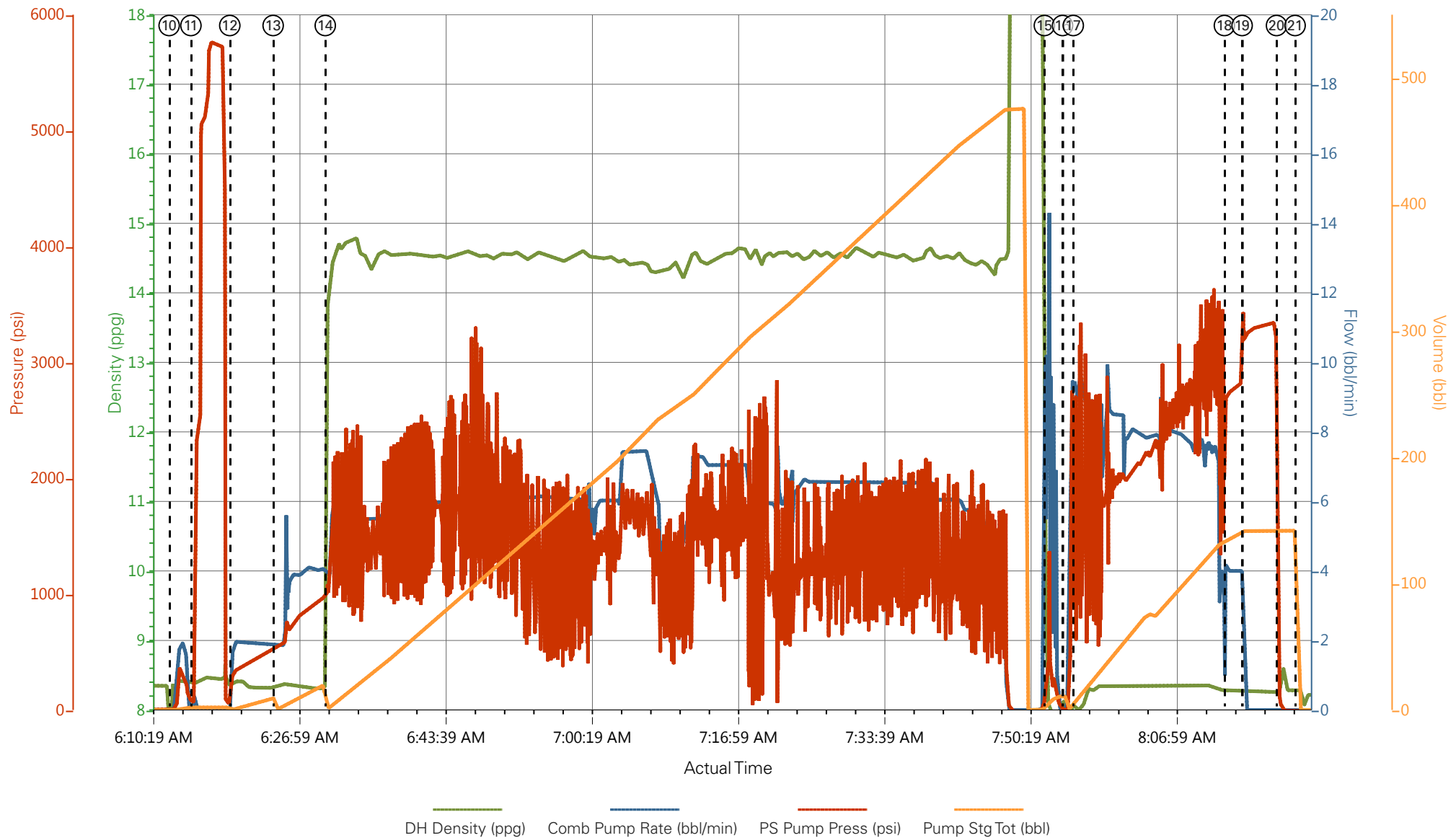
2.0 Real-Time Job Summary

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	3/22/2018	22:30:00	USER					
Event	2	Pre-Convoy Safety Meeting	3/23/2018	00:50:00	USER					
Event	3	Crew Leave Yard	3/23/2018	01:00:00	USER					
Event	4	Arrive At Loc	3/23/2018	02:00:00	USER					
Event	5	Assessment Of Location Safety Meeting	3/23/2018	02:05:00	USER					
Event	6	Spot Equipment	3/23/2018	02:15:00	USER					
Event	7	Pre-Rig Up Safety Meeting	3/23/2018	02:20:00	USER					
Event	8	Rig-Up Equipment	3/23/2018	02:30:00	USER					
Event	9	Pre-Job Safety Meeting	3/23/2018	04:10:36	USER					
Event	10	Start Job	3/23/2018	06:12:29	COM5					TD: 8747 TP: 8741 SJ: 28.9' MW: 14.0 PPG4 1/2" 11.6#/FT CSG IN 8 3/4" OH WATER TEST: PH: 6.5 POTASSIUM: 450 CHLORIDES: 0 SULFATES: <200 TEMP: 74 DEGREES
Event	11	Test Lines	3/23/2018	06:14:58	COM5	8.33	0.00	5500.00	2.0	5500 PSI TEST
Event	12	Pump Spacer 1	3/23/2018	06:19:24	COM5	8.33	4.00	462.00	10.0	FRESH H2O SPACER
Event	13	Pump Spacer 2	3/23/2018	06:24:20	COM5	8.32	1.90	544.00	20.0	MUDFLUSH SPACER
Event	14	Pump Cement	3/23/2018	06:30:17	COM5	14.50	6.00	1139.00	465.2	1935 SKS @ 14.5 PPG 1.32 YLD 5.85 GAL/SK H2O
Event	15	Clean Lines	3/23/2018	07:52:14	COM5					
Event	16	Drop Top Plug	3/23/2018	07:54:19	COM5					PLUG AWAY
Event	17	Pump Displacement	3/23/2018	07:55:32	COM5	8.48	9.00	2579.00	135.0	FRESH H2O DISPLACEMENT WITH KCL, MMCR, BE-6

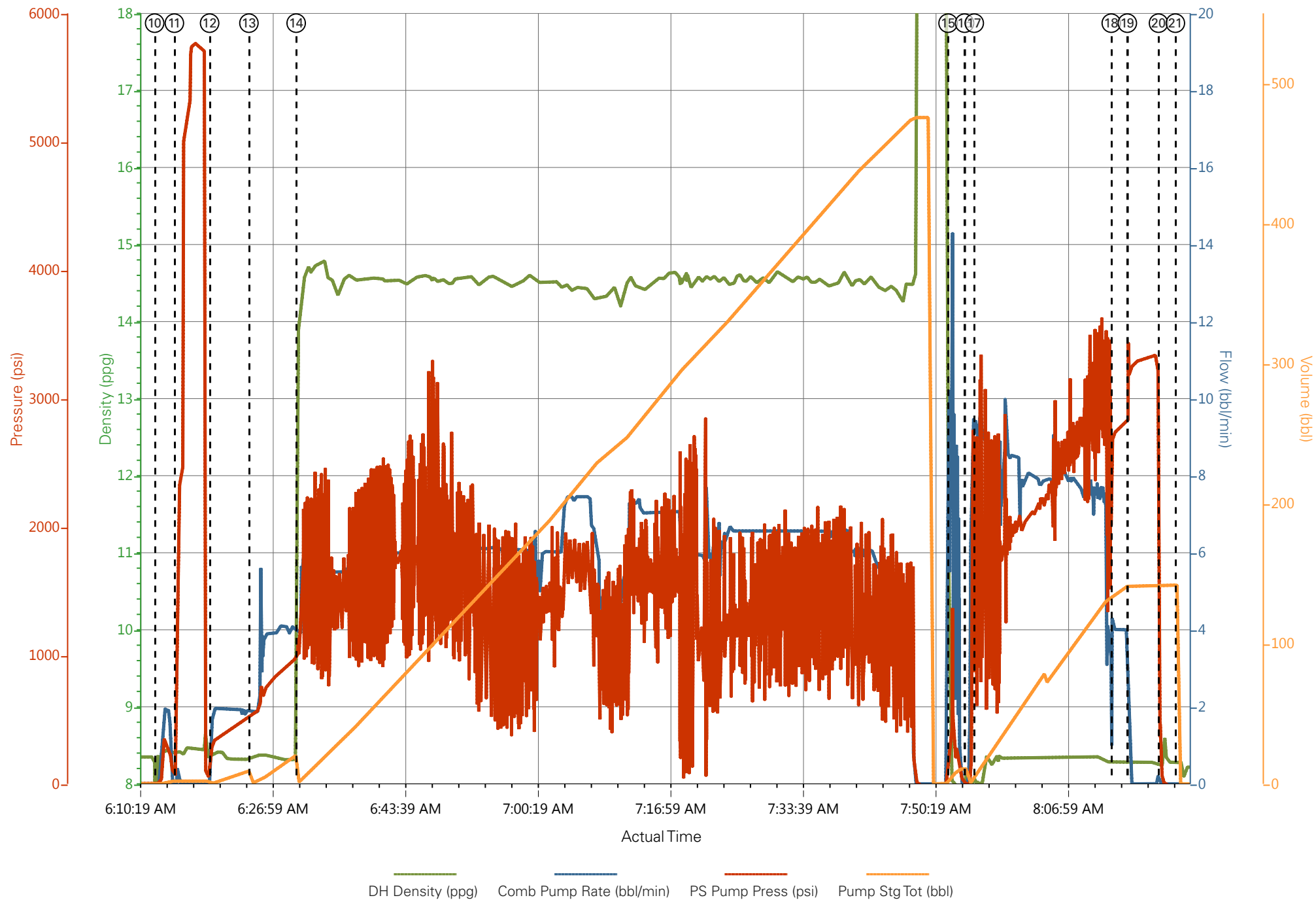
Event	18	Slow Rate	3/23/2018	08:12:45	USER	8.48	4.00	2738.00	125.0	
Event	19	Bump Plug	3/23/2018	08:14:46	COM5	8.48	4.0	3285.00	135.0	PLUG BUMPED AT CALCULATED DISPLACEMENT
Event	20	Check Floats	3/23/2018	08:18:42	USER					FLOATS HELD, GAINED 1.5 BBL BACK TO PUMP
Event	21	End Job	3/23/2018	08:20:49	COM5					
Event	22	Post-Job Safety Meeting (Pre Rig-Down)	3/23/2018	08:30:00	USER					GOOD CIRCULATION THROUGHOUT JOB. PIPE WAS RECIPROCATED THROUGHOUT JOB.
Event	23	Rig-Down Equipment	3/23/2018	08:35:00	USER					NO ADD HOURS CHARGED. NO SUGAR USED.
Event	24	Pre-Convoy Safety Meeting	3/23/2018	09:45:00	USER					
Event	25	Crew Leave Location	3/23/2018	10:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO ANTHONY ANDREWS AND CREW

TEP - PA 424-24 - 4 1/2" PRODUCTION



- | | | | | |
|---|-----------------------------|-----------------|---------------------|---|
| ① Call Out | ⑥ Spot Equipment | ⑪ Test Lines | ⑯ Drop Top Plug | 21 End Job |
| ② Pre-Convoy Safety Meeting | ⑦ Pre-Rig Up Safety Meeting | ⑫ Pump Spacer 1 | ⑰ Pump Displacement | 22 Post-Job Safety Meeting (Pre Rig-Down) |
| ③ Crew Leave Yard | ⑧ Rig-Up Equipment | ⑬ Pump Spacer 2 | ⑱ Slow Rate | 23 Rig-Down Equipment |
| ④ Arrive At Loc | ⑨ Pre-Job Safety Meeting | ⑭ Pump Cement | ⑲ Bump Plug | 24 Pre-Convoy Safety Meeting |
| ⑤ Assessment Of Location Safety Meeting | ⑩ Start Job | ⑮ Clean Lines | 20 Check Floats | 25 Crew Leave Location |

TEP - PA 424-24 - 4 1/2" PRODUCTION



Job Information

Request/Slurry	2460555/1	Rig Name	H&P 271	Date	14/MAR/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 424-24

Well Information

Casing/Liner Size	4.5 in	Depth MD	8731 ft	BHST	102°C / 215°F
Hole Size	8.75 in	Depth TVD	7947 ft	BHCT	63°C / 145°F
Pressure	4863 psi				

Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name		Density	
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Cement Information - Primary Design



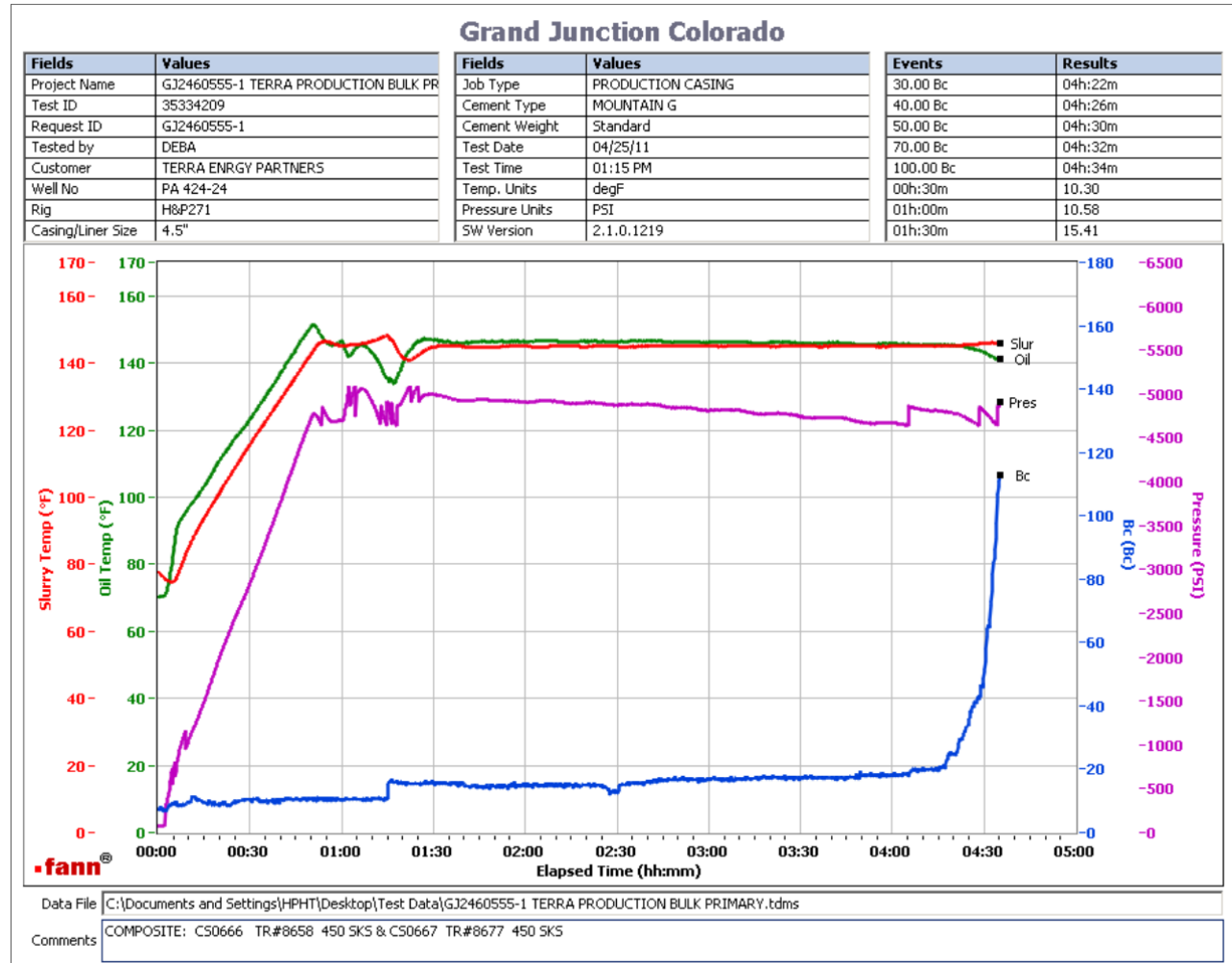
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		VariCem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

19/MAR/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)
145	4863	50	4:22	4:30	4:32	4:34	7	60	15	15



Total sks = 1935
 CS0666 TR#8658 450 SKS
 CS0667 TR#8677 450 SKS
 Deflected 10-- > 15-- > 15

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Operation Test Results Request ID 2460555/2

Thickening Time - ON-OFF-ON

19/MAR/2018

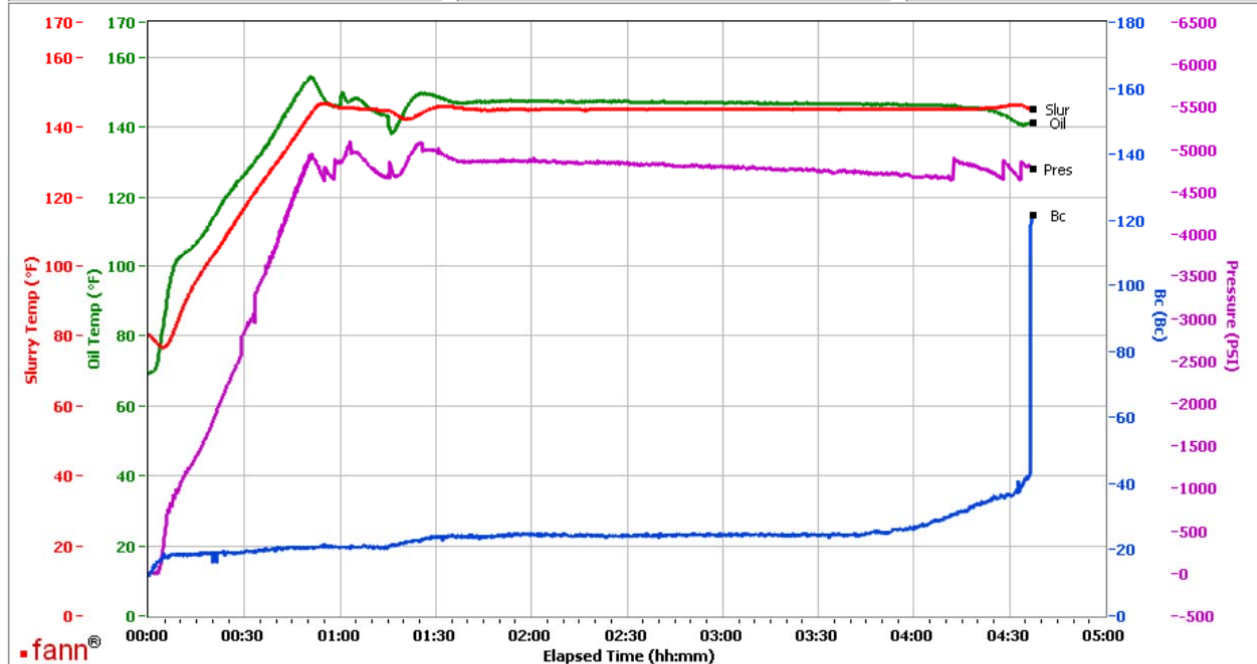
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
145	4863	50	4:10	4:36	4:36	4:36	12	60	15	21

Grand Junction Colorado

Fields	Values
Project Name	GJ2460555-2 TERRA PRODUCTION BULK PR
Test ID	35343996
Request ID	GJ2460555-2
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 424-24
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	03/18/18
Test Time	05:32 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:10m
40.00 Bc	04h:32m
50.00 Bc	04h:36m
70.00 Bc	04h:36m
100.00 Bc	04h:36m
00h:30m	19.49
01h:00m	20.78
01h:30m	23.80



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TJ89YN\GJ2460555-2 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments COMPOSITE: CS0668 TR# 8678 450 SKS AND CS0669 TR#2878 450 SKS

CS0668 TR#8678 450 sks
CS0669 TR#2878 450 SKS
No deflection.

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Thickening Time - ON-OFF-ON

19/MAR/2018

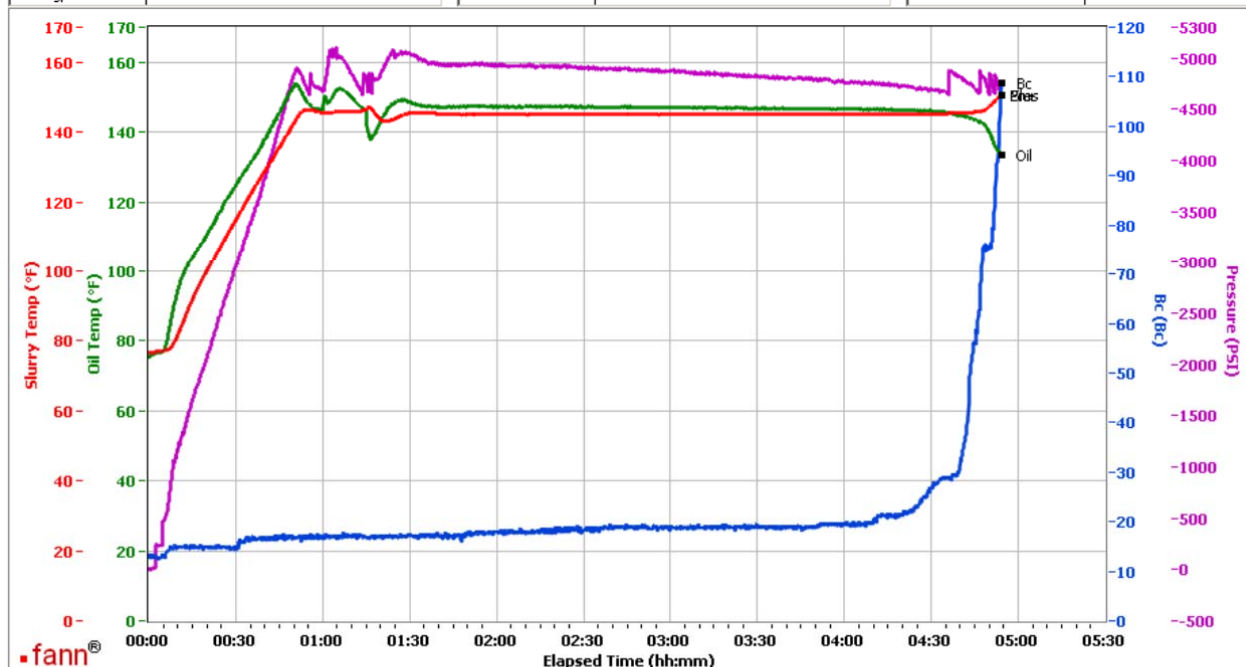
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
145	4863	50	4:39	4:43	4:47	4:53	13	60	15	17

Grand Junction Colorado

Fields	Values
Project Name	GJ2460555-3 TERRA PRODUCTION BULK PR
Test ID	35345892
Request ID	2560555-3
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	PA 424-24
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	03/19/18
Test Time	09:42 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:39m
40.00 Bc	04h:42m
50.00 Bc	04h:43m
70.00 Bc	04h:47m
100.00 Bc	04h:53m
00h:30m	14.99
01h:00m	16.60
01h:30m	17.19



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2460555-3 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS0670 TR 4549 135 SK5

1935 sks Total
CS0670 TR 4549 135 SK5
no deflection , 17Bc--- > 17 Bc

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