

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Monday, January 15, 2018

PA 541-26 Production PJR

API# 05-045-23651-00

Sincerely,

Grand Junction Cement Engineering

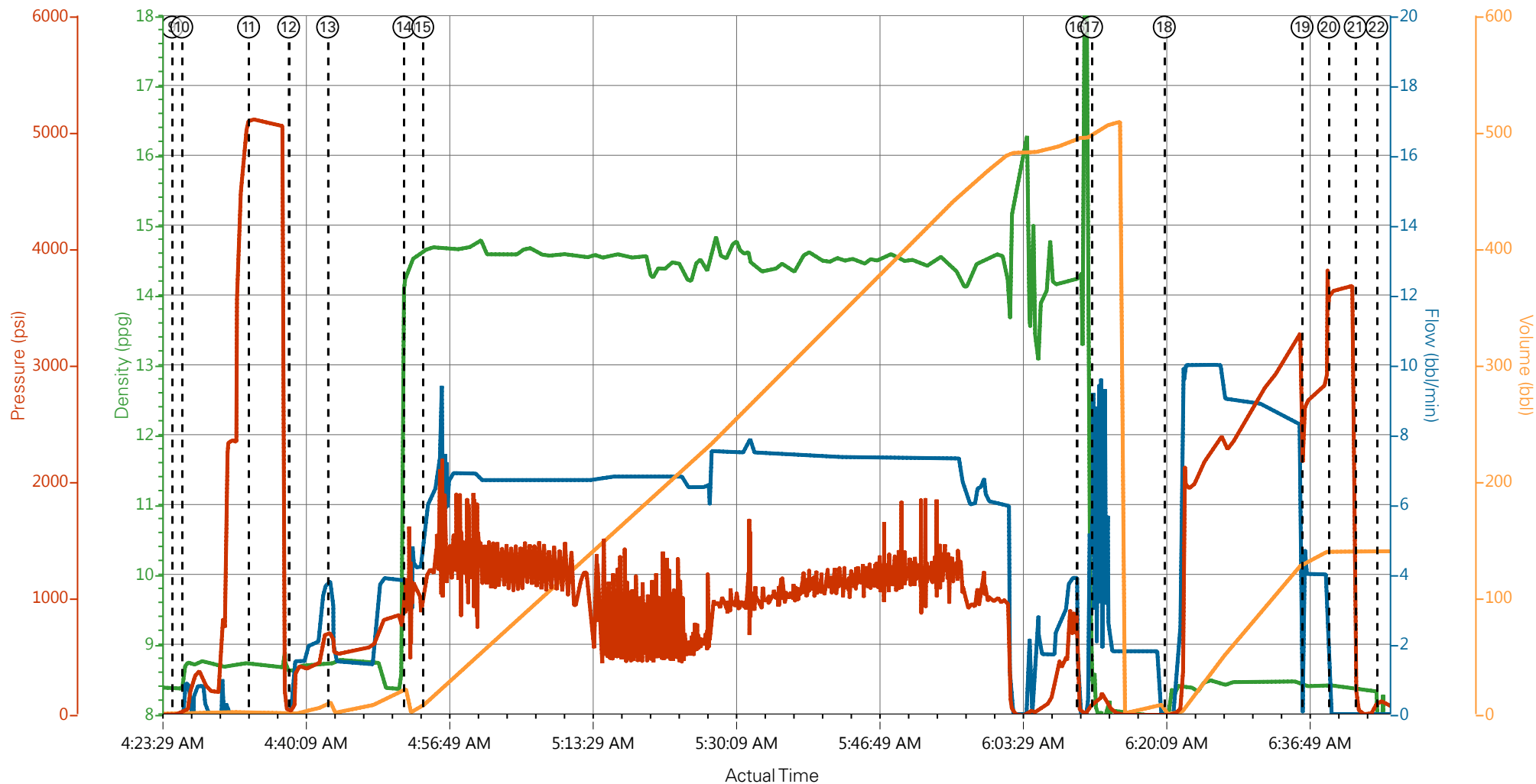
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	1/14/2018	15:30:00	USER					REQUESTED ON LOCATION @ 2100
Event	2	Pre-Convoy Safety Meeting	1/14/2018	17:30:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	1/14/2018	17:40:00	USER					1 F550 & 1 660 BULK TURCKS, 1 PUMP TRUCK
Event	4	Arrive At Loc	1/14/2018	19:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	1/14/2018	19:10:00	USER					MET WITH COMP REP, M.HUDSON, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 55F). COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	1/14/2018	19:20:00	USER					ALL HES PRESENT
Event	7	Rig-up Lines	1/14/2018	19:25:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	1/15/2018	04:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Start Job	1/15/2018	04:25:00	COM6					TD 8587', TP 8582', SJ 31.29', OH 8.75", CSG 4.5" 11.6#, MUD 13 PPG. RIG CIRCULATED WELL 2600 PSI AT 10 BBM
Event	10	Prime Pumps	1/15/2018	04:26:07	USER	225.00	8.33	1.00	2.00	8.33 PPG FRESH WATER
Event	11	Test Lines	1/15/2018	04:33:53	COM6	5112.00	8.33	0.50	0.50	ALL LINES HELD PRESSURE AT 5000 PSI

Event	12	Pump Spacer 1	1/15/2018	04:38:32	COM6	760.00	8.33	4.00	10.00	8.33 PPG FRESH WATER (10BBL)
Event	13	Pump Spacer 2	1/15/2018	04:43:04	COM6	900.00	8.45	4.00	20.00	8.4 PPG MUDFLUSH III (20BBL)
Event	14	Pump Cement	1/15/2018	04:51:56	COM6	1458.00	14.50	7.00	857.20	NEOCER CEMENT 1945 SKS (457.2 BBLs), 14.5 PPG, 1.32 FT3/SK, 5.86 GAL/SK
Event	15	Check weight	1/15/2018	04:54:07	COM6					VIA MUD SCALES
Event	16	Shutdown	1/15/2018	06:10:08	USER					END OF JOB
Event	17	Clean Lines	1/15/2018	06:11:51	USER					WASH UP PUMPS AND LINES TO THE PIT
Event	18	Pump Displacement	1/15/2018	06:20:18	COM6	3240.00	8.33	10.00	122.2	8.34 PPG FRESH WATER (132.5BBLs) 3 BAGS BE6, 1 GAL MMCR & 14 SKS KCL
Event	19	Slow Rate	1/15/2018	06:36:19	USER	2785.00	8.33	4.00	10.0	SLOW RATE TO 4 BPM PER CO REP TO LAND PLUG
Event	20	Bump Plug	1/15/2018	06:39:24	USER	3632.00	8.33	4.00	132.2	LAND PLUG AT 1270 PSI, BROUGHT UP TO 2178 PSI
Event	21	Check Floats	1/15/2018	06:42:30	USER					FLOATS HELD, 1 BBL BACK TO TRUCK
Event	22	End Job	1/15/2018	06:45:00	USER					RETURNS THROUGHOUT JOB, PIPE WAS RECIPROCATED DURING THE JOB, 0 BBL OF CEMENT BACK TO SURFACE
Event	23	Post-Job Safety Meeting (Pre Rig-Down)	1/15/2018	06:50:00	USER					ALL HES PRESENT
Event	24	Rig Down Lines	1/15/2018	06:55:00	USER					ALL HES PRESENT
Event	25	Pre-Convoy Safety Meeting	1/15/2018	07:55:00	USER					ALL HES PRESENT
Event	26	Crew Leave Location	1/15/2018	08:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, KEVIN BENNETT AND CREW

TERRA - PA 541-26 - 4.5" PRODUCTION



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

- | | | | |
|---|--------------------------|---------------------|---|
| ① Call Out | ⑧ Pre-Job Safety Meeting | ⑮ Check weight | 22 End Job |
| ② Pre-Convoy Safety Meeting | ⑨ Start Job | ⑯ Shutdown | 23 Post-Job Safety Meeting (Pre Rig-Down) |
| ③ Crew Leave Yard | ⑩ Prime Pumps | ⑰ Clean Lines | 24 Rig Down Lines |
| ④ Arrive At Loc | ⑪ Test Lines | ⑱ Pump Displacement | 25 Pre-Convoy Safety Meeting |
| ⑤ Assessment Of Location Safety Meeting | ⑫ Pump Spacer 1 | ⑲ Slow Rate | 26 Crew Leave Location |
| ⑥ Pre-Rig Up Safety Meeting | ⑬ Pump Spacer 2 | 20 Bump Plug | |
| ⑦ Rig-up Lines | ⑭ Pump Cement | 21 Check Floats | |

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Created: 2018-01-14 21:05:59, Version: 4.2.393

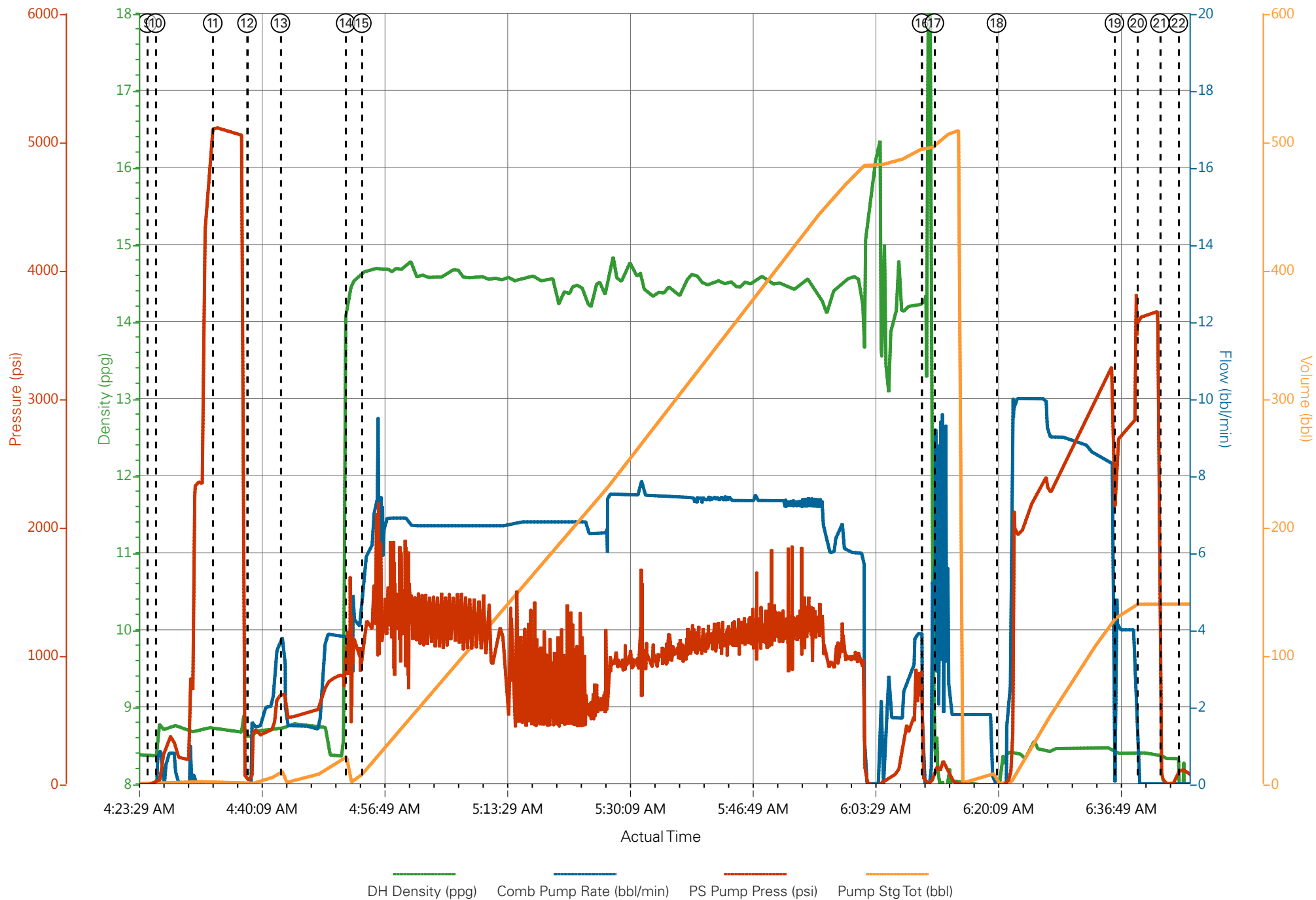
Edit

Customer : TERRA ENERGY LTD.
Representative : M.HUDSON

Job Date : 1/14/2018 9:08:46 PM
Sales Order # : 904564557

Well : PA 541-26
ELITE 8 : K.BENNETT/ S.LEWIS

TERRA - PA 541-26 - 4.5" PRODUCTION



HALLIBURTON

Rockies, Grand Junction

Lab Results- Primary

Job Information

Request/Slurry	2443858/1	Rig Name	H&P 271	Date	10/JAN/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 541-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8573 ft	BHST	102°C / 215°F
Hole Size	8.75 in	Depth TVD	7928 ft	BHCT	63°C / 145°F
Pressure	4850 psi				

Drilling Fluid Information

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



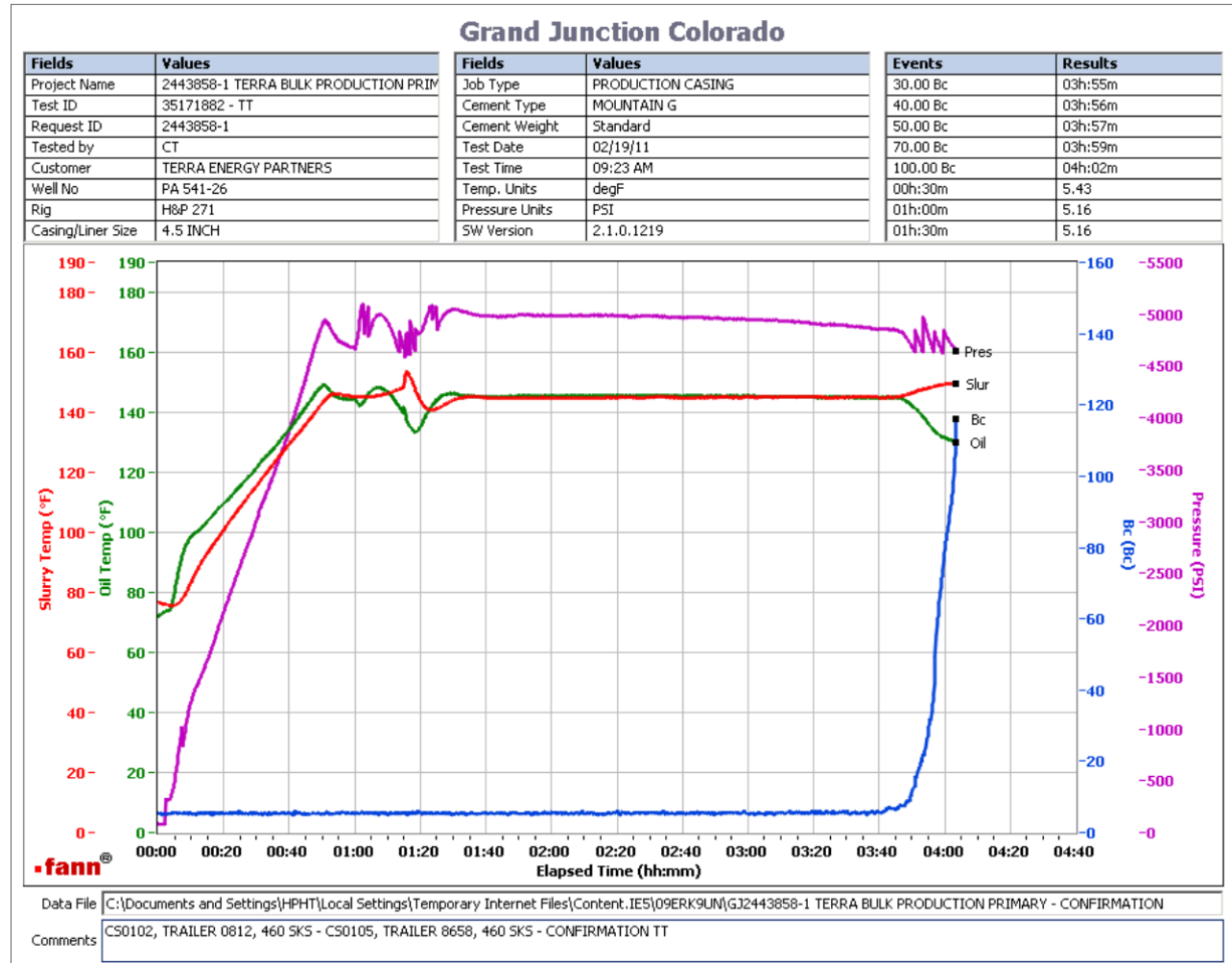
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		VariCem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.856	gal/sack
						Total Mix Fluid	5.856	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

12/JAN/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	4850	50	3:55	3:57	3:59	4:02	5	60	15	6



Deflection: 6 – 6

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Operation Test Results Request ID 2443858/2

Thickening Time - ON-OFF-ON

13/JAN/2018

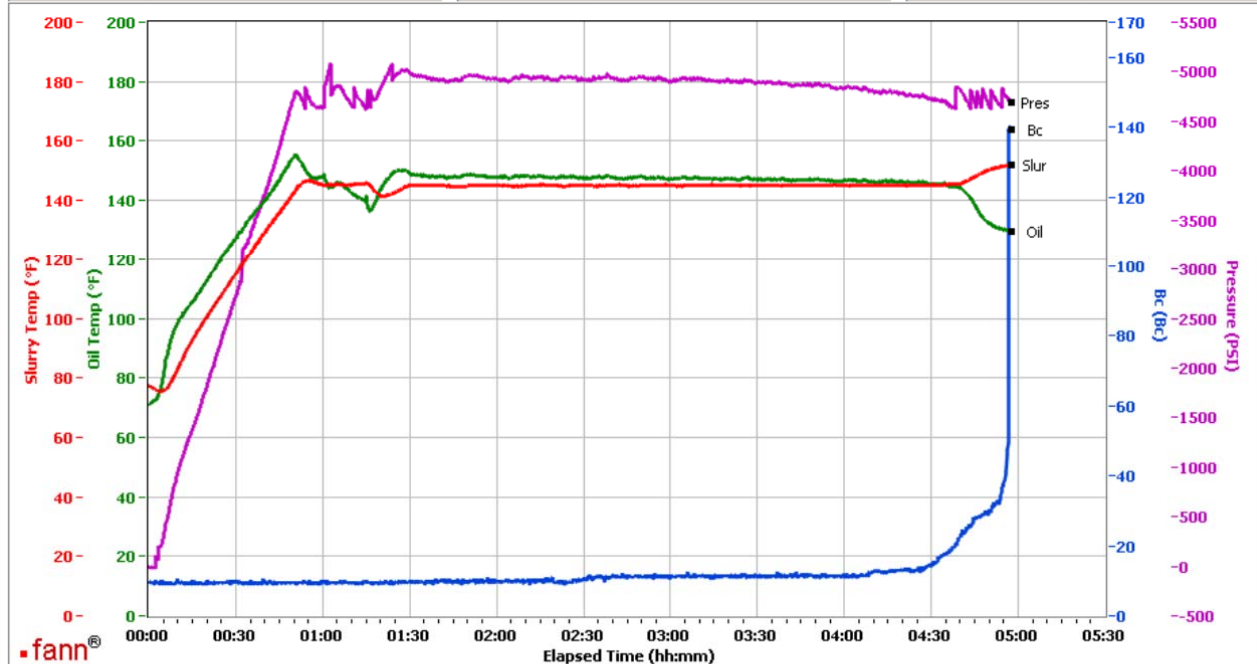
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
145	4850	50	4:48	4:56	4:56	4:56	10	60	15	9

Grand Junction, Colorado

Fields	Values
Project Name	GJ2443858-2 TERRA PRODUCTION PRIMAR
Test ID	35172520
Request ID	2443858-2
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	PA 541-26
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	01/13/18
Test Time	12:59 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:48m
40.00 Bc	04h:55m
50.00 Bc	04h:56m
70.00 Bc	04h:56m
100.00 Bc	04h:56m
00h:30m	10.00
01h:00m	9.48
01h:30m	9.63



Data File: C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TJ389YN\GJ2443858-2 TERRA PRODUCTION PRIMARY BULK[1].tdms

Comments: CS0107 TR 1513 460 SKS CS0110 TR 1656 460 SKS

Composite:

CS0107 TR 1513 460 SKS

CS0110 TR 1656 460 SKS

Deflection: 9 - 9

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Operation Test Results Request ID 2443858/3

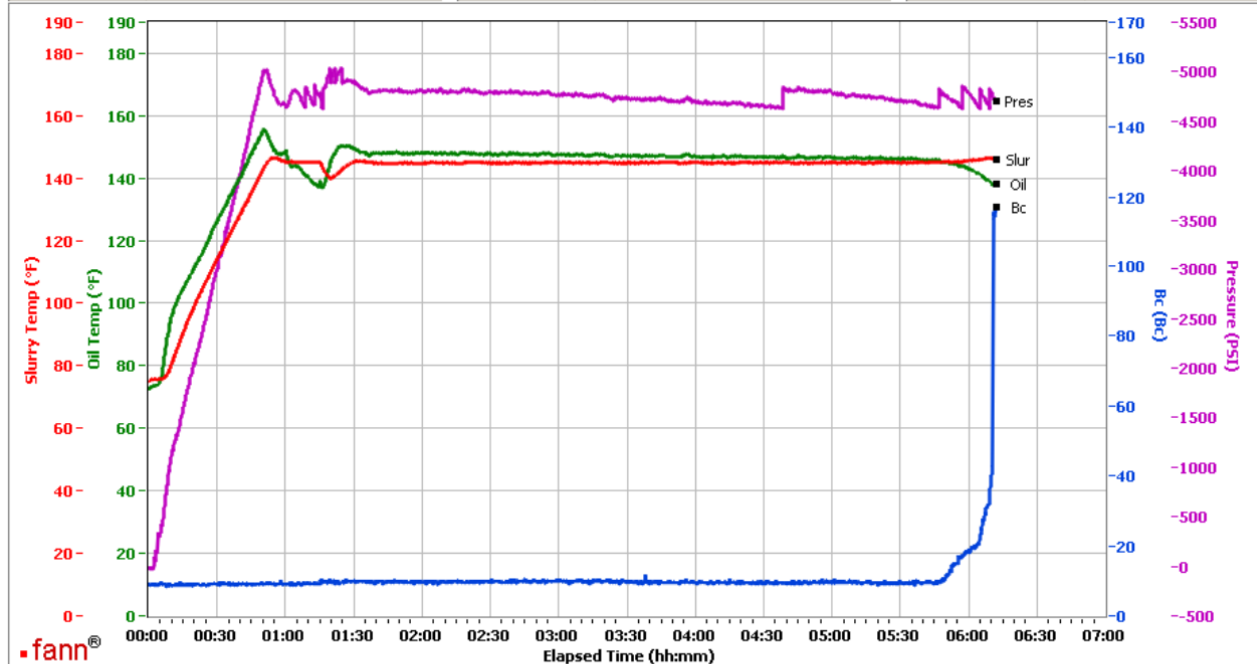
Thickening Time - ON-OFF-ON

13/JAN/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	4850	50	6:07	6:10	6:10	6:10	9	60	15	10

Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	2443858-3 TERRA BULK PRODUCTION PRIM	Job Type	PRODUCTION CASING	30.00 Bc	06h:07m
Test ID	35173316 - TT	Cement Type	MOUNTAIN G	40.00 Bc	06h:10m
Request ID	2443858-3	Cement Weight	Standard	50.00 Bc	06h:10m
Tested by	CT	Test Date	01/13/18	70.00 Bc	06h:10m
Customer	TERRA ENERGY PARTNERS	Test Time	07:15 PM	100.00 Bc	06h:10m
Well No	PA 541-26	Temp. Units	degF	00h:30m	8.92
Rig	H&P 271	Pressure Units	PSI	01h:00m	8.88
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	10.15



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2443858-3 TERRA BULK PRODUCTION PRIMARY[1].tdms

Comments CS0116, TRAILER 3212, 105 SKS

1945 sks Total
CS0116, Trailer 3212, 105 sks
Deflection: 9 - 10

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