

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

For: Terra

Date: Thursday, November 16, 2017

PA 343-26 Production PJR

API# 05-045-23662-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

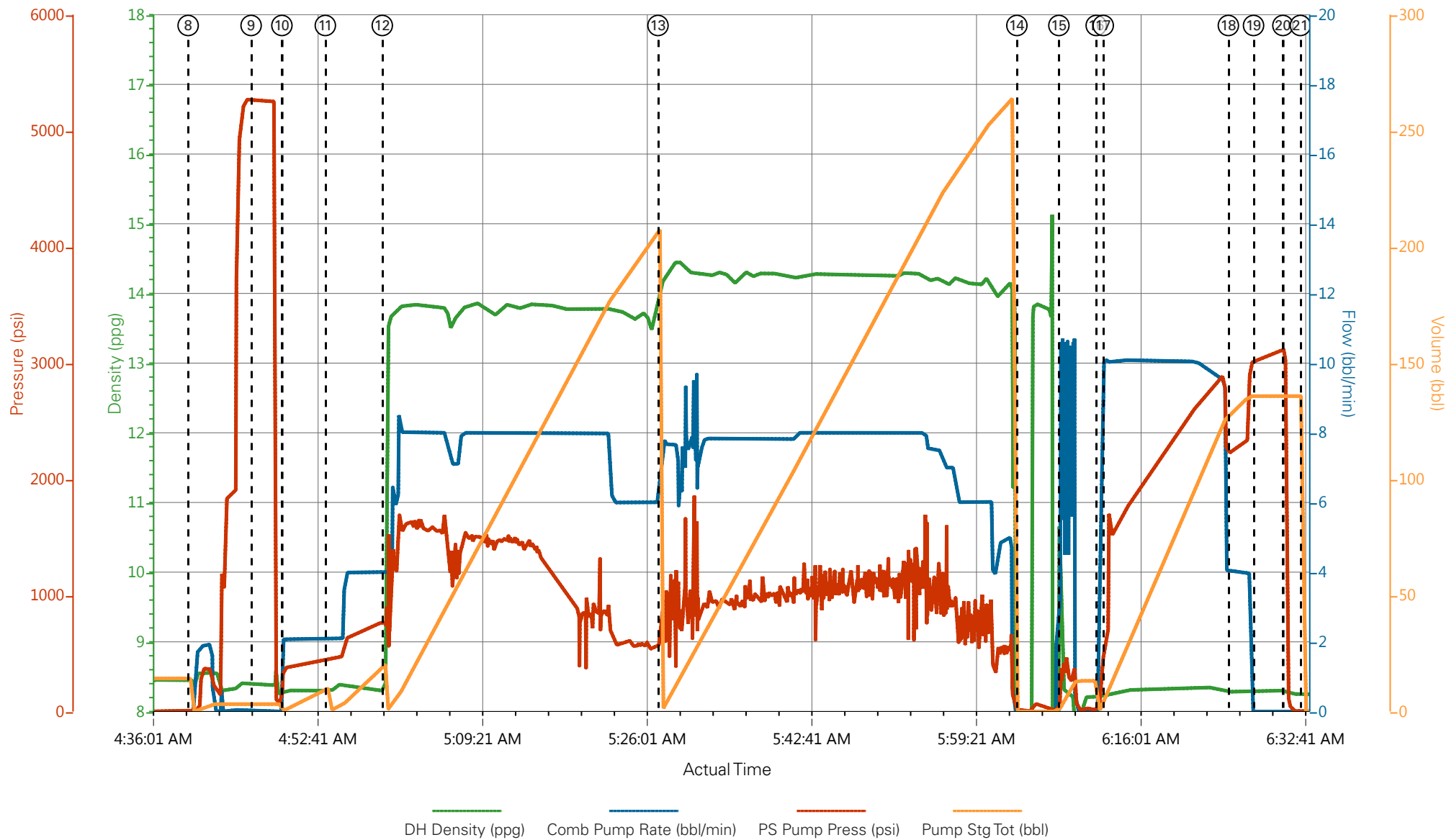
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	11/15/2017	18:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	11/15/2017	19:30:00	USER					ALL HES PERSONNEL
Event	3	Crew Leave Yard	11/15/2017	19:45:00	USER					
Event	4	Arrive At Loc	11/15/2017	20:45:00	USER					RIG RUNNING CASING, THEN CIRCULATED FOR 1.5 HOURS
Event	5	Assessment Of Location Safety Meeting	11/15/2017	21:30:00	USER					ALL HES PERSONNEL
Event	6	Pre-Rig Up Safety Meeting	11/15/2017	21:45:00	USER					ALL HES PERSONNEL
Event	7	Pre-Job Safety Meeting	11/16/2017	04:35:00	USER					ALL ON LOCATION PERSONNEL
Event	8	Start Job	11/16/2017	04:39:53	COM5					TP-8335, TD-8345, SJ-31.50, HOLE- 8 3/4, MUD#-12.4, 9 5/8 SURFACE CASING SET @ 1109
Event	9	Test Lines	11/16/2017	04:46:16	COM5			5275.00		5275 GOOD
Event	10	Pump Spacer 1	11/16/2017	04:49:23	COM5	8.33	2.10	383.00	10.0	FRESH WATER
Event	11	Pump Spacer 2	11/16/2017	04:53:47	COM5	8.33	2.10	452.00	20	MUD FLUSH
Event	12	Pump Lead Cement	11/16/2017	04:59:33	COM5	13.7	8.00	748.00	177.3	655 SKS, 13.7 PPG, 1.52 FT3/K, 7.33 GAL/SK
Event	13	Pump Tail Cement	11/16/2017	05:27:28	COM5	14.3	8.00	1020	233.9	945 SKS, 14.2 PPG, 1.39 FT3/SK, 6.36 GAL/SK
Event	14	Shutdown	11/16/2017	06:03:48	USER					TO BLOW AIR BACK FROM FLOOR TO PIT AND

WASH UP PUMPS TO PIT

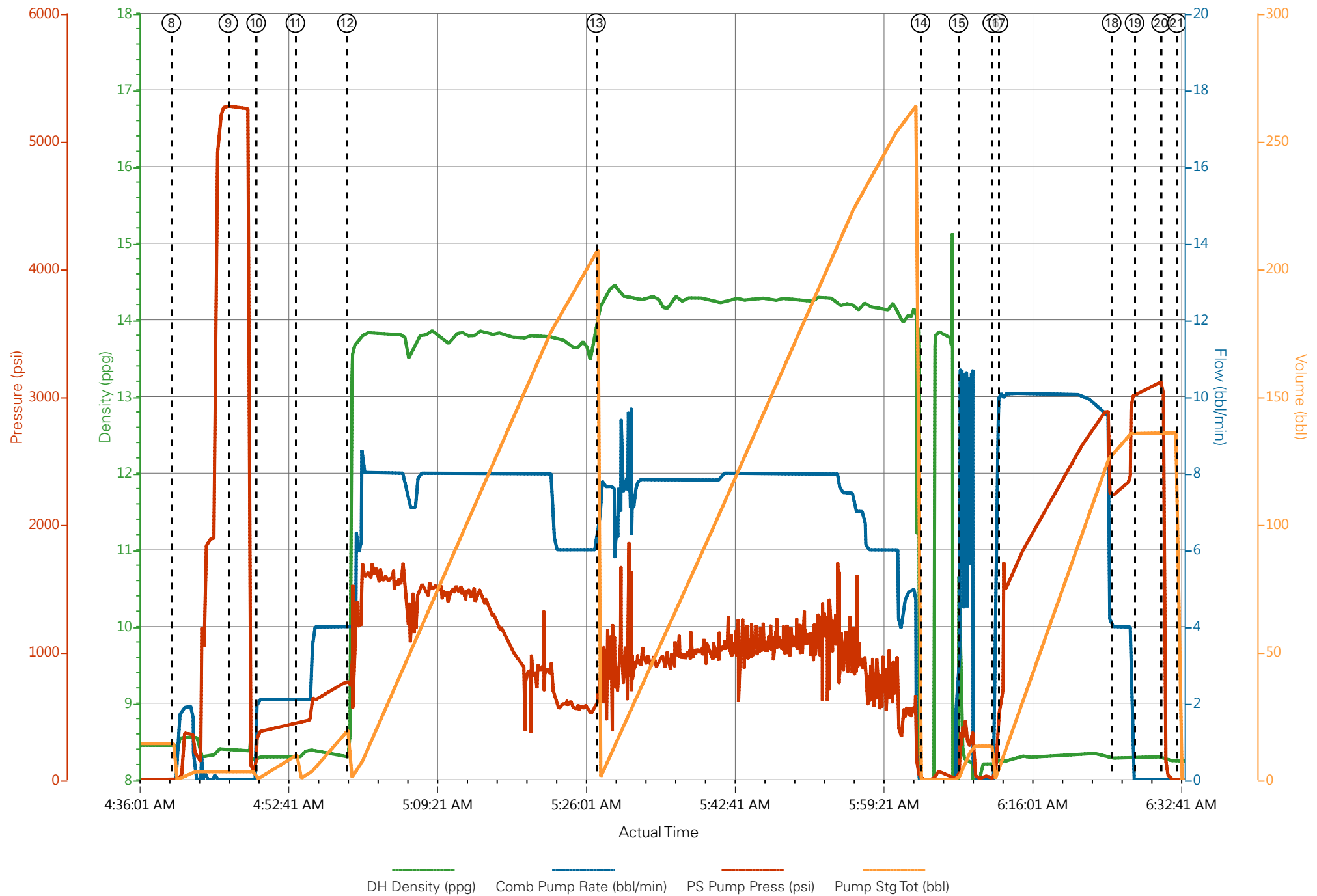
Event	15	Clean Lines	11/16/2017	06:08:03	COM5					
Event	16	Drop Top Plug	11/16/2017	06:11:50	COM5					AWAY
Event	17	Pump Displacement	11/16/2017	06:12:33	COM5	8.33	10.00	2880	128.7	KCL WATER WITH 1 GAL MMCR, 3 BAGS BE-6
Event	18	Slow Rate	11/16/2017	06:25:13	USER	8.33	4.00	2230.00	118	TO BUMP PLUG
Event	19	Bump Plug	11/16/2017	06:27:46	COM5	8.33	0.00	2270	128.7	BUMPED, FULL RETURNS THROUGHOUT JOB, PIPE WAS RECIPROCATED THROUGH OUT JOB
Event	20	Check Floats	11/16/2017	06:30:44	USER			3025		FLOATS HELD, 1.5 BBLS BACK TO TRUCK
Event	21	End Job	11/16/2017	06:32:30	COM5					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW
Event	22	Post-Job Safety Meeting (Pre Rig-Down)	11/16/2017	06:35:00	USER					ALL HES PERSONNEL
Event	23	Rig Down Lines	11/16/2017	07:30:00	USER					
Event	24	Pre-Convoy Safety Meeting	11/16/2017	08:00:00	USER					ALL HES PERSONNEL
Event	25	Crew Leave Location	11/16/2017	08:15:00	USER					

TEP - PA 343-26 - 4.5 PRODUCTION CASING



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

TEP - PA 343-26 - 4.5 PRODUCTION CASING



Job Information

Request/Slurry	2429838/2	Rig Name	H&P 271	Date	11/NOV/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 343-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8382 ft	BHST	102°C / 215°F
Hole Size	8.75 in	Depth TVD	7908 ft	BHCT	63°C / 145°F
Pressure	4843 psi				

Drilling Fluid Information

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

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
						Slurry Density	13.7 lbm/gal
						Slurry Yield	1.516 ft3/sack
						Water Requirement	7.326 gal/sack
						Total Mix Fluid	7.326 gal/sack
						Water Source	Fresh Water
						Water Chloride	

These are draft results and have not been approved for final use.

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Operation Test Results Request ID 2429838/2

Thickening Time - ON-OFF-ON

13/NOV/2017

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	4843	50	3:17	3:30	3:39	3:48	12	60	15	14

CS3094 TR 32312 175 SKS

no deflection was observed. 14Bc--- > 14Bc

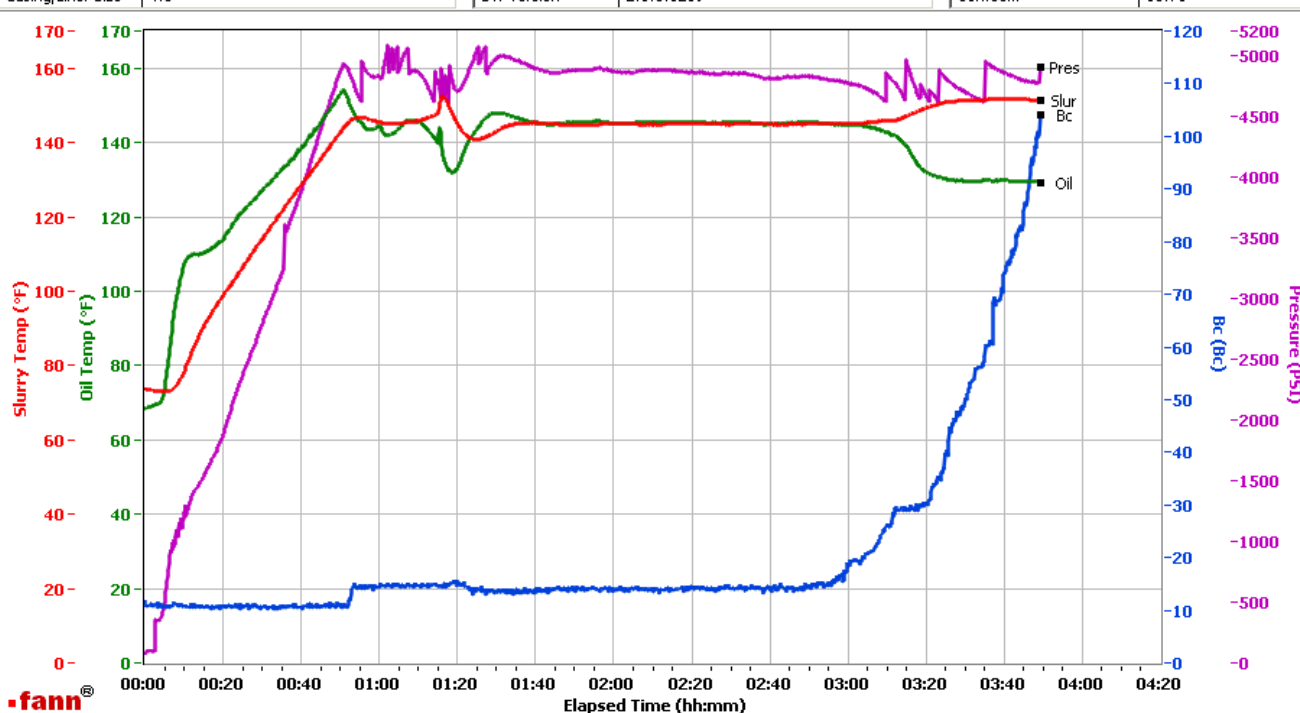
please note heat of hydration at 3:08

Grand Junction Colorado

Fields	Values
Project Name	GJ2429838-2 TERRA PRODUCTION LEAD BL
Test ID	35021897
Request ID	2429838-2
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	PA 343-26
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Light Weight
Test Date	11/13/2017
Test Time	10:31 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	03h:17m
40.00 Bc	03h:25m
50.00 Bc	03h:30m
70.00 Bc	03h:39m
100.00 Bc	03h:48m
00h:30m	10.72
01h:00m	14.26
01h:30m	13.71



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\8HEN8T6Z\GJ2429838-2 TERRA PRODUCTION LEAD BULK[1].tdms

Comments CS3094 TR 3212 175 SKS

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Operation Test Results Request ID 2429838/1

Thickening Time - ON-OFF-ON

13/NOV/2017

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	4843	50	3:19	3:23	3:38	3:53	16	60	15	15

Total sks = 655

CS3087 TR#0813 480 SKS

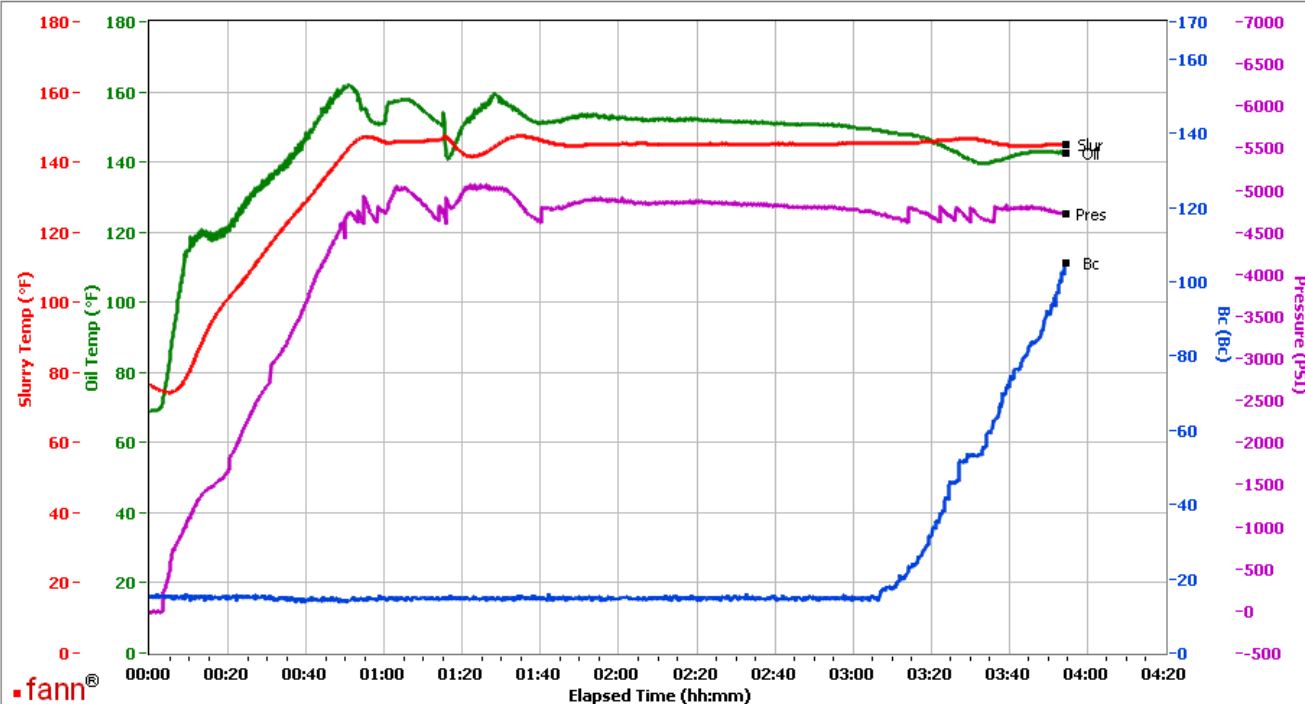
No deflection. Heat of hydration started around 3:20.

Grand Junction Colorado

Fields	Values
Project Name	GJ2429838-1 TERRA PRODUCTION BULK LE
Test ID	35017931
Request ID	GJ2429838-1
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 343-26
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	11/12/17
Test Time	05:15 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:19m
40.00 Bc	03h:23m
50.00 Bc	03h:27m
70.00 Bc	03h:38m
100.00 Bc	03h:53m
00h:30m	14.97
01h:00m	15.02
01h:30m	14.94



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TJ89YN\GJ2429838-1 TERRA PRODUCTION BULK LEAD[1].tdms

Comments CS3087 TR#0813 480 SKS

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2429839/1	Rig Name	H&P 271	Date	11/NOV/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 343-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8382 ft	BHST	102°C / 215°F
Hole Size	8.75 in	Depth TVD	7908 ft	BHCT	63°C / 145°F
Pressure	4843 psi				

Drilling Fluid Information

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

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						Slurry Density	14.2	lbm/gal
						Slurry Yield	1.387	ft3/sack
						Water Requirement	6.36	gal/sack
						Total Mix Fluid	6.36	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2429839/1

Thickening Time - ON-OFF-ON

13/NOV/2017

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	4843	50	2:40	2:52	2:58	2:58	13	60	15	20

Total sks = 945

Composite:

CS3088 TR#1656 472.5 SKS

CS3089 TR#0812 472.5 SKS

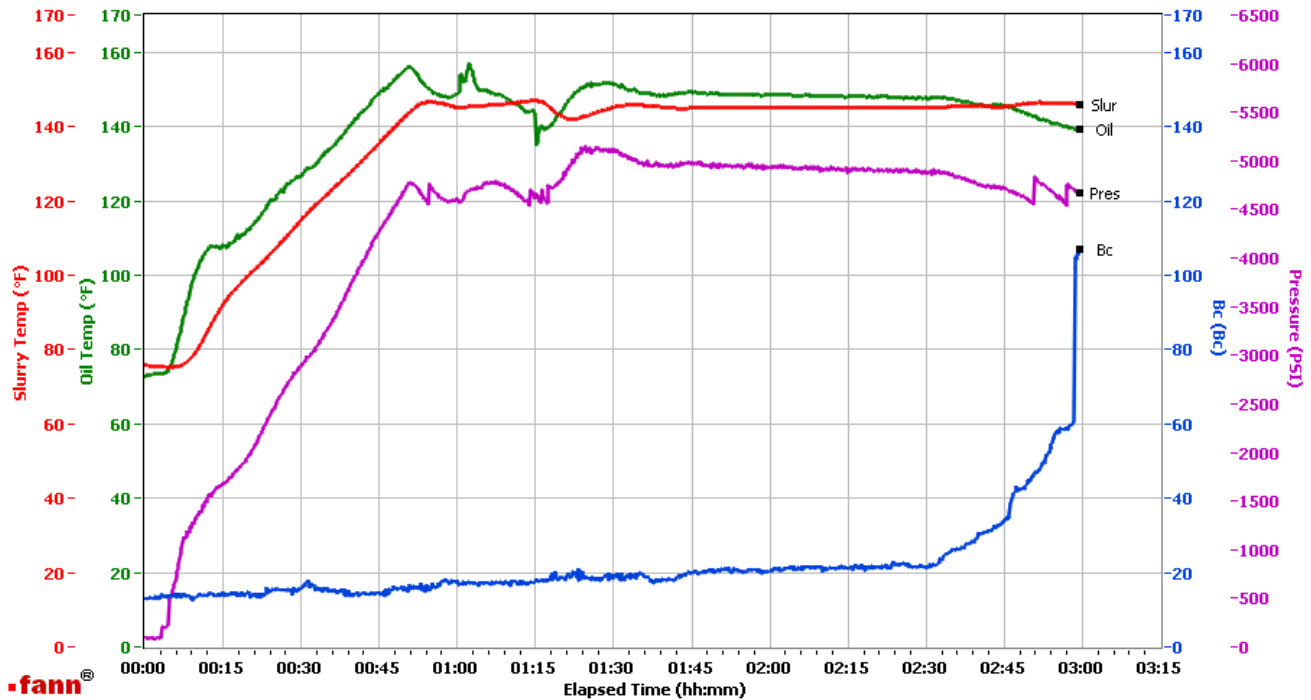
No deflection. Heat of hydration started around 2:39.

Grand Junction Colorado

Fields	Values
Project Name	GJ2429839-1 TERRA PRODUCTION BULK TA
Test ID	35017933
Request ID	GJ2429839-1
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 343-26
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	11/13/17
Test Time	03:31 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:40m
40.00 Bc	02h:46m
50.00 Bc	02h:52m
70.00 Bc	02h:58m
100.00 Bc	02h:58m
00h:30m	16.28
01h:00m	17.87
01h:30m	19.27



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\O3KLGZVR\GJ2429839-1 TERRA PRODUCTION BULK TAIL[1].tdms

Comments COMPOSITE: CS3088 TR#1656 472.5 SKS AND CS3089 TR#0812 472.5 SKS

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