

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Mark Mewshaw and Lynn Cass

Date: Saturday, August 27, 2016

RU 412-7 Production

Sincerely,
Grand Junction Cement Department

1.0 Real-Time Job Summary

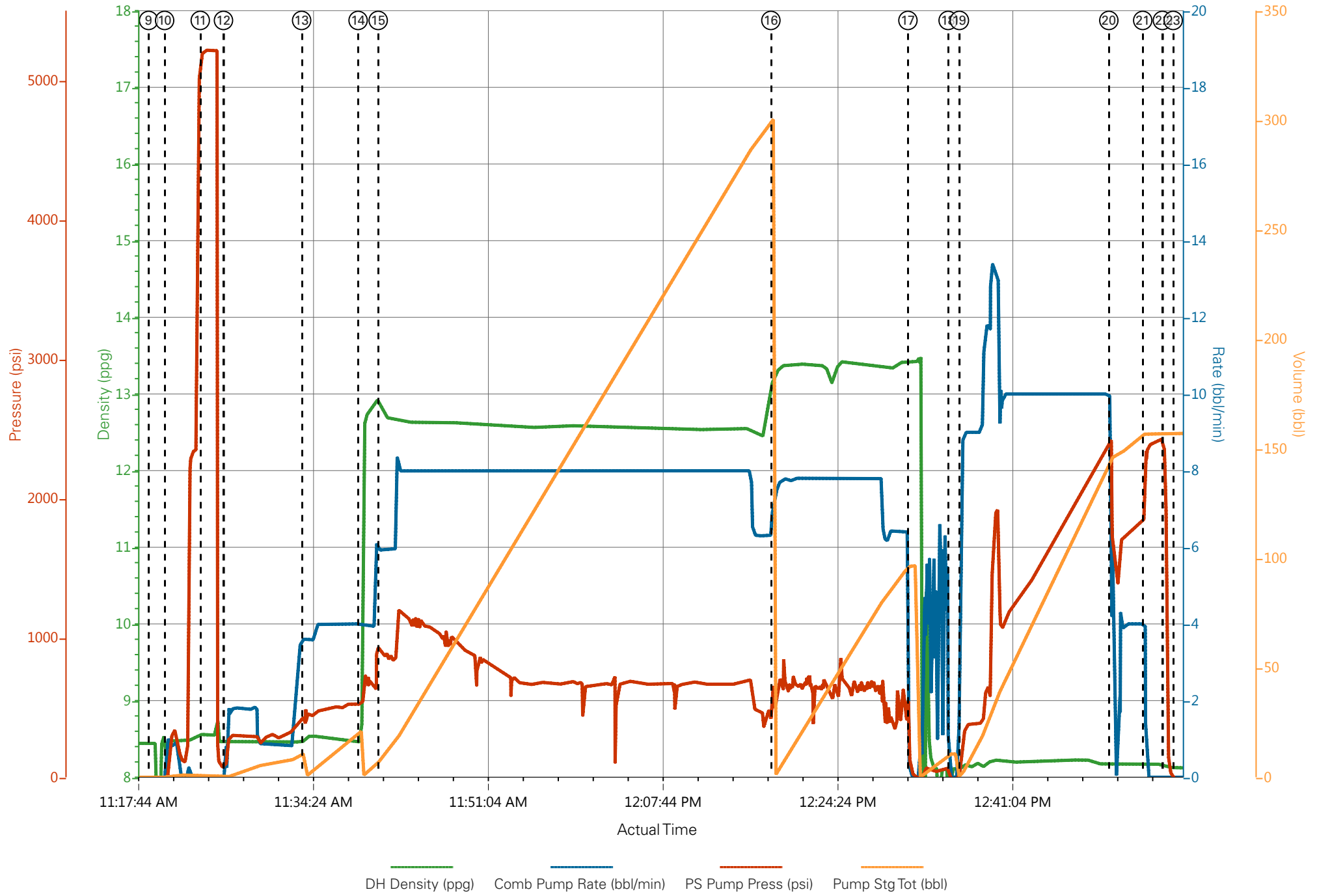
1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	8/27/2016	02:00:00	USER					O/L time 0800
Event	2	Pre-Convoy Safety Meeting	8/27/2016	03:45:00	USER					
Event	3	Crew Leave Yard	8/27/2016	04:00:00	USER					1 Elite, 1 660, 1 pickup
Event	4	Arrive At Location	8/27/2016	05:30:00	USER					Rig still running casing
Event	5	Assessment Of Location Safety Meeting	8/27/2016	05:45:00	USER					JSA completed - customer offered/received SDS - water test pH 7.0, Cl 0, temp 63 degrees
Event	6	Pre-Rig Up Safety Meeting	8/27/2016	08:00:00	USER					
Event	7	Rig-Up Equipment	8/27/2016	08:15:00	USER					Manifold on ground, hard line to standpipe, hard line to pit, water hoses to uprights, bulk hoses to silo and 660
Event	8	Pre-Job Safety Meeting	8/27/2016	09:00:00	USER					All HES personnel, rig crew, and company rep
Event	9	Start Job	8/27/2016	11:19:00	USER					TD 9652', TP 9645.04', SJ 28.85', Mud 10.1#, 8 3/4"OH, 9 5/8" 32.3# H40 Surf casing @ 1175', 4 1/2" 11.6# P110 casing
Event	10	Prime Lines	8/27/2016	11:20:31	USER	8.33	2.0	375	2.0	Fresh water
Event	11	Test Lines	8/27/2016	11:23:55	COM5			5232		Pressure held well
Event	12	Pump H2O Spacer	8/27/2016	11:26:08	COM5	8.33	4.0	420	10.0	Fresh water
Event	13	Pump Mud Flush	8/27/2016	11:33:35	COM5	8.33	4.0	539	20.0	80 lbs Mud Flush III
Event	14	Pump Lead Cement	8/27/2016	11:38:58	COM5	12.5	8.0	1248	292.0	845 sks, 12.6 ppg, 1.94 yield, 9.58

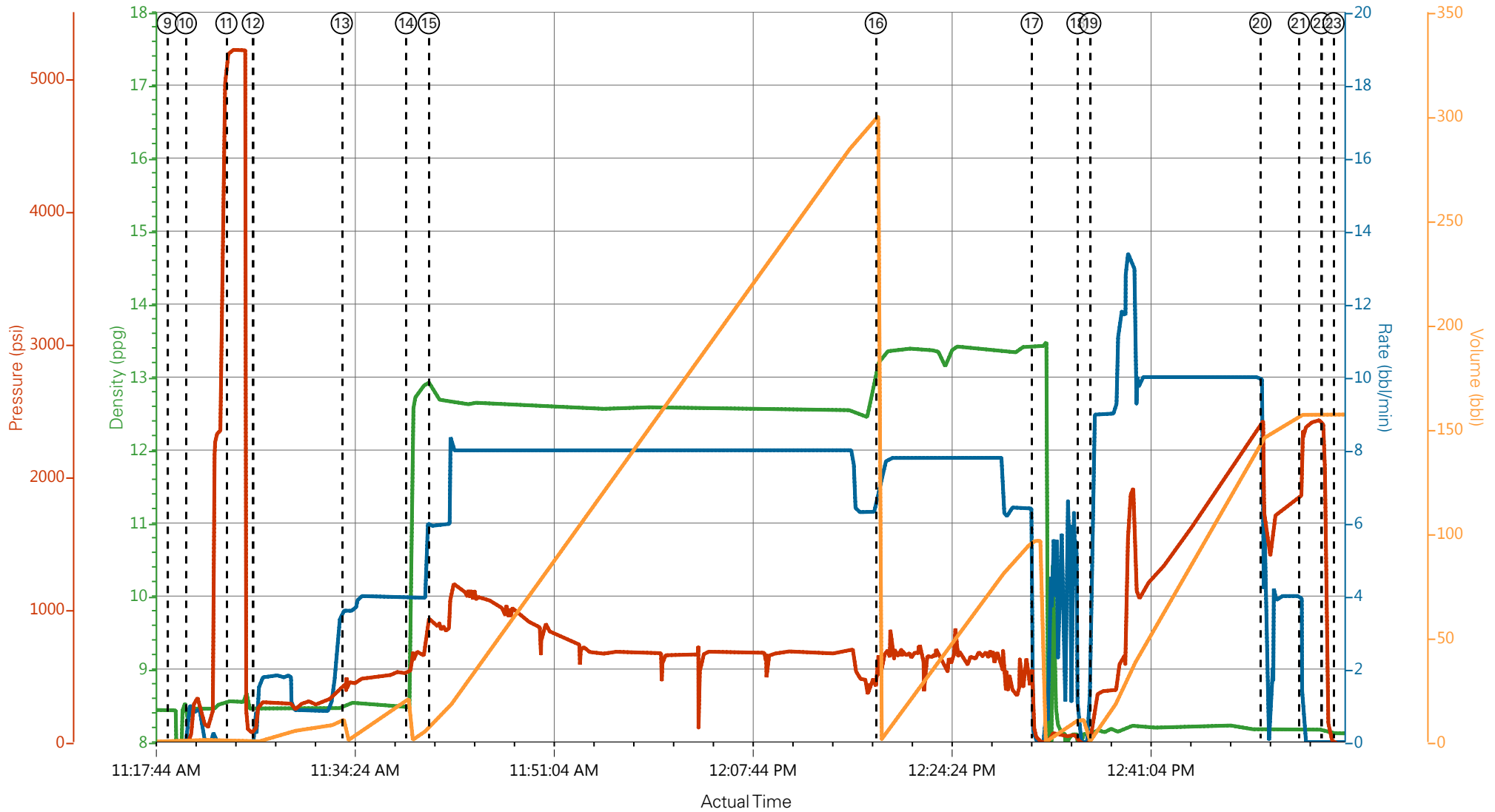
gal/sk - Tuf fiber added to lead cement

Event	15	Check weight	8/27/2016	11:40:53	COM5	12.5					Recirc matched mud scales
Event	16	Pump Tail Cement	8/27/2016	12:18:19	COM5	13.3	8.0	657	81.6		265 sks, 13.3 ppg, 1.73 yield, 7.81 gal/sk
Event	17	Shutdown	8/27/2016	12:31:23	COM5						Wash up lines to truck
Event	18	Drop Top Plug	8/27/2016	12:35:13	USER						Plug launched
Event	19	Pump Displacement	8/27/2016	12:36:17	COM5	8.33	10.0	2427	149.0		3 lbs BE-6, 1 gal MMCR, 2% Kcl
Event	20	Slow Rate	8/27/2016	12:50:32	COM5	8.33	4.0	1730	@ 140		Pipe reciprocated at beginning of cement only
Event	21	Bump Plug	8/27/2016	12:53:46	USER			1870			Good returns throughout job
Event	22	Check Floats	8/27/2016	12:55:38	COM5			2380			Floats held – 1 ½ bbl flowback
Event	23	End Job	8/27/2016	12:56:40	COM5						
Event	24	Pre-Rig Down Safety Meeting	8/27/2016	13:10:00	USER						
Event	25	Rig-Down Equipment	8/27/2016	13:20:00	USER						
Event	26	Pre-Convoy Safety Meeting	8/27/2016	13:50:00	USER						
Event	27	Crew Leave Location	8/27/2016	14:00:00	USER						Thank you for using Halliburton - Ed Deussen and crew

TERRA ENERGY - RU 412-7 - 4 1/2" Production



TERRA ENERGY - RU 412-7 - 4 1/2" Production



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

- | | | | | | |
|---|-----------------------------|--------------------|---------------------|-------------------------------|-----------------------------|
| ① Call Out | ⑥ Pre-Rig Up Safety Meeting | ⑪ Test Lines | ⑯ Pump Tail Cement | ⑳ Bump Plug | ⑳ Pre-Convoy Safety Meeting |
| ② Pre-Convoy Safety Meeting | ⑦ Rig-Up Equipment | ⑫ Pump H2O Spacer | ⑰ Shutdown | ㉑ Check Floats | ㉒ Crew Leave Location |
| ③ Crew Leave Yard | ⑧ Pre-Job Safety Meeting | ⑬ Pump Mud Flush | ⑱ Drop Top Plug | ㉓ End Job | |
| ④ Arrive At Location | ⑨ Start Job | ⑭ Pump Lead Cement | ㉒ Pump Displacement | ㉔ Pre-Rig Down Safety Meeting | |
| ⑤ Assessment Of Location Safety Meeting | ⑩ Prime Lines | ⑮ Check weight | ㉓ Slow Rate | ㉕ Rig-Down Equipment | |

▼ **HALLIBURTON** | iCem® Service

Created: 2016-08-27 06:04:08, Version: 4.2.393

Edit

Customer : TERRA ENERGY PARTNERS
 Representative : Beaudé Oaks

Job Date : 8/27/2016 10:41:56 AM
 Sales Order # : 903504307

Well : RU 412-7
 Elite #4 : Ed Deussen / Kevin Bennett

Job Information

Request/Slurry	2336396/2	Rig Name	H&P 318	Date	24/AUG/2016
Submitted By	Evan Russell	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 412-7

Well Information

Casing/Liner Size	4.5 in	Depth MD	9626 ft	BHST	116°C / 240°F
Hole Size	8.75 in	Depth TVD	9394 ft	BHCT	77°C / 170°F
Pressure	5880 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.95 lbm/gal
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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>	<u>Cement Properties</u>		
		NeoCem™ Cement				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft ³ /sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time

25/AUG/2016

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
170	5880	47	3	5:47	6:16	6:50	6:56	6:58

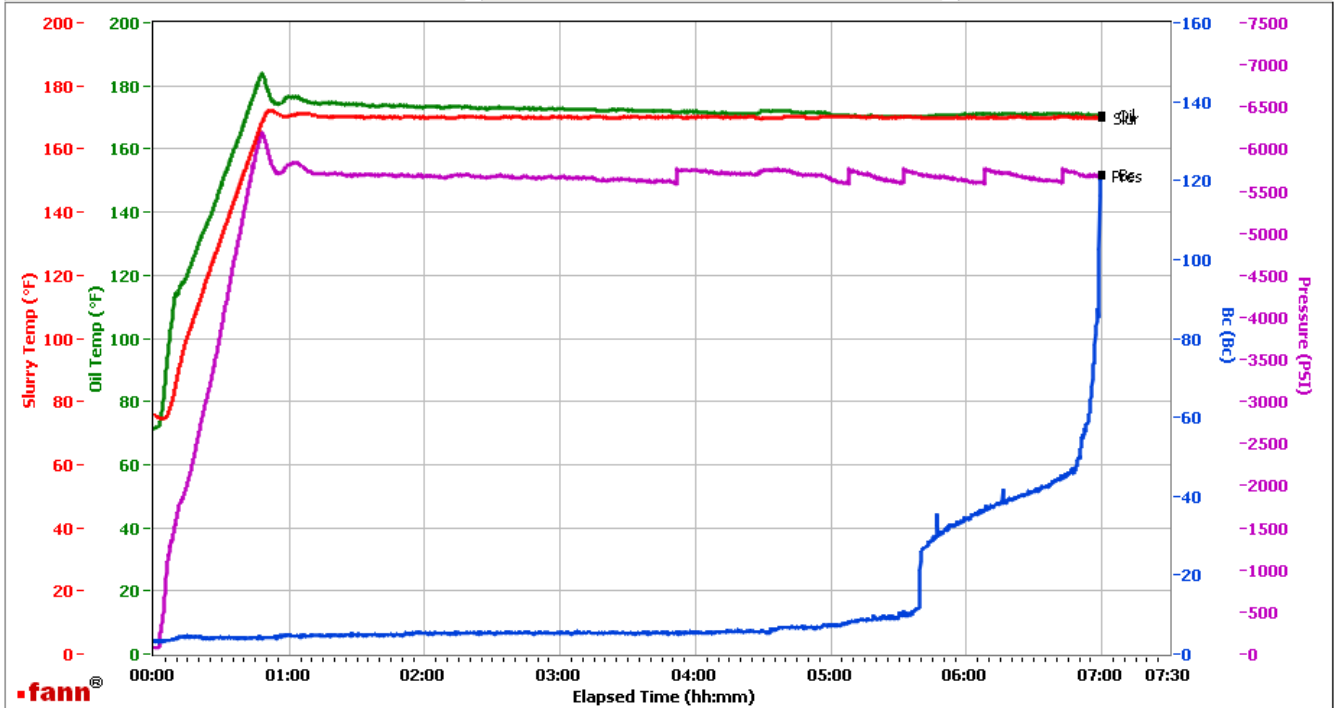
Total Sacks- 845
CS0803 TR 8678 422.5 SKS

Grand Junction Colorado

Fields	Values
Project Name	GJ2336396-2 TERRA PRODUCTION BULK LE
Test ID	GJ2336396-2 TERRA PRODUCTION BULK LE
Request ID	GJ2336396-2 TERRA PRODUCTION BULK LE
Tested by	JASON
Customer	TERRA
Well No	RU 412-7
Rig	H&P 318
Casing/Liner Size	4.5

Fields	Values
Job Type	PRODUCTION
Cement Type	NEOCEM
Cement Weight	Light Weight
Test Date	08/25/16
Test Time	01:41 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	05h:47m
40.00 Bc	06h:16m
50.00 Bc	06h:50m
70.00 Bc	06h:56m
100.00 Bc	06h:58m
00h:30m	4.37
01h:00m	4.97
01h:30m	4.47



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Comments CS0803 TR 8678 422.5 SKS

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Operation Test Results Request ID 2336396/1

Thickening Time

25/AUG/2016

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
170	5880	47	6	5:44	6:21	6:47	13:49	17:07

Total Sacks- 845

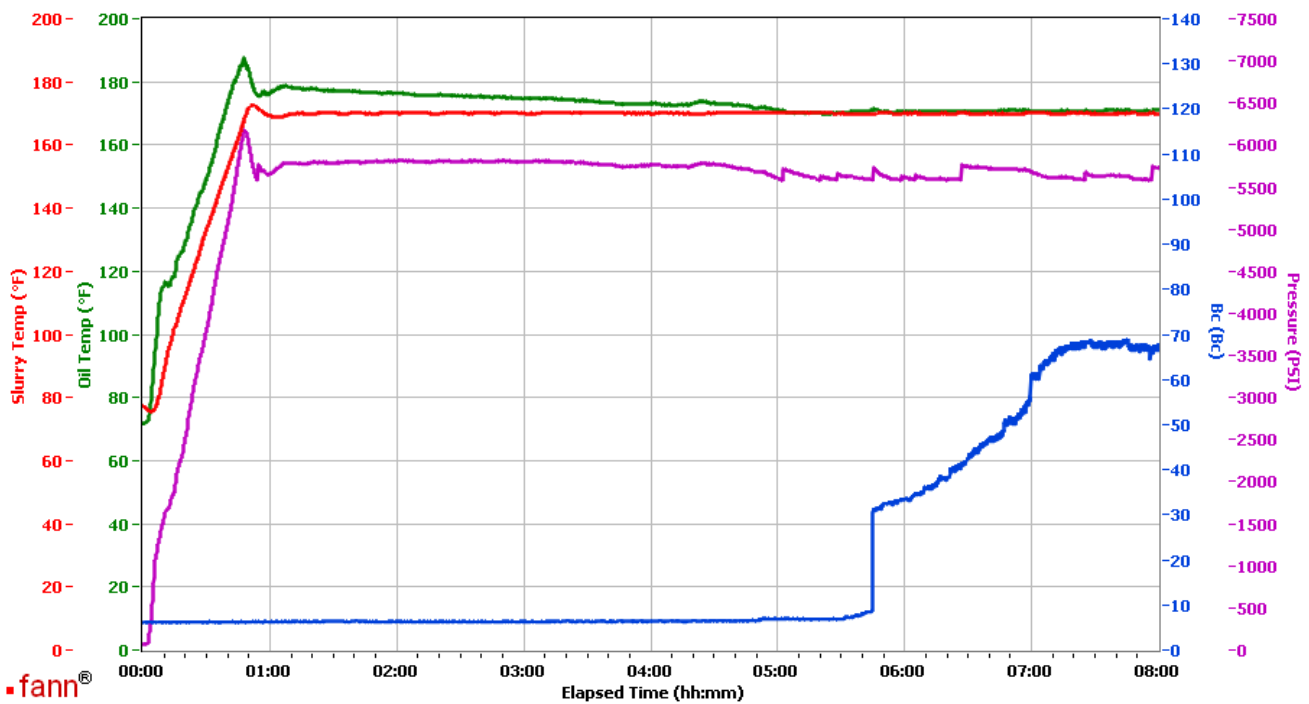
CS0802 TR 8658 422.5 SKS

Grand Junction Colorado

Fields	Values
Project Name	GJ2336396-1 TERRA PRODUCTION BULK LE
Test ID	GJ2336396-1 TERRA PRODUCTION BULK LE
Request ID	GJ2336396-1 TERRA PRODUCTION BULK LE
Tested by	JASON
Customer	TERRA
Well No	RU 412-7
Rig	H&P 318
Casing/Liner Size	4.5

Fields	Values
Job Type	PRODUCTION
Cement Type	NEOCEM
Cement Weight	Light Weight
Test Date	08/24/16
Test Time	11:13 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	05h:44m
40.00 Bc	06h:21m
50.00 Bc	06h:47m
70.00 Bc	13h:49m
100.00 Bc	17h:07m
00h:30m	6.96
01h:00m	6.96
01h:30m	6.96



Data File C:\Documents and Settings\M290\Desktop\Test Data\GJ2336396-1 TERRA PRODUCTION BULK LEAD.tdms
 Comments CS0802 TR 8658 422.5 SKS

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Job Information

Request/Slurry	2336397/1	Rig Name	H&P 318	Date	24/AUG/2016
Submitted By	Evan Russell	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 412-7

Well Information

Casing/Liner Size	4.5 in	Depth MD	9626 ft	BHST	116°C / 240°F
Hole Size	8.75 in	Depth TVD	9394 ft	BHCT	77°C / 170°F
Pressure	5880 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	10.4 lbm/gal
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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™ Cement				Slurry Density	13.3 lbm/gal
						Slurry Yield	1.733 ft ³ /sack
						Water Requirement	7.799 gal/sack
						Total Mix Fluid	7.799 gal/sack
						Water Source	Fresh Water
						Water Chloride	

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Thickening Time

25/AUG/2016

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
170	5880	47	17	2:35	2:42	2:47	2:56	3:01

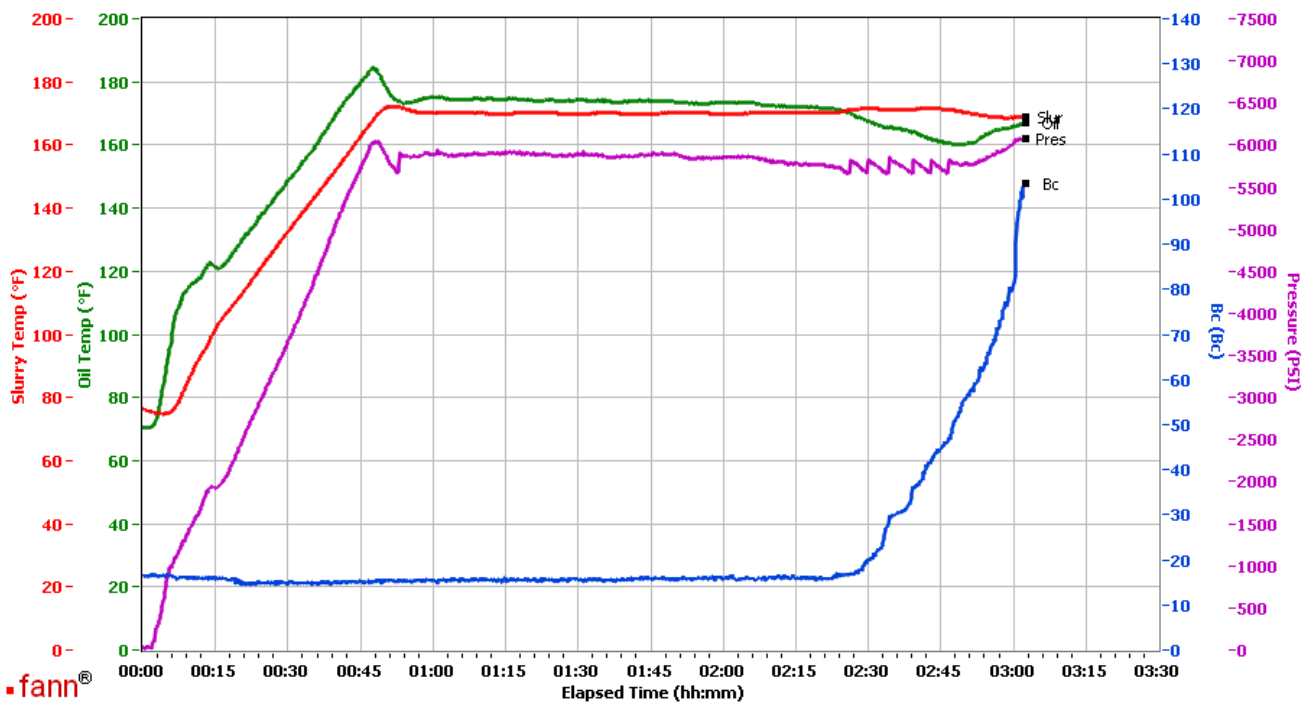
Total sacks=265
CS0804 TR 5104 265 SKS

Grand Junction Colorado

Fields	Values
Project Name	GJ2336397-1 TERRA PRODUCTION BULK TA
Test ID	GJ2336397-1 TERRA PRODUCTION BULK TA
Request ID	GJ2336397-1 TERRA PRODUCTION BULK TA
Tested by	JASON
Customer	TERRA
Well No	RU 412-7
Rig	H&P 318
Casing/Liner Size	4.5

Fields	Values
Job Type	PRODUCTION
Cement Type	THERMACEM
Cement Weight	Light Weight
Test Date	08/24/16
Test Time	05:52 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:35m
40.00 Bc	02h:42m
50.00 Bc	02h:47m
70.00 Bc	02h:56m
100.00 Bc	03h:01m
00h:30m	14.49
01h:00m	15.52
01h:30m	15.66



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Comments CS0804 TR 5104 265 SKS

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