

# HALLIBURTON

iCem<sup>®</sup> Service

## **TEP ROCKY MOUNTAIN LLC-EBUS**

**For: Terra Energy Partners**

### **SR 334-12**

SR 334-12 Production

API # 05-045-23451-00

Job Date: Wednesday, December 20, 2017

Sincerely,

**Grand Junction Cement Engineering**

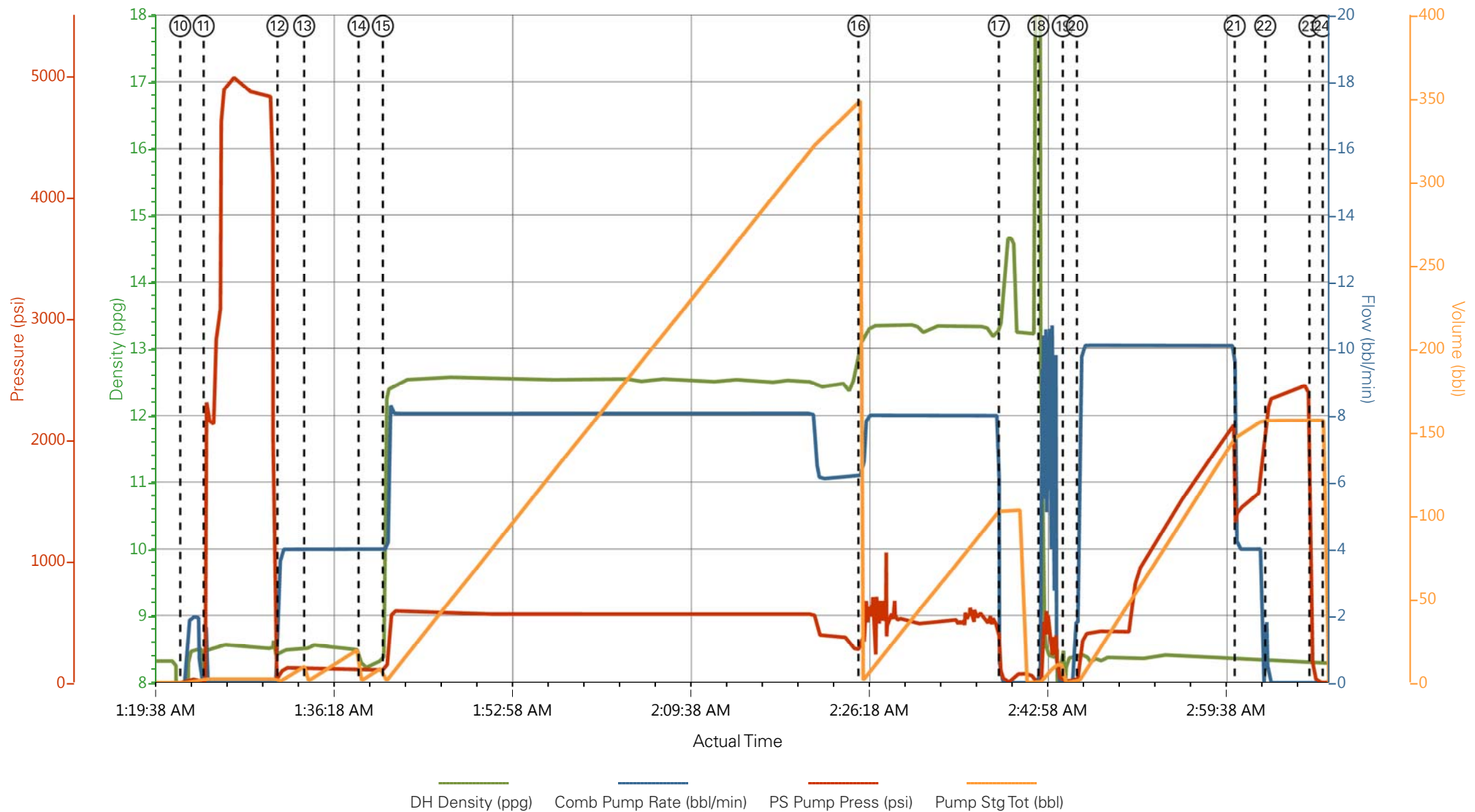
## 1.0 Real-Time Job Summary

## 1.1 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	12/20/2017	15:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	12/20/2017	17:55:00	USER					
Event	3	Crew Leave Yard	12/20/2017	18:00:00	USER					
Event	4	Arrive At Loc	12/20/2017	19:30:00	USER					
Event	5	Assessment Of Location Safety Meeting	12/20/2017	19:35:00	USER					
Event	6	Spot Equipment	12/20/2017	19:40:00	USER					
Event	7	Pre-Rig Up Safety Meeting	12/20/2017	19:45:00	USER					
Event	8	Rig-Up Equipment	12/20/2017	20:00:00	USER					
Event	9	Pre-Job Safety Meeting	12/21/2017	00:45:00	USER					
Event	10	Start Job	12/21/2017	01:22:16	COM5					TD: 9735 TP: 9729 SJ: 31.43 MW: 9.4 PPG 4 1/2" 11.6#/FT CSG IN 8 3/4" OH WATER TEST: PH: 6.5 POTASSIUM: 700 CHLORIDES: 0 SULFATES: <200 TEMP: 66 DEGREES
Event	11	Test Lines	12/21/2017	01:24:27	COM5	8.33	0.00	5000.00	2.0	5000 PSI TEST
Event	12	Pump H2O Spacer	12/21/2017	01:31:20	COM5	8.33	4.00	74.00	10.0	FRESH H2O SPACER
Event	13	Pump Mudflush	12/21/2017	01:33:50	COM5	8.40	4.00	117.00	20.0	MUDFLUSH
Event	14	Pump H2O Spacer	12/21/2017	01:38:55	COM5	8.33	4.00	102.00	10.0	FRESH H2O SPACER

Event	15	Pump Lead Cement	12/21/2017	01:41:11	COM5	12.50	8.00	580.00	279.9	810 SKS @ 12.5 PPG 1.94 YLD 9.6 GAL/SK H2O
Event	16	Pump Tail Cement	12/21/2017	02:25:34	COM5	13.30	8.00	526.00	81.6	265 SKS @ 13.3 PPG 1.73 YLD 7.81 GAL/SK H2O
Event	17	Shutdown	12/21/2017	02:38:40	USER					
Event	18	Clean Lines	12/21/2017	02:42:22	COM5					
Event	19	Drop Top Plug	12/21/2017	02:44:39	COM5					PLUG AWAY
Event	20	Pump Displacement	12/21/2017	02:45:58	COM5	8.48	10.00	2190.00	150.3	FRESH H2O DISPLACEMENT W/ KCL, MMCR, BE-6
Event	21	Slow Rate	12/21/2017	03:00:41	USER	8.48	4.00	1416.00	140.0	
Event	22	Bump Plug	12/21/2017	03:03:33	USER	8.48	4.00	2300.00	150.3	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE WAS 1600PSI, BUMPED TO 2300 PSI
Event	23	Check Floats	12/21/2017	03:07:40	USER					FLOATS HELD, GAINED 1 1/2 BBL BACK TO PUMP.
Event	24	End Job	12/21/2017	03:08:54	COM5					
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	12/21/2017	03:15:00	USER					GOOD CIRCULATION THROUGHOUT JOB, PIPE WAS RECIPROCATED. NO ADD HOURS CHARGED.
Event	26	Rig-Down Equipment	12/21/2017	03:30:00	USER					
Event	27	Pre-Convoy Safety Meeting	12/21/2017	04:40:00	USER					
Event	28	Crew Leave Location	12/21/2017	04:45:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JCT, CO      ANTHONY ANDREWS AND CREW

# TEP - SR 334-12 - 4 1/2" PRODUCTION



- |   |                          |                      |   |
|---|--------------------------|----------------------|---|
| ① Call Out                              | ⑧ Rig-Up Equipment       | ⑮ Pump Lead Cement   | 22 Bump Plug                              |
| ② Pre-Convoy Safety Meeting             | ⑨ Pre-Job Safety Meeting | ⑯ Pump Tail Cement   | 23 Check Floats                           |
| ③ Crew Leave Yard                       | ⑩ Start Job              | ⑰ Shutdown           | 24 End Job                                |
| ④ Arrive At Loc                         | ⑪ Test Lines             | ⑱ Clean Lines        | 25 Post-Job Safety Meeting (Pre Rig-Down) |
| ⑤ Assessment Of Location Safety Meeting | ⑫ Pump H2O Spacer        | ⑲ Drop Top Plug      | 26 Rig-Down Equipment                     |
| ⑥ Spot Equipment                        | ⑬ Pump Mudflush          | 20 Pump Displacement | 27 Pre-Convoy Safety Meeting              |
| ⑦ Pre-Rig Up Safety Meeting             | ⑭ Pump H2O Spacer        | 21 Slow Rate         | 28 Crew Leave Location                    |

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Created: 2017-12-20 21:18:12, Version: 4.2.393

Edit

Customer : TEP ROCKY MOUNTAIN LLC-EBUS

Job Date : 12/20/2017 9:20:12 PM

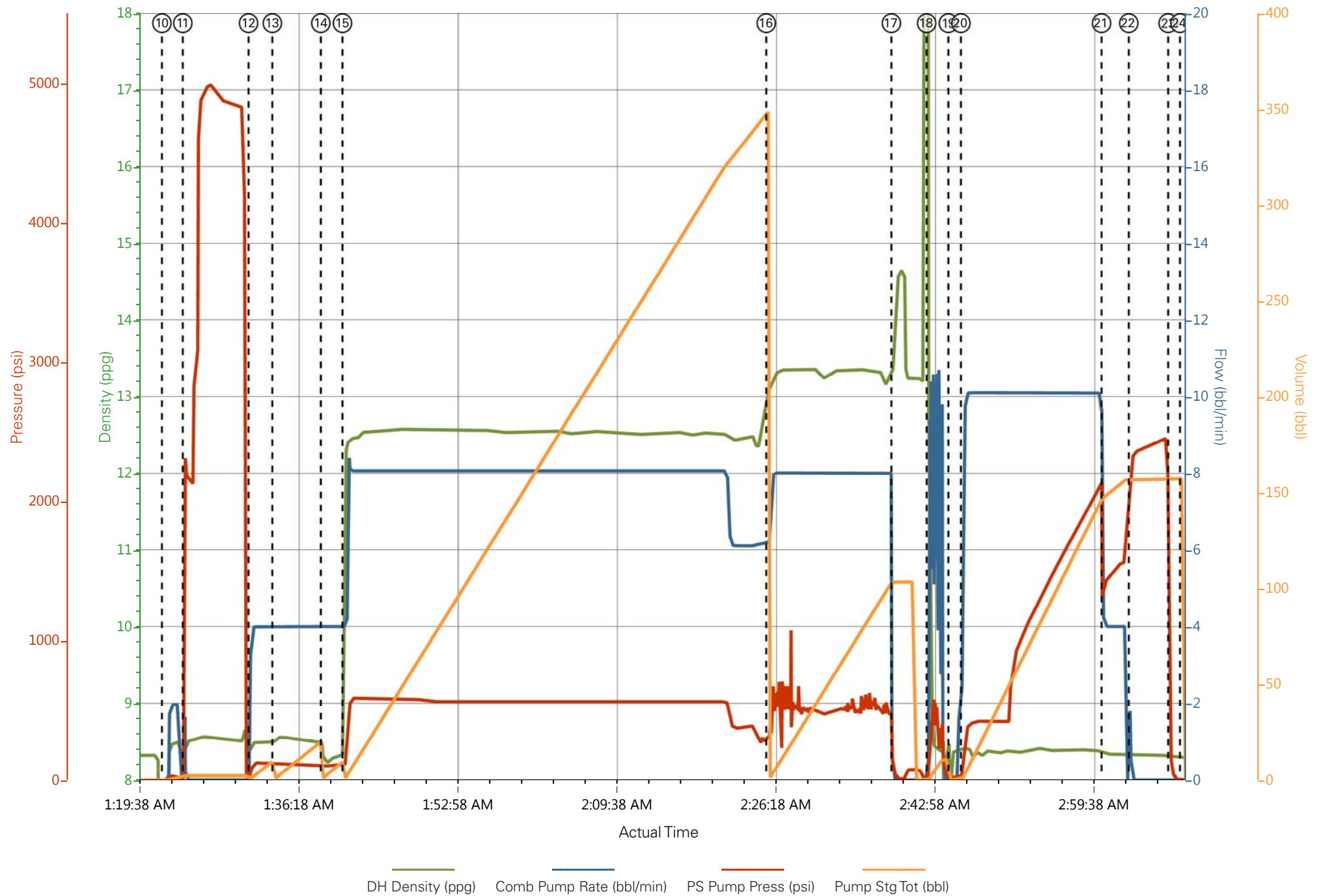
Well : SR 334-12

Representative : JOSH PHILLIPS

Sales Order # : 904516521

ELITE 8 : TRAVIS BROWN/ ANTHONY ANDREWS

# TEP - SR 334-12 - 4 1/2" PRODUCTION



## Job Information

Request/Slurry	2439114/1	Rig Name	H&P 318	Date	18/DEC/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SR 334-12

## Well Information

Casing/Liner Size	4.5 in	Depth MD	9910 ft	BHST	118°C / 245°F
Hole Size	8.75 in	Depth TVD	9701 ft	BHCT	79°C / 175°F
Pressure	6090 psi				

## Drilling Fluid Information

Mud Supplier Name	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	12.5 lbm/gal
						Slurry Yield	1.941 ft3/sack
						Water Requirement	9.623 gal/sack
						Total Mix Fluid	9.623 gal/sack
						Water Source	Fresh Water
						Water Chloride	

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# Operation Test Results Request ID 2439114/1

## Thickening Time - ON-OFF-ON

19/DEC/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)
175	6090	49	4:45	5:25	8:49	10:21	12	59	15	12

Total sks=810

Composite:

CS3423 TR 8658 405 SKS

CS3427 TR 8678 405 SKS

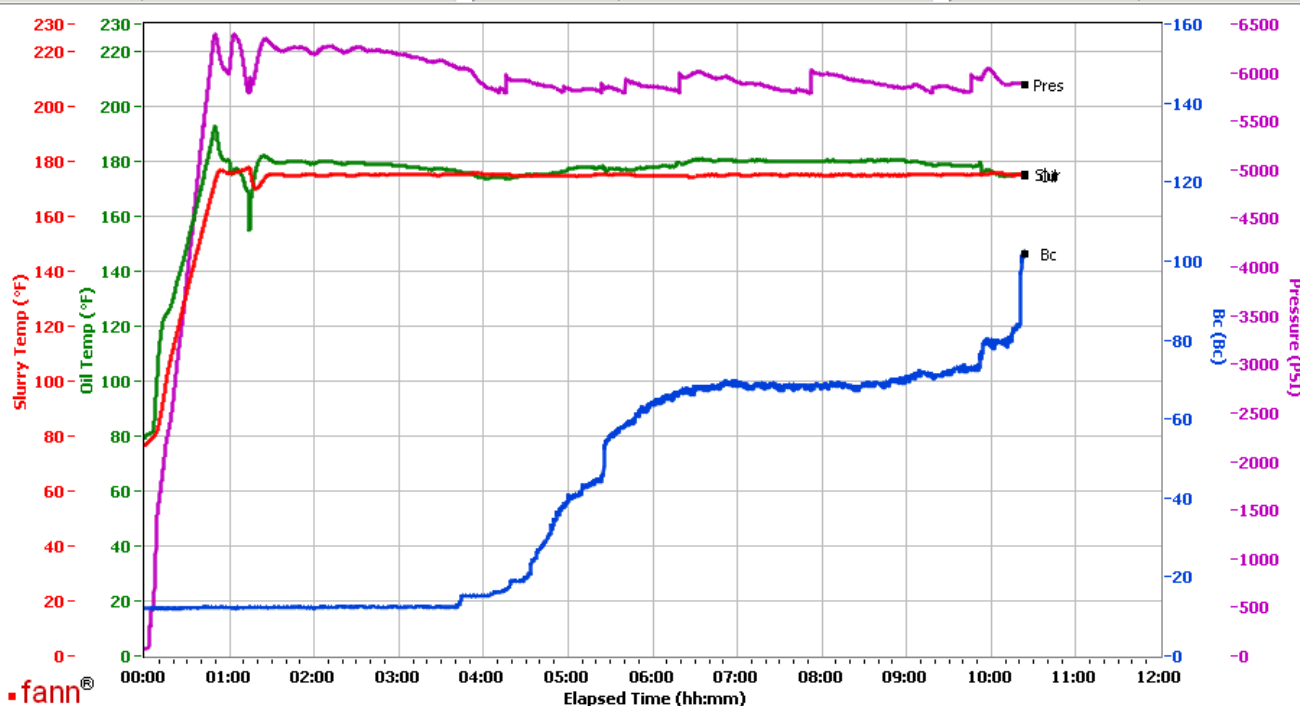
Deflection: 12 – 12

## Grand Junction Colorado

Fields	Values
Project Name	GJ2439114-1 TERRA PRODUCTION LEAD BL
Test ID	35113741
Request ID	2439114-1
Tested by	JASON
Customer	TERRA
Well No	SR 334-12
Rig	H&P 318
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION
Cement Type	HOLCIM TYPE I-II
Cement Weight	Light Weight
Test Date	12/19/17
Test Time	03:34 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:45m
40.00 Bc	05h:00m
50.00 Bc	05h:25m
70.00 Bc	08h:49m
100.00 Bc	10h:21m
00h:30m	12.06
01h:00m	11.98
01h:30m	12.55



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TIJ89YN\GJ2439114-1 TERRA PRODUCTION LEAD BULK COMPOSITE[1].tdms

Comments CS3423 TR 8658 405 SKS CS3427 TR 8678 405 SKS

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

Request/Slurry	2439115/1	Rig Name	H&P 318	Date	18/DEC/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SR 334-12

### Well Information

Casing/Liner Size	4.5 in	Depth MD	9910 ft	BHST	118°C / 245°F
Hole Size	8.75 in	Depth TVD	9701 ft	BHCT	79°C / 175°F
Pressure	6090 psi				

### Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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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>	<u>Cement Properties</u>	
						Slurry Density	13.3 lbm/gal
						Slurry Yield	1.733 ft3/sack
						Water Requirement	7.799 gal/sack
						Total Mix Fluid	7.799 gal/sack
						Water Source	Fresh Water
						Water Chloride	

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# Operation Test Results Request ID 2439115/1

## Thickening Time - ON-OFF-ON

19/DEC/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)
175	6090	49	2:57	3:18	3:58	4:22	11	59	15	7

265 sks tail

CS3428 TR 4064 265 SKS

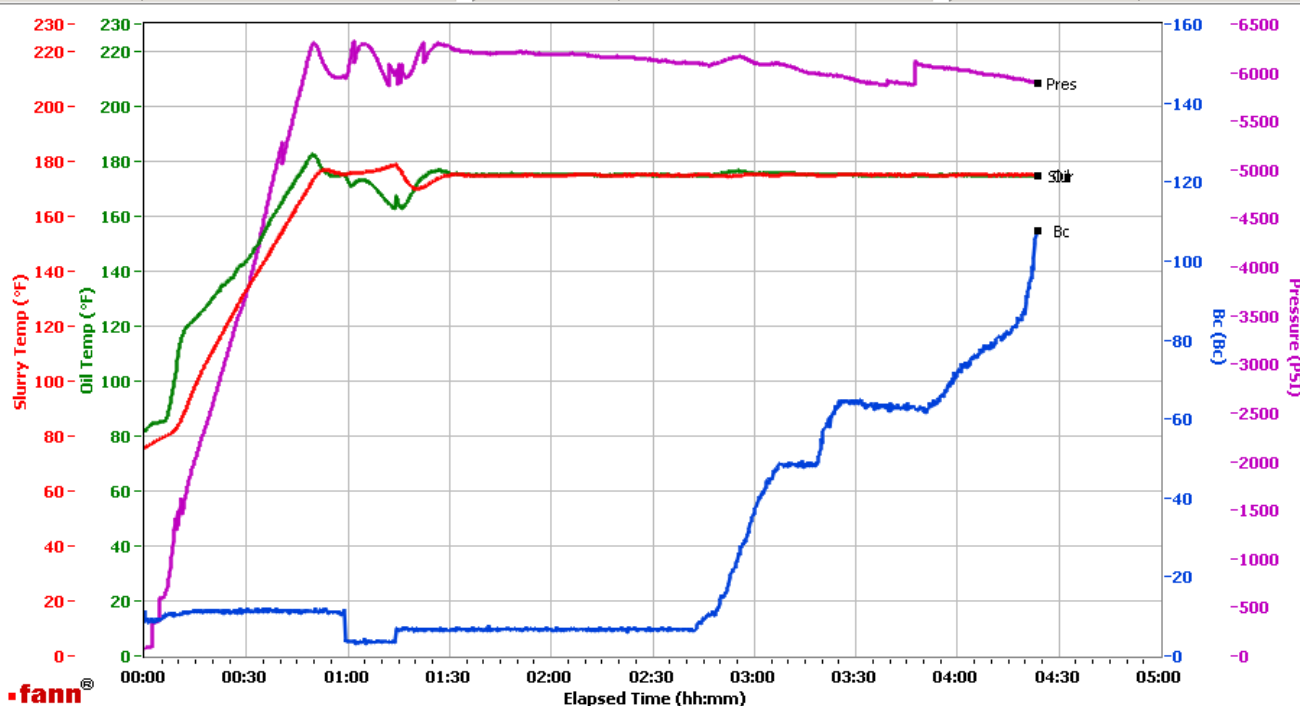
Deflection: 11 – 7

## Grand Junction Colorado

Fields	Values
Project Name	GJ2439115-1 TERRA PRODUCTION TAIL BU
Test ID	35113743
Request ID	2439115-1
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	SR 334-12
Rig	H&P 318
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Light Weight
Test Date	01/25/11
Test Time	08:11 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	02h:57m
40.00 Bc	03h:01m
50.00 Bc	03h:18m
70.00 Bc	03h:58m
100.00 Bc	04h:22m
00h:30m	11.20
01h:00m	3.80
01h:30m	6.31



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\09ERK9UN\GJ2439115-1 TERRA PRODUCTION TAIL BULK[1].tdms

Comments CS3428 TR 4064 265 SKS

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