

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

For: Terra

Date: Monday, March 05, 2018

RU 312-17 Production

API# 05-045-23736-00

Job Date: Monday, March 05, 2018

Sincerely,

Grand Junction Cement Engineering

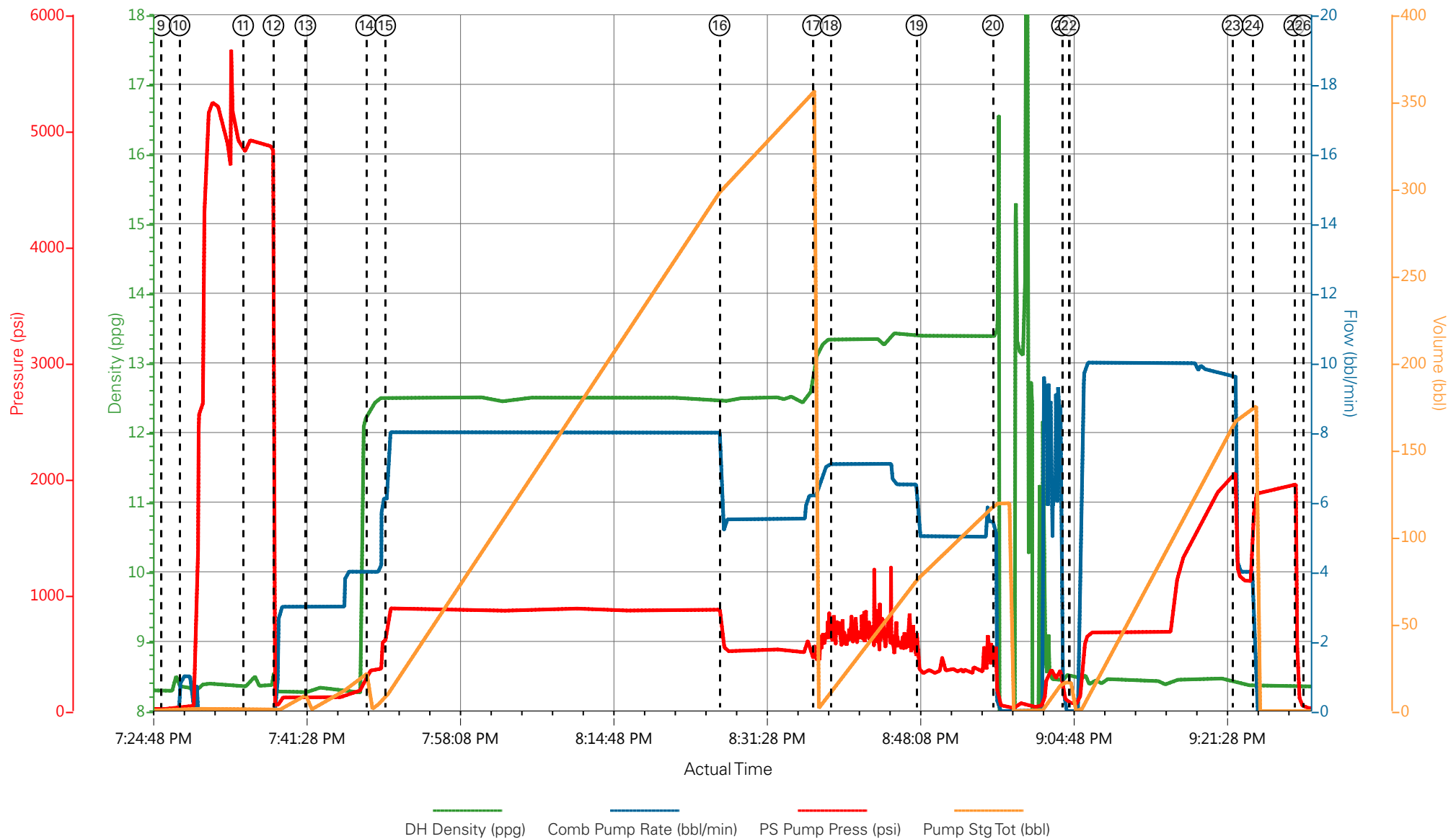
2.0 Real-Time Job Summary

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	3/5/2018	02:00:00	USER					REQUESTED ON LOCATION @ 08:00
Event	2	Pre-Convoy Safety Meeting	3/5/2018	04:20:00	USER					ALL HES EMPLOYEES PRESENT
Event	3	Crew Leave Yard	3/5/2018	04:30:00	USER					1 HT 400 PUMP TRUCK E4, 2 660 BULK TRUCK, 1 F550 SERVICE TRUCK
Event	4	Arrive At Loc	3/5/2018	07:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	3/5/2018	07:15:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7.0, CHLORIDES- 500, TEMP- 62F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	3/5/2018	07:30:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	3/5/2018	07:45:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	3/5/2018	19:15:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 10 BPM PRIOR TO JOB PRESSURE @ 750 PSI.
Event	9	Start Job	3/5/2018	19:26:00	COM6					TD 10872, TP 10866', SJ 27.3', SURFACE CSG 9 5/8" 32.3# H-40 SET @ 1141' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 9.1#
Event	10	Prime Lines	3/5/2018	19:28:00	USER	8.33	2	50	3	FRESH WATER
Event	11	Test Lines	3/5/2018	19:34:54	COM6	8.33	0	4899	.5	ALL LINES HELD PRESSURE AT PSI 4899
Event	12	H2O Spacer	3/5/2018	19:38:12	COM6	8.33	4	130	10	8.33 PPG FRESH WATER

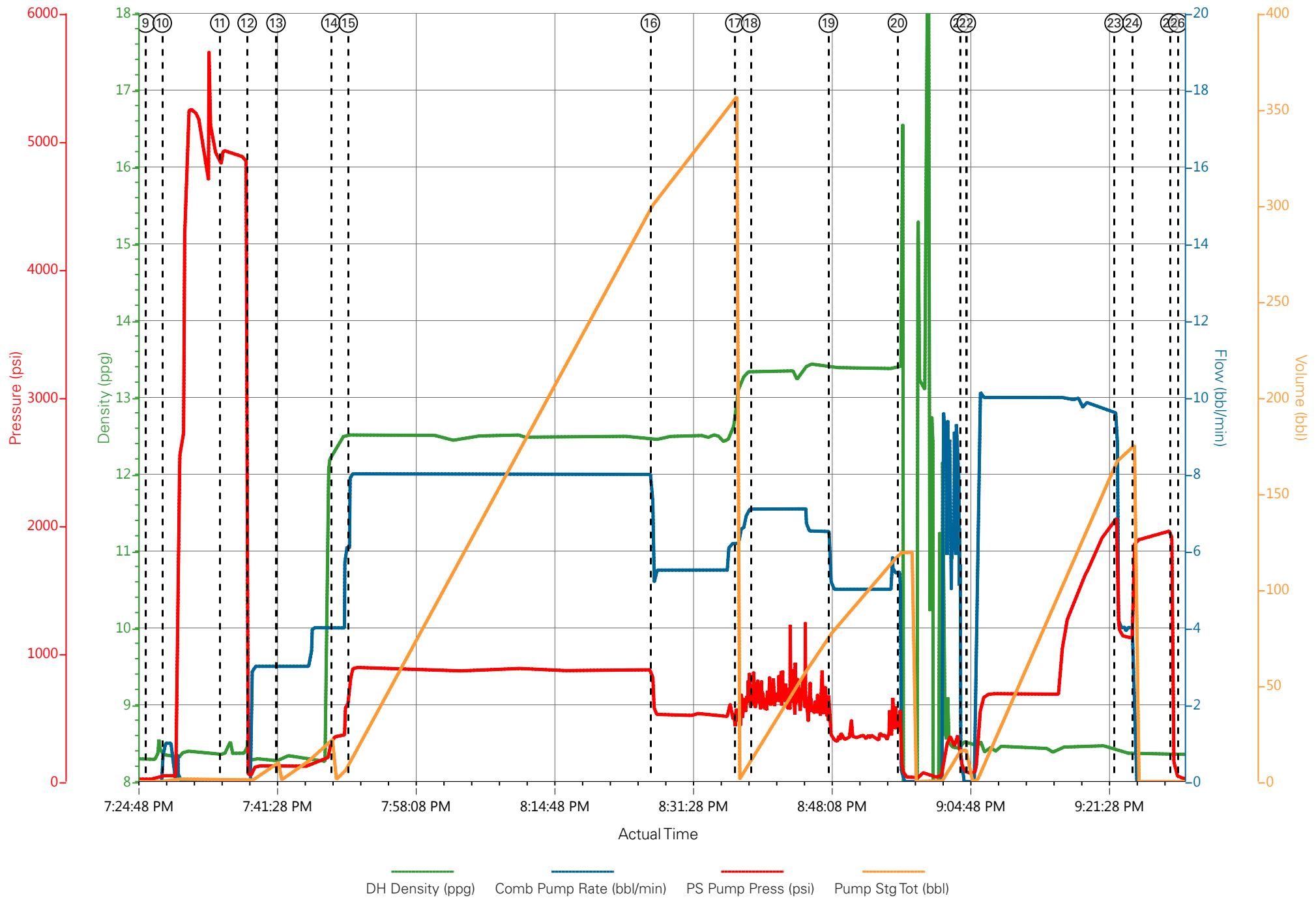
Event	13	Mud Flush	3/5/2018	19:41:40	COM6	8.4	4	175	20	20 BBL MUDFLUSH III
Event	14	Pump Lead Cement	3/5/2018	19:48:16	COM6	12.5	8	880	328.2	950 SKS NEOCEM CMT 12.5 PPG, 1.96 FT3/SK, 9.6 GAL/SK
Event	15	Check weight	3/5/2018	19:50:20	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Slow Rate	3/5/2018	20:26:40	USER					SLOWED TO END LEAD SILO
Event	17	Pump Tail Cement	3/5/2018	20:36:49	COM6	13.3	7	780	81.7	265 SKS THERMACEM CMT 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK.
Event	18	Check weight	3/5/2018	20:38:43	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	19	Slow Rate	3/5/2018	20:48:03	USER					SLOWED TO END CEMENT
Event	20	Shutdown	3/5/2018	20:56:21	USER					END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	21	Drop Top Plug	3/5/2018	21:03:51	USER					VERIFIED BY FLAG INDICATOR
Event	22	Pump Displacement	3/5/2018	21:04:38	COM6	8.4	10	2060	168	1 GAL MMCR IN FIRST 10 BBLS, 3 LBS BE-6 IN FIRST 30 BBLS, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	23	Slow Rate	3/5/2018	21:22:24	USER	8.4	4	1180	158	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	24	Bump Plug	3/5/2018	21:24:34	COM6	8.4	4	1140	168	LANDED PLUG AT 1140 PSI, BROUGHT UP TO 1900 PSI
Event	25	Check Floats	3/5/2018	21:29:06	USER					FLOATS HELD. 1.25BBLS BACK TO TRUCK.
Event	26	End Job	3/5/2018	21:30:03	COM6					HAD RETURNS THROUGHT CEMENT. LOST RETURNS IN THE BEGINNING OF DISPLACEMENT, REGAINED RETURNS AT 140BBLS GONE ON DISPLACEMENT.
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	3/5/2018	21:40:00	USER					ALL HES PRESENT
Event	28	Rig-Down Equipment	3/5/2018	21:50:00	USER					ALL HES PRESENT
Event	29	Pre-Convoy Safety Meeting	3/5/2018	22:45:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	3/5/2018	23:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

TERRA RU 312-17, 4.5" PRODUCTION



- | | | | | | |
|---|-----------------------------|--------------------|--------------------|----------------------|---|
| ① Call Out | ⑥ Pre-Rig Up Safety Meeting | ⑪ Test Lines | ⑯ Slow Rate | 21 DropTop Plug | 26 End Job |
| ② Pre-Convoy Safety Meeting | ⑦ Rig-Up Equipment | ⑫ H2O Spacer | ⑰ Pump Tail Cement | 22 Pump Displacement | 27 Post-Job Safety Meeting (Pre Rig-Down) |
| ③ Crew Leave Yard | ⑧ Pre-Job Safety Meeting | ⑬ Mud Flush | ⑱ Check weight | 23 Slow Rate | 28 Rig-Down Equipment |
| ④ Arrive At Loc | ⑨ Start Job | ⑭ Pump Lead Cement | ⑲ Slow Rate | 24 Bump Plug | 29 Pre-Convoy Safety Meeting |
| ⑤ Assessment Of Location Safety Meeting | ⑩ Prime Lines | ⑮ Check weight | 20 Shutdown | 25 Check Floats | 30 Crew Leave Location |

TERRA RU 312-17, 4.5" PRODUCTION



Job Information

Request/Slurry	2457625/1	Rig Name	H&P 318	Date	01/MAR/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 312-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	11067 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10580 ft	BHCT	92°C / 198°F
Pressure	6706 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
-------------------	----------------	---------

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		

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2457625/1

Thickening Time - ON-OFF-ON

02/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)
198	6706	52	3:38	4:06	4:16	4:50	11	62	15	12

Total sks = 950

CS0530, Trailer 1513, 400 sks

CS0531, Trailer 8476, 400 sks

CS0532, Trailer 1972, 150 sks

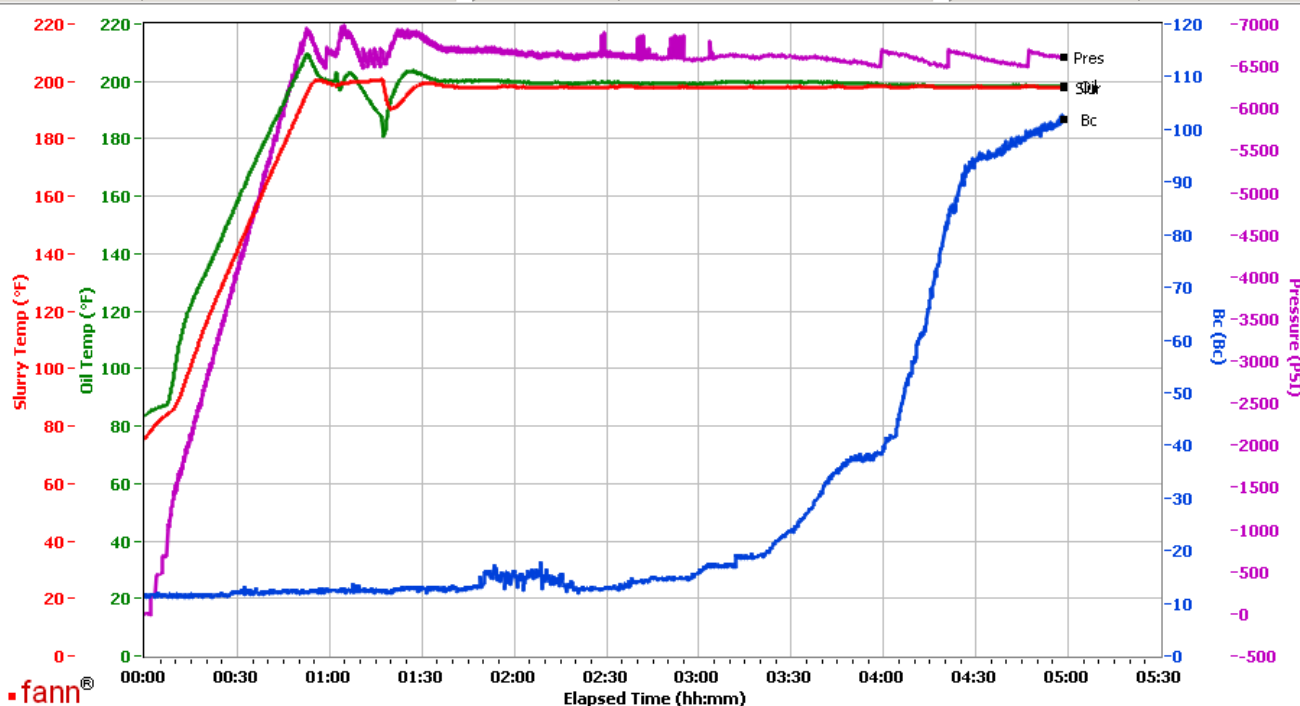
No deflection

Grand Junction Colorado

Fields	Values
Project Name	2457625-1 TERRA BULK PRODUCTION LEAD
Test ID	35297776 - TT
Request ID	2457625-1
Tested by	CT
Customer	TERRA ENERGY PARTNERS
Well No	RU 312-17
Rig	H&P 318
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	HOLCIM TTYPE I-II
Cement Weight	Standard
Test Date	03/01/18
Test Time	09:59 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:38m
40.00 Bc	04h:00m
50.00 Bc	04h:06m
70.00 Bc	04h:16m
100.00 Bc	04h:50m
00h:30m	12.09
01h:00m	12.66
01h:30m	12.80



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\0HU9OBIZ\GJ2457625-1 TERRA BULK PRODUCTION LEAD[1].tdms

Comments CS0530, TRAILER 1513, 400 SKS - CS0531, TRAILER 8476, 400 SKS - CS0532, TRAILER 1972, 150 SKS

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2457626/1	Rig Name	H&P 318	Date	01/MAR/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 312-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	11067 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10580 ft	BHCT	92°C / 198°F
Pressure	6706 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
--------------------------	-----------------------	----------------

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	
						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	

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2457626/1

Thickening Time - ON-OFF-ON

02/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)
198	6706	52	5:28	5:36	5:42	6:16	18	62	15	15

Total sks = 265

CS0534 TR 3212 265 SKS

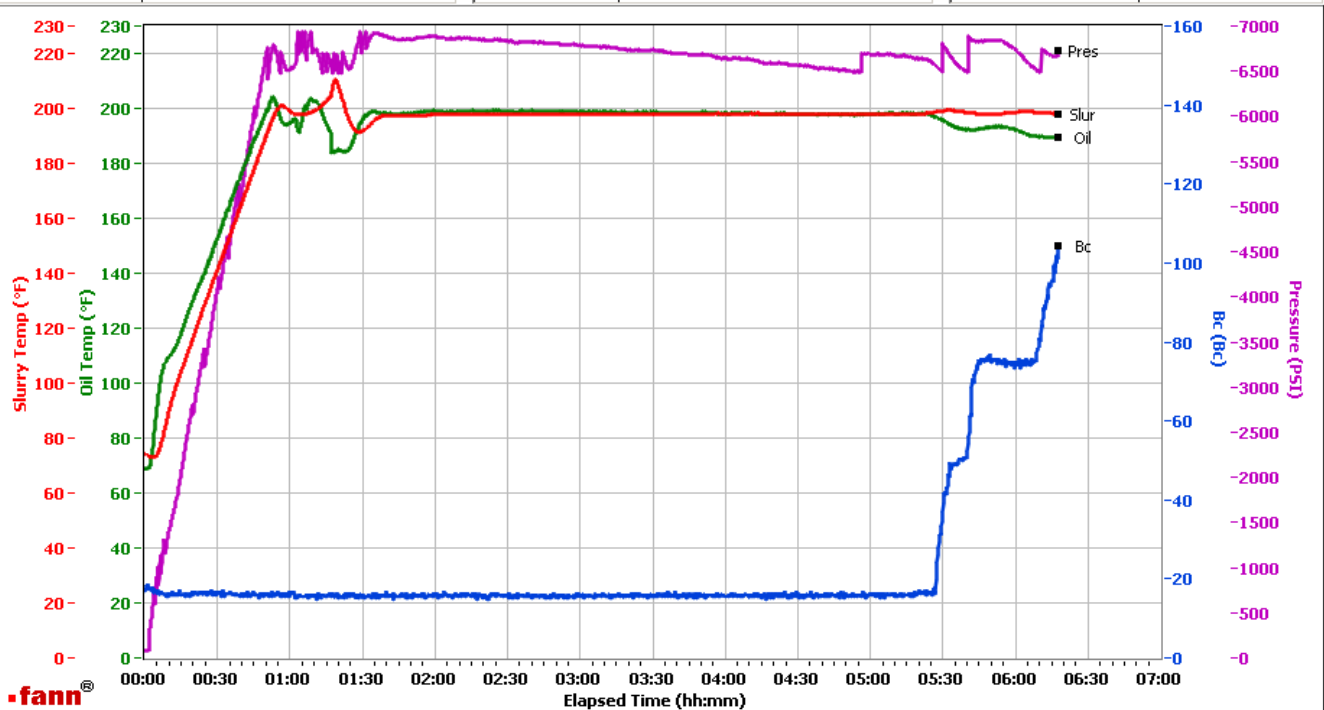
Deflection: 15 - 15

Grand Junction Colorado

Fields	Values
Project Name	GJ2457626-1 TERRA PRODUCTION BULK TA
Test ID	35297778
Request ID	2457626-1
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	RU 312-17
Rig	H8P 318
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Light Weight
Test Date	04/09/11
Test Time	10:53 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	05h:28m
40.00 Bc	05h:30m
50.00 Bc	05h:36m
70.00 Bc	05h:42m
100.00 Bc	06h:16m
00h:30m	16.27
01h:00m	16.44
01h:30m	15.30



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\09ERK9UN\GJ2457626-1 TERRA BULK PRODUCTION TAIL[1].tdms

Comments CS0534 TR 3212 265 SKS

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.