

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

Date: Sunday, November 4, 2018

### **PA 333-24 PRODUCTION**

Terra PA 333-24 Production

API # 05-045-23788

Job Date: Sunday, October 28, 2018

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	10/27/2018	12:00:00	USER					REQUESTED ON LOCATION @ 18:00
Event	2	Depart Yard Safety Meeting	10/27/2018	14:15:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	10/27/2018	14:30:00	USER					1 HT 400 PUMP TRUCK E4 11808827-12610956, 1 660 BULK TRUCK 11071559-11398321, 1 550 SERVICE PICKUP WITH IRON TRAILER 1992355-11057895
Event	4	Arrive At Loc	10/27/2018	16:00:00	USER					ARRIVED TO LOCATION 2 HOURS EARLY. RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	10/27/2018	16:30:00	USER					MET WITH COMP REP, WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE. COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES.
Event	6	Spot Equipment	10/27/2018	17:30:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 SERVICE PICKUP
Event	7	Pre-Rig Up Safety Meeting	10/27/2018	18:00:00	USER					ALL HES PRESENT
Event	8	Pre-Job Safety Meeting	10/27/2018	19:00:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 9.5 BPM PRIOR TO JOB PRESSURE @ 1200 PSI THROUGH A CRT.
Event	9	Start Job	10/27/2018	20:19:15	USER					PRESSURIZED MUD SCALES WERE CALIBRATED TO DRINKING WATER PRIOR TO JOB. TD 9061', TP 9054.53', SJ 31.91',

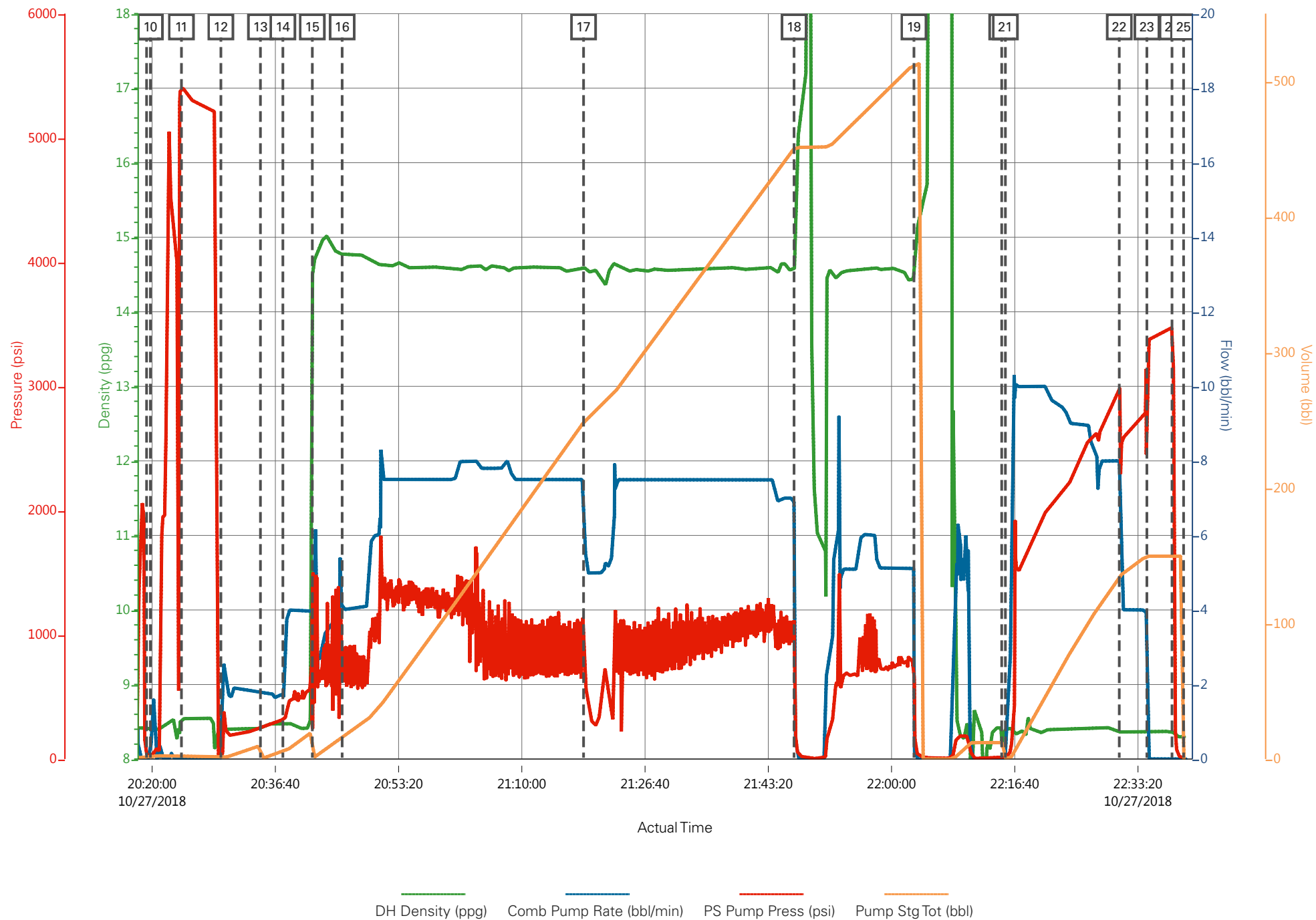
SURFACE CSG 9 5/8" 36# J-55 SET @ 1126', PRODUCTION CSG 4 1/2" 11.6# HCP-110, OH 8 3/4", MUD 12.6 PPG

Event	10	Prime Lines	10/27/2018	20:19:46	COM5	8.33	2.0	240	2	FRESH WATER
Event	11	Test Lines	10/27/2018	20:23:58	USER			5400		PRESSURE TESTED LINES
Event	12	Pump H2O Spacer	10/27/2018	20:29:18	COM5	8.33	2.0	340	10	10 BBLS FRESH WATER
Event	13	Pump Mud Flush III	10/27/2018	20:34:39	COM5	8.410	4.0	550	20	20 BBL MUDFLUSH III. USED 80 LBS. MUD FLUSH III
Event	14	Check Weight	10/27/2018	20:37:41	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Lead Cement	10/27/2018	20:41:40	COM5	14.5	7.5	1000	448	1905 SACKS EXPANDACEM CMT, 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK
Event	16	Check Weight	10/27/2018	20:45:42	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	17	Slow Rate	10/27/2018	21:18:21	USER					SLOWED RATE FOR SWAP
Event	18	Shutdown	10/27/2018	21:46:49	USER					SHUTDOWN DUE TO HEAD LEAKING ON FLOOR.
Event	19	Shutdown	10/27/2018	22:03:02	USER					END OF CEMENT. BLEW DOWN IRON WITH AIR TO PIT. CLEANED PUMP AND LINE WITH WATER TO PIT.
										VERIFIED BY FLAG INDICATOR AND CO. REP
Event	20	Drop Top Plug	10/27/2018	22:14:54	USER					
Event	21	Pump Displacement	10/27/2018	22:15:24	COM5	8.4	10.0	2000	50	1 GAL MMCR IN FIRST 10 BBLS, 3 LBS BE-6 IN FIRST 30 BBLS, 1 50 LB. BAG KCL EVERY 10 BBLS.
						8.4	9.5	2200	20	
						8.4	9.5	2480	20	
						8.4	8.5	2550	10	
						8.4	8.0	3000	30	
Event	22	Slow Rate	10/27/2018	22:30:48	USER	8.4	4.0	2590	10	SLOWED RATE TO BUMP PLUG
Event	23	Bump Plug	10/27/2018	22:34:32	COM5	8.4	4.0	2800	140	PLUG BUMPED
Event	24	Check Floats	10/27/2018	22:37:56	USER			3460		FLOATS HELD 2 BBLS FLOWED BACK TO TRUCK TANKS
Event	25	End Job	10/27/2018	22:39:30	COM5					PIPE WAS RECIPICATED THROUGHOUT JOB WITH RETURNS. USED TOP PLUG, 1 GAL MMCR, 3 BE-6, AND 80 LBS MUD FLUSH

III FOR JOB. BROUGHT ALL IRON AND BULK HOSES FROM  
LOCATION.

Event	26	Post-Job Safety Meeting (Pre Rig-Down)	10/27/2018	22:50:00	USER	ALL HES PRESENT
Event	27	Pre-Convoy Safety Meeting	10/28/2018	00:45:00	USER	ALL HES PRESENT
Event	28	Depart Location	10/28/2018	01:00:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, DUSTIN HYDE AND CREW

# TERRA - PA 33-24 - 4 1/2" PRODUCTION



Job Information

Request/Slurry	2509482/2	Rig Name	H&P 271	Date	18/OCT/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 333-24

Well Information

Casing/Liner Size	4.5 in	Depth MD	9080 ft	BHST	109°C / 229°F
Hole Size	8.75 in	Depth TVD	8750 ft	BHCT	71°C / 159°F
Pressure	5425 psi				

Drilling Fluid Information

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

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride	N/A	

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# **Operation Test Results Request ID 2509482/2**

## **Thickening Time - ON-OFF-ON**

**24/OCT/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)
159	5425	44	5:21	5:28	5:32	5:33	23	54	15	29

total sks=1905

CS2351, Trailer 2378, 450 sks

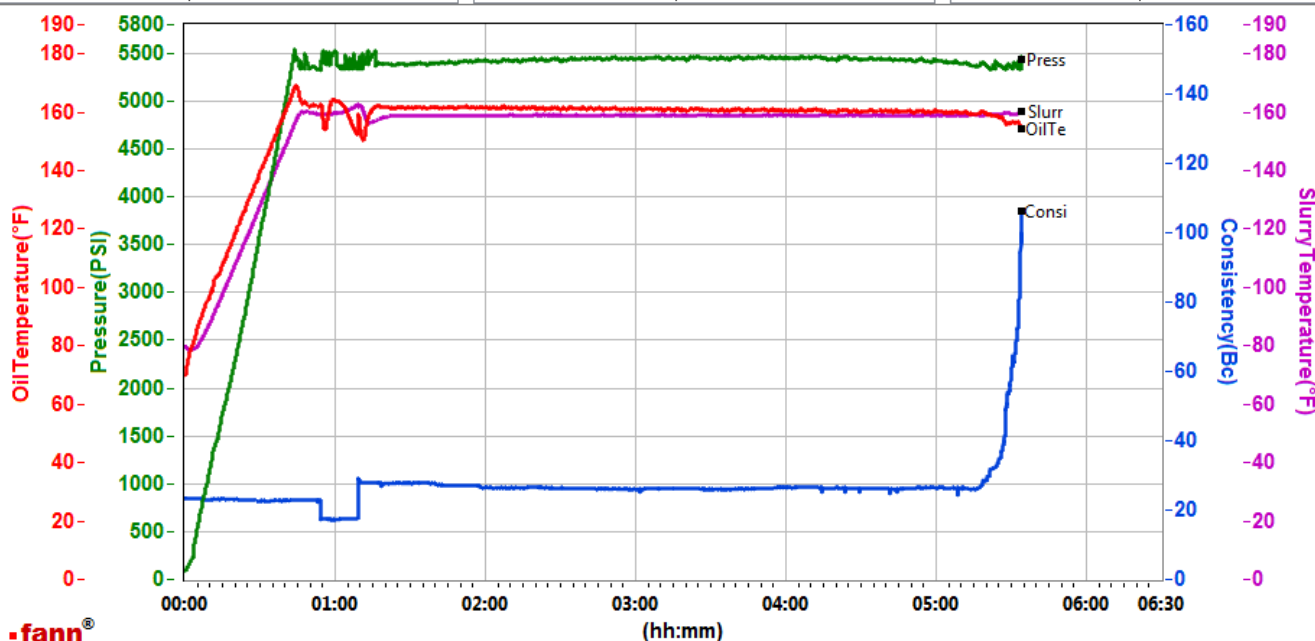
CS2349, Trailer 8677, 450 sks

CS2352, Trailer 8321, 105 sks

Deflection: 23 – 29

## **GRAND JUNCTION**

Fields	Values	Fields	Values	Events	Results
Project Name	2509482-2 H&P 271 Terra	Rig	H&P 271	30 BC	5:21
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 BC	5:28
Test ID	35927382 - TT	Job Type	PRODUCTION CASING	70 BC	5:32
Request ID	2509482-2	Cement Weight	MOUNTAIN G	100 BC	5:33
Tested by	CT	Comments	Standard		
Customer	TERRA ENERGY PARTN	Date Time	10/24/2018 10:07:02.748		
Well No	PA 333-24	Temp. Units	degF		



Data File \\Corp.Halliburton.com\NA\GJU\Public\Z Lab\HPHT 2\GJ2509482-2 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Standard

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# **Operation Test Results Request ID 2509482/1**

## **Thickening Time - ON-OFF-ON**

**24/OCT/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)
159	5425	44	5:40	5:42	5:42	5:42	6	54	15	11

total sks=1905

CS2347 TR 8658 450 SKS

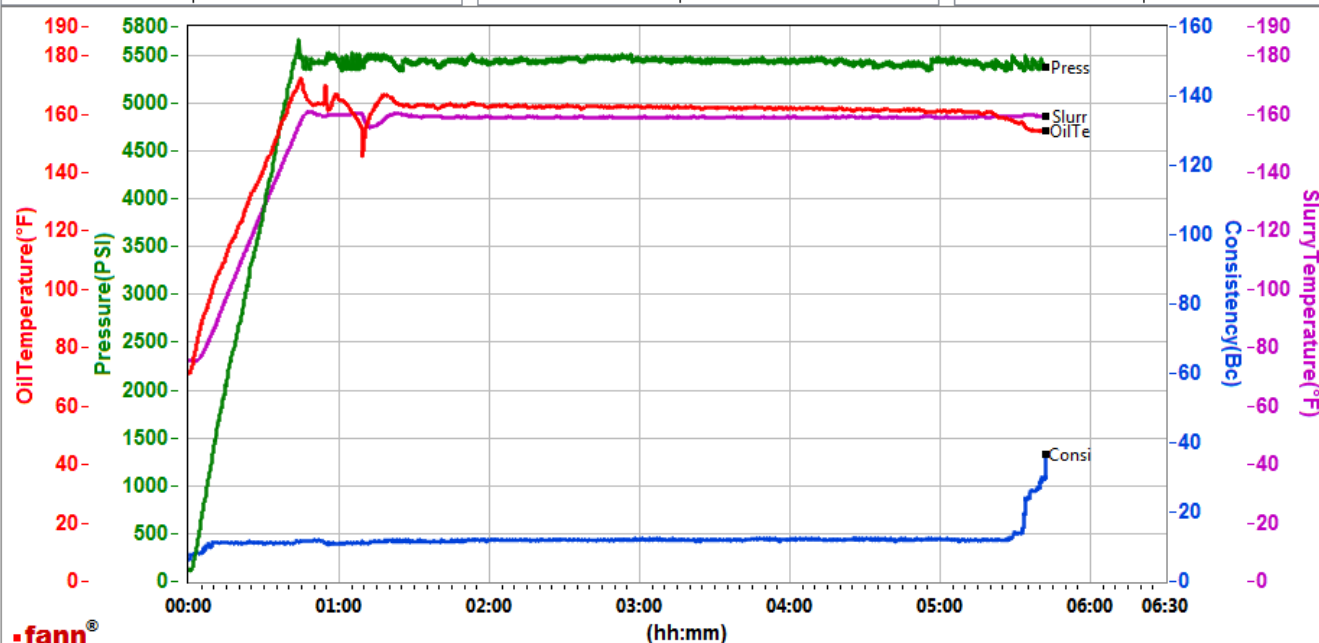
CS2348 TR 8678 450 SKS

Deflection: 12 - 11

The sample flash set quickly and the M290A did not catch all of the pumpoff on the graph. A screen shot of the completed test from the consistometer has been included.

## **GRAND JUNCTION**

Fields	Values	Fields	Values	Events	Results
Project Name	2509482-1 H&P 271 Terr	Rig	H&P 271	30 BC	5:40
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 BC	5:42
Test ID	35912009-TT	Job Type	PRODUCTION CASING	70 BC	5:42
Request ID	2509482-1	Cement Weight	MOUNTAIN G	100 BC	5:42
Tested by	JASON	Comments	Standard	00:00	New Value
Customer	TERRA ENERGY PARTN	Date Time	10/24/2018 06:18:40.159		
Well No	PA 333-24	Temp. Units	degF		



Data File C:\Users\H185329\Desktop\000 Graphs\GJ2509482-1 TERRA PRODUCTION BULK PRIMARY.tdms

Comments Standard

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