

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

Date: Thursday, October 11, 2018

PA 32-24 Production

Terra PA 32-24 Production

API# 05-045-23786

Job Date: Wednesday, September 26, 2018

Sincerely,

Grand Junction Cement Engineering

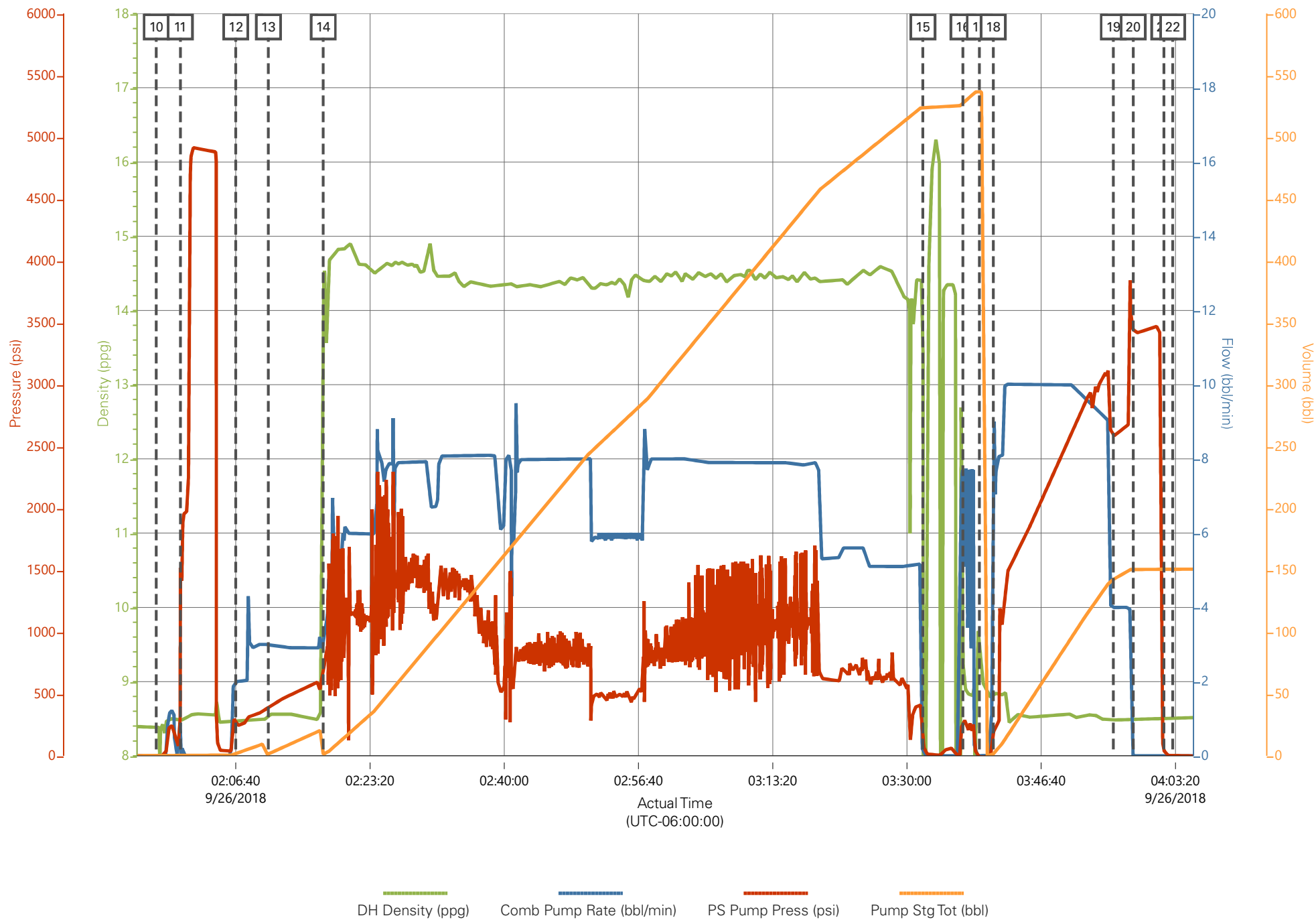
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	9/25/2018	13:30:00	USER					
Event	2	Pre-Convoy Safety Meeting	9/25/2018	16:45:00	USER					
Event	3	Crew Leave Yard	9/25/2018	17:00:00	USER					
Event	4	Arrive At Loc	9/25/2018	19:00:00	USER					REQUESTED ON LOC TIME WAS 1930, CREW ARRIVED @ 1900, CUSTOMER REQUESTED WE STAY OFF LOCATION UNTIL 2130 DUE TO TRAFFIC ON LOCATION.
Event	5	Assessment Of Location Safety Meeting	9/25/2018	21:10:00	USER					
Event	6	Other	9/25/2018	21:25:00	USER					
Event	7	Pre-Rig Up Safety Meeting	9/25/2018	21:30:00	USER					
Event	8	Rig-Up Equipment	9/25/2018	21:35:00	USER					PRESSURIZED MUD SCALES VERIFIED ON DRINKING WATER PRIOR TO JOB
Event	9	Pre-Job Safety Meeting	9/26/2018	01:30:00	USER					
Event	10	Start Job	9/26/2018	01:56:48	COM5					TD: 9278 TP: 9275 SJ: 31.24 MW: 12.2PPG 4 1/2" 11.6#/FT CSG IN 8 3/4" OH WATER TEST: PH: 7 POTASSIUM: 450 CHLORIDES: 0 SULFATES: <200 TEMP: 68 DEGREES
Event	11	Test Lines	9/26/2018	01:59:47	COM5			5000.00		5000 PSI TEST SUCCESSFUL
Event	12	Pump Spacer 1	9/26/2018	02:06:40	COM5	8.33	3.00	249.00	10.00	10 BBL FRESH H2O SPACER

Event	13	Pump Spacer 2	9/26/2018	02:10:43	COM5	8.40	3.00	398.00	20.00	20 BBL MUDFLUSH SPACER
Event	14	Pump Cement	9/26/2018	02:17:31	COM5	14.50	8.00	1400.00	458.40	1950 SKS @ 14.5 PPG 1.32 YLD 5.85 GAL/SK H2O
Event	15	Shutdown	9/26/2018	03:31:59	COM5					
Event	16	Clean Lines	9/26/2018	03:36:57	COM5					
Event	17	Drop Top Plug	9/26/2018	03:39:00	USER					
Event	18	Pump Displacement	9/26/2018	03:40:43	COM5	8.48	8.00	3125.00	143.30	FRESH H2O DISPLACEMENT W/ KCL, MCCR, BE-6
Event	19	Slow Rate	9/26/2018	03:55:38	USER	8.48	4.00	2582.00	133.00	
Event	20	Bump Plug	9/26/2018	03:58:06	COM5	8.48	4.00	3441.00	143.30	PLUG BUMPED AT CALCULATED DISPLACEMENT
Event	21	Other	9/26/2018	04:01:54	COM5					FLOATS HELD, GAINED 2 BBL BACK TO PUMP
Event	22	End Job	9/26/2018	04:03:00	COM5					
Event	23	Post-Job Safety Meeting (Pre Rig-Down)	9/26/2018	04:10:00	USER					
Event	24	Rig-Down Equipment	9/26/2018	04:20:00	USER					GOOD CIRCULATION THROUGHOUT JOB. PIPE WAS RECIPROCATED DURING JOB. NO ADD HOURS CHARGED. RIG WAS EXPERIENCING GAS PRIOR TO JOB. GAS WAS @ 600 UNITS AT START OF JOB AND HAD CAME UP TO 2100 UNITS WHILE PUMPING.
Event	25	Pre-Convoy Safety Meeting	9/26/2018	05:15:00	USER					RIG WAS USING MPD TO MANAGE GAS.
Event	26	Crew Leave Location	9/26/2018	05:30:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JCT, CO ANTHONY ANDREWS AND CREW

TEP - PA 32-24 - 4 1/2" PRODUCTION



HALLIBURTON

Rockies, Grand Junction

Lab Results- Primary

Job Information

Request/Slurry	2501444/1	Rig Name	H&P 271	Date	16/SEP/2018
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 32-24

Well Information

Casing/Liner Size	4.5 in	Depth MD	9305 ft	BHST	107°C / 225°F
Hole Size	8.75 in	Depth TVD	8523 ft	BHCT	68°C / 155°F
Pressure	5230 psi				

Drilling Fluid Information

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

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Operation Test Results Request ID 2501444/1

Thickening Time - ON-OFF-ON

21/SEP/2018

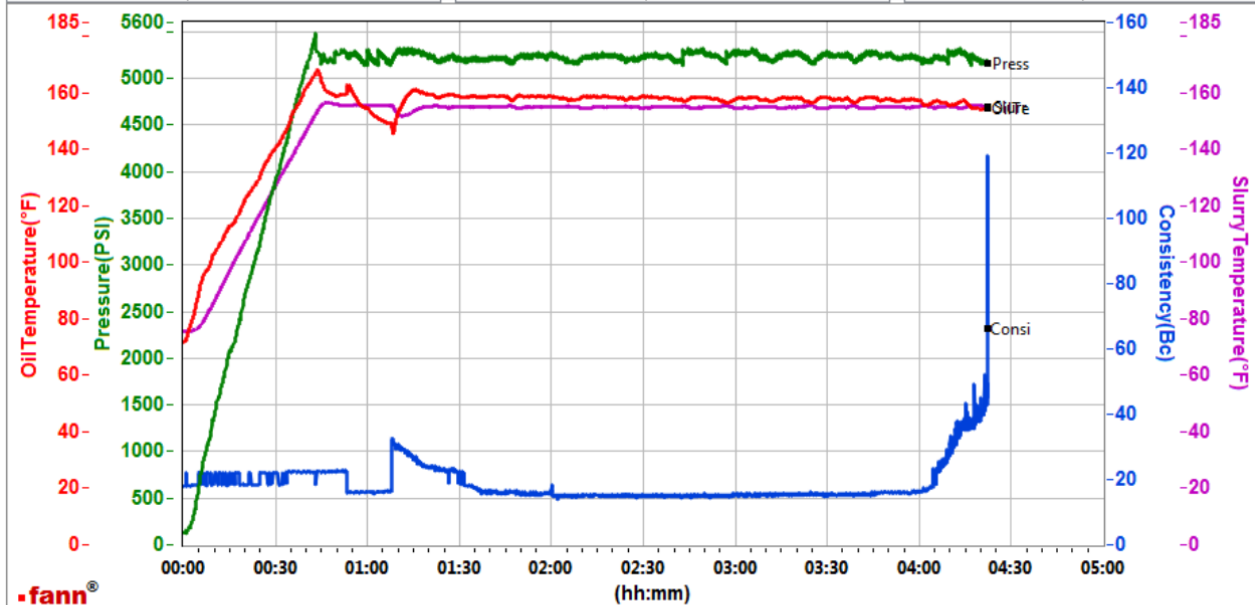
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
155	5230	43	1:08	4:22	4:22	4:22	18	53	15	32

GRAND JUNCTION

Fields	Values
Project Name	2501444-1 Terra Bulk Proc
SW Version	1.0
Test ID	35823813 - TT
Request ID	2501444-1
Tested by	CT
Customer	TERRA ENERGY PARTN
Well No	PA 32-24

Fields	Values
Rig	H&P 271
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	MOUNTAIN G
Comments	Standard
Date Time	9/21/2018 10:10:26.228
Temp. Units	degF

Events	Results
30 BC	1:08
50 BC	4:22
70 BC	4:22
100 BC	4:22



Data File \\Corp.Halliburton.com\NA\GJU\Public\Z Lab\HPHT 1\GJ2501444-1 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Standard

total sks=1950
 CS2111, Trailer 8658, 450 sks
 CS2113, Trailer 8678, 450 sks
 Deflection: 22 – 32

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Operation Test Results Request ID 2501444/2

Thickening Time - ON-OFF-ON

22/SEP/2018

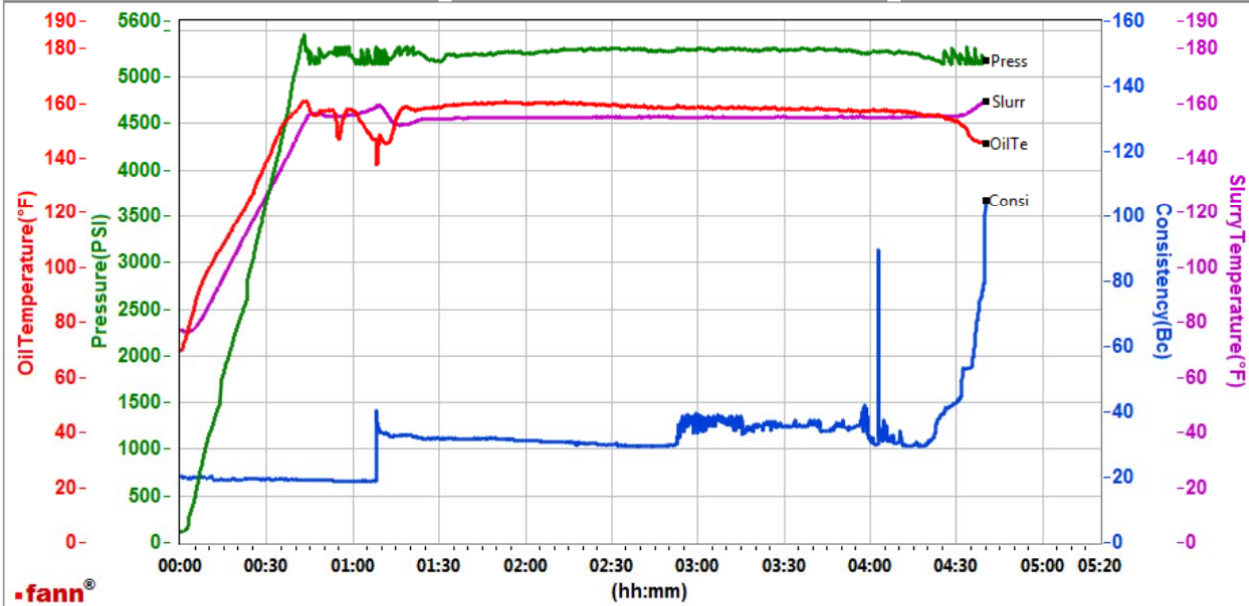
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
155	5230	43	1:08	4:31	4:37	4:39	19	53	15	34

GRAND JUNCTION

Fields	Values
Project Name	GJ2501444-2 Terra Bulk I
SW Version	1.0
Test ID	35839958 - TT
Request ID	25001444-2
Tested by	CT
Customer	TERRA ENERGY PARTN
Well No	PA 32-24

Fields	Values
Rig	H&P 271
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	MOUNTAIN G
Comments	Standard
Date Time	9/21/2018 15:21:53.948
Temp. Units	degF

Events	Results
30 BC	1:08
50 BC	4:31
70 BC	4:37
100 BC	4:39



Data File \\Corp.Halliburton.com\NA\GJU\Public\Z Lab\HPHT 2\GJ2501444-2 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Standard

total sks=1950
 CS2114, Trailer 8677, 450 sks
 CS2115, Trailer 2878, 450 sks
 CS2116, Trailer 4549, 150 sks
 Deflection: 19 - 34

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