

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: Terra

Date: Friday, March 29, 2019

SG 541-21 Production PJR

API# 05-045-24139-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

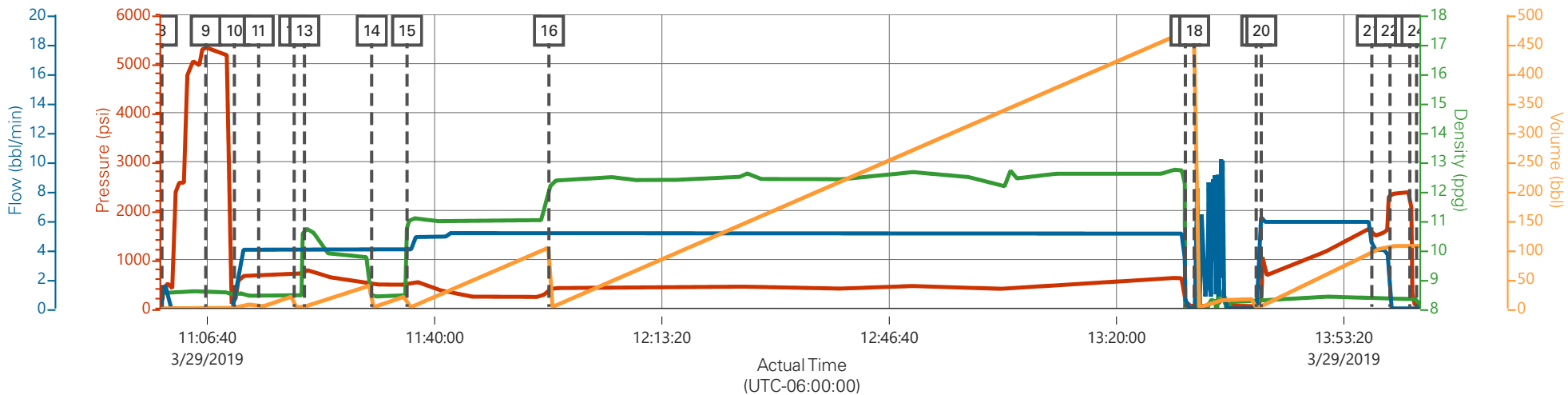
Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	3/28/2019	23:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	3/29/2019	01:30:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	3/29/2019	02:00:00	USER					
Event	4	Arrive At Loc	3/29/2019	04:00:00	USER					JOURNEY MANAGEMENT CLOSED OUT. RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	3/29/2019	04:30:00	USER					
										WATER TEST: PH-7, CL-0, TEMP-71
Event	6	Other	3/29/2019	06:00:00	USER					WELL INFO: 4.5 11.6# SET AT 6931.4, TD-6936, S.J.-29.18, HOLE- 8 3/4, MUD#- 9.9, 9 5/8 32.3# SET @ 1043
Event	7	Other	3/29/2019	06:20:00	USER					MUD SCALES CHECKED WITH WATER PRIOR TO JOB.
Event	8	Pre-Rig Up Safety Meeting	3/29/2019	08:00:00	USER					JSA COMPLETE
Event	9	Rig-Up Equipment	3/29/2019	08:10:00	USER					
Event	10	Pre-Job Safety Meeting	3/29/2019	10:00:00	USER					JSA COMPLETE
Event	11	Start Job	3/29/2019	11:00:00	COM5					

Event	12	Test Lines	3/29/2019	11:06:26	COM5			5358.00		5358 PSI
Event	13	Pump Spacer 1	3/29/2019	11:10:38	COM5	8.33	4.00	117.00	10.00	FRESH WATER
Event	14	Pump Spacer 2	3/29/2019	11:14:12	COM5	8.40	4.00	673.00	20.00	MUD FLUSH
Event	15	Pump Spacer 1	3/29/2019	11:19:24	COM5	8.33	4.00	707.00	5.00	FRESH WATER
Event	16	Pump Spacer 2	3/29/2019	11:20:54	COM5	10.70	4.00	795.00	40.00	SUPERFLUSH 101
Event	17	Pump Spacer 1	3/29/2019	11:30:46	COM5	8.33	4.00	498.00	20.00	FRESH WATER
Event	18	Pump Lead Cement	3/29/2019	11:35:57	COM5	11.00	5.00	485.00	100.0	242 SKS ECONOCCEM, 11 PPG, 2.32 FT3/SK, 12.67 GAL/SK
Event	19	Pump Tail Cement	3/29/2019	11:56:46	COM5	12.30	5.00	386.00	426.00	1161 SKS NEOCEM, 12.3 PPG, 2.06 FT3/SK, 10.11 GAL/SK. THERE IS 549 SKS LEFT IN SILO # 11749216, WE GOT CEMENT BACK TO SURFACE SO WE CUT THE TAIL SHORT.
Event	20	Shutdown	3/29/2019	13:30:06	USER					TO CLEAN UP PUMPS AND LINES PRIOR TO DROP PLUG
Event	21	Clean Lines	3/29/2019	13:31:23	USER					CLEAN LINES TO PIT FROM PUMP AND BLEW AIR FROM RIG TO PIT.
Event	22	Drop Top Plug	3/29/2019	13:40:29	USER					AWAY USING POSITIVE DISPLACEMENT
Event	23	Pump Displacement	3/29/2019	13:41:14	COM5	8.40	6.00	1625.00	107.7	KCL WATER WITH 1 GAL MMCR, 3 BAG BE-6
Event	24	Slow Rate	3/29/2019	13:57:26	USER	8.40	4.00	1481.00	97.00	TO BUMP PLUG
Event	25	Bump Plug	3/29/2019	14:00:06	USER	8.40	4.00	1481.00	107.70	PLUG BUMPED
Event	26	Check Floats	3/29/2019	14:03:01	USER			2380.00		FLOATS HELD, 1 BBL BACK TO TRUCK
Event	27	End Job	3/29/2019	14:04:00	COM5					GOOD CIRCULATION THROUGHOUT JOB, RIG WORKED PIPE 15-20 FT. DURING CMT JOB. WE GOT CMT RETURNS DURING TAIL CMT, CUT TAIL CMT SHORT. WE USED 11737 TOTAL MIX GALS OF WATER ON TAIL, USING THIS I FIGURED WE GOT A

TOTAL OF 146 BBLS OF CMT TO SURFACE
(INCLUDING ECONOCEM SCAVENGER).

Event	28	Post-Job Safety Meeting (Pre Rig-Down)	3/29/2019	14:10:00	USER	
Event	29	Crew Leave Location	3/29/2019	15:30:00	USER	THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW.

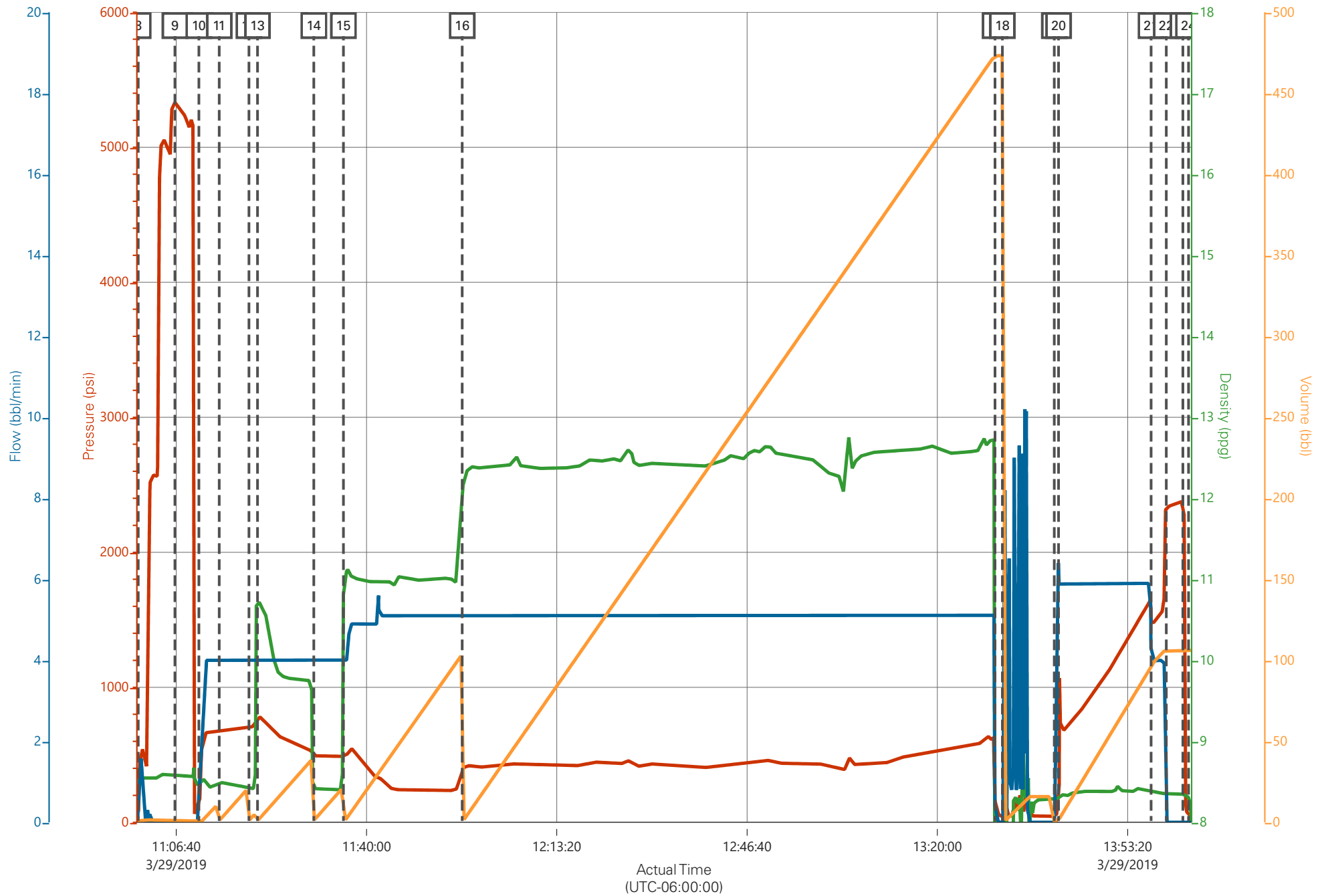
TEP SG 541-21 Production



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

Description	Actual Time (UTC-06:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	
8 Start Job	11:00:00	58.00	8.48	0.00	0.00	
9 Test Lines	11:06:26	5343.00	8.58	0.00	1.50	
10 Pump Spacer 1	11:10:38	117.00	8.46	0.00	0.00	
11 Pump Spacer 2	11:14:12	673.00	8.49	4.00	1.00	
12 Pump Spacer 1	11:19:24	707.00	8.41	4.00	1.00	
13 Pump Spacer 2	11:20:54	795.00	10.73	4.00	0.90	
14 Pump Spacer 1	11:30:46	498.00	8.42	4.00	1.20	
15 Pump Lead Cement	11:35:57	485.00	10.78	4.00	21.70	
16 Pump Tail Cement	11:56:46	386.00	12.08	5.10	0.00	
17 Shutdown	13:30:06	151.00	2.97	0.40	473.20	
18 Clean Lines	13:31:23	40.00	-0.10	0.00	473.20	
19 Drop Top Plug	13:40:29	41.00	8.29	0.00	0.00	
20 Pump Displacement	13:41:14	224.00	8.29	5.80	1.40	
21 Slow Rate	13:57:26	1515.00	8.39	4.00	97.00	
22 Bump Plug	14:00:06	2337.00	8.36	0.00	106.30	
23 Check Floats	14:03:01	2380.00	8.35	0.00	106.30	
24 End Job	14:04:00	47.00	8.31	0.00	106.30	

TEP SG 541-21 Production



Job Information

Request/Slurry	2544658/1	Rig Name	H&P 318	Date	26/MAR/2019
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SG 541-21

Well Information

Casing/Liner Size	4.5 in	Depth MD	7017 ft	BHST	84°C / 184°F
Hole Size	7.875 in	Depth TVD	6102 ft	BHCT	49°C / 121°F
Pressure	3571 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	
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Cement Information - Lead Design



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Primary					Slurry Density	12.3	lbm/gal
							Slurry Yield	2.07	ft3/sack
							Water Requirement	10.16	gal/sack
							Total Mix Fluid	10.16	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

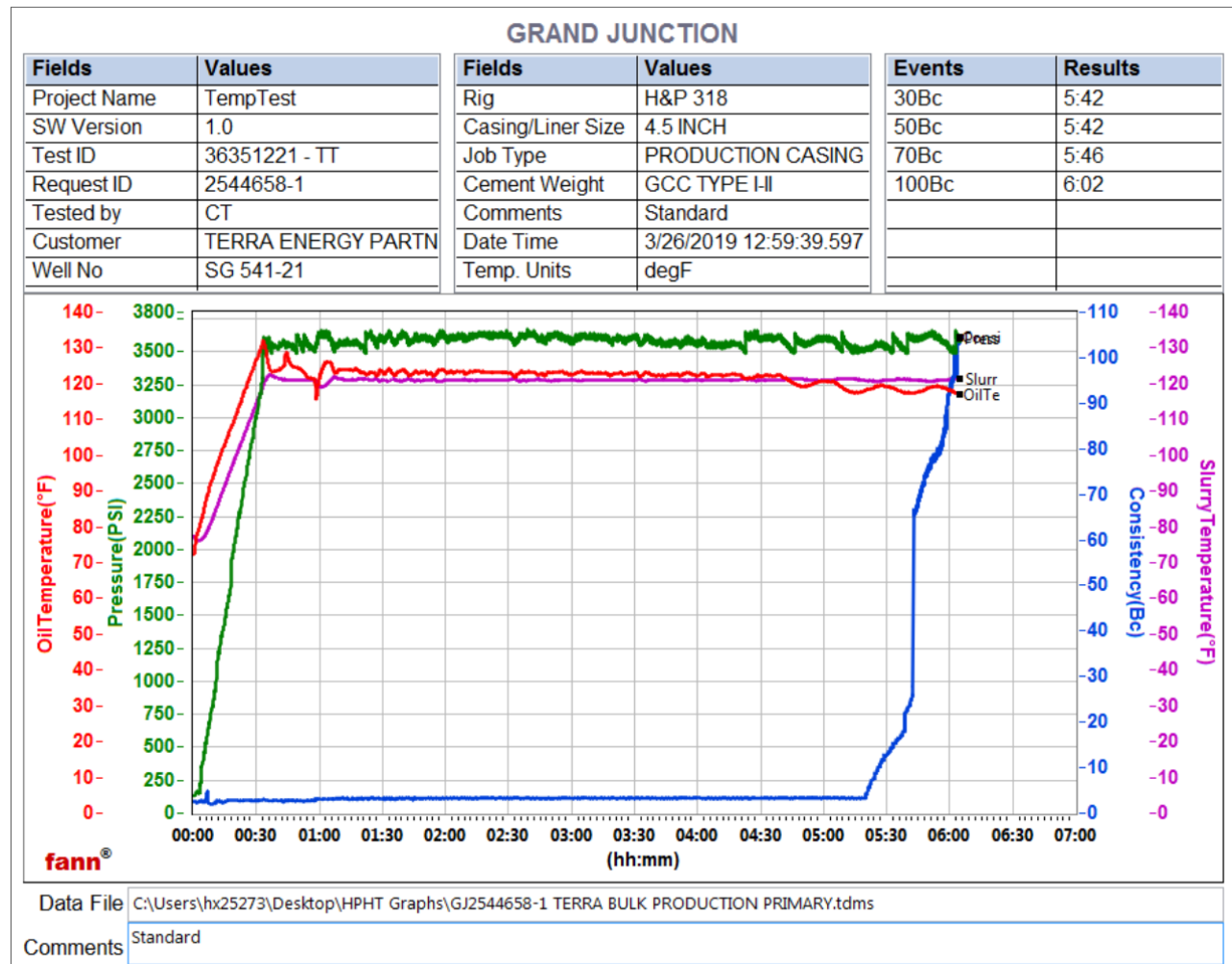
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Operation Test Results Request ID 2544658/1

Thickening Time - ON-OFF-ON, Request Test ID:36351221

27/MAR/2019

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)
121	3571	33	5:42	5:42	5:46	6:02	3	43	15	3



Total sks = 1710

CS0403, Trailer 8678, 400 sks

CS0404, Trailer 2878, 400 sks

no deflection, 6Bc---- > 6Bc please note heat of hydration at 4:43

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Operation Test Results Request ID 2544658/2

Thickening Time - ON-OFF-ON, Request Test ID:36352532

27/MAR/2019

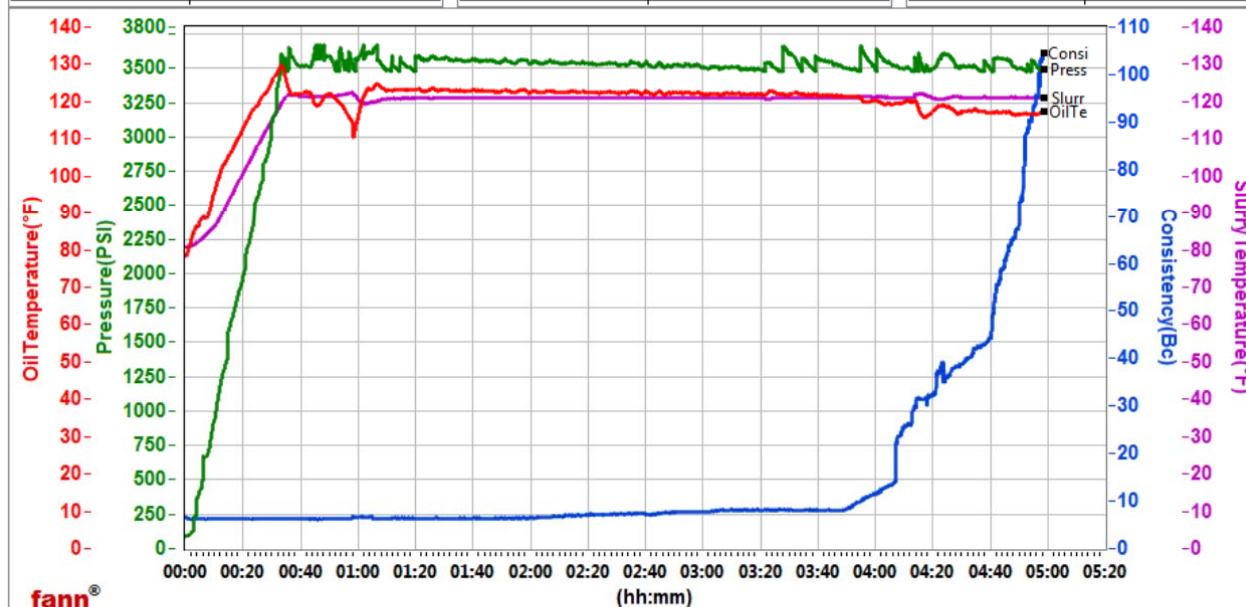
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
121	3571	33	4:14	4:41	4:50	4:57	7	43	15	6

GRAND JUNCTION

Fields	Values
Project Name	TempTest
SW Version	1.0
Test ID	3635
Request ID	2544658-2
Tested by	CT
Customer	TERRA ENERGY PARTN
Well No	SG541-21

Fields	Values
Rig	H&P 318
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE I-II
Comments	Standard
Date Time	3/26/2019 15:27:16.951
Temp. Units	degF

Events	Results
30Bc	4:14
50Bc	4:41
70Bc	4:50
100Bc	4:57



Data File C:\Users\hx25273\Desktop\HPHT Graphs\GJ2544658-2 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Standard

Total sks = 1710
 CS0405, Trailer 1513, 400 sks
 CS0406, Trailer 8476, 400 sks
 no deflection, 6Bc--- > 6Bc please note heat of hydration at 3:55

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Operation Test Results Request ID 2544658/3

Thickening Time - ON-OFF-ON, Request Test ID:36354662

27/MAR/2019

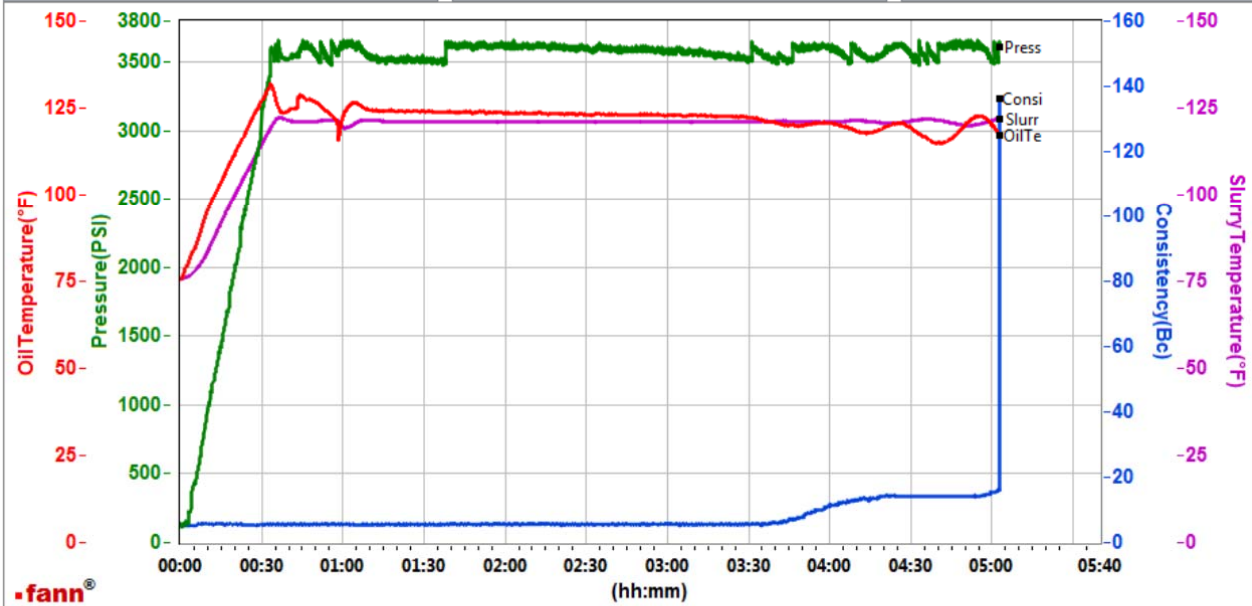
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)
121	3571	33	5:02	5:02	5:02	5:02	5	43	15

GRAND JUNCTION

Fields	Values
Project Name	2544658-3 H&P 318 Terra
SW Version	1.0
Test ID	3635662 - TT
Request ID	2544658-3
Tested by	DEBA
Customer	TERRA ENERGY PARTN
Well No	SG 541-21

Fields	Values
Rig	H&P 318
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE III
Comments	Standard
Date Time	3/27/2019 05:21:04.786
Temp. Units	degF

Events	Results
30 BC	5:02
50 BC	5:02
70 BC	5:02
100 BC	5:02



Data File C:\Users\H185329\Desktop\000 Graphs\GJ2544658-3 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Standard

Total sks = 1710
CS0407 TR#4057 110 SKS

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