

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Saturday, April 21, 2018

FEDERAL PA 32-26 Production PJR

API #: 05-045-23728

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

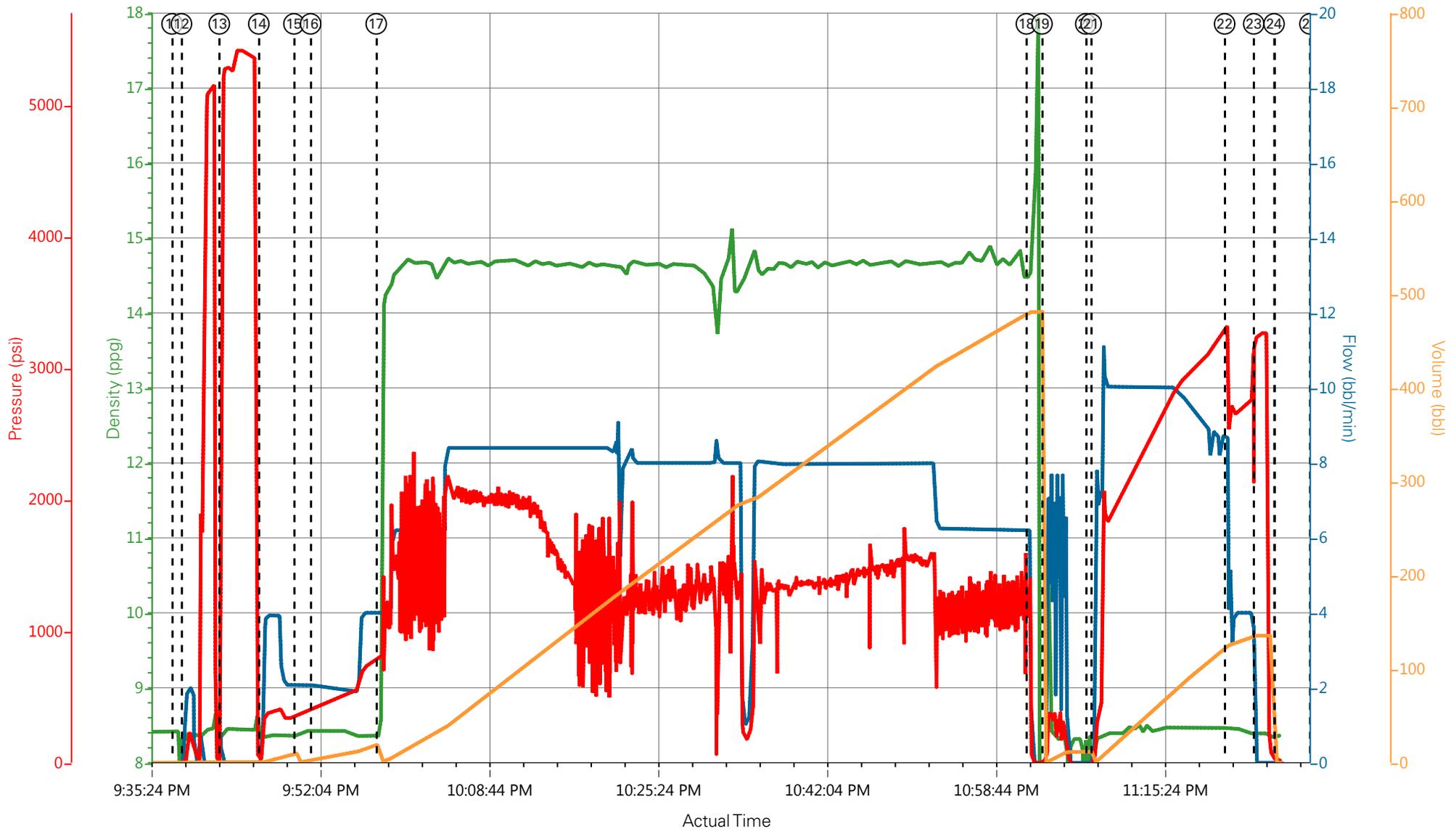
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density <i>(ppg)</i>	Combined Pump Rate <i>(bbl/min)</i>	Pass-Side Pump Pressure <i>(psi)</i>	Pump Stage Total <i>(bbl)</i>	Comments
Event	1	Call Out	4/20/2018	14:00:00	USER					ON LOCATION 19:00
Event	2	Pre-Convoy Safety Meeting	4/20/2018	16:30:00	USER					JOURNEY CREATED - ALL HES INVOLVED IN SAFETY MEETING
Event	3	Crew Leave Yard	4/20/2018	17:00:00	USER					1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK
Event	4	Arrive At Loc	4/20/2018	18:30:00	USER					HES ARRIVED 30-MINS EARLY
Event	5	Assessment Of Location Safety Meeting	4/20/2018	18:45:00	USER					RIG WAS RUNNING CASING - HES SPOKE WITH COMPANY REP AND SPOTTED EQUIPMENT
Event	6	Pre-Rig Up Safety Meeting	4/20/2018	19:00:00	USER					JSA FILLED OUT AND REVIEWED BY ALL HES ON LOCATION
Event	7	Rig-Up Equipment	4/20/2018	19:10:00	USER					RIG-UP IRON TO THE RIG STAND PIPE AND WASH UP LINE TO RIG CATCH TANK - RIG UP BULK EQUIPMENT TO PUMP TRUCK - WATER HOSES TO BOTH RIG UPRIGHTS
Event	8	Well Info/Water Test	4/20/2018	19:20:03	USER					TD: 8782FT TP: 8775FT SJ: 29.85FT OH: 8.75 CSG: 4 1/2" 11.6# SRF: 1134FT 9.625 - WATER TEST- TEMP: 50 CHLOR: 0 PH: 7
Event	9	Rig-Up Completed	4/20/2018	20:30:00	USER					COMPLETED SAFELY

Event	10	Pre-Job Safety Meeting	4/20/2018	20:45:00	USER					ALL HES, RIG CREW AND COMPANY REP IN ATTENDANCE
Event	11	Start Job	4/20/2018	21:37:43	COM5					START JOB
Event	12	Fill Lines	4/20/2018	21:38:39	USER	8.34	2	270	2	FILL LINES WITH 2BBLs OF WATER TO PRESSURE TEST
Event	13	Test Lines	4/20/2018	21:42:23	COM5			5426		PRESSURE TEST LINES TO 5426PSI - PRESSURE TEST GOOD
Event	14	Fresh Water Spacer	4/20/2018	21:46:17	COM5	8.34	2	370	10	10BBL FRESH WATER SPACER AHEAD - PRESSURE WAS 370PSI AT 2BPM
Event	15	Mud Flush Spacer	4/20/2018	21:49:45	COM5	8.45	4	800	20	20BBL MUD FLUSH SPACER AHEAD - PRESSURE WAS 800 PSI AT 4BPM
Event	16	Check weight	4/20/2018	21:51:24	COM5					VERIFIED WEIGHT OF FIRST TUB OF CEMENT
Event	17	Pump Cement	4/20/2018	21:57:52	COM5	14.5	8	2000	432.6	1840SKS OF EXPANDACEM CEMENT (432.6BBLs) 14.5PPG 1.32YIELD 5.85GAL/SK WEIGHT OF CEMENT VERIFIED VIA PRESSURIZED MUD SCALES THROUGHOUT CEMENT
Event	18	Shutdown	4/20/2018	23:02:01	USER					SHUTDOWN END OF CEMENT
Event	19	Clean Lines	4/20/2018	23:03:33	USER					CLEAN LINES TO RIG 3-SIDED TANK - CLEAN LINES WITH RIG SUPPLIED AIR - READY TANKS FOR DISPLACEMENT
Event	20	Drop Top Plug	4/20/2018	23:07:52	USER					TOP PLUG LAUNCHED NO PROBLEMS - POSITIVE DISPLACEMENT MANIFOLD USED

Event	21	Pump Displacement	4/20/2018	23:08:24	COM5	8.45	10	3330	125.5	FRESH WATER DISPLACEMENT WITH 1-BAG OF KCL PER 10BBLS OF DISPLACEMENT WITH 3 POUNDS OF BE-6 AND 1-GAL MMCR
Event	22	Slow Rate	4/20/2018	23:21:34	USER	8.45	4	2680	10	SLOW RATE TO LAND THE PLUG - PRESSURE PRIOR TO SLOWING WAS 3330 PSI AT 9BPM - PRESSURE AFTER SLOWING WAS 2680 PSI AT 4BPM
Event	23	Bump Plug	4/20/2018	23:24:27	COM5	8.45	4	2742	135.5	PLUG BUMPED AT CALCULATED DISPLACEMENT - PLUG BUMPED AT 2742 PSI AT 4BPM TOOK TO 3270 PSI
Event	24	End Job	4/20/2018	23:26:27	COM5			3270		THANK YOU FOR CHOOSING HALLIBURTON CEMENT CARL KUKUS AND CREW
Event	25	Pre-Rig Down Safety Meeting	4/20/2018	23:30:00	USER					JSA REVIEWED - ALL HES INVOLVED IN SAFETY MEETING
Event	26	Rig-Down Equipment	4/20/2018	23:35:00	USER					WASH UP AND BLOW DOWN PUMP TRUCK - RIG DOWN ALL LINES AND EQUIPMENT
Event	27	Rig-Down Completed	4/21/2018	00:35:00	USER					COMPLETED SAFELY
Event	28	Pre-Convoy Safety Meeting	4/21/2018	00:40:00	USER					JOURNEY CREATED - ALL HES INVOLVED IN SAFETY MEETING
Event	29	Crew Leave Location	4/21/2018	00:50:00	USER					1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK

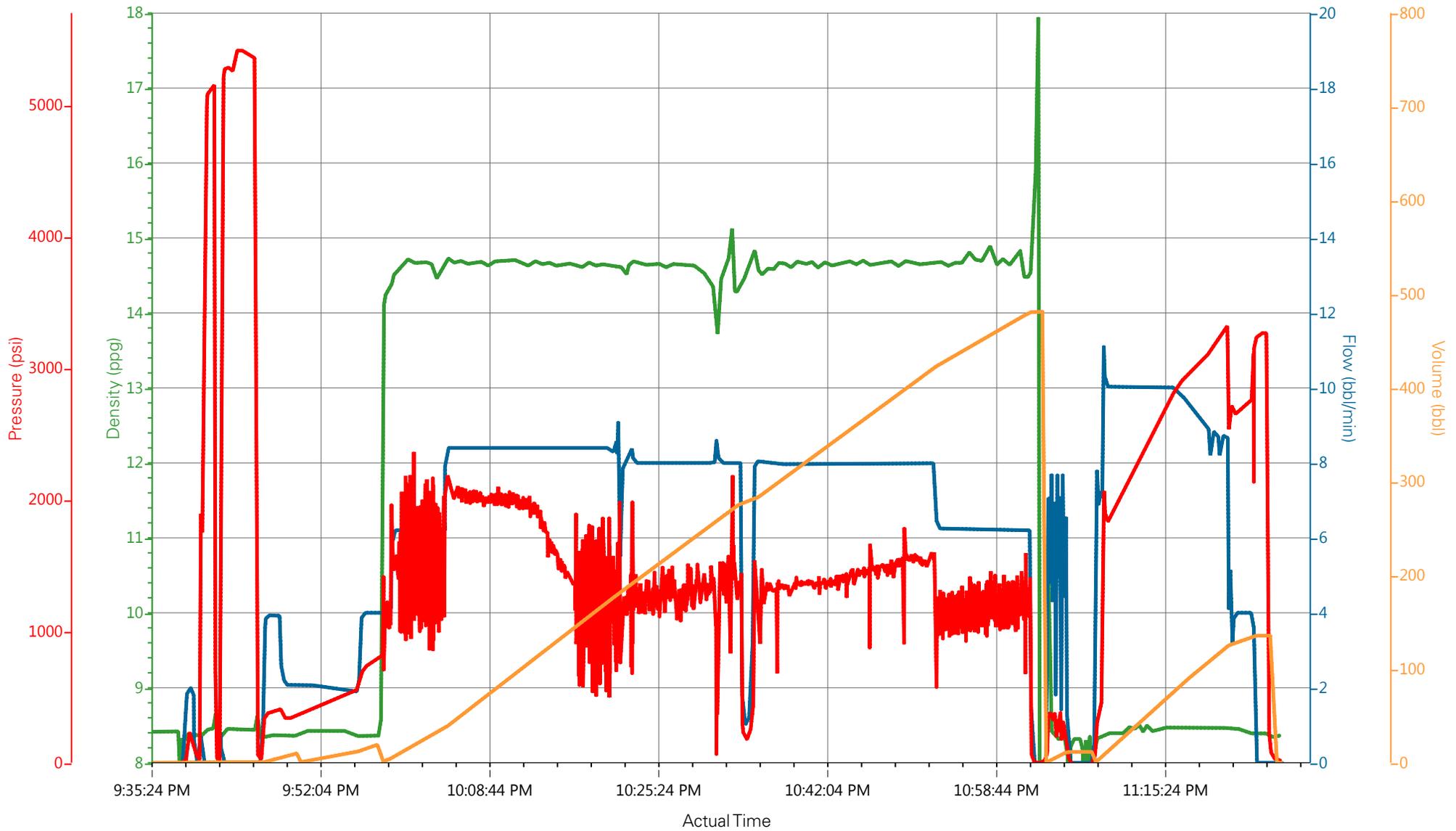
TEP - FEDERAL PA 32-26 - 904782559 - 4 1/2" PRODUCTION



DH Density (ppg) 8.36 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 18 Pump Stg Tot (bbl) 0

- 7 Rig-Up Equipment 9 Rig-Up Completed 11 Start Job 13 Test Lines 15 Mud Flush Spacer 17 Pump Cement 19 Clean Lines 21 Pump Displacement 23 Bump Plug 25 F
- 8 Well Info/Water Test 10 Pre-Job Safety Meeting 12 Fill Lines 14 FreshWater Spacer 16 Check weight 18 Shutdown 20 Drop Top Plug 22 Slow Rate 24 End Job 26 F

TEP - FEDERAL PA 32-26 - 904782559 - 4 1/2" PRODUCTION



DH Density (ppg) 8.36 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 18 Pump Stg Tot (bbl) 0

Job Information

Request/Slurry	2466898/1	Rig Name	H&P 271	Date	12/APR/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 32-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8823 ft	BHST	106°C / 222°F
Hole Size	8.75 in	Depth TVD	8356 ft	BHCT	67°C / 152°F
Pressure	5149 psi				

Drilling Fluid Information

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

Cement Information - Primary Design

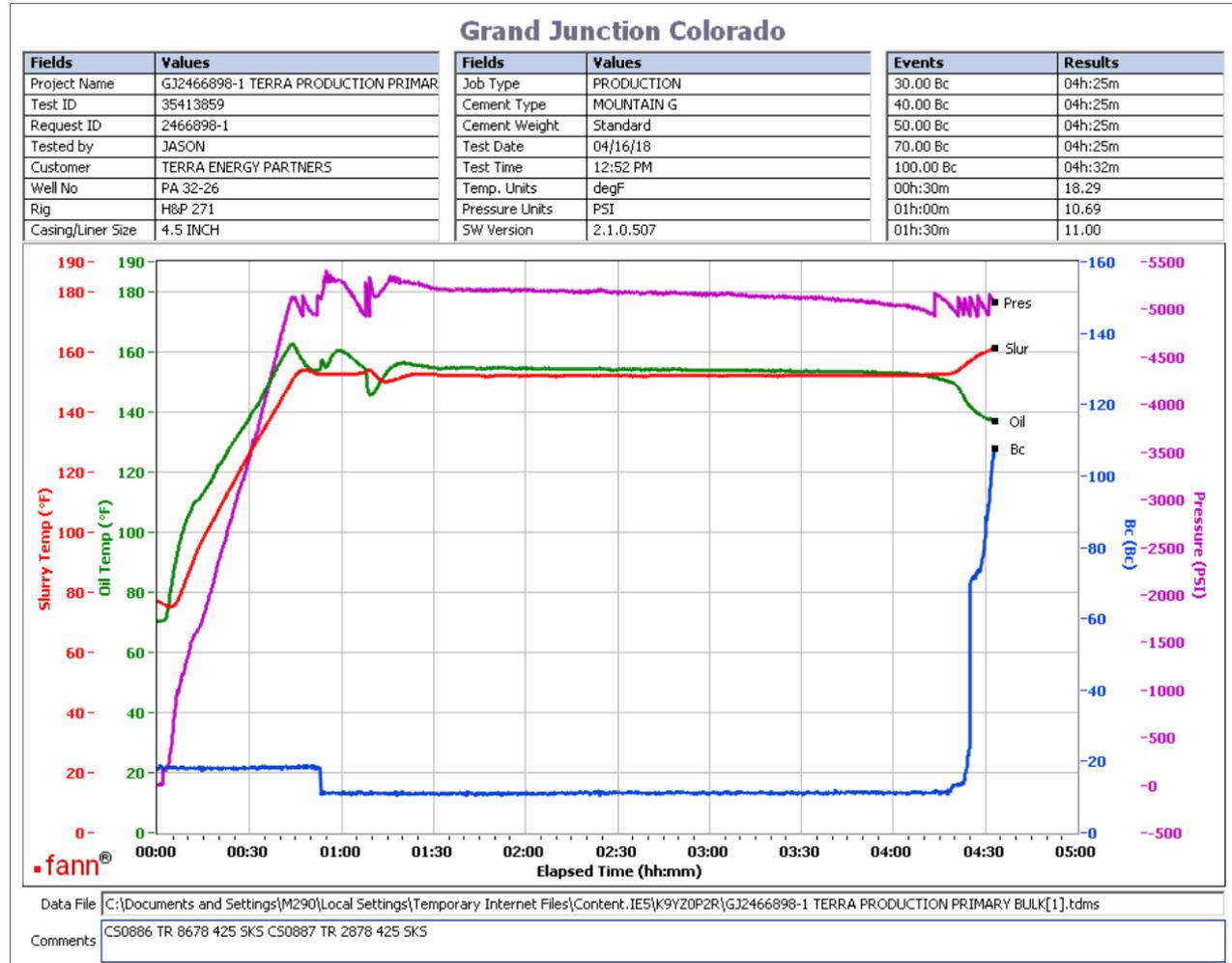
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		Expandacem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh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

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.

Thickening Time - ON-OFF-ON

17/APR/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)
152	5149	43	4:25	4:25	4:25	4:32	18	53	15	11



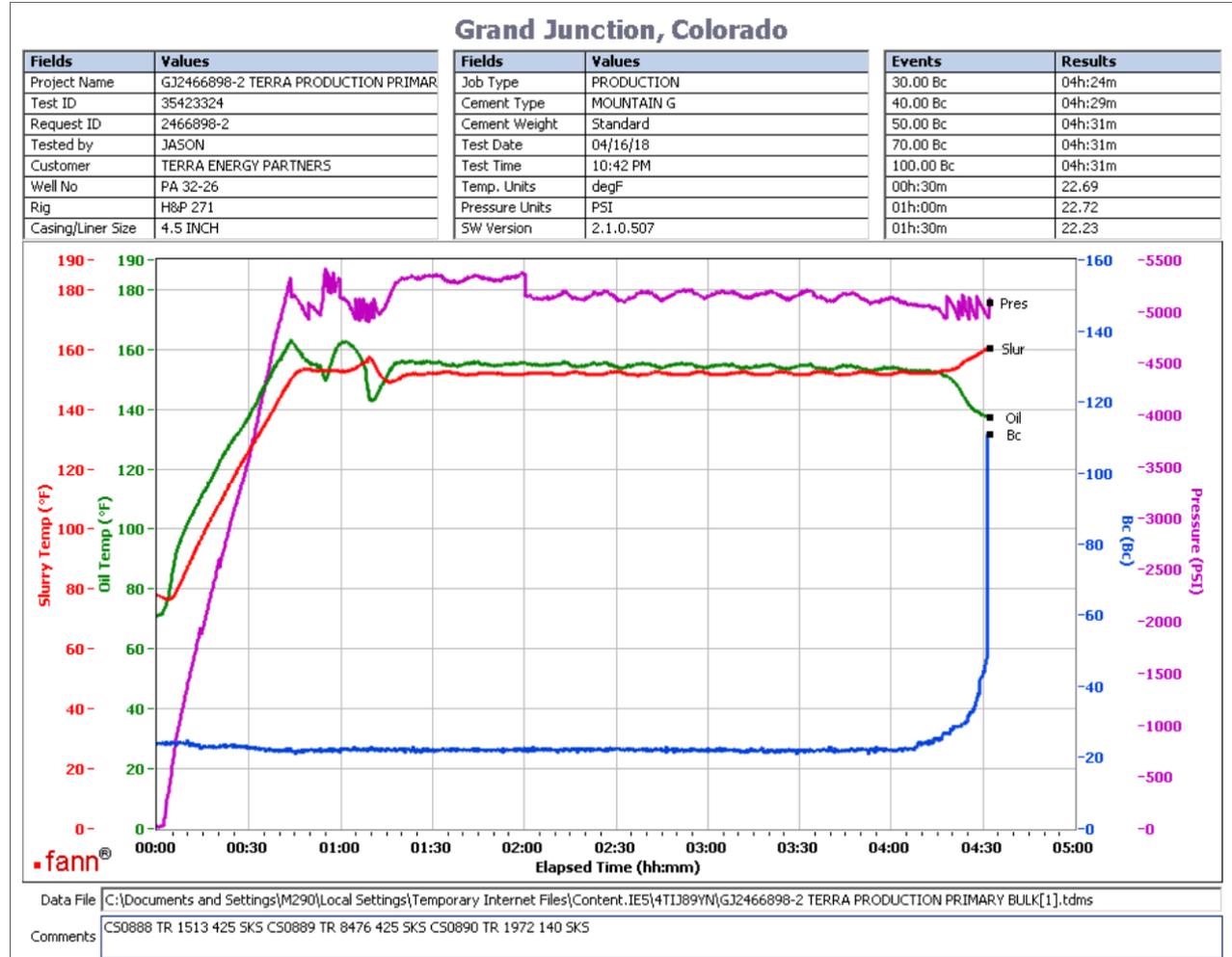
total sks =1840
 Composite:
 CS0886 TR 8678 425 SKS
 CS0887 TR 2878 425 SKS
 Deflection: 11 – 11

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.

Thickening Time - ON-OFF-ON

17/APR/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)
152	5149	43	4:24	4:31	4:31	4:31	24	53	15	22



total sks=1840
 Composite:
 CS0888 TR 1513 425 SKS
 CS0889 TR 8476 425 SKS
 CS0890 TR 1972 140 SKS
 Deflection: 22 - 22

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.