

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

Date: Wednesday, April 11, 2018

### **PA 333-26 Production**

API# 05-045-23709-00

Job Date: Tuesday, April 10, 2018

Sincerely,

**Grand Junction Cement Engineering**

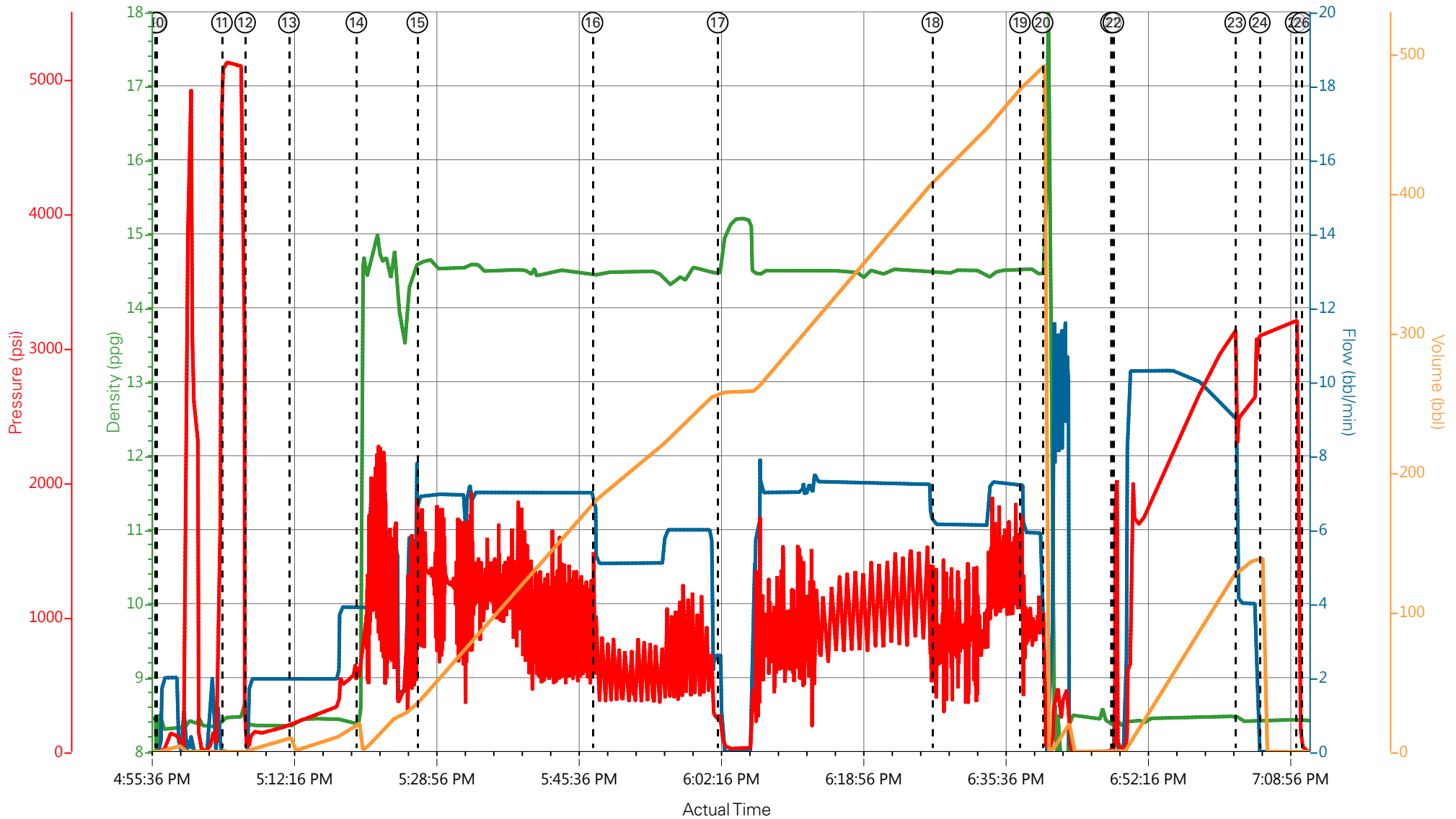
## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	4/10/2018	09:00:00	USER					REQUESTED ON LOCATION @ 15:00
Event	2	Pre-Convoy Safety Meeting	4/10/2018	11:30:00	USER					ALL HES EMPLOYEES PRESENT
Event	3	Crew Leave Yard	4/10/2018	11:45:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCK, 1 F450 SERVICE TRUCK
Event	4	Arrive At Loc	4/10/2018	13:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	4/10/2018	13:15:00	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- 55F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	4/10/2018	13:30:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	4/10/2018	13:35:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	4/10/2018	16:40:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 13 BPM PRIOR TO JOB PRESSURE @ 2100PSI.
Event	9	Start Job	4/10/2018	16:56:23	COM6					TD 8488', TP 8482', SJ 32', SURFACE CSG 9 5/8" 36# H-40 SET @ 1101' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 12.3#
Event	10	Prime Lines	4/10/2018	16:56:32	COM6	8.33	2	142	4	8.33 PPG FRESH WATER

Event	11	Test Lines	4/10/2018	17:04:11	COM6			5133		ALL LINES HELD PRESSURE AT PSI 5133
Event	12	Pump H2O Spacer	4/10/2018	17:06:54	COM6	8.33	2	207	10	FRESH WATER
Event	13	Mud Flush	4/10/2018	17:12:02	COM6	8.4	4	400	20	20 BBL MUDFLUSH III
Event	14	Pump Cement	4/10/2018	17:19:56	COM6	14.5	7	1330	429	1825 SKS EXPANDACEM CMT 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK
Event	15	Check Weight	4/10/2018	17:27:04	USER					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Slow Rate	4/10/2018	17:47:35	USER					SLOWED TO END CEMENT SILO
Event	17	Shutdown	4/10/2018	18:02:15	USER					SHUTDOWN TO FIX LEAK ON LINE
Event	18	Slow Rate	4/10/2018	18:27:23	USER					SLOWED TO END CEMENT SILO
Event	19	Slow Rate	4/10/2018	18:37:39	USER					SLOWED TO END CEMENT
Event	20	Shutdown	4/10/2018	18:40:18	COM6					END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	21	Pump Displacement	4/10/2018	18:48:18	COM6	8.4	10	3150	131	1 GAL MMCR IN FIRST 10 BBLs, 3 LBS BE-6 IN FIRST 30 BBLs, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	22	Drop Top Plug	4/10/2018	18:48:35	COM6					VERIFIED BY FLAG INDICATOR
Event	23	Slow Rate	4/10/2018	19:02:51	COM6	8.4	4	2500	121	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	24	Bump Plug	4/10/2018	19:05:44	COM6	8.4	4	2640	131	LANDED PLUG AT 2640 PSI, BROUGHT UP TO 3207 PSI
Event	25	Check Floats	4/10/2018	19:09:56	USER					FLOATS HELD. 1.5BBLs BACK TO TRUCK.
Event	26	End Job	4/10/2018	19:10:38	USER					HAD RETURNS THROUGH JOB. NO SUGAR USED
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	4/10/2018	19:15:00	USER					ALL HES PRESENT
Event	28	Rig-Down Equipment	4/10/2018	19:20:00	USER					ALL HES PRESENT
Event	29	Pre-Convoy Safety Meeting	4/10/2018	20:30:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	4/10/2018	20:40:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

# TERRA RU 333-26, 4.5" PRODUCTION



DH Density (ppg) 7.46    Comb Pump Rate (bbl/min) 0    PS Pump Press (psi) 18    Pump Stg Tot (bbl) 50.4

- ① Call Out                      ④ Arrive At Loc                      ⑦ Rig-Up Equipment                      ⑩ Prime Lines                      ⑬ Mud Flush                      ⑯ Slow Rate                      ⑲ Slow Rate                      22 Drop Top P
- ② Pre-Convoy Safety Meeting    ⑤ Assessment Of Location Safety Meeting    ⑧ Pre-Job Safety Meeting                      ⑪ Test Lines                      ⑭ Pump Cement                      ⑰ Shutdown                      20 Shutdown                      23 Slow Rate
- ③ Crew Leave Yard                      ⑥ Pre-Rig Up Safety Meeting                      ⑨ Start Job                      ⑫ Pump H2O Spacer                      ⑮ Check Weight                      ⑱ Slow Rate                      21 Pump Displacement                      24 Bump Plug



**HALLIBURTON** | iCem® Service

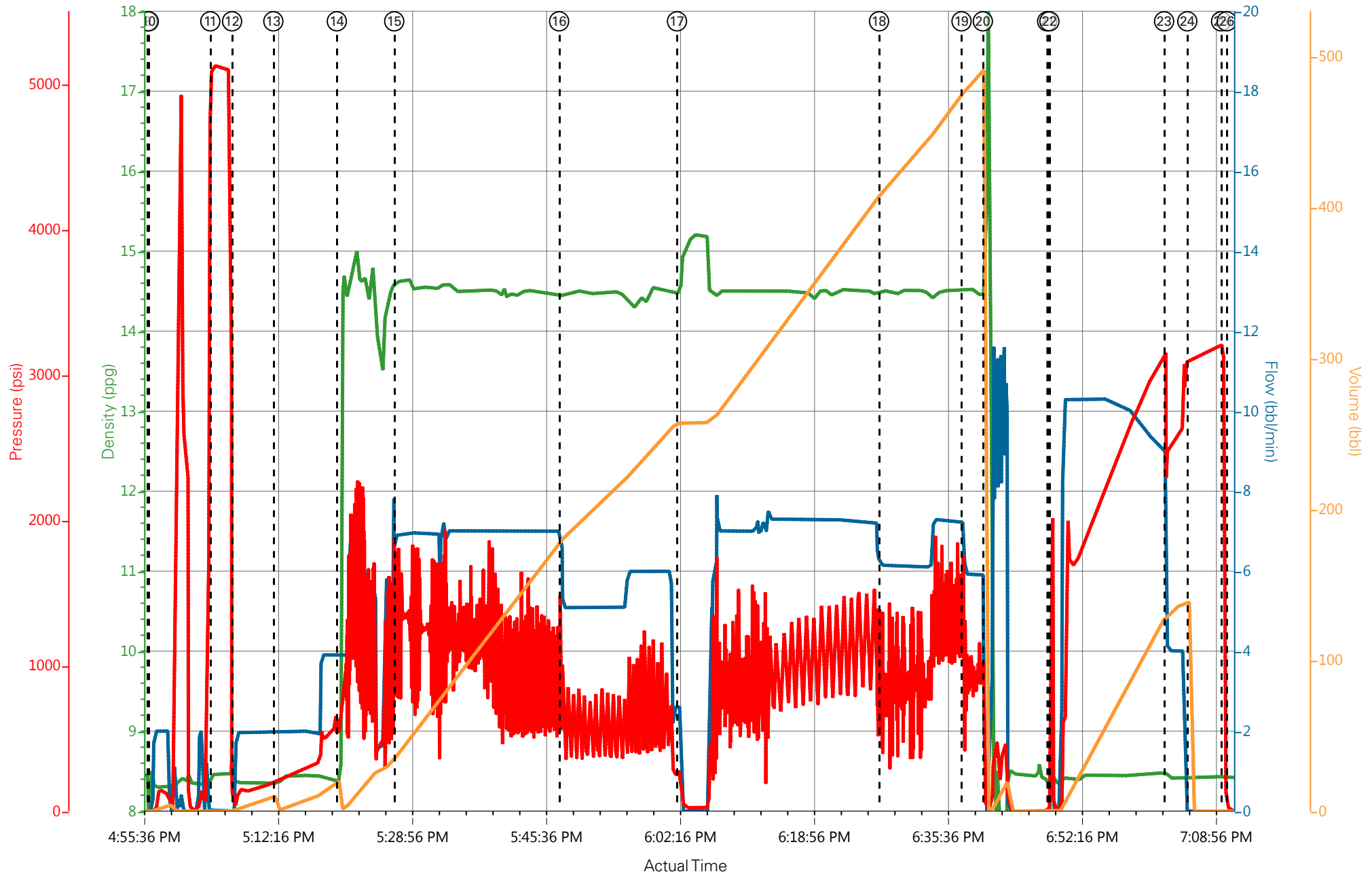
Created: 2018-04-10 10:13:05, Version: 4.2.393

Customer : TERRA ENERGY PARTNERS-EBUS  
 Representative : DARRELL LEATHERMAN

Job Date : 4/10/2018  
 Sales Order # : 904762748

Well : PA 333-26  
 ELITE 8 : WES.G/SHAWN.B

# TERRA RU 333-26, 4.5" PRODUCTION



DH Density (ppg) 7.46    Comb Pump Rate (bbl/min) 0    PS Pump Press (psi) 18    Pump Stg Tot (bbl) 50.4

### Job Information

<b>Request/Slurry</b>	2464529/1	<b>Rig Name</b>	H&P 271	<b>Date</b>	02/APR/2018
<b>Submitted By</b>	Aaron Katz	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Terra Energy Partners	<b>Location</b>	Garfield	<b>Well</b>	PA 333-26

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	8519 ft	<b>BHST</b>	106°C / 222°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	7948 ft	<b>BHCT</b>	67°C / 152°F
<b>Pressure</b>	5140 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>	AMC	<b>Mud Trade Name</b>		<b>Density</b>	
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### Cement Information - Primary Design

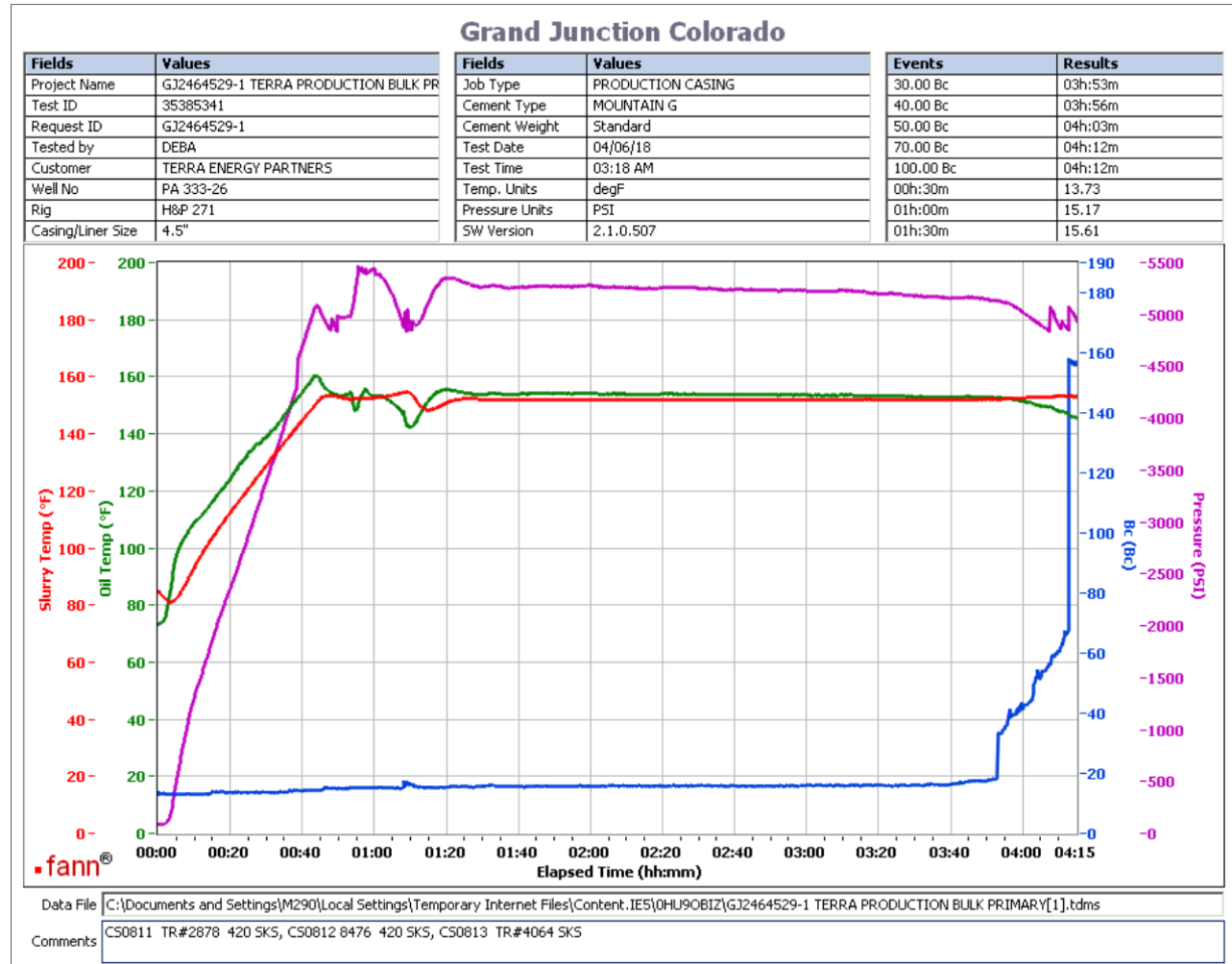
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		HalCem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source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

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Thickening Time - ON-OFF-ON

06/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)
151	5140	43	3:53	4:03	4:12	4:12	13	53	15	13



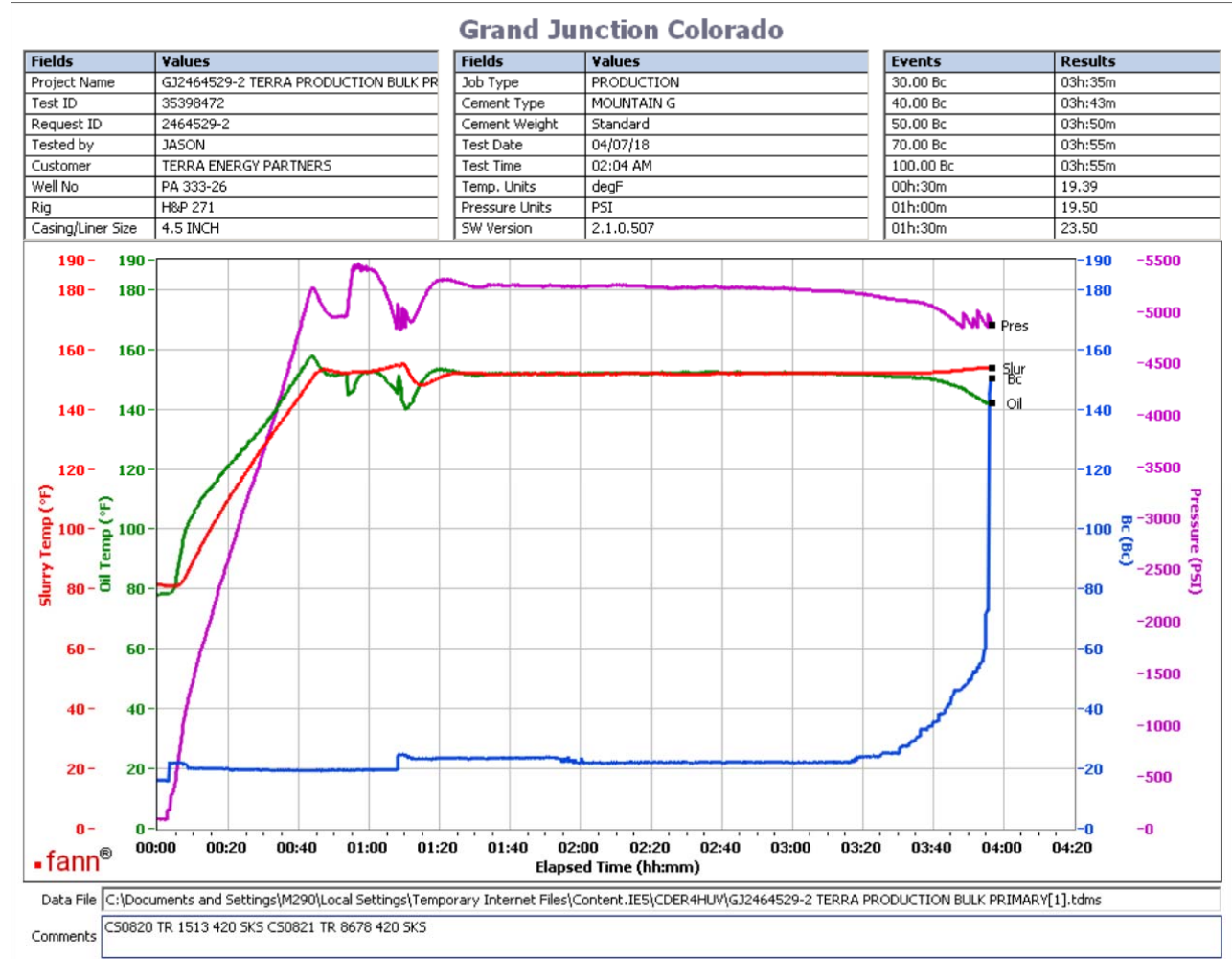
total sks=1825  
 CS0811 TR#2878 420 SKS  
 CS0812 TR#8476 420 SKS  
 CS0813 TR#4064 145 SKS

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**Operation Test Results Request ID 2464529/2**

**Thickening Time - ON-OFF-ON 07/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	5140	43	3:35	3:50	3:55	3:55	16	53	15	25



total sks=1825  
 Composite:  
 CS0820 TR 1513 420 SKS  
 CS0821 TR 8678 420 SKS  
 Deflection: 19 - 25

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