

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

United States of America, COLORADO

### **For: Terra**

Date: Friday, October 12, 2018

### **PA 332-24 Production PJR**

API #: 05-045-23763

Sincerely,

**Grand Junction Cement Engineering**

## 2.0 Real-Time Job Summary

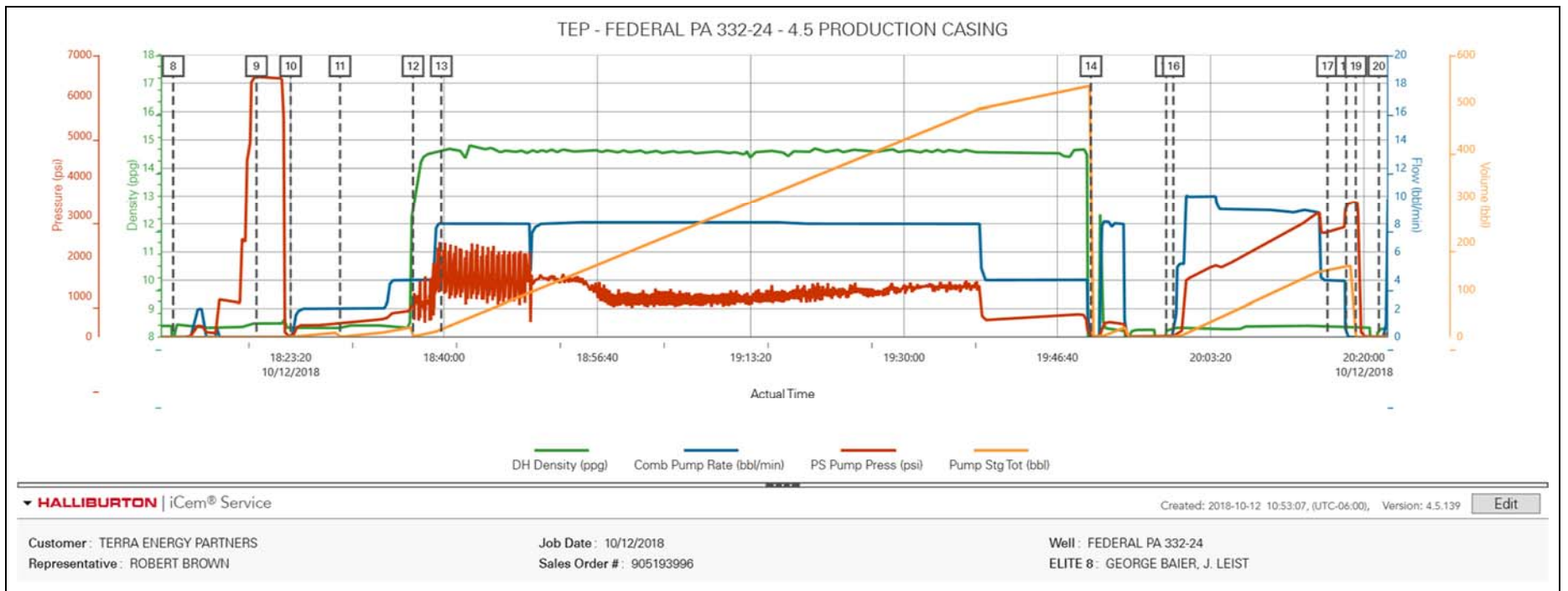
### 2.1 Job Event Log

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	10/12/2018	09:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	10/12/2018	12:45:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	10/12/2018	13:00:00	USER					
Event	4	Arrive At Loc	10/12/2018	14:30:00	USER					JOURNEY MANAGEMENT CLOSED OUT. RIG RUNNING CASING.
Event	5	Assessment Of Location Safety Meeting	10/12/2018	15:00:00	USER					
Event	6	Pre-Rig Up Safety Meeting	10/12/2018	15:20:00	USER					JSA COMPLETE
Event	7	Rig-Up Equipment	10/12/2018	15:30:00	USER					1 ELITE, 1 660, 2 SILOS, 2 UPRIGHT 400 BBL WATER TANKS
Event	8	Other	10/12/2018	16:00:00	USER					WATER TEST: PH-7, CL-0, TEMP-61  WELL INFO: 4.5 11.6# TP- 9195, TD-9201, S.J.-27.93, HOLE- 8 3/4, MUD#- 13, 9 5/8 SET @ 1127
Event	9	Other	10/12/2018	16:30:00	USER					MUD SCALES CHECKED WITH WATER PRIOR TO JOB.
Event	10	Pre-Job Safety Meeting	10/12/2018	17:40:00	USER					JSA COMPLETE
Event	11	Start Job	10/12/2018	18:10:34	COM5					
Event	12	Test Lines	10/12/2018	18:19:37	COM5	8.33	0.00	6444.00	0.00	6544 PSI TEST GOOD
Event	13	Pump Spacer 1	10/12/2018	18:23:20	COM5	8.33	2.00	287.00	10.00	FRESH WATER
Event	14	Pump Spacer 2	10/12/2018	18:28:42	COM5	8.40	4.00	600.00	20.00	MUD FLUSH
Event	15	Pump Cement	10/12/2018	18:36:38	COM5	14.5	8.00	1190.00	458.4	1950 SKS EXPANDACEM, 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK

Event	16	Check Weight	10/12/2018	18:39:42	COM5	14.50				14.5 PPG, WEIGHT GOOD
Event	17	Shutdown	10/12/2018	19:50:19	USER					WASH UP PUMPS AND LINES TO PIT, BLOW AIR FROM RIGH FLOOR TO PIT.
Event	18	Drop Top Plug	10/12/2018	19:58:30	COM5					AWAY USING POSITIVE DISPLACEMENT
Event	19	Pump Displacement	10/12/2018	19:59:16	COM5	8.40	9.00	3060.00	142.1	KCL WATER WITH 3 LBS BE-6, 1 GAL MMCR
Event	20	Slow Rate	10/12/2018	20:16:02	USER	8.40	4.00	2590.00	133.20	TO BUMPE PLUG
Event	21	Bump Plug	10/12/2018	20:18:04	COM5	8.40	4.00	2740.00	142.10	PLUG BUMPED ON CALULATED
Event	22	Check Floats	10/12/2018	20:19:06	USER			3370.00		FLOATS HELD 2 BBLS BACK TO TRUCK
Event	23	End Job	10/12/2018	20:21:37	COM5					GOOD RETURNS THROUGHOUT JOB, PIPE WORKED 5-10 FEET THROUGHOUT.
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	10/12/2018	20:43:03	USER					
Event	25	Crew Leave Location	10/12/2018	21:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

## 3.0 Attachments

### 3.1 CHART.png



### Job Information

<b>Request/Slurry</b>	2506699/1	<b>Rig Name</b>	H&P 271	<b>Date</b>	05/OCT/2018
<b>Submitted By</b>	Patrick Ealey	<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 332-24

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	9242 ft	<b>BHST</b>	107°C / 225°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	8518 ft	<b>BHCT</b>	68°C / 155°F
<b>Pressure</b>	5263 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

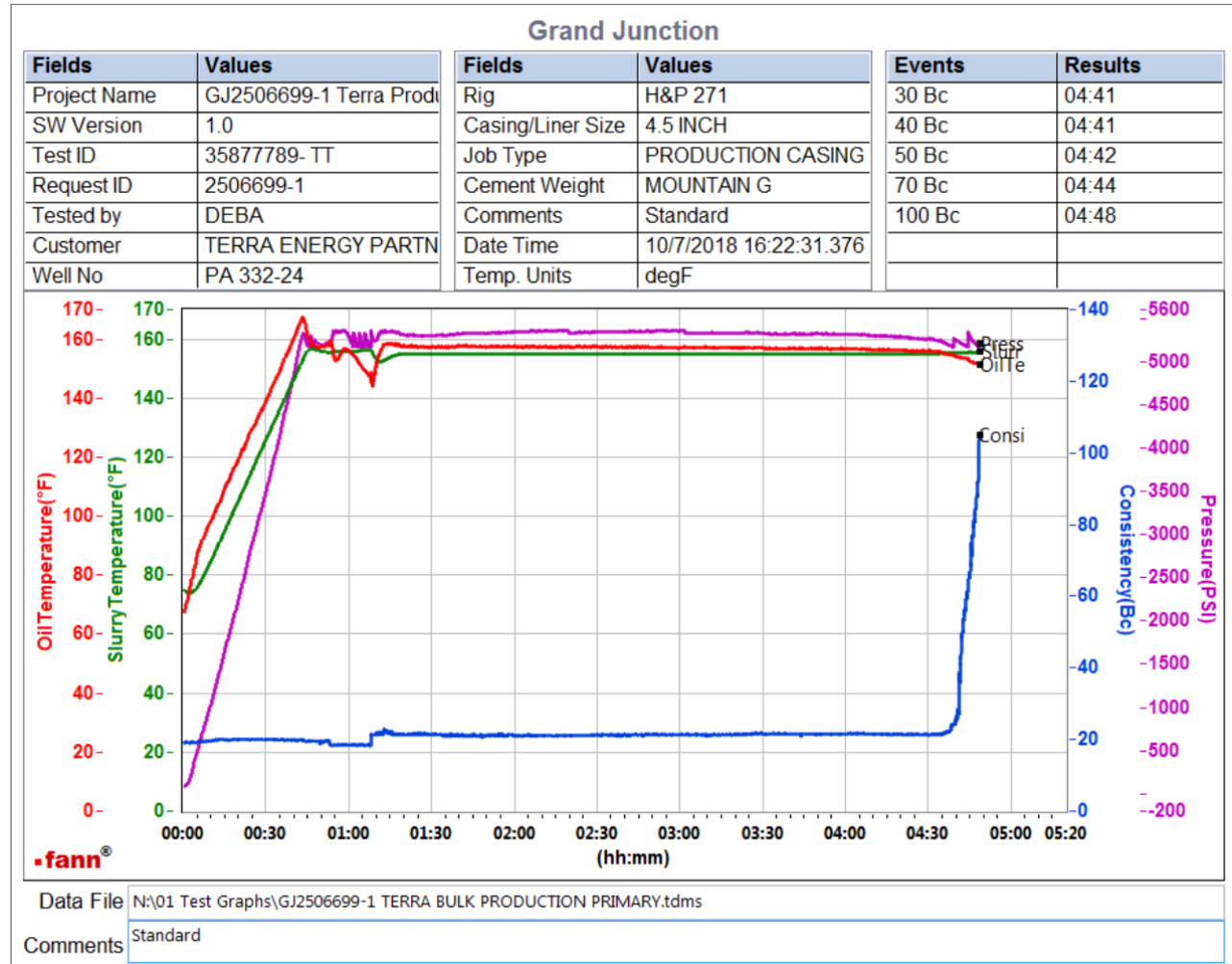
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		Expandacem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft <sup>3</sup> /sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

08/OCT/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)
155	5263	43	4:41	4:42	4:44	4:48	19	53	15	21



total sks=1950  
 CS2239 TR#8658 450 SKS  
 CS2240 TR#8678 450 SKS  
 Deflected 18-- > 21

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**Operation Test Results Request ID 2506699/2**

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

**08/OCT/2018**

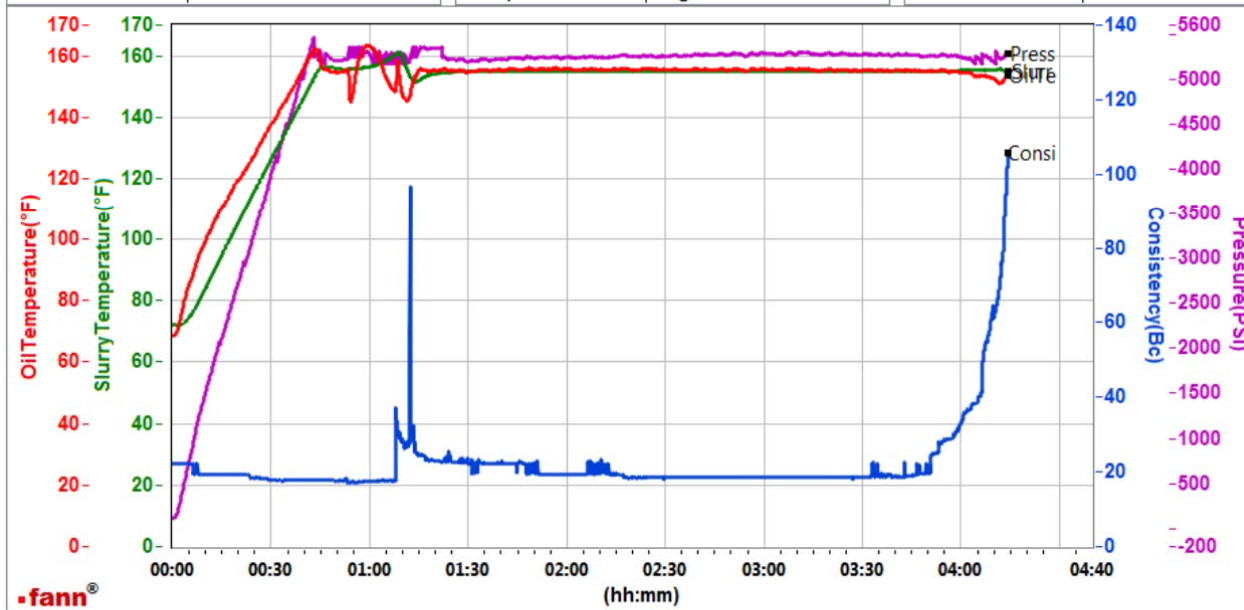
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
155	5263	43	3:59	4:07	4:12	4:13	22	53	15	30

**GRAND JUNCTION**

Fields	Values
Project Name	GJ2506699-2 Terra Prodi
SW Version	1.0
Test ID	35882437 - TT
Request ID	2506699-2
Tested by	DEBA
Customer	TERRA ENERGY PARET
Well No	PA 332-24

Fields	Values
Rig	H&P 271
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	MOUNTAIN G
Comments	Standard
Date Time	10/7/2018 16:39:10.926
Temp. Units	degF

Events	Results
30 Bc	03:59
40 Bc	04:05
50 Bc	04:07
70 Bc	04:12
100 Bc	04:13



Data File N:\01 Test Graphs\GJ2506699-2 TERRABULK PRODUCTION PRIMARY.tdms

Comments Standard

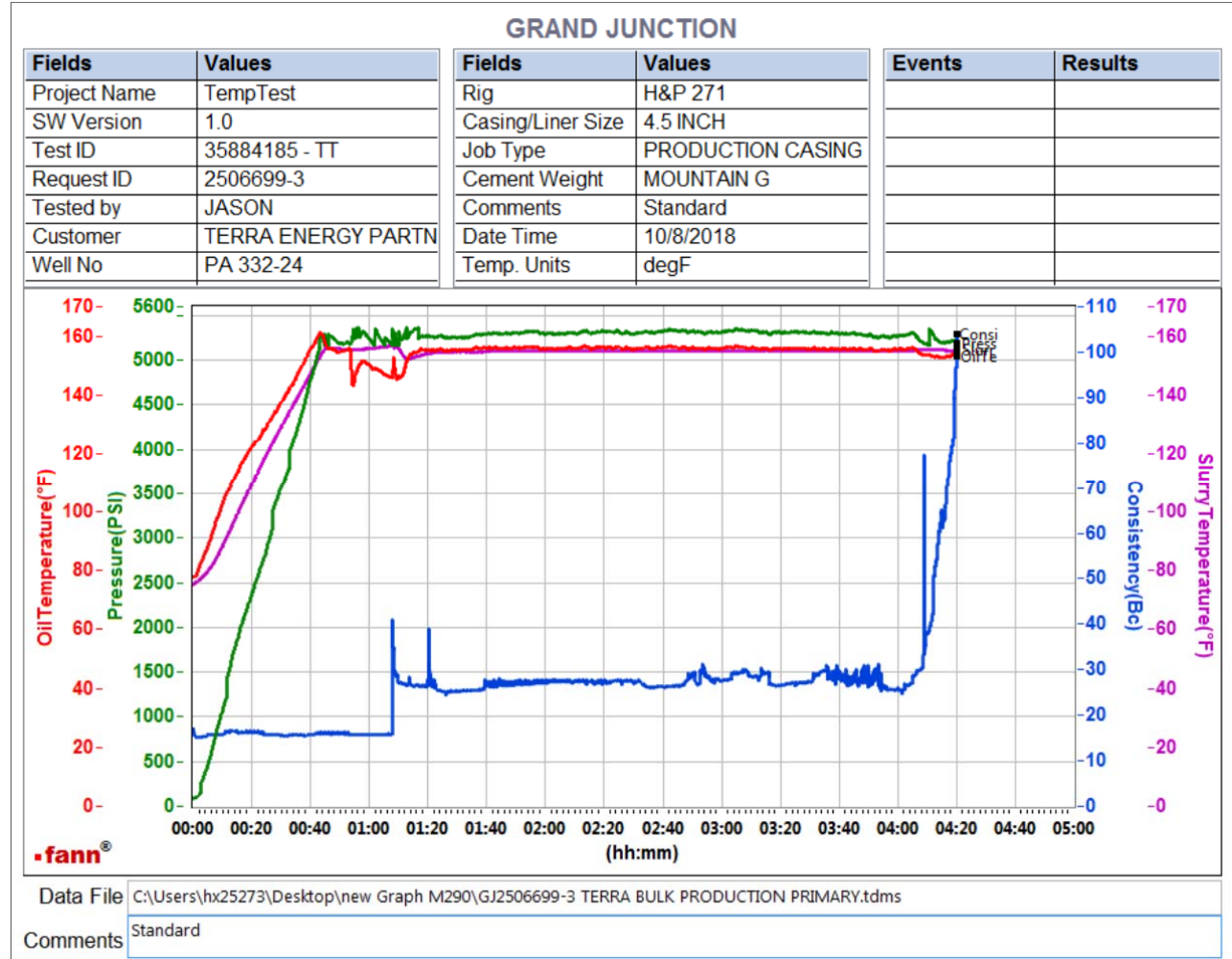
total sks=1950  
 CS2241 TR#8476 450 SKs  
 CS2242 TR#1513 450 SKS  
 Deflected 18-- > 30

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**Operation Test Results Request ID 2506699/3**

**Thickening Time - ON-OFF-ON** **08/OCT/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)
155	5263	43	4:08	4:12	4:16	4:20	17	53	15	35



total sks=1950  
 CS2243 TR 3212 150 SKS  
 deflected from 15Bc--- > 35BC

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