

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

United States of America, COLORADO

### **For: TEP**

Date: Sunday, November 25, 2018

### **CLOUGH NR 344-3 Production PJR**

API #: 05-045-23917

Sincerely,

**Grand Junction Cement Engineering**

## 2.0 Real-Time Job Summary

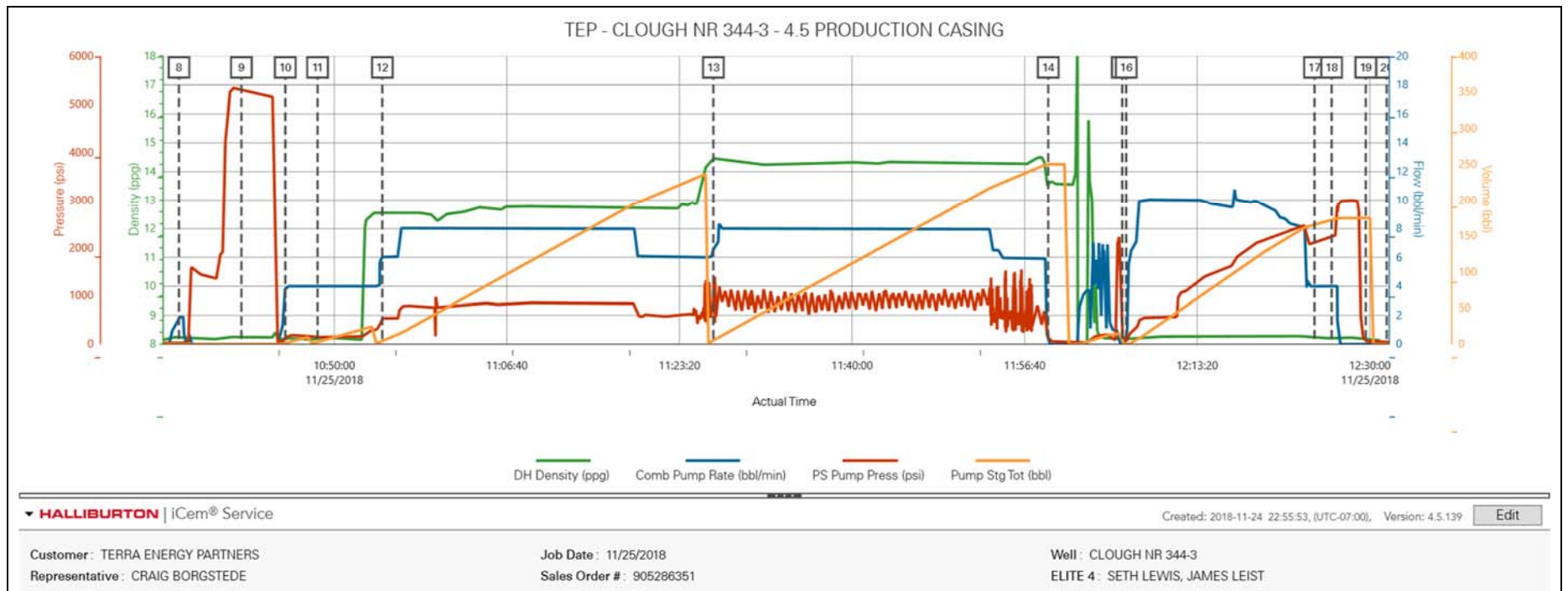
### 2.1 Job Event Log

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	11/24/2018	22:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	11/25/2018	00:30:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	11/25/2018	01:00:00	USER					
Event	4	Arrive At Loc	11/25/2018	03:00:00	USER					JOURNEY MANAGEMENT CLOSED OUT. RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	11/25/2018	04:00:00	USER					
Event	6	Pre-Rig Up Safety Meeting	11/25/2018	05:00:00	USER					JSA COMPLETE
Event	7	Rig-Up Equipment	11/25/2018	05:30:00	USER					2 SILOS, 1 ELITE, 1 BULK TRUCKS, 2 UPRIGHT WATER TANKS
Event	8	Other	11/25/2018	09:00:00	USER					WATER TEST: PH-7, CL-0, TEMP-72  WELL INFO: 4.5 11.6# TP- 10710.49, TD-10715, S.J.- 70.97, HOLE- 8 3/4, MUD#- 11.0, 9 5/8 36# SET @ 1114
Event	9	Other	11/25/2018	09:10:00	USER					MUD SCALES CHECKED WITH WATER PRIOR TO JOB.
Event	10	Pre-Job Safety Meeting	11/25/2018	10:00:00	USER					JSA COMPLETE
Event	11	Start Job	11/25/2018	10:35:00	USER					RIG HAD CIRCULATION PRIOR TO STARTING CMT JOB.
Event	12	Test Lines	11/25/2018	10:41:02	USER			5273.00		5273 PSI
Event	13	Pump Spacer	11/25/2018	10:45:16	USER	8.33	4.00	104.00	10.00	FRESH WATER
Event	14	Pump Spacer 1	11/25/2018	10:48:23	USER	8.33	4.00	148.00	20.0	MUD FLUSH

Event	15	Pump Lead Cement	11/25/2018	10:54:38	USER	12.70	8.00	750.00	222.4	675 SKS NEOCEM, 12.7 PPG, 1.85 FT3/SK, 8.94 GAL/SK, GAINED RETURNS AT 30 BBLS GONE OF LEAD CMT
Event	16	Pump Tail Cement	11/25/2018	11:26:36	USER	14.20	8.00	725.00	224	740 SKS THERMACEM, 14.2 PPG, 1.7 FT3/SK, 7.53 GAL/SK
Event	17	Shutdown	11/25/2018	11:58:56	USER					TO WASH UP PUMPS AND LINES, AND DROP TOP PLUG, BLEW AIR FROM RIG TO PIT.
Event	18	Drop Top Plug	11/25/2018	12:06:05	USER					AWAY USING POSTITIVE DISPLACEMENT
Event	19	Pump Displacement	11/25/2018	12:06:28	USER	8.33	10.00	2455.00	164.90	KCL WATER WITH 3 BAGS BE-6, 1 GAL MMCR
Event	20	Slow Rate	11/25/2018	12:24:39	USER	8.33	4.00	2087.00	155.00	TO BUMP PLUG
Event	21	Bump Plug	11/25/2018	12:26:18	USER	8.33	4.00	2245.00	164.90	PLUG BUMPED
Event	22	Check Floats	11/25/2018	12:29:36	USER			3003.0		FLOATS HELD, 2.0 BBLS BACK TO TRUCK
Event	23	End Job	11/25/2018	12:31:37	USER					GOOD CIRCULATION THROUGHOUT JOB, CIRCULATION SLOWED TO NOTHING AT START OF DISPLACEMENT, PIPE WORKED THROUGHOUT JOB.
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	11/25/2018	12:32:55	USER					JSA COMPLETE
Event	25	Crew Leave Location	11/25/2018	14:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

## 3.0 Attachments

### 3.1 CHART.png



**Job Information**

<b>Request/Slurry</b>	2515205/1	<b>Rig Name</b>	H&P 318	<b>Date</b>	14/NOV/2018
<b>Submitted By</b>	Connor Matthews	<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>	NR 344-3

**Well Information**

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10744 ft	<b>BHST</b>	121°C / 249°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	9914 ft	<b>BHCT</b>	82°C / 179°F
<b>Pressure</b>	6240 psi				

**Drilling Fluid Information**

<b>Mud Supplier Name</b>	<b>Mud Trade Name</b>	<b>Density</b>
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**Cement Information - Lead 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>	
						Slurry Density	12.7 lbm/gal
						Slurry Yield	1.851 ft3/sack
						Water Requirement	8.949 gal/sack
						Total Mix Fluid	8.949 gal/sack
						Water Source	Fresh Water
						Water Chloride	

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# Operation Test Results Request ID 2515205/1

## Thickening Time - ON-OFF-ON

18/NOV/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)
179	6240	58	4:13	4:21	4:21	4:38	9	68	15	9

Total Sks = 675

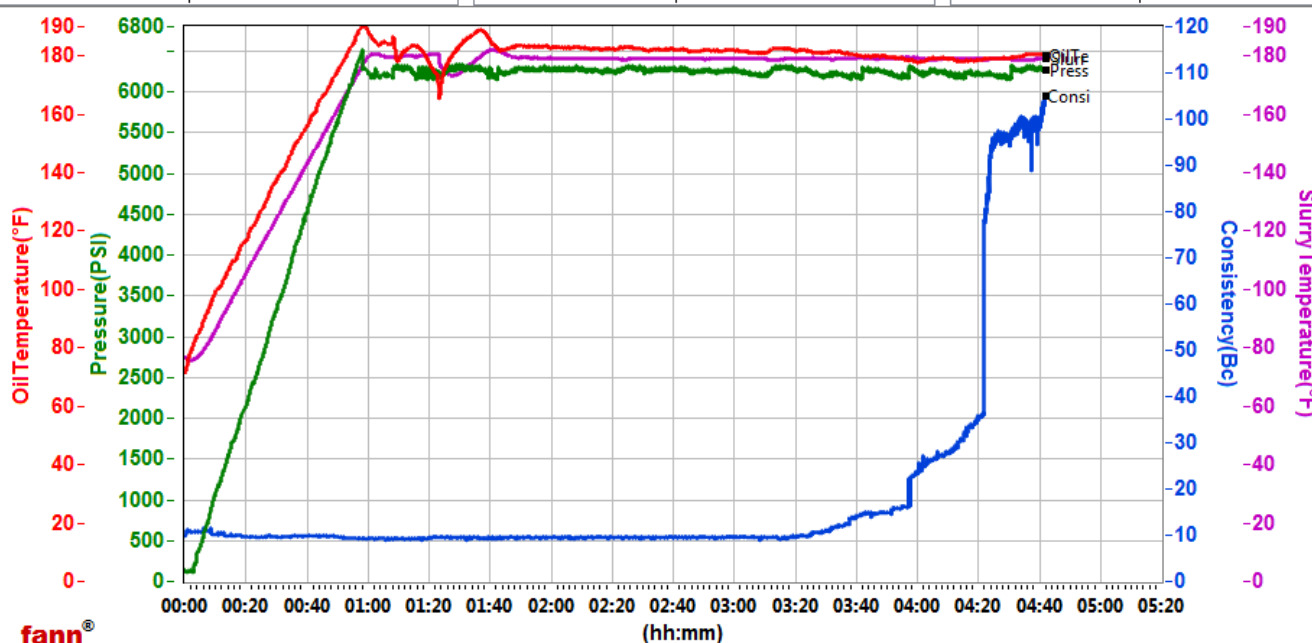
CS2482 TR#8476 400 SKS

CS2483 TR#7094 275 SKS

no deflection, 9Bc--- > 9Bc

## GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P 318		
SW Version	1.0	Casing/Liner Size	4.5 INCH		
Test ID	35981712 - TT	Job Type	PRODUCTION CASING		
Request ID	2515205-1	Cement Weight	GCC TYPE I-II		
Tested by	DS	Comments	Standard		
Customer	TERRA ENERGY PARTN	Date Time	11/18/2018 06:57:55.996		
Well No	NR 344-3	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\new Graph M290\GJ2515205-1 TERRA BULK PRODUCTION LEAD.tdms

Comments Standard

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

Request/Slurry	2515206/1	Rig Name	H&P 318	Date	14/NOV/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 344-3

### Well Information

Casing/Liner Size	4.5 in	Depth MD	10744 ft	BHST	121°C / 249°F
Hole Size	8.75 in	Depth TVD	9914 ft	BHCT	82°C / 179°F
Pressure	6240 psi				

### Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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### Cement Information - Tail 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		
						Slurry Density	14.2	lbm/gal
						Slurry Yield	1.704	ft3/sack
						Water Requirement	7.53	gal/sack
						Total Mix Fluid	7.53	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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# **Operation Test Results Request ID 2515206/1**

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

**19/NOV/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)
179	6240	58	1:23	2:28	2:29	2:35	22	68	15	41

Total sks = 740

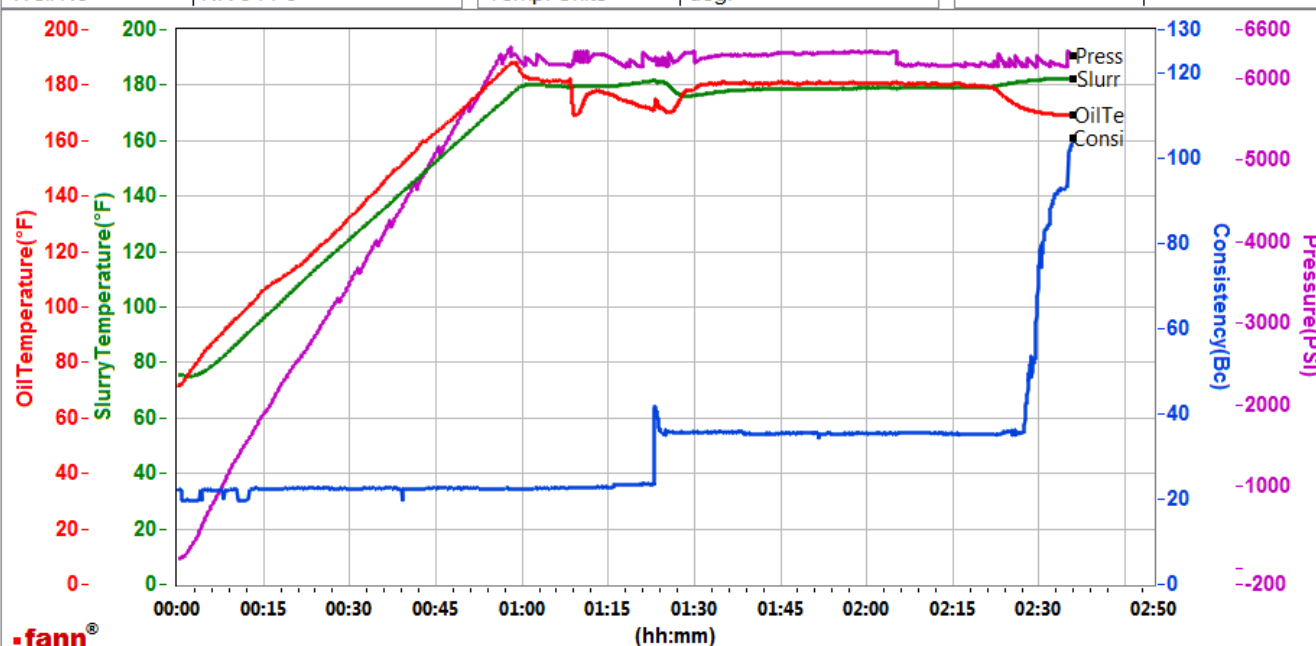
CS2485 TR#8677 370 SKS

CS2487 TR#8658 370 SKS

Deflected 23-- > 41-- > 36 after 1 minute. Please note heat of hydration started around 2:20.

## **GRAND JUNCTION**

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2515206-1 Terra Prodi	Rig	H&P 318	30 Bc	01:23
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 Bc	02:28
Test ID	3598171'4- TT	Job Type	PRODUCTION CASING	70 Bc	02:29
Request ID	2515206-1	Cement Weight	MOUNTAIN G	100 Bc	02:35
Tested by	DS	Comments	Standard		
Customer	TERRA ENERGY PARTN	Date Time	11/18/2018 11:22:34.239		
Well No	NR 344-3	Temp. Units	degF		



Data File N:\01 Test Graphs\GJ2515206-1 TERRA PRODUCTION TAIL.tdms

Comments Standard

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