

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

**For: TEP**

Date: Tuesday, December 25, 2018

GM 311-8 Production PJR

API #05-045-24017

Sincerely,

**Grand Junction Cement Engineering**

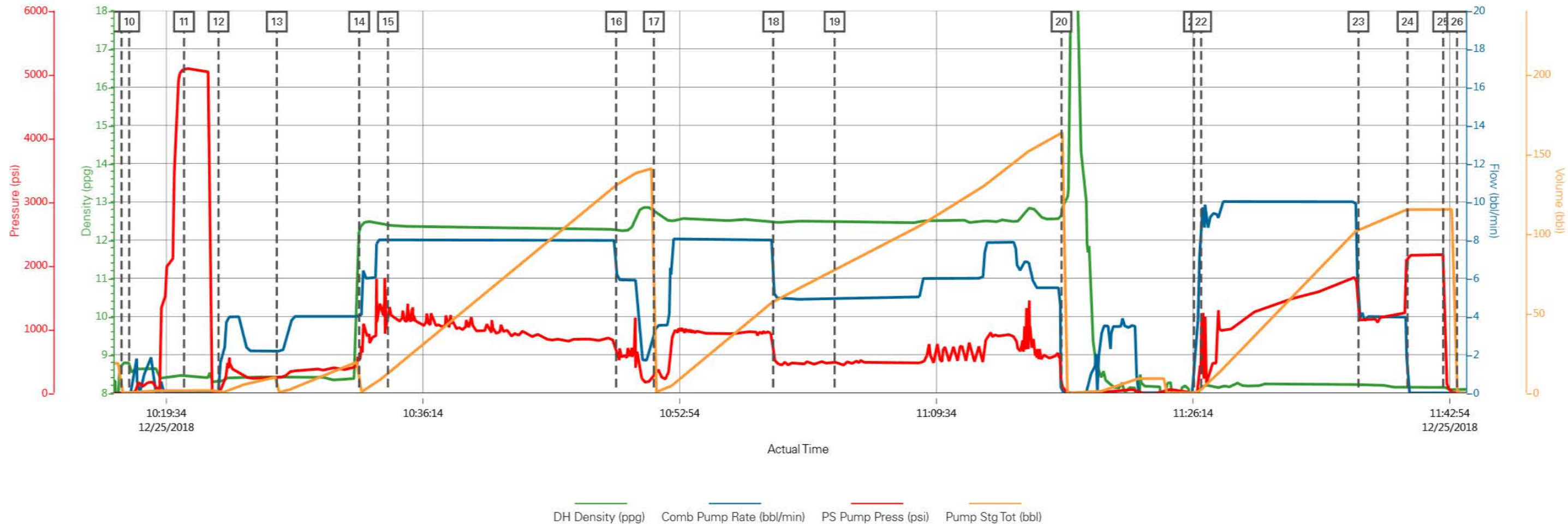
## 2.0 Real-Time Job Summary

## 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	12/25/2018	00:00:00	USER					REQUESTED ON LOCATION @ 05:00
Event	2	Pre-Convoy Safety Meeting	12/25/2018	02:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	12/25/2018	02:10:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	12/25/2018	04:00:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	12/25/2018	04:15:00	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- 62F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES. CALIBRATED MUD SCALES ON WATER.
Event	6	Pre-Rig Up Safety Meeting	12/25/2018	04:30:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	12/25/2018	04:45:00	USER					HES RIGGED UP 1 HT400 PUMP TRUCK, 1 660 BULK TRUCK, 2 CEMENT SILOS, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	12/25/2018	10:00:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 10 BPM PRIOR TO JOB PRESSURE @ 1253 PSI. 150 UNITS OF GAS.
Event	9	Start Job	12/25/2018	10:16:40	COM6					TD 7,319', TP 7313', SJ 29.3', SURFACE CSG 13 3/8" 54.5# J55 SET @ 1040' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 10.3 PPG
Event	10	Prime Lines	12/25/2018	10:17:10	COM6	8.33	2	200	2	FRESH WATER
Event	11	Test Lines	12/25/2018	10:20:44	COM6			5100		ALL LINES HELD PRESSURE AT 5100 PSI

Event	12	Pump H2O Spacer	12/25/2018	10:22:58	COM6	8.33	4	250	10	10BBLS FRESH WATER
Event	13	Pump Mud Flush	12/25/2018	10:26:45	COM6	8.4	4	410	20	20BBLS MUD FLUSH
Event	14	Pump Lead Cement	12/25/2018	10:32:06	COM6	12.3	8	1200	136	370 SKS NEOCEM CMT 12.3 PPG, 2.06 FT3/SK, 10.14 GAL/SK
Event	15	Check Weight	12/25/2018	10:33:58	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Slow Rate	12/25/2018	10:48:47	USER					SLOWED TO END LEAD SILO
Event	17	Pump Tail Cement	12/25/2018	10:51:14	COM6	12.5	8	1100	164	470 SKS NEOCEM CMT 12.5 PPG, 1.96 FT3/SK, 9.4 GAL/SK.
Event	18	Slow Rate	12/25/2018	10:58:59	USER					SLOWED DUE TO WASH UP TRUCK BEING DELAYED
Event	19	Check Weight	12/25/2018	11:02:58	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	20	Clean Lines	12/25/2018	11:17:42	USER					END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	21	Pump Displacement	12/25/2018	11:26:18	COM6	8.4	10	1820	113	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	12/25/2018	11:26:46	USER					VERIFIED BY CO-REP
Event	23	Slow Rate	12/25/2018	11:36:59	USER	8.4	4	1160	103	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	24	Bump Plug	12/25/2018	11:40:10	COM6	8.4	4	1270	113	LANDED PLUG AT 1270 PSI, BROUGHT UP TO 2175 PSI
Event	25	Check Floats	12/25/2018	11:42:29	USER					FLOATS HELD, 1 BBLS BACK TO TRUCK
Event	26	End Job	12/25/2018	11:43:23	COM6					RETURNS THROUGH OUT JOB. PIPE WAS RECIPERICATED. USED TOP PLUG, 40# SUGAR USED.
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	12/25/2018	11:50:00	USER					ALL HES PRESENT
Event	28	Rig Down Lines	12/25/2018	12:00:00	USER					ALL HES PRESENT
Event	29	Pre-Convoy Safety Meeting	12/25/2018	13:30:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	12/25/2018	13:45:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

# TERRA GM 311-8, 4.5" PRODUCTION



## Job Information

Request/Slurry	2523347/1	Rig Name	H&P 271	Date	21/DEC/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	GM 311-8

## Well Information

Casing/Liner Size	4.5 in	Depth MD	7337 ft	BHST	87°C / 189°F
Hole Size	8.75 in	Depth TVD	6414 ft	BHCT	52°C / 125°F
Pressure	3790 psi				

## Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.93 lbm/gal
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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		
							Slurry Density	12.3	lbm/gal
							Slurry Yield	2.06	ft3/sack
							Water Requirement	10.17	gal/sack
							Total Mix Fluid	10.17	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

These are draft results and have not been approved for final use.

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# Operation Test Results Request ID 2523347/1

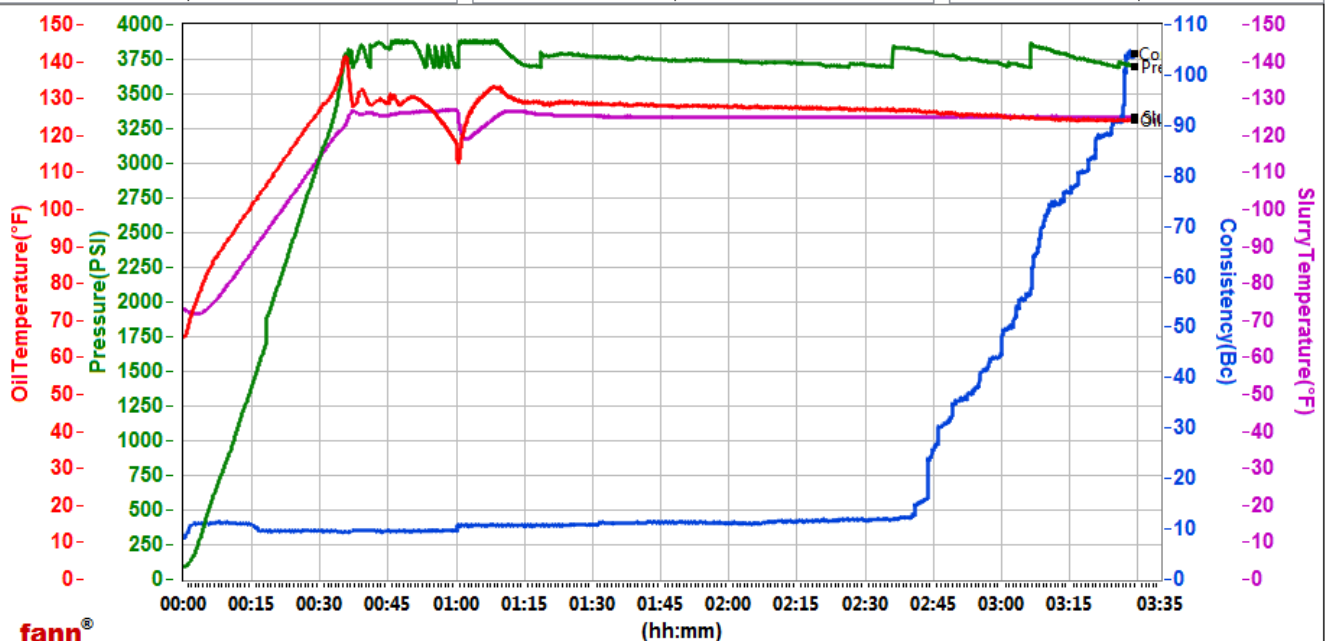
Thickening Time - ON-OFF-ON, Request Test ID:36083260

23/DEC/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)
125	3790	35	2:46	3:01	3:09	3:26	8	45	15	10

## GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P 271		
SW Version	1.0	Casing/Liner Size	4.5 INCH		
Test ID	36083260 - TT	Job Type	PRODUCTION CASING		
Request ID	2523347-1	Cement Weight	GCC TYPE I-II		
Tested by	CT	Comments	Standard		
Customer	TERRA ENERGY	Date Time	12/22/2018 10:06:32.16		
Well No	GM 311-8	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\HPHT Graphs\GJ2523347-1 TERRA BULK PRODUCTION LEAD.tdms

Comments Standard

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

Request/Slurry	2523348/1	Rig Name	H&P 271	Date	21/DEC/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	GM 311-8

### Well Information

Casing/Liner Size	4.5 in	Depth MD	7337 ft	BHST	87°C / 189°F
Hole Size	8.75 in	Depth TVD	6414 ft	BHCT	52°C / 125°F
Pressure	3790 psi				

### Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.93 lbm/gal
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### Cement Information - Tail 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		
							Slurry Density	12.5	lbm/gal
							Slurry Yield	1.96	ft3/sack
							Water Requirement	9.43	gal/sack
							Total Mix Fluid	9.43	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

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# Operation Test Results Request ID 2523348/1

Thickening Time - ON-OFF-ON, Request Test ID:36083265

23/DEC/2018

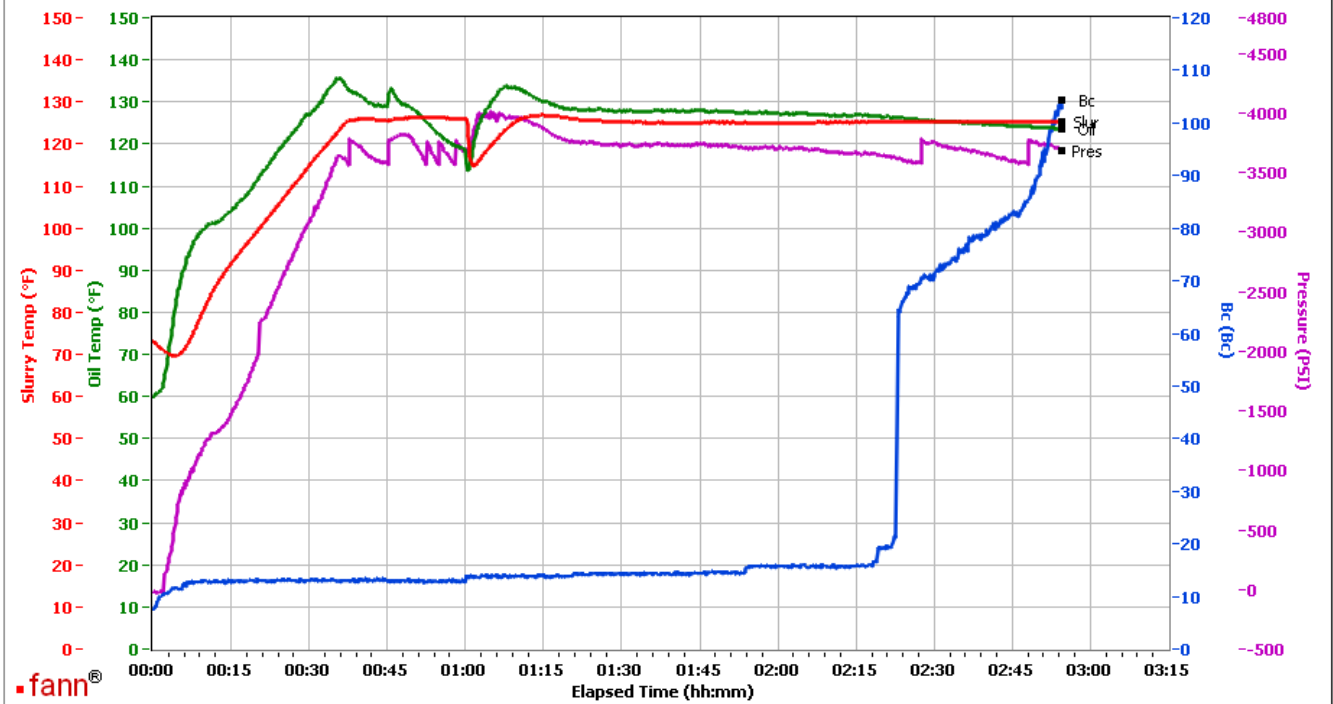
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
125	3790	35	2:22	2:23	2:27	2:52	7	45	15	13

## Grand Junction Colorado

Fields	Values
Project Name	GJ2523348-1 TERRA BULK PRODUCTION TA
Test ID	36083264 - TT
Request ID	2523348-1
Tested by	CT
Customer	TERRA ENERGY PARTNERS
Well No	GM 311-8
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I-II
Cement Weight	Standard
Test Date	12/22/18
Test Time	06:02 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:22m
40.00 Bc	02h:22m
50.00 Bc	02h:23m
70.00 Bc	02h:27m
100.00 Bc	02h:52m
00h:30m	12.98
01h:00m	12.76
01h:30m	14.51



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\K9YZ0P2R\GJ2523348-1 TERRA BULK PRODUCTION TAIL[1].tdms

Comments CS2656, TRAILER 8677, 370 SKS - CS2657, TRAILER 1972, 100 SKS

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