

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

Job Date: Thursday, July 06, 2017

For: Terra

GM 511-10 Production PJR

API# 05-045-22688-00

Sincerely,

Grand Junction Cement Engineering

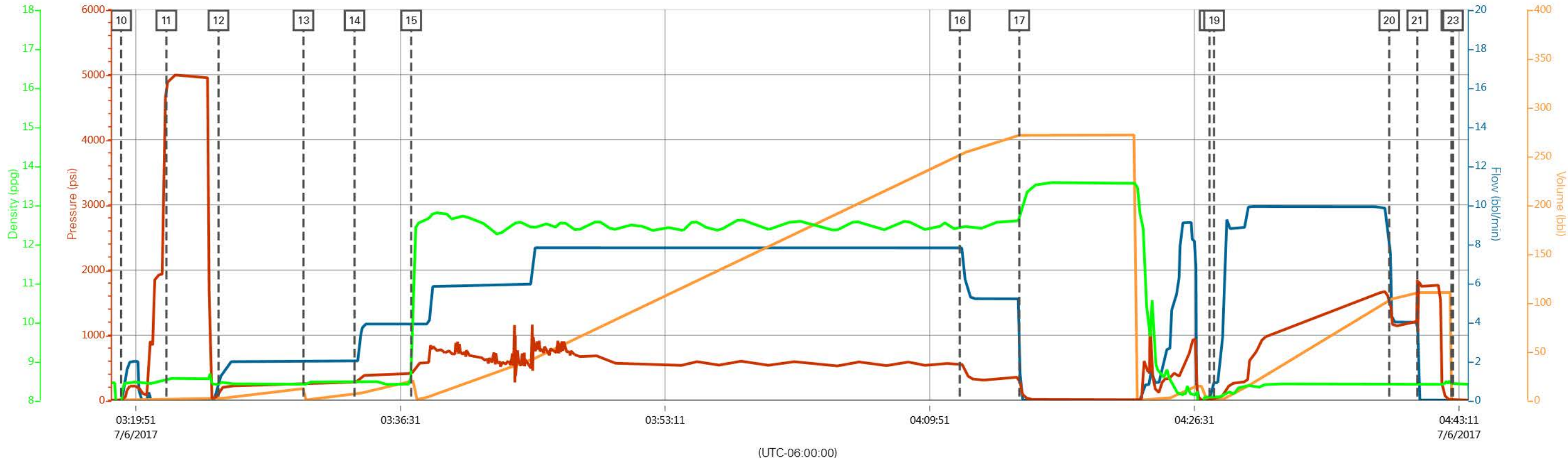
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	7/5/2017	20:00:00	USER					Requested on Location @ 02:30
Event	2	Pre-convoy Safety Meeting	7/5/2017	22:00:00	USER					
Event	3	Crew Leave Yard	7/5/2017	22:15:00	USER					1 Elite, 1 660, 1 pickup
Event	4	Arrive at Location	7/6/2017	00:15:00	USER					Rig running casing
Event	5	Assessment of Location	7/6/2017	00:30:00	USER					JSA completed - Customer offered/received SDS - Water test pH 7.0, CI 200, temp 65 degrees
Event	6	Pre-Rig Up Safety Meeting	7/6/2017	00:45:00	USER					All HES personnel, rig crew, and company rep.
Event	7	Rig-Up Equipment	7/6/2017	01:00:00	USER					DME iron to ground manifold, standpipe, hardline to wash up container. Water hoses to upright and day tank, bulk hoses to silo and 660.
Event	8	Pre-Job Safety Meeting	7/6/2017	02:30:00	USER					
Event	9	Start Job	7/6/2017	03:11:07	COM5					TD 7207', TP 7196', SJ 30.79', SFC CSG 9 5/8" 32.3 LB/FT SET AT 1128', CSG 4 1/2" 11.6 LB/FT, OH 8 3/4", MUD 9.9 PPG, Circulated for 1 hour prior to job at 600 SPM 500 psi 252 gas.
Event	10	Prime Lines	7/6/2017	03:18:56	USER	8.4	229.0	2.0	2.0	Fresh Water
Event	11	Test Lines	7/6/2017	03:21:47	USER		4997.0			Tested Lines to 4997 PSI, Pressure holding
Event	12	Pump Water Spacer	7/6/2017	03:25:04	USER	8.4	250.0	2.0	10.0	Fresh Water
Event	13	Pump Mud Flush Spacer	7/6/2017	03:30:25	USER	8.4	400.0	4.0	20.0	Fresh Water with 80 lbs Mud Flush

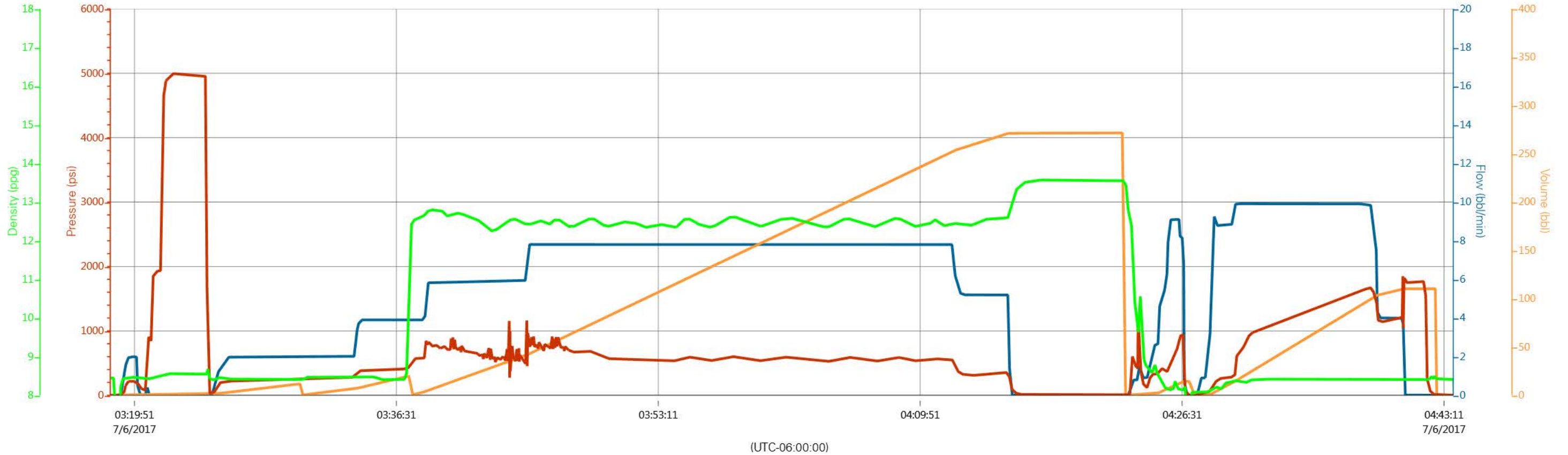
Event	14	Check Weight	7/6/2017	03:33:38	COM5					Density verified via mud cup
Event	15	Pump Primary Cement	7/6/2017	03:37:12	USER	12.5	580.0	8.0	270.5	775 Sks 12.5 ppg 1.96 yield 9.38 gal/sk
Event	16	Slow Rate	7/6/2017	04:11:45	USER	12.5	560.0	5.0	260.0	Slowed rate to finish cement
Event	17	Shutdown	7/6/2017	04:15:30	USER					Cleaned pumps and lines to pit
Event	18	Pump Displacement	7/6/2017	04:27:29	USER	8.4	1700.0	10.0	111.1	3 lbs BE-6, 1 gal MMCR, 2% KCl
Event	19	Drop Top Plug	7/6/2017	04:27:46	USER					Verified Plug launch
Event	20	Slow Rate	7/6/2017	04:38:48	USER	8.4	1150.0	4.0	101.1	Slow Rate 10 bbls to Calculated Displacement
Event	21	Bump Plug	7/6/2017	04:40:34	USER		1240.0			Plug Bumped at 1240 psi, Brought up to 1750 psi
Event	22	Check Floats	7/6/2017	04:42:43	USER		1750.0			Floats holding 1 bbl back to pump
Event	23	End Job	7/6/2017	04:42:49	COM5					Good returns throughout job. Pipe was reciprocated during job.
Event	24	Pre-Rig Down Safety Meeting	7/6/2017	05:00:00	USER					No sugar used, No add hours
Event	25	Rig-Down Equipment	7/6/2017	05:10:00	USER					
Event	26	Pre-Convoy Safety Meeting	7/6/2017	06:30:00	USER					
Event	27	Crew Leave Location	7/6/2017	06:40:00	USER					
Event	28	Comment	7/6/2017	07:00:00	USER					Thank you for using Halliburton Cement, Steven Wardell and Crew.

Terra Energy - Federal GM 511-10 - Production



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

Terra Energy - Federal GM 511-10 - Production



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

Job Information

Request/Slurry	2398866/1	Rig Name	H&P 273	Date	03/JUL/2017
Submitted By	Philip Readle	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	GM 511-10

Well Information

Casing/Liner Size	4.5 in	Depth MD	7197 ft	BHST	91°C / 196°F
Hole Size	8.75 in	Depth TVD	6808 ft	BHCT	55°C / 131°F
Pressure	4066 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.2 lbm/gal
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Cement Information - Primary Design

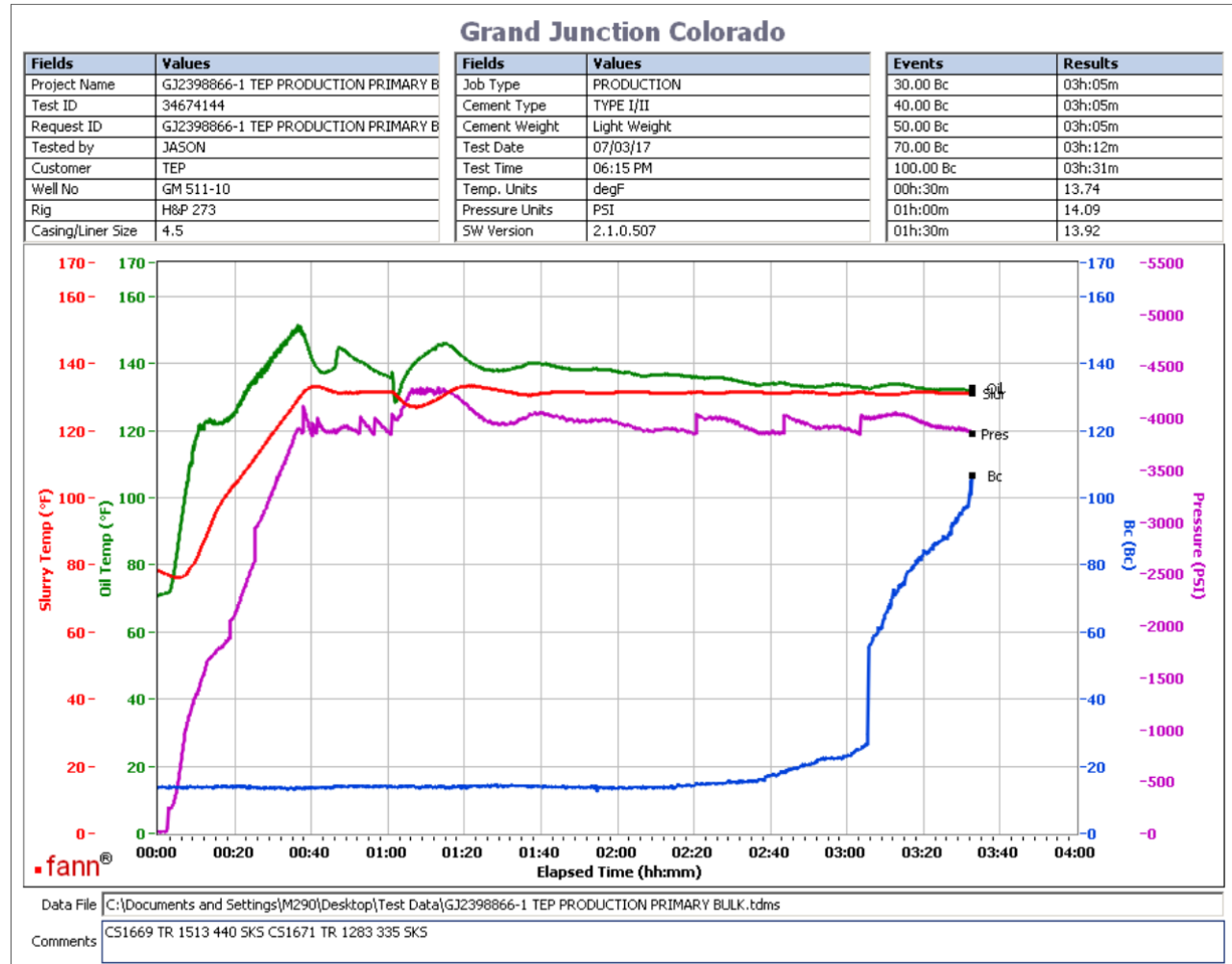
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<u>Cement Properties</u>		
		NeoCem Primary				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.962	ft ³ /sack
						Water Requirement	9.434	gal/sack
						Total Mix Fluid	9.434	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

03/JUL/2017

Test Temp (°F)	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)
131	4066	36	3:05	3:05	3:12	3:31	14	46	15	14



Total sks = 775
 Composite:
 CS1669 TR 1513 440 SKS
 CS1671 TR 1283 335 SKS
 No deflection

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