

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: H&P 318

Date: Tuesday, October 22, 2019

Puckett GM 344-8 Surface

GARFIELD, Puckett

API 05-045-24092

Job Date: Tuesday, October 22, 2019

Sincerely,

Steve Dickenson

Legal Notice

Disclaimer:

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services for this cementing services job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton, Rock Springs

Job Times

	Date	Time	Time Zone
Called Out	10/21/2019	2000	MST
On Location	10/22/2019	0430	MST
Job Started	10/22/2019	0939	MST
Job Complete	10/22/2019	1028	MST
Depart Location	10/22/2019	1200	MST

1.2 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	40
2	Mud type (OBM, WBM, SBM, Water, Brine)	lb/gal	WBM
3	Actual mud density	lb/gal	9.5
4	Time circulated before job	HH:MM	0100
5	Mud volume circulated	Bbls	600
6	Rate at which well was circulated	Bpm	10
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	160
9	Time from end mud circulation to start of job	HH:MM	0010
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	75.4
12	Job displaced by	Rig/HES	HES
13	Annular flow before job	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	5
16	Units of gas detected while circulating	Units	0
17	Was lost circulation experienced at any time ?	Y/N	N

1.3 Water Analysis Report

CEMENT MIX WATER REQUIREMENTS

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Temperature	53	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

2.0 Real-Time Job Summary

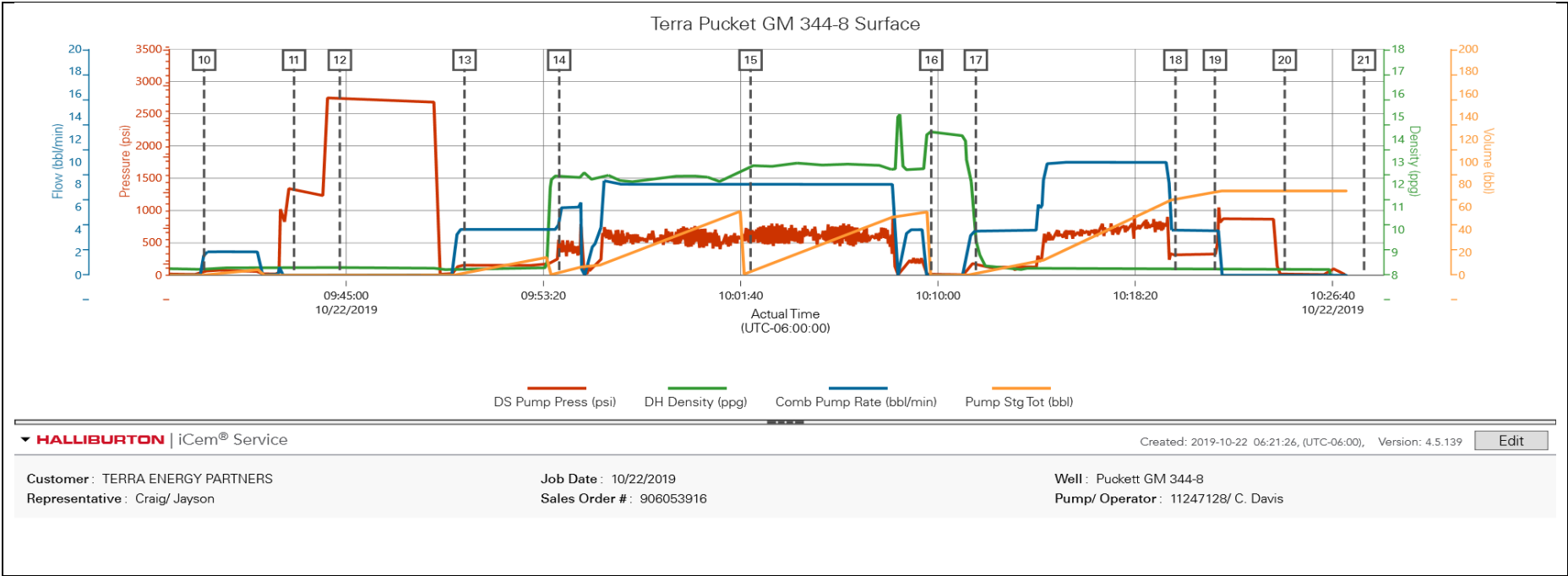
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	10/22/2019	03:00:00	USER					Crew requested on location @ 06:00
Event	2	Pre-Convoy Safety Meeting	10/22/2019	04:10:00	USER					Have a JSA with crew on the hazards of driving to location
Event	3	Crew Leave Yard	10/22/2019	04:15:00	USER					
Event	4	Arrive At Loc	10/22/2019	04:30:00	USER					HD-1025, Casing-9.625 36#, J-55 @ 1019.28', SJ-44' Hole 13.5", Mud 9.6#
Event	5	Pre-Rig Up Safety Meeting	10/22/2019	04:40:00	USER					Have a JSA with crew on spotting equipment and rigging up bulk, water, and iron on the ground.
Event	6	Rig-Up Equipment	10/22/2019	04:50:00	USER					
Event	7	Check Weight	10/22/2019	08:40:00	USER					Check scales on water 8,36 ppg
Event	8	Pre-Job Safety Meeting	10/22/2019	09:15:00	USER					HES has a JSA with rig crew to go over the job and the hazards of rigging up the floor and pumping the job
Event	9	Rig Info	10/22/2019	09:30:00	USER	5.16	8.26	0.00	0.00	Tob-08:30, Rate- 10 Bpm, 160 Psi, 0 units of gas, and 0 loses
Event	10	Start Job	10/22/2019	09:39:00	USER	67.98	8.27	1.93	0.15	Pump 5 Bbl of H2O ahead
Event	11	Pressure Test	10/22/2019	09:42:48	USER	1312.06	8.33	0.00	0.04	500 psi low pressure kick out test
Event	12	Pressure Test	10/22/2019	09:44:44	USER	2723.02	8.34	0.00	0.05	Pressure test HES iron to 2723 psi, No leaks
Event	13	Pump Spacer	10/22/2019	09:50:00	USER	141.10	8.31	4.06	1.68	Pump 15 Bbl of H2O behind @ 4 Bpm
Event	14	Pump Lead Cement	10/22/2019	09:54:00	USER	465.48	12.36	6.22	1.96	Pump 53 Bbl(125 sks) of Varicem RS1 Lead cement @ 12.3 ppg, 2.38 ft3/sk, 13.77 gal/sk @ 8 Bpm
Event	15	Pump Tail Cement	10/22/2019	10:02:05	USER	493.61	12.81	8.03	3.15	Pump 56.4 Bbl(150 sks) of VariCem RS1 Tail cement @ 12.8 ppg, 2.11 ft3/sk, 11.78 gal/sk @ 8 Bpm
Event	16	Shutdown	10/22/2019	10:09:43	USER	14.54	14.33	0.00	0.00	Shutdown/ Drop top plug witnessed by Co-Man

Event	17	Pump Displacement	10/22/2019	10:11:36	USER	162.67	9.61	3.94	1.40	Pump 75.4 Bbl of H2O displacement @ 10 Bpm
Event	18	Slow Rate	10/22/2019	10:20:02	USER	296.73	8.27	3.97	67.27	Slow rate to 4 Bpm for the last 10 Bbl
Event	19	Bump Plug	10/22/2019	10:21:42	USER	339.86	8.27	3.98	73.89	Bump plug/ Final circ psi was 342, brought it up to 867 psi for 3 min
Event	20	Check Floats	10/22/2019	10:24:39	USER	11.73	8.25	0.00	74.55	Floats held/ 0.5 Bbl back to the truck
Event	21	End Job	10/22/2019	10:28:00	USER					Full returns throughout entire job with 20 Bbl of H2O spacer and 25 Bbl of lead cement to surface. Est top of tail is at 410'
Event	22	Pre-Rig Down Safety Meeting	10/22/2019	10:35:00	USER					JSA with crew on rigging down the equipment and lines
Event	23	Rig Down Equipment	10/22/2019	10:40:00	USER					
Event	24	Depart Location Safety Meeting	10/22/2019	11:50:00	USER					JSA with the crew on driving back to the yard
Event	25	Crew Leave Location	10/22/2019	12:00:00	USER					Thank you for choosing Halliburton, Steve Dickenson

3.0 Attachments

3.1 Terra Puckett GM 344-8 Surface-Custom Results.png



3.2 Terra Puckett GM 344-8 Surface no-Custom Results (1).png

