

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

Rock Springs District, WY

For: H&P 318

Date: Monday, October 28, 2019

GM 44-8 Surface

API# 05-045-24089

Job Date: Monday, October 28, 2019

Sincerely,

Rock Springs Engineering

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	10/27/2019	1800	MST
On Location	10/27/2019	2130	MST
Job Started	10/28/2019	0055	MST
Job Completed	10/28/2019	0145	MST
Departed Location	10/28/2019	0230	MST

1.2 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	26
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	9.4
4	Time circulated before job	HH:MM	00:10
5	Mud volume circulated	Bbls	80
6	Rate at which well was circulated	Bpm	11
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	175
9	Time from end mud circulation to start of job	HH:MM	00:10
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	77.4
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	10
16	Units of gas detected while circulating	Units	0
17	Was lost circulation experienced at any time ?	Y/N	0

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	70	°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

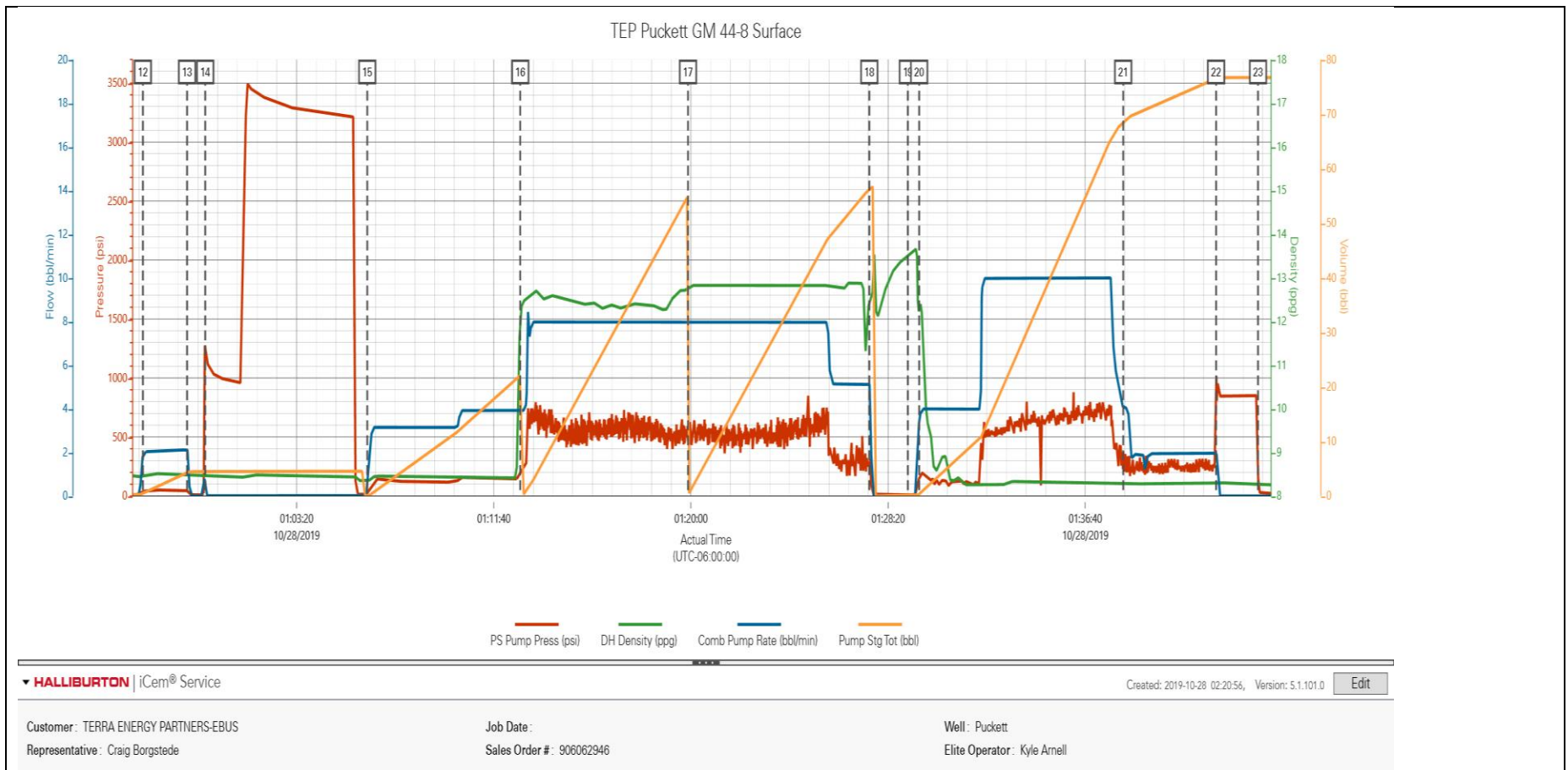
Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	10/27/2019	18:00:00	USER					CREW CALLED OUT TO H&P 318 FOR TEP SURFACE JOB. REQUESTED ON LOCATION AT 2200
Event	2	Pre-Convoy Safety Meeting	10/27/2019	20:45:00	USER					ALL HAZARDS ASSOCIATED WITH DRIVING TO LOCATGION DISCUSSED AMONG THE CREW
Event	3	Crew Leave Yard	10/27/2019	21:00:00	USER					CREW LEFT THE STAGING AREA IN PARACHUTE CO
Event	4	Arrive At Location	10/27/2019	21:30:00	USER					RIG WAS RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	10/27/2019	21:31:00	USER					WITH ALL HES PERSONNEL
Event	6	Pre-Rig Up Safety Meeting	10/27/2019	21:50:00	USER					ALL HAZARDS ASSOCIATED WITH RIG UP DISCUSSED AMONG THE CREW
Event	7	Rig-Up Equipment	10/27/2019	22:00:00	USER					1-ELITE RCM PUMP TRUCK, 1-660 FT3 BULK TRUCK, 2, 1700 CUFT SILO, 1 IRON TRUCK
Event	8	Rig-Up Completed	10/27/2019	22:30:00	USER					RIG UP COMPLETED. WAIT FOR RIG TO FINISH RUNNING CASING.
Event	9	Check Weight	10/27/2019	22:31:00	USER					PRESSURIZED MUD SCALES CALIBRATED USING FRESH WATER PRIOR TO JOB. ALL FLUID DENSITIES VERIFIED USING PRSSURIZED MUD SCALES THROUGHOUT JOB
Event	10	Pre-Job Safety Meeting	10/28/2019	00:30:00	USER					ALL HAZARDS ASSOCIATED WITH PUMPING THE JOB DISCUSSED AMONG THE CREW
Event	20	Start Job	10/28/2019	00:55:00	USER	41.99	8.27	0.00	0.00	
Event	22	Pump Water	10/28/2019	00:56:50	USER	40.12	8.43	1.90	0.42	PUMP 5 BBL H2O TO PRIME LINES. PUMPED AT 2 BPM WITH 70 PSI
Event	23	Shutdown	10/28/2019	00:58:42	USER	44.80	8.49	2.11	4.28	SHUTDOWN TO LINE OUT VALVES FOR PRESSURE TEST.

Event	27	Pressure Test	10/28/2019	00:59:28	USER	1195.14	8.39	0.10	4.51	SET KICKOUTS TO 500 PSI FOR LOW TEST TO ENSURE KICKOUTS FUNCTIONING PROPERLY. BROUGHT PRESSURE UP TO 3,500 PSI FOR HIGH TEST.
Event	31	Pump H2O Spacer	10/28/2019	01:06:19	USER	18.55	8.36	0.12	0.00	PUMP 20 BBL H2O SPACER. PUMPED AT 4 BPM WITH 150 PSI.
Event	64	Pump Lead Cement	10/28/2019	01:12:47	USER	215.43	12.07	3.91	22.12	PUMP 53 BBL VARICEM GJ1 LEAD CEMENT. 125 SKS AT 12.3 PPG, 2.38 FT3/SK, 13.77 GAL/SK. PUMPED AT 8 BPM WITH 600 PSI.
Event	86	Pump Tail Cement	10/28/2019	01:19:53	USER	522.00	12.74	7.97	0.27	PUMP 56.4 BBL VARICEM GJ1 TAIL CEMENT. 150 SKS AT 12.8 PPG, 2.11 FT3/SK, 11.78 GAL/SK. PUMPED AT 8 BPM WITH 500 PSI.
Event	131	Shutdown	10/28/2019	01:27:32	USER	267.00	12.44	5.11	56.31	SHUTDOWN TO DROP TOP PLUG.
Event	134	Drop Top Plug	10/28/2019	01:29:10	USER	9.18	13.49	0.00	0.00	DROP HES TOP PLUG. PLUG LAUNCHED. WITNESSED BY CUSTOMER REP.
Event	135	Pump Displacement	10/28/2019	01:29:39	USER	149.81	12.31	3.41	0.35	PUMP 67.4 BBL H2O DISPLACEMENT. PUMPED AT 10 BPM WITH 730 PSI.
Event	136	Slow Rate	10/28/2019	01:38:16	USER	373.87	8.29	4.07	68.54	SLOW RATE TO 2 BPM 10 BBL PRIOR TO CALCULATED DISPLACEMENT TO BUMP PLUG.
Event	137	Bump Plug	10/28/2019	01:42:12	USER	1015.13	8.28	1.94	76.60	PLUG BUMPED AT 2 BPM. FCP- 260 PSI. BROUGHT PRESSURE UP TO 850 PSI. TOTAL DISPLACEMENT-77.4 BBL
Event	138	Check Floats	10/28/2019	01:43:58	USER	150.74	8.28	0.00	76.69	FLOATS HOLDING. RETURNED .5 BBL FLUID TO TRUCK.
Event	139	End Job	10/28/2019	01:45:00	USER	14.80	8.25	0.00	76.69	PIPE WAS STATIC DURING JOB. GOOD CIRCULATION THROUGHOUT JOB.
Event	142	Pre-Rig Down Safety Meeting	10/28/2019	01:47:00	USER					ALL HAZARDS ASSOCIATED WITH RIGGING DOWN DISCUSSED AMONG THE CREW
Event	143	Rig-Down Equipment	10/28/2019	01:50:00	USER					
Event	144	Rig-Down Completed	10/28/2019	02:20:00	USER					
Event	145	Pre-Convoy Safety Meeting	10/28/2019	02:21:00	USER					ALL HAZARDS ASSOCIATED WITH DRIVING FROM LOCATION DISCUSSED AMONG THE CREW
Event	146	Crew Leave Location	10/28/2019	02:30:00	USER					
Event	147	Well Info	10/28/2019	02:31:00	USER					TD-1,051', TP-1,045.41 SET AT 1,041', SHOE-44.02', HOLE-13 1/2", MUD-9.4 PPG WBM, CSG-9 5/8" 32.3 LB/FT j-55

Event	148	Rig Info	10/28/2019	02:32:00	USER	RIG ON BOTTOM AT 00:00. CIRCULATED AT 11 BPM WITH 175 PSI. 80 BBL CIRCULATED
Event	149	Job Info	10/28/2019	02:33:00	USER	CALCULATED TOP OF TAIL CEMENT-431.8'. RETURNED 15.4 BBL LEAD CEMENT TO SURFACE. TOP PLUG WAS USED FOR JOB. RETURNED 100 POUNDS OF SUGAR
Event	150	Comment	10/28/2019	02:34:00	USER	THANK YOU FOR USING HALLIBURTON CEMENT DEPARTMENT. ZACHARY CRUTCHMAN AND CREW.
Event	151	Spot Equipment	10/28/2019	21:45:00	USER	SPOT EQUIPMENT

3.0 Attachments

3.1 TEP Puckett GM 44-8- With Events.png



3.2 TEP Puckett GM 44-8- Without Events.png

