

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

United States of America, COLORADO

For: Terra

Date: Friday, February 22, 2019

SG 311-22 Surface PJR

API# 05-045-24142-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

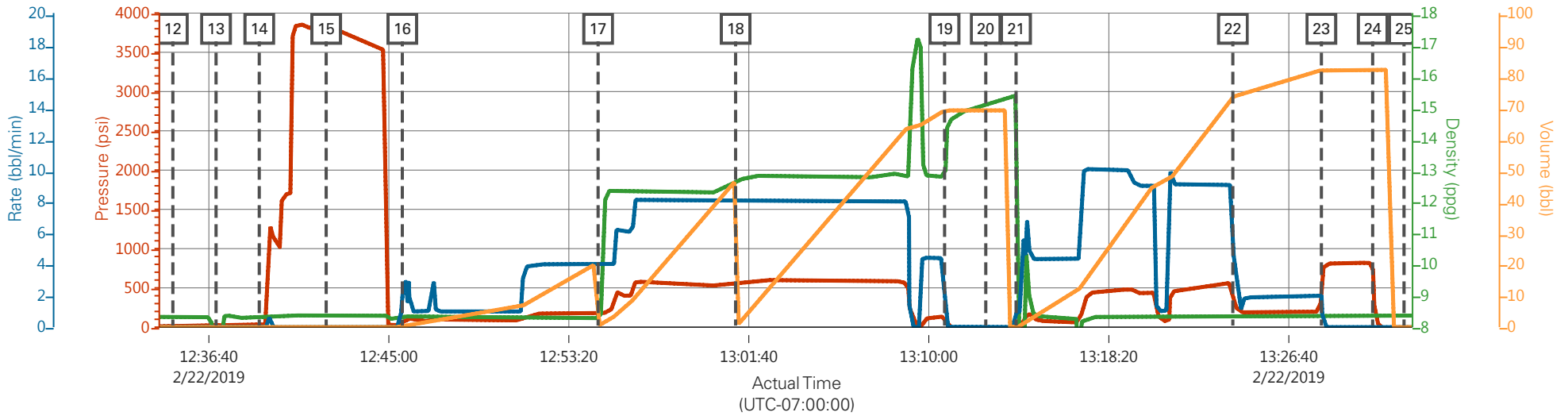
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	2/22/2019	05:30:00	USER					CREW CALLED OUT TO H&P 318 FOR TEP SURFACE JOB. REQUESTED ON LOCATION AT 10:30.
Event	2	Pre-Convoy Safety Meeting	2/22/2019	07:45:00	USER					WITH ALL HES PERSONNEL
Event	3	Crew Leave Yard	2/22/2019	08:00:00	USER					
Event	4	Arrive at Location	2/22/2019	10:00:00	USER					RIG WAS RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment of Location Safety Meeting	2/22/2019	10:05:00	USER					WITH ALL HES PERSONNEL
Event	6	Spot Equipment	2/22/2019	10:10:00	USER					SPOT EQUIPMENT
Event	7	Pre-Rig Up Safety Meeting	2/22/2019	10:20:00	USER					WITH ALL HES PERSONNEL
Event	8	Rig-Up Equipment	2/22/2019	10:30:00	USER					1-RCM ELITE PUMP TRUCK, 1-660 FT3 BULK TRUCK, 1-PICKUP
Event	9	Rig-Up Completed	2/22/2019	11:00:00	USER					RIG UP COMPLETED. WAIT FOR RIG TO FINISH RUNNING CASING.
Event	10	Pre-Job Safety Meeting	2/22/2019	12:00:00	USER					WITH ALL PERSONNEL ON LOCATION
Event	11	Check Weight	2/22/2019	12:30:00	COM10		8.33			PRESSURIZED MUD SCALES CALIBRATED USING FRESH WATER PRIOR TO JOB. ALL FLUID DENSITIES VERIFIED USING PRESSURIZED MUD SCALES THROUGHOUT JOB.
Event	12	Start Job	2/22/2019	12:35:00	USER					

Event	13	Pump Water	2/22/2019	12:37:00	USER	50	8.33			PUMP 2 BBL H2O AHEAD TO PRIME LINES. PUMPED WITH 6X5 PUMP WITH 50 PSI
Event	14	Shutdown	2/22/2019	12:39:00	USER					SHUTDOWN TO LINE OUT VALVES ON MANIFOLD FOR PRESSURE TEST
Event	15	Pressure Test	2/22/2019	12:42:06	USER	3870				SET KICKOUTS TO 500 PSI FOR LOW TEST TO ENSURE KICKOUTS ARE FUNCTIONING PROPERLY. BROUGHT PRESSURE UP TO 3,870 PSI FOR HIGH TEST.
Event	16	Pump Spacer	2/22/2019	12:45:37	USER	150	8.33	4	20	PUMP 20 BBL H2O SPACER. PUMPED AT 4 BPM WITH 150 PSI.
Event	17	Pump Lead Cement	2/22/2019	12:54:41	USER	560	12.3	8	42.4	PUMP 42.4 BBL VARICEM GJ1 LEAD CEMENT. 100 SKS AT 12.3 PPG, 2.38 FT3/SK, 13.77 GAL/SK. PUMPED AT 8 BPM WITH 560 PSI
Event	18	Pump Tail Cement	2/22/2019	13:01:03	USER	580	12.8	8	65.8	PUMP 65.8 BBL VARICEM GJ1 TAIL CEMENT. 175 SKS AT 12.8 PPG, 2.11 FT3/SK, 11.78 GAL/SK. PUMPED AT 8 BPM WITH 580 PSI
Event	19	Shutdown	2/22/2019	13:10:44	USER					SHUTDOWN TO DROP TOP PLUG.
Event	20	Drop Top Plug	2/22/2019	13:12:38	USER					DROP HES TOP PLUG. PLUG LAUNCHED. WITNESSED BY CUSTOMER REP.
Event	21	Pump Displacement	2/22/2019	13:14:02	USER	500	8.33	10	68	PUMP 68 BBL H2O DISPLACEMENT AT 10 BPM WITH 500 PSI.
Event	22	Slow Rate	2/22/2019	13:24:04	USER	250	8.33	2	10	SLOW RATE TO 2 BPM 10 BBL PRIOR TO CALCULATED DISPLACEMENT TO BUMP PLUG.
Event	23	Bump Plug	2/22/2019	13:28:10	USER	870	8.37		78	PLUG BUMPED AT 2 BPM. FCP-250 PSI. BROUGHT PRESSURE UP TO 870 PSI. TOTAL DISPLACEMENT- 78 BBL
Event	24	Check Floats	2/22/2019	13:30:33	USER					FLOATS HOLDING. RETURNED 1 BBL FLUID TO TRUCK
Event	25	End Job	2/22/2019	13:32:00	USER					PIPE WAS STATIC DURING JOB. GOOD CIRCULATION THROUGHOUT JOB.

Event	26	Pre-Rig Down Safety Meeting	2/22/2019	13:35:00	USER	WITH ALL HES PERSONNEL
Event	27	Rig-Down Equipment	2/22/2019	13:40:00	USER	
Event	28	Rig-Down Completed	2/22/2019	14:20:00	USER	
Event	29	Pre-Convoy Safety Meeting	2/22/2019	14:25:00	USER	WITH ALL HES PERSONNEL
Event	30	Crew Leave Location	2/22/2019	14:30:00	USER	
Event	31	Well Info	2/22/2019	14:31:00	USER	TD-1,045', TP-1,035', SHOE-44.09', HOLE 13 1/2", MUD-9.7 PPG WBM, CSG-9 5/8" 32.3 LB/FT H-40
Event	32	Rig Info	2/22/2019	14:32:00	USER	RIG ON BOTTOM AT 11:45, CIRCULATED AT 10 BPM WITH 115 PSI, 300 BBL CIRCULATED
Event	33	Job Info	2/22/2019	14:33:00	USER	ESTIMATED TOP OF TAIL CEMENT-319', RETURNED 14 BBL LEAD CEMENT TO SURFACE. USED 40 LBS SUGAR IN CEMENT RETURNS. TOP PLUG WAS USED FOR JOB.
Event	34	Comment	2/22/2019	14:34:00	USER	THANK YOU FOR USING HALLIBURTON CEMENT DEPARTMENT. JEREMY YOUNG AND CREW.

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

Description	Actual Time (UTC-07:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	
12 Start Job	12:35:00	11.00	8.31	0.00	0.00	
13 Pump Water	12:37:00	7.00	5.14	0.00	0.00	
14 Shutdown	12:39:00	28.00	8.31	0.00	0.00	
15 Pressure Test	12:42:06	3845.00	8.35	0.00	0.00	
16 Pump Spacer	12:45:37	39.00	8.28	2.40	0.10	
17 Pump Lead Cement	12:54:41	175.00	8.29	4.00	0.40	
18 Pump Tail Cement	13:01:03	577.00	12.60	8.00	46.60	
19 Shutdown	13:10:44	106.00	12.79	1.80	69.00	
20 Drop Top Plug	13:12:38	-50.00	15.11	0.00	69.00	
21 Pump Displacement	13:14:02	-49.00	15.39	0.60	0.00	
22 Slow Rate	13:24:04	440.00	8.37	4.60	73.40	
23 Bump Plug	13:28:10	495.00	8.37	2.00	81.90	
24 Check Floats	13:30:33	785.00	8.37	0.00	81.90	
25 End Job	13:32:00	-49.00	8.37	0.00	0.00	

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