

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

United States of America, COLORADO

### **For: H&P 318**

Date: Sunday, October 13, 2019

### **Puckett GM 314-8**

GARFIELD, Puckett GM 314-8

API# 05-045-24093

Job Date: Sunday, October 13, 2019

Sincerely,

**Rock Springs Engineering**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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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	10/12/19	19:00	MST
On Location	10/13/19	01:00	MST
Job Started	10/13/19	04:00	MST
Job Complete	10/13/19	05:30	MST
Depart Location	10/13/19	07:00	MST

### 1.2 Job Overview

		<b>Units</b>	<b>Description</b>
<b>1</b>	Surface temperature at time of job	°F	33
<b>2</b>	Mud type (OBM, WBM, SBM, Water, Brine)	lb/gal	WATER
<b>3</b>	Actual mud density	lb/gal	8.5
<b>4</b>	Time circulated before job	HH:MM	0:30
<b>5</b>	Mud volume circulated	Bbls	160
<b>6</b>	Rate at which well was circulated	Bpm	5
<b>7</b>	Pipe movement during hole circulation	Y/N	N
<b>8</b>	Rig pressure while circulating	Psi	340
<b>9</b>	Time from end mud circulation to start of job	HH:MM	0:10
<b>10</b>	Pipe movement during cementing	Y/N	N
<b>11</b>	Calculated displacement	Bbls	75.6
<b>12</b>	Job displaced by	Rig/HES	HES
<b>13</b>	Annular flow before job	Y/N	N
<b>14</b>	Annular flow after job	Y/N	N
<b>15</b>	Length of rat hole	Ft	4
<b>16</b>	Units of gas detected while circulating	Units	0
<b>17</b>	Was lost circulation experienced at any time ?	Y/N	N

1.3 Water Analysis Report

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**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

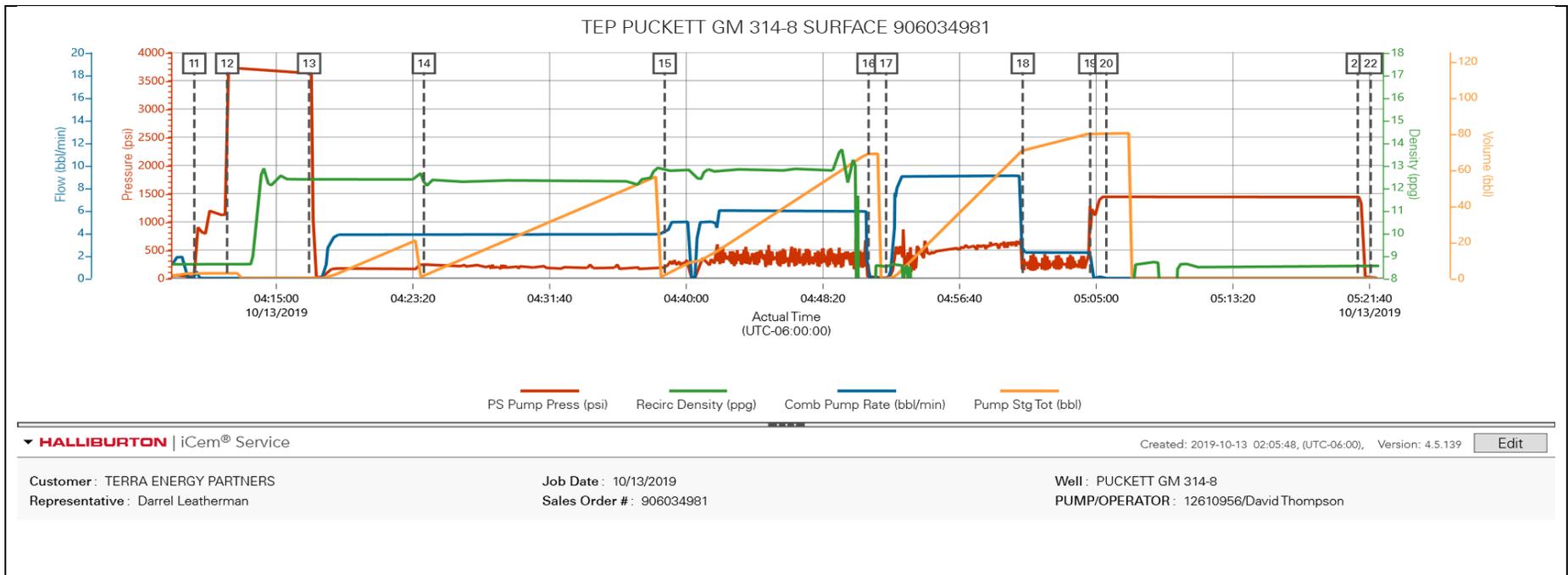
### 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (1) <i>(psi)</i>	Recirc Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	10/12/2019	19:00:00	USER					Crew requested on location @ 01:00
Event	2	Pre-Convoy Safety Meeting	10/12/2019	23:00:00	USER					Have a JSA with crew on the hazards of driving to location
Event	3	Crew Leave Yard	10/12/2019	23:30:00	USER					
Event	4	Arrive At Loc	10/13/2019	01:00:00	USER					HD-1027, Casing-9.625 36#, J-55 @ 1021' , SJ-42.5' Hole 13.5", Mud 8.3#
Event	5	Pre-Rig Up Safety Meeting	10/13/2019	01:10:00	USER					Have a JSA with crew on spotting equipment and rigging up bulk, water, and iron on the ground.
Event	6	Rig-Up Equipment	10/13/2019	01:15:00	USER					
Event	7	Pre-Job Safety Meeting	10/13/2019	02:12:42	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	8	Check Weight	10/13/2019	02:12:48	USER					Check scales on water 8,4 ppg
Event	9	Rig Info	10/13/2019	02:12:57	USER					Tob-04:00, Rate- 6 Bpm, 340 Psi, 0 units of gas, and 0 loses
Event	10	Start Job	10/13/2019	04:07:00	USER	14.10	8.60	0.05	0.10	Pump 5 Bbl of H2O ahead
Event	11	Pressure Test	10/13/2019	04:10:00	USER	17.85	8.61	0.00	2.65	500 psi low pressure kick out test
Event	12	Pressure Test	10/13/2019	04:12:00	USER	1966.94	8.61	0.00	2.69	Pressure test HES iron to 3500 psi, No leaks

Event	13	Pump Spacer	10/13/2019	04:17:00	USER	3629.16	12.38	0.00	0.00	Pump 20 Bbl of H2O behind @ 4 Bpm
Event	14	Pump Lead Cement	10/13/2019	04:24:00	USER	232.54	12.22	3.85	1.38	Pump 53 Bbl( 125 sks) of Varicem Lead cement @ 12.3 ppg, 2.38 ft3/sk, 13.74 gal/sk @ 6 Bpm
Event	15	Pump Tail Cement	10/13/2019	04:38:41	USER	223.17	12.77	3.95	1.55	Pump 56 Bbl( 150 sks) of Varicem Tail cement @ 12.8 ppg, 2.11 ft3/sk, 11.74 gal/sk @ 6 Bpm
Event	16	Shutdown	10/13/2019	04:51:07	USER	17.85	0.00	0.00	68.82	Shutdown/ Drop top plug witnessed by Co-Man
Event	17	Pump Displacement	10/13/2019	04:52:11	USER	7.54	8.42	0.00	0.00	Pump 75.6 Bbl of H2O displacement @ 6 Bpm
Event	18	Slow Rate	10/13/2019	05:00:31	USER	194.10	0.00	2.27	70.80	Slow rate to 2 Bpm for the last 20 Bbl
Event	19	Bump Plug	10/13/2019	05:04:38	USER	1269.43	0.00	2.25	80.13	Bump plug/ Final circ psi was 1370, brought it up to 1961 psi for 3 min
Event	20	Start Casing Test	10/13/2019	05:05:37	USER	1433.50	0.00	0.00	80.23	
Event	21	End Casing Test	10/13/2019	05:20:57	USER	1441.00	8.52	0.00	0.00	
Event	22	Check Floats	10/13/2019	05:21:44	USER	10.35	8.54	0.00	0.00	Floats held/ .5 Bbl back to the truck
Event	23	End Job	10/13/2019	05:30:00	USER					Full returns throughout enntire job with 20 Bbl of water spacer and 40 Bbl of lead cement to surface. Est top of tail is at 377'
Event	24	Pre-Rig Down Safety Meeting	10/13/2019	05:35:00	USER					JSA with crew on rigging down the equipment and lines
Event	25	Rig Down Equipment	10/13/2019	05:40:00	USER					
Event	26	Depart Location Safety Meeting	10/13/2019	06:50:00	USER					JSA with the crew on driving back to the yard
Event	27	Crew Leave Location	10/13/2019	07:00:00	USER					Thank you for choosing Halliburton, Brandon Hunt And Crew

## 3.0 Attachments

### 3.1 TEP PUCKETT GM 314-8 SURFACE 906034981-Custom Results.png



3.2 TEP PUCKETT GM 314-8 SURFACE 906034981-Custom Results (1).png

