

# HALLIBURTON

iCem<sup>®</sup> Service

## **Terra Energy Partners**

**For: Lynn Cass & Abe Alexander**

Date: Thursday, January 19, 2017

**TR 13-21-597 Surface PJR**

API# 05-045-23347-00

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

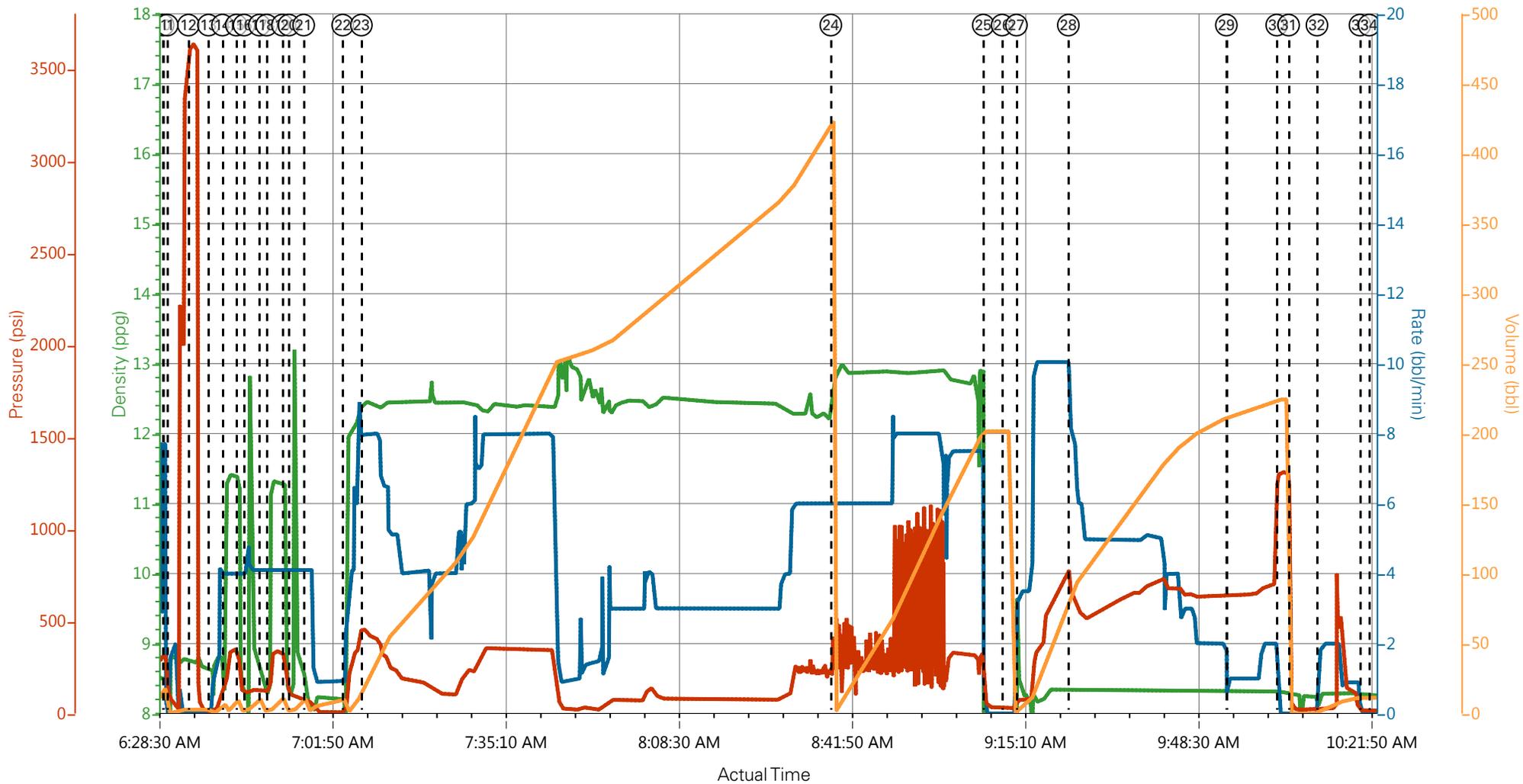
### 1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	1/18/2017	10:00:00	USER					O/L time 2100 - crew already in field
Event	2	Pre-Convoy Safety Meeting	1/18/2017	13:45:00	USER					
Event	3	Crew Leave Yard	1/18/2017	14:00:00	USER					1 Elite, 1 Transport, Pickup w/ compressor trailer, Pickup w/ heater trailer
Event	4	Arrive At Location	1/18/2017	18:30:00	USER					Rig just starting to run casing
Event	5	Assessment Of Location Safety Meeting	1/18/2017	19:00:00	USER					JSA completed - customer offered/received SDS - water test pH 7.0, Cl 0, temp 77 degrees
Event	6	Pre-Rig Up Safety Meeting	1/18/2017	21:45:00	USER					
Event	7	Rig-Up Equipment	1/18/2017	22:00:00	USER					Hard line to standpipe, bulk hose to silos, water hoses to uprights
Event	8	Other	1/19/2017	05:00:00	USER					Start add hours
Event	9	Pre-Job Safety Meeting	1/19/2017	06:15:00	USER					All HES personnel, rig crew, and company rep
Event	10	Start Job	1/19/2017	06:29:52	COM5					TD 2837', TP 2842.21', SJ 28', Mud 9.2 ppg, 14 3/4" OH, 9 5/8" 36# J55 casing up to 1837.45', 1004.96' 40# casing to surface
Event	11	Prime Pumps	1/19/2017	06:30:39	COM5	8.33	2.0	115	3.0	Fresh water
Event	12	Test Lines	1/19/2017	06:34:44	COM5			3635		Pressure held well
Event	13	Pump H2O Spacer	1/19/2017	06:38:35	COM5	8.33	4.0	130	5.0	Fresh water

Event	14	Pump SuperFlush	1/19/2017	06:41:16	COM5	10.0	4.0	385	10.0	42 gal/bbl Injectrol
Event	15	Pump H2O Spacer	1/19/2017	06:43:56	COM5	8.33	4.0	130	5.0	Fresh water
Event	16	Pump CaCl Spacer	1/19/2017	06:45:26	COM5	8.33	4.0	155	10.0	50 lb/bl Calcium Chloride
Event	17	Pump H2O Spacer	1/19/2017	06:48:22	COM5	8.33	4.0	150	5.0	Fresh water
Event	18	Pump SuperFlush Spacer	1/19/2017	06:49:47	COM5	10.0	4.0	350	10.0	42 gal/bbl Injectrol
Event	19	Pump H2O Spacer	1/19/2017	06:52:48	COM5	8.33	4.0	115	5.0	Fresh water
Event	20	Pump CaCl Spacer	1/19/2017	06:54:03	COM5	8.33	4.0	120	10.0	50 lb/bl Calcium Chloride
Event	21	Pump H2O Spacer	1/19/2017	06:56:54	COM5	8.33	4.0	105	10.0	Fresh water - Mix up cement
Event	22	Pump Lead Cement	1/19/2017	07:04:25	COM5	12.3	8.0	440	404.8	955 sks, 12.3 ppg, 2.38 yield, 13.76 gal/sk – Rig had issues with cellar pump not being able to keep up – had to slow rate to accommodate cellar pump – lost returns at 90 bbls pumped, regained returns at 240 bbls pumped
Event	23	Check weight	1/19/2017	07:08:01	COM5	12.3				Recirc matched mud scales
Event	24	Pump Tail Cement	1/19/2017	08:38:22	COM5	12.8	8.0	355	129.6	345 sks, 12.8 ppg, 2.11 yield, 11.78gal/sk – lost returns at 40 bbls pumped
Event	25	Shutdown	1/19/2017	09:07:43	USER					Wash up on top of plug
Event	26	Drop Top Plug	1/19/2017	09:11:21	COM5					Plug launched
Event	27	Pump Displacement	1/19/2017	09:14:06	COM5	8.33	10.0	770	216.1	Fresh water
Event	28	Slow Rate	1/19/2017	09:24:06	USER	8.33	5.0	530	@ 90.0	Had to slow rate again to accommodate cellar pump – returns re-established at 60 bbls pumped – cement returns at 106 bbls pumped
Event	29	Slow Rate	1/19/2017	09:54:31	USER	8.33	1.0	650	@ 205.0	110 bbls cement to surface
Event	30	Bump Plug	1/19/2017	10:04:13	USER			724		
Event	31	Check Floats	1/19/2017	10:06:30	USER			1321		Floats held – 1 bbl flowback
Event	32	Pump Sugar Water	1/19/2017	10:11:57	COM5	8.33	2.0	30	10.0	Clear parasite string

Event	33	Shutdown	1/19/2017	10:20:14	USER	
Event	34	End Job	1/19/2017	10:22:00	USER	100 lbs sugar used – 6 add hours – no topout needed
Event	35	Pre-Rig Down Safety Meeting	1/19/2017	10:30:00	USER	
Event	36	Rig-Down Equipment	1/19/2017	10:45:00	USER	
Event	37	Pre-Convoy Safety Meeting	1/19/2017	11:15:00	USER	
Event	38	Crew Leave Location	1/19/2017	11:30:00	USER	Thank you for using Halliburton - Ed Deussen and crew

TERRA ENERGY - TR 13-21-597 - 9 5/8" Surface



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

- |   |                          |                          |                      |                                |                              |
|---|--------------------------|--------------------------|----------------------|--------------------------------|------------------------------|
| ① Call Out                              | ⑧ Other                  | ⑮ Pump H2O Spacer        | 22 Pump Lead Cement  | 29 Slow Rate                   | 36 Rig-Down Equipment        |
| ② Pre-Convoy Safety Meeting             | ⑨ Pre-Job Safety Meeting | ⑯ Pump CaCl Spacer       | 23 Check weight      | 30 Bump Plug                   | 37 Pre-Convoy Safety Meeting |
| ③ Crew Leave Yard                       | ⑩ Start Job              | ⑰ Pump H2O Spacer        | 24 Pump Tail Cement  | 31 Check Floats                | 38 Crew Leave Location       |
| ④ Arrive At Location                    | ⑪ Prime Pumps            | ⑱ Pump SuperFlush Spacer | 25 Shutdown          | 32 Pump Sugar Water            |                              |
| ⑤ Assessment Of Location Safety Meeting | ⑫ Test Lines             | ⑲ Pump H2O Spacer        | 26 Drop Top Plug     | 33 Shutdown                    |                              |
| ⑥ Pre-Rig Up Safety Meeting             | ⑬ Pump H2O Spacer        | 20 Pump CaCl Spacer      | 27 Pump Displacement | 34 End Job                     |                              |
| ⑦ Rig-Up Equipment                      | ⑭ Pump SuperFlush        | 21 Pump H2O Spacer       | 28 Slow Rate         | 35 Pre-Rig Down Safety Meeting |                              |

▼ HALLIBURTON | iCem® Service

Created: 2017-01-18 20:29:23, Version: 4.2.393

Edit

Customer : TEP ROCKY MOUNTAIN LLC  
 Representative :

Job Date : 1/19/2017 5:00:37 AM  
 Sales Order # : 903785159

Well : TR 13-21-597

TERRA ENERGY - TR 13-21-597 - 9 5/8" Surface

