

# HALLIBURTON

iCem<sup>®</sup> Service

**EXTRACTION OIL & GAS-EBUS**

**WS-SUNRISE C1-5-5**

Job Date: Sunday, March 11, 2018

Sincerely,

**Meghan Jacobs**

## Legal Notice

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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 on the **WS-Sunrise C1-5-5** cement **Production** casing 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.

**Approximately 50 bbls of cement were returned to surface.**

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 [Ft. Lupton]**

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404	Ship To #: 3847522	Quote #:	Sales Order #: 0904699227							
Customer: EXTRACTION OIL & GAS		Customer Rep: Shayne Hackford								
Well Name: WS-SUNRISE	Well #: C1-5-5	API/UWI #: 05-123-46045-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: SW SE-32-6N-65W-250FSL-1686FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Nicholas Roles								
<b>Job</b>										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	11930ft	Job Depth TVD								
Water Depth		Wk Ht Above Floor								
Perforation Depth (MD)	From	To								
<b>Well Data</b>										
Description	New / Used	Size in	ID in	Weight lbnv/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	0	9.625	8.921	36		J-55	0	1585	0	1585
Casing	0	5.5	4.778	20		P-110	0	11930	0	7072
Open Hole Section			8.5				1585	11942	1585	7072
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			11930		Top Plug	5.5		HES	
Float Shoe	5.5					Bottom Plug	5.5		HES	
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
<b>Fluid Data</b>										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73	23.4	5		
	149.34 lbn/bbl	BARITE, BULK (100003681)								
	35 gal/bbl	FRESH WATER								
	0.50 gal/bbl	MUSOL A, 330 GAL TOTE - (790828)								
	0.50 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

last updated on 3/13/2018 2:02:16 PM

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*Cementing Job Summary*

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM	1970	sack	13.2	1.57		8	7.53
		FRESH WATER							
		SCR-100 (100003749)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Displacement	Displacement	264	bbl	8.33			10	
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	
Comment Got 50bbls Cement to surface.									

## 2.0 Real-Time Job Summary

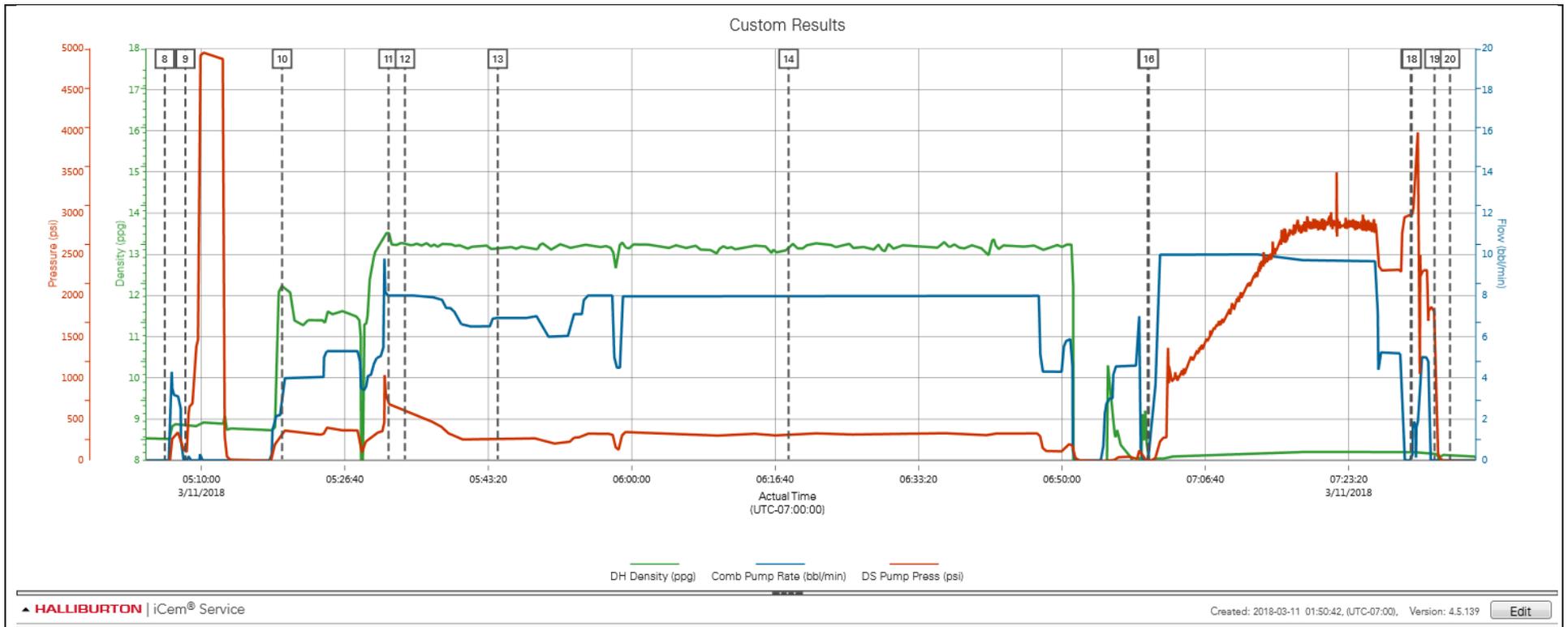
### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	3/10/2018	18:00:00	USER				Called out by Service Coordinator for O/L at 0130
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	3/10/2018	23:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	3/11/2018	00:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	3/11/2018	01:00:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/11/2018	01:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	3/11/2018	01:30:00	USER				Water test- PH-6, Chlor-0, Temp-85.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/11/2018	04:45:00	USER	0.10	0.00	-18.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	3/11/2018	05:05:44	COM4	8.52	0.00	-18.00	TD-11942', TP-11930' 5.5" 20#, FC-11925', TVD-7072', SURF-1585' 9.625" 36#, MUD 10.3#
Event	9	Test Lines	Test Lines	3/11/2018	05:08:08	COM4	8.84	0.00	107.00	Pumped 5bbls fresh water to fill lines at 2bpm 110psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1453psi, proceeded to bring pressure to 4500psi, held well and no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	3/11/2018	05:19:23	COM4	12.25	2.20	267.00	Pumped 50bbls of 11.5# 3.78y 23.8g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-air at 5bpm 350psi.
Event	11	Pump Cement	Pump Cement	3/11/2018	05:31:45	USER	13.52	8.00	686.00	Pumped 1970sks or 551bbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 498psi.

Event	12	Check Weight	Check Weight	3/11/2018	05:33:39	COM4	13.25	8.00	596.00	Weight verified with pressurized mud scales.
Event	13	Check Weight	Check Weight	3/11/2018	05:44:26	COM4	13.13	6.90	268.00	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	3/11/2018	06:18:14	COM4	13.17	8.00	313.00	Weight verified with pressurized mud scales.
Event	15	Drop Top Plug	Drop Top Plug	3/11/2018	06:59:58	COM4	8.23	0.00	-3.00	Dropped by KLX tool hand, witnessed by company man and HES supervisor.
Event	16	Pump Displacement	Pump Displacement	3/11/2018	07:00:06	COM4	8.14	0.00	-5.00	Pumped 264bbls fresh water at 10bpm.
Event	17	Bump Plug	Bump Plug	3/11/2018	07:30:32	COM4	8.19	0.00	2981.00	Slowed down at 250bbls away to 5bpm, final circulating pressure-2400psi. Bump pressure-3000psi.
Event	18	Pressure Up Well	Pressure Up Well	3/11/2018	07:30:39	COM4	8.19	0.00	2981.00	Pressured up to burst plug at 4000psi, continued to pump 5bbls at 5bpm 2300psi.
Event	19	Check Floats	Check Floats	3/11/2018	07:33:18	USER	8.15	0.00	1745.00	Released pressure and got 1.5bbls back. Floats held.
Event	20	End Job	End Job	3/11/2018	07:35:06	COM4	8.10	0.00	-10.00	Got 50bbls Cement to surface.
Event	21	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	3/11/2018	07:40:00	USER	-0.44	2.20	-10.00	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	22	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/11/2018	09:45:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	23	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	3/11/2018	10:00:00	USER				Pre journey management prior to departure.

3.0 Attachments

3.1 WS-SUNRISE C1-5-5 Job Chart with Events



3.2 WS-SUNRISE C1-5-5 Job Chart without Events

