

# HALLIBURTON

iCem® Service

## **CIVITAS RESOURCES-EBUS**

**For: JOSH JOHNSON**

Date: Friday, January 26, 2024

### **CHICO 4-65 25-26**

Civitas Patterson 345 -Chico 4-65 25-26 3BH Production

Job Date: Thursday, January 25, 2024

Sincerely,

**ANDREW GLOVER**

## Legal Notice

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Table of Contents

---

Cementing Job Summary ..... 4

    Executive Summary ..... 4

    Job Overview ..... 5

    Water Field Test ..... 7

    Actual Pump Schedule..... 7

Real-Time Job Summary ..... 8

    Job Event Log..... 8

Attachments..... 12

    Civitas Patterson 345 -Chico 4-65 25-26 3BH Production-Custom Results.png ..... 12

## 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 **CHICO 4-65 25-26 3BH - Production**. 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.

**This space is provided to enter in a brief summary of the job. Below are some important items to discuss:**

- **Quality of circulation – Prejob100 % , While pumping Cement 100%, While Pumping Displacement 100%**
- **Final Circulating Pressure and Pump Rate 2400 @ 4**
- **Returns to Surface 61 BBLS CEMENT**
- **Any deviation from plan NO**
- **Abnormalities on job chart NO**

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 Rockies Cement Team**

## 1.2 Job Overview

Job Details	
API #:	005-07545
City, County:	RORA, ARAPAHOE
SO#:	909114583

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	1/25/24	17:00
Called Out Time:	1/25/24	11:00
Arrived On Location:	1/25/24	16:30
Job Started:	1/25/24	20:20
Job Completed:	1/25/24	23:53
Departed Location:	1/26/24	0:45

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	28
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9
4	Casing set depth (shoe)	ft	18070
5	TVD	ft	7972
6	Float collar depth	ft	18065
7	Length of rate hole	ft	17
8	Previous casing shoe depth	ft	3260'

9	Pre-job mud circulation time	hh:mm	2:00
10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	1200
12	Mud circulation pressure at start of cement	psi	790
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	401
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	CMT, 61 BBLS
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2400 @ 4
20	Number of Centralizers	-	300
21	Number of bottom plugs	-	1
22	Number of trucks used preparing/during job	-	2
23	Add hours? If Yes, put #	Y/N and hours	N
24	NPT? If Yes, put #	Y/N and hours	N

### 1.3 Water Field Test

	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
<b>pH</b>	6		6.0 - 8.0	Chemicals in water can cause severe retardation
<b>Temperature</b>	70	F	60 - 80 F	Can can pre-mature setting of cement
<b>Chlorides</b>	0	ppm	3000 ppm	Can shorten thickening time

### 1.4 Actual Pump Schedule

#### Stage 1

	Density (ppg)	Volume (bbls)	Yield (ft <sup>3</sup> /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
<b>Spacer Fluid</b>	11.5	120	2.57	16.21	262	4242
<b>Cap Cement</b>	13	201	1.65	8.07	685	5527
<b>Lead Cement</b>	13	166	1.58	7.42	590	4368
<b>Tail Cement</b>	13.2	446	1.57	7.5	1595	11970
<b>Top Plug</b>						
<b>Displacement Fluid</b>	8.4	401				16842

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Cmb Pump Rate (bbl/min)	Cmb Stg Total (bbl)	Pump A Pressure (psi)	Dwnhole Density (ppg)	Comments
Event	1	Summit Crew Notified Date/Time	Crew Notified Date/Time	1/25/2024	11:00:16	USER					Crew called out for CIVITAS Production
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/25/2024	14:45:16	USER					Discussed route and possible hazards
Event	3	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/25/2024	14:55:17	USER					Depart yard w/ 1 pump, 660, 1 pickup and 4 personnel.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/25/2024	16:30:18	USER					Requested on location @ 1700
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	1/25/2024	16:40:19	USER					Discussed location and possible hazards. Water test: Temp - 70, Chlorides - 0, PH - 6, Sulfates - <200. 8 1/2 TD @ 18087'. Production casing set @ 18070'. 5.5" 20# P110, ST - 5' .0222 bbl/ft. CSG/OH - .0408 bbl/ft. CSG/CSG - .0479 bbl/ft. 9 5/8" 36# J55 set @ 3260'.

TVD @ 7972'. Mud Weight - 9.ppg

Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	1/25/20 24	16:50:2 4	USER					Discussed rig up and possible hazards.
Event	7	Rig-up Lines	Rig-up Lines	1/25/20 24	17:00:1 2	USER					Rig up equipment
Event	8	Casing on Bottom	Casing on Bottom	1/25/20 24	18:20:2 1	USER	0.00	19.56	-2.63	8.33	
Event	9	Circulate Well	Circulate Well	1/25/20 24	18:45:2 3	USER	0.00	19.56	-3.01	8.32	Rig circulating well 10 bpm @ 790 psi
Event	10	Safety Meeting - Pre Job	Safety Meeting - Pre Job	1/25/20 24	19:55:2 4	USER	0.00	19.56	-3.37	8.32	Discussed job and possible hazards with everyone on location.
Event	11	Start Job	Start Job	1/25/20 24	20:05:4 7	NONE	0.00	19.56	-2.61	8.33	
Event	12	Pump Spacer 1	Fill Lines	1/25/20 24	20:15:2 8	USER	0.00	0.00	-0.29	8.32	Pumped 3 bbls of FW
Event	13	Drop Bottom Plug	Drop Bottom Plug	1/25/20 24	20:16:3 2	USER	0.00	0.00	1.73	6.55	
Event	14	Pressure Test	Pressure Test	1/25/20 24	20:18:3 7	USER	0.00	2.54	130.08	8.63	Test lines to 6500 psi
Event	15	Pump Spacer 1	Pump Tuned Spacer	1/25/20 24	20:22:0 1	USER	0.00	2.59	4.33	8.54	Pumped 120 bbls of 11.5 ppg of Tuned Spacer. 2.57 cuft/sk and 16.21 gal/sk. Verified weight with pressurized mud scales.

Event	16	Pump Lead Cement	Pump Cap Cement	1/25/20 24	20:40:4 7	USER	5.96	1.25	151.85	11.38	Pumped 201 bbls of 13 ppg Elasticem. 685 sks, 1.65 cuft/sk, and 8.07 gal/sk. Verified weight with pressurized mud scales.
Event	17	Pump Lead Cement	Pump Lead Cement	1/25/20 24	21:08:4 8	USER	7.00	5.91	454.36	12.65	Pumped 166 bbls of 13 ppg Isobond cmt. 590 sks, 1.58 cuft/sk, and 7.42 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 3092.99'
Event	18	Pump Tail Cement	Pump Tail Cement	1/25/20 24	21:30:1 6	USER	7.94	1.59	615.21	12.85	Pumped 446 bbls of 13.2 ppg Elasticem. 1595 sks, 1.57 cuft/sk, and 7.5 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 7138.63'
Event	19	Shutdown	Shutdown/Flush Lines	1/25/20 24	22:36:3 5	USER	4.34	485.97	246.33	13.28	
Event	20	Drop Top Plug	Drop Top Plug	1/25/20 24	22:44:0 0	USER	2.41	16.58	75.19	8.08	3rd party rupture plug
Event	21	Pump Displacement	Pump Displacement	1/25/20 24	22:45:2 1	USER	0.00	0.00	8.62	8.10	Pumped 401 bbls of displacement. 1st 20 bbls FW w/ MMCR FW w/ Chemicals
Event	22	Bump Plug	Bump Plug	1/25/20 24	23:32:5 4	USER	0.00	393.91	2928.64	8.25	Bump plug 2400 - 2900 psi
Event	23	Check Floats	Check Floats	1/25/20 24	23:33:5 5	USER	0.00	393.91	1426.47	8.17	Floats are good. Got 4.5 bbls back.

Event	24	End Job	End Job	1/25/20 24	23:34:4 5	NONE	0.00	393.91	6.18	8.46	Got 61 bbls of cement back to surface.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/25/20 24	23:40:5 6	USER					
Event	26	Rig-Down Equipment	Rig-Down Equipment	1/25/20 24	23:50:5 7	USER					
Event	27	Depart Location Safety Meeting	Depart Location Safety Meeting	1/26/20 24	00:30:3 1	USER					
Event	28	Depart Location	Depart Location	1/26/20 24	00:45:3 7	USER					Thank you for using Halliburton cement. Andrew Glover and crew.

3.0 Attachments

3.1 Civitas Patterson 345 -Chico 4-65 25-26 3BH Production-Custom Results.png

