

HALLIBURTON

iCem® Service

CIVITAS RESOURCES-EBUS

For: SAM MARES

Date: Monday, January 22, 2024

WATKINS 4-64 30-29

CIVITAS RESOURCES - WATKINS 4-64 30-29 4AH

Job Date: Monday, January 22, 2024

Sincerely,

ANDREW GLOVER

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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 RESOURCES - WATKINS 4-64 30-29 4AH-Custom Results.png 12

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **WATKINS 4-64 30-29**. 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 – Prejob 100 % , While pumping Cement 100%, While Pumping Displacement 100%**
- **Final Circulating Pressure and Pump Rate 2300 PSI @ 4 BPM**
- **Returns to Surface 57 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 #:	005-07552
City, County:	RORA, ARAPAHOE
SO#:	909110619

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	1/22/24	11:00
Called Out Time:	1/22/24	4:00
Arrived On Location:	1/22/24	9:15
Job Started:	1/22/24	13:30
Job Completed:	1/22/24	16:56
Departed Location:	1/22/24	18:45

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	50
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9
4	Casing set depth (shoe)	ft	18222
5	TVD	ft	7687
6	Float collar depth	ft	18214
7	Length of rate hole	ft	13
8	Previous casing shoe depth	ft	3295
9	Pre-job mud circulation time	hh:mm	2:00

10	Pre-job mud circulation rate	bpm	11
11	Pre-job mud circulation volume	bbls	1320
12	Mud circulation pressure at start of cement	psi	950
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	404.4
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	CEMENT,57BBLS
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2300 @ 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
pH	6		6.0 - 8.0	Chemicals in water can cause severe retardation
Temperature	70	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	0	ppm	3000 ppm	Can shorten thickening time

1.4 Actual Pump Schedule

Stage 1

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	120	2.57	16.2	262	4242
Cap Cement	13	205.7	1.65	8.07	700	5649
Lead Cement	13	163	1.58	7.42	580	4305
Tail Cement	13.2	454.4	1.57	7.5	1625	12180
Top Plug						
Displacement Fluid	8.4	404.4				16985

Stage 2

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid						
Cap Cement						
Lead Cement						
Tail Cement						
Top Plug						
Displacement Fluid						

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)	Dwnhol e Density (ppg)	Pump A Pressure (psi)	Comments
Event	1	Summit Crew Notified Date/Time	Crew Notified Date/Time	1/22/20 24	04:00:4 9	USER					Crew called out for CIVITAS Production
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/22/20 24	08:15:5 2	USER					Discussed route and possible hazards
Event	3	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/22/20 24	08:30:5 3	USER					Depart yard w/ 1 pump, 660, 1 Frue, 1 pickup and 4 personnel.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/22/20 24	09:15:5 4	USER					Requested on location @ 1100
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	1/22/20 24	09:45:5 6	USER					Discussed location and possible hazards. Water test: Temp - 70, Chlorides - 0, PH - 6, Sulfates - <200. 8 1/2 TD @ 18232'. Production casing set @ 18219'. 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 @ 3295'.

											TVD @ 7687'. Mud Weight - 9 ppg
Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	1/22/2024	10:00:01	USER					Discussed rig up and possible hazards.
Event	7	Rig-up Lines	Rig-up Lines	1/22/2024	10:15:02	USER					Rig up equipment
Event	8	Casing on Bottom	Casing on Bottom	1/22/2024	11:45:12	USER	0.00	12.62	8.25	1.16	
Event	9	Circulate Well	Circulate Well	1/22/2024	12:00:14	USER	0.00	22.99	8.26	-0.28	Rig circulating well 10 bpm @ 950 psi
Event	10	Safety Meeting - Pre Job	Safety Meeting - Pre Job	1/22/2024	13:15:15	USER	0.00	22.99	8.31	2.65	Discussed job and possible hazards with everyone on location.
Event	11	Start Job	Start Job	1/22/2024	13:31:40	USER					
Event	12	Pump Spacer 1	Fill Lines	1/22/2024	13:36:19	USER	0.82	0.07	7.90	16.55	Pumped 3 bbls of FW
Event	13	Drop Bottom Plug	Drop Bottom Plug	1/22/2024	13:36:21	USER	1.17	0.11	7.83	17.60	
Event	14	Pressure Test	Pressure Test	1/22/2024	13:37:20	USER	0.00	1.94	8.49	152.31	Test lines to 6500 psi
Event	15	Pump Spacer 1	Pump Tuned Spacer	1/22/2024	13:42:22	USER	0.00	0.00	8.46	15.49	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	1/22/2024	14:01:24	USER	4.20	109.97	11.59	95.24	Pumped 205,7 bbls of 13 ppg Elasticem. 700 sks, 1.65 cuft/sk, and 8.07 gal/sk. Verified weight with pressurized mud scales.
Event	17	Pump Lead Cement	Pump Lead Cement	1/22/2024	14:30:27	USER	7.99	212.68	12.91	530.63	Pumped 163 bbls of 13 ppg Isobond cmt. 580 sks, 1.58 cuft/sk, and 7.43 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 3117.55'
Event	18	Pump Tail Cement	Pump Tail Cement	1/22/2024	14:53:48	USER	7.90	5.64	13.04	592.78	Pumped 454.4 bbls of 13.2 ppg Elasticem. 1625 sks, 1.57 cuft/sk, and 7.5 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 7081.75'
Event	19	Shutdown	Shutdown/Flush Lines	1/22/2024	15:56:29	USER	0.00	487.12	21.30	84.29	
Event	20	Drop Top Plug	Drop Top Plug	1/22/2024	16:03:30	USER	0.00	15.55	8.12	11.16	3rd party rupture plug
Event	21	Pump Displacement	Pump Displacement	1/22/2024	16:04:31	USER	3.06	0.44	5.93	14.57	Pumped 404.4 bbls of displacement. 1st 20 bbls FW w/ MMCR FW w/ Chemicals
Event	22	Bump Plug	Bump Plug	1/22/2024	16:51:32	USER	0.00	397.34	8.16	2894.33	Bump plug 2300 - 2900 psi
Event	23	Check Floats	Check Floats	1/22/2024	16:55:34	USER	0.00	397.34	8.04	7.37	Floats are good. Got 4.5 bbls back.

Event	24	End Job	End Job	1/22/2024	16:56:20	USER	0.00	397.34	8.05	2.43	Got 57 bbls of cement back to surface.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/22/2024	17:00:39	USER	0.00	397.34	0.21	3.75	
Event	26	Rig-Down Equipment	Rig-Down Equipment	1/22/2024	17:15:40	USER					
Event	27	Depart Location Safety Meeting	Depart Location Safety Meeting	1/22/2024	18:30:42	USER					
Event	28	Depart Location	Depart Location	1/22/2024	18:45:49	USER					Thank you for using Halliburton cement. Andrew Glover and crew.

3.0 Attachments

3.1 CIVITAS RESOURCES - WATKINS 4-64 30-29 4AH-Custom Results.png



