

HALLIBURTON

iCem® Service

CIVITAS RESOURCES-EBUS

Ft. Lupton District, Colorado

For: Sam M.

Date: Friday, January 19, 2024

WATKINS 4-64 30-29 3BH

Aurora / Arapahoe

Case 1

Job Date: Friday, January 19, 2024

Sincerely,

Brandon Beutler

Legal Notice

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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 3BH PRODUCTION 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.

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 / FCP 2500 and 4 BPM**
- **Returns to Surface / 120 Spacer / 47 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 #:	005-07551
City, County:	Aurora, Arapahoe
SO#:	909099092

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	01/19/2024	07:00
Called Out Time:	01/19/2024	00:30
Arrived On Location:	01/19/2024	06:30
Job Started:	01/19/2024	09:43
Job Completed:	01/19/2024	13:40
Departed Location:	01/19/2024	15:10

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	23
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9
4	Casing set depth (shoe)	ft	18289
5	TVD	ft	7746.5
6	Float collar depth	ft	18292.7
7	Length of rate hole	ft	15
8	Previous casing shoe depth	ft	3274
9	Pre-job mud circulation time	hh:mm	02:00
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	550
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	406.1
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120 / 47
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2500 @ 4
20	Number of Centralizers	-	290
21	Number of bottom plugs	-	1
22	Number of trucks used preparing/during job	-	4
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	7		6.0 - 8.0	Chemicals in water can cause severe retardation
Temperature	64	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	<200	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		4247
Cap Cement	13	204.2	1.65	8.07	695	5609
Lead Cement	13	159	1.58	7.42	565	4192
Tail Cement	13.2	454.4	1.57	7.5	1625	12188
Top Plug	1					
Displacement Fluid	8.33	406				17052

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Pump A Pressur e (psi)	Dwnhol e Density (ppg)	Cmb Pump Rate (bbl/mi n)	Cmb Stg Total (bbl)	Comments
Event	1	Call Out	Call Out	1/19/20 24	00:30:0 0	USER					CIVITAS RESOURCES WATKINS 4-64 30-29 3BH 5.5" PRODUCTION CASING JOB - On location 01/19/2024 @ 07:00 AM
Event	2	Safety Meeting - Service Center or other Site	Safety Meeting - Service Center or other Site	1/19/20 24	04:50:0 0	USER					Review Journey Management And Route With Crew Members
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	1/19/20 24	05:00:0 0	USER					Depart From Yard

Event	4	Arrive At Loc	Arrive At Loc	1/19/20 24	06:30:0 0	USER	Talk To Company Man (Sam) : TD = 18,327', TP = 18,312.7', ST = 20', OH = 8.5", CSG = 5.5" 20#, Previous Casing 9 5/8" Set @ 3,274', WF = OBM @ 9#, Test Water = pH – 7, Chlorides - < 200 ppm, 64 F.
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	1/19/20 24	06:45:0 0	USER	Spot Equipment
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/19/20 24	07:00:0 0	USER	Review JSA With Crew Members
Event	7	Rig-Up Equipment	Rig-Up Equipment	1/19/20 24	07:10:0 0	USER	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
Event	8	Rig-Up Completed	Rig-Up Plug Container	1/19/20 24	07:30:0 0	USER	Rig Up Plug Container And Rig Floor To Circulate With Rig Pumps. Rig Circulated From 07:30 AM To 09:30 AM At 420 GPM (10 BPM) With 770 psi, Good Returns.

Event	9	Rig-Up Completed	Rig-Up Completed	1/19/20 24	08:30:0 0	USER						Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
Event	10	Safety Meeting - Pre Job	Safety Meeting - Pre Job	1/19/20 24	09:15:0 0	USER	-9.79	0.00	0.00	0.00		Review Job Procedure And JSA With Rig Hands, Co. Man, And HES Members
Event	11	Start Job	Start Job	1/19/20 24	09:42:4 0	NONE	65.92	7.86	0.00	0.00		Start Recording Data
Event	12	Drop Bottom Plug	Drop Bottom Plug	1/19/20 24	09:43:0 0	USER	17.77	7.86	0.00	0.00		Drop Bottom Plug / Verified by Company Representative
Event	13	Test Lines	Test Lines	1/19/20 24	09:47:3 8	NONE	7.19	8.26	0.00	2.93		Pressure Test Lines to 6956 PSI
Event	14	Pump Spacer 1	Pump Spacer 1	1/19/20 24	09:53:2 3	NONE	2.99	8.17	0.00	0.00		Pump 120 bbls of Tuned Prime Spacer @ 11.5 PPG (2.57 ft3, 16.2 gal/sk). Total gallons 4,247. Pump Rate 6 BPM with 180 PSI. TOS=0'
Event	15	Check Weight	Check Weight	1/19/20 24	09:56:1 5	NONE	289.59	11.38	5.98	10.51		Weight Verified by Mud Scales

Event	16	Pump Cap Cement	Pump Cap Cement	1/19/20 24	10:16:3 2	NONE	158.46	11.62	5.95	0.10	Pump 204.2 bbls of ElastiCem @ 13 PPG (695 sk, 1.65 ft3, 8.07 gal/sk). Total gallons 5,609. Pump Rate 7.5 BPM with 550 PSI. TOCC=0'
Event	17	Check Weight	Check Weight	1/19/20 24	10:22:3 6	NONE	546.64	12.88	7.66	46.07	Weight Verified by Mud Scales
Event	18	Pump Lead Cement	Pump Lead Cement	1/19/20 24	10:45:5 3	NONE	570.18	12.65	7.60	0.06	Pump 159 bbls of IsoBond @ 13 PPG (565 sk, 1.58 ft3, 7.42 gal/sk). Total gallons 4,192. Pump Rate 7.5 BPM with 620 PSI. TOLC=3,288'
Event	19	Check Weight	Check Weight	1/19/20 24	10:52:5 7	NONE	580.49	12.95	7.53	51.36	Weight Verified by Mud Scales
Event	20	Pump Tail Cement	Pump Tail Cement	1/19/20 24	11:09:1 8	NONE	501.84	12.97	7.54	0.13	Pump 454.4 bbls of ElastiCem @ 13.2 PPG (1,625 sk, 1.57 ft3, 7.5 gal/sk). Total gallons 12,188. Pump Rate 7.5 BPM with 450 PSI. TOTC=7,185'
Event	21	Check Weight	Check Weight	1/19/20 24	11:13:2 2	NONE	701.27	13.22	7.65	30.82	Weight Verified by Mud Scales
Event	22	Check Weight	Check Weight	1/19/20 24	11:47:3 4	NONE	851.91	13.19	7.68	288.87	Weight Verified by Mud Scales

Event	23	Shutdown	Shutdown	1/19/20 24	12:21:2 9	NONE	109.12	13.31	0.00	519.31	Shutdown Pumping Cement
Event	24	Drop Top Plug	Drop Top Plug	1/19/20 24	12:31:0 2	NONE	-7.43	8.22	0.00	17.48	Drop Top Plug / Verified by Company Representative
Event	25	Pump Displacement	Pump Displacement	1/19/20 24	12:32:0 0	USER	373.66	8.25	9.15	5.11	Pump 406 bbls of Fresh Water Displacement. First 20 bbls with MMCR. The Rest of Displacement with Company Provided Biocide. 47 bbls of Cement to Surface.
Event	26	Bump Plug	Bump Plug	1/19/20 24	13:33:4 4	NONE	3010.34	8.44	0.00	419.00	Bump Plug / FCP 2500 PSI and took up to 3000 PSI
Event	27	Bleed Casing	Bleed Casing	1/19/20 24	13:37:0 0	USER	3109.32	8.43	0.00	419.00	Bled Pressure Back To Zero And Got 4.5 bbls Back
Event	28	Check Floats	Check Floats	1/19/20 24	13:38:0 0	USER	792.00	8.29	0.00	419.00	Floats Held Good.
Event	29	End Job	End Job	1/19/20 24	13:40:0 8	NONE	-13.18	8.25	0.00	0.00	Stop Recording Data
Event	30	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/19/20 24	14:00:0 0	USER					Review JSA With HES Crew Members

Event	31	Rig-Down Equipment	Rig-Down Equipment	1/19/20 24	14:20:0 0	USER	Rig Down Iron, Plug Container, And Hoses Used On Job
Event	32	Rig-Down Completed	Rig-Down Completed	1/19/20 24	14:40:0 0	USER	All Equipment Rigged Down With No Issues Or Incidents
Event	33	Safety Meeting - Departing Location	Safety Meeting - Departing Location	1/19/20 24	14:50:0 0	USER	Review Journey Management And Route With Crew Members
Event	34	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/19/20 24	15:10:0 0	USER	Depart location

3.0 Attachments

3.1 Case 1-Custom Results.png

