

HALLIBURTON

iCem® Service

CIVITAS RESOURCES-EBUS

Ft. Lupton District, CO

For: Sam Mares

Date: Saturday, May 11, 2024

KING 3-65 28-29 1AH

Arapahoe County

Job Date: Saturday, May 11, 2024

Sincerely,

Mike Loughran / David Womack

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Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

 1.2 Job Overview 5

 1.3 Water Field Test.....7

 1.4 Actual Pump Schedule7

2.0 Real-Time Job Summary 8

 2.1 Job Event Log8

3.0 Attachments..... 10

 3.1 Real Time Job Chart 10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **King 3-65 28-29 1AH 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.

- Quality of circulation – Prejob 100 %, While pumping Cement 100 %, While Pumping Displacement 100 %
- Final Circulating Pressure and Pump Rate: 2900 psi @ 4 bpm
- Returns to Surface: 120 bbl of Spacer, 40 bbl of 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 #:	05-001-10563-00
City, County:	AURORA, ARAPAHOE
SO#:	909324105

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	5/11/2024	04:00
Called Out Time:	5/10/2024	23:30
Arrived On Location:	5/11/2024	02:00
Job Started:	5/11/2024	14:25
Job Completed:	5/11/2024	18:35
Departed Location:	5/11/2024	14:00

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	37
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.4
4	Casing set depth (shoe)	ft	18682
5	TVD	ft	7937
6	Float collar depth	ft	18677
7	Length of rate hole	ft	7
8	Previous casing shoe depth	ft	3502
9	Pre-job mud circulation time	hh:mm	2:00
10	Pre-job mud circulation rate	bpm	12

11	Pre-job mud circulation volume	bbls	787
12	Mud circulation pressure at start of cement	psi	975
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	414
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120/40
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2900/4
20	Number of Centralizers	-	
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	7		6.0 - 8.0	Chemicals in water can cause severe retardation
Temperature	52	F	60 - 80 F	Can pre-mature setting of cement
Chlorides	Less 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		4248
Cap Cement	13	213.05	1.65	8.07	725	5851
Lead Cement	13	185.72	1.58	7.42	660	4898
Tail Cement	13.2	437.60	1.57	7.54	1565	11800
Top Plug	1					
Displacement Fluid	8.33					

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Graph Label	Date	Time	Comments
1	Call Out	Call Out	5/10/2024	23:30:00	CREW CALLED OUT 05/11/2024 2330 HRS. REQUESTED ON LOCATION 5/11/2024 0400 HRS.
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/11/2024	00:30:00	DISCUSS ROUTE AND HAZARDS OF DRIVING
3	Crew Leave Yard	Crew Leave Yard	5/11/2024	01:00:00	CREW LEAVES YARD
4	Arrive At Loc	Arrive At Loc	5/11/2024	02:00:00	ARRIVE AT LOCATION. MEET WITH CUSTOMER
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/11/2024	04:30:00	DISCUSS RIG-UP AND ANY HAZARDS THAT MAY EXIST
6	Rig-Up Equipment	Rig-Up Equipment	5/11/2024	04:40:00	RIG-UP EQUIPMENT
7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	5/11/2024	08:00:00	DISCUSS JOB PROCEDURES AND HAZARDS OF JOB, PRESSURE AND HAZARDS OF HES EQUIPMENT
8	Start Job	Start Job	5/11/2024	08:17:07	BEGIN RECORDING DATA
9	Drop Bottom Plug	Drop Bottom Plug	5/11/2024	08:18:03	1000 PSI CITADEL BOTTOM PLUG VERIFIED BY SAM
10	Pressure Test	Pressure Test	5/11/2024	08:20:17	PRESSURE TEST HES LINES 6000 PSI
11	Pump Spacer 1	Pump Spacer 1	5/11/2024	08:27:10	120 BBLS TUNED PRIME SPACER. 11.5 PPG. MIX D-AIR ON FLY
12	Pump Cap Cement	Pump Cap Cement	5/11/2024	08:54:11	725 SACKS ELASTICEM CAP CEMENT. 213.05 BBLS. 13 PPG. TOCC=0' APPROX 40 BBLS CAP TO SURFACE

13	Pump Lead Cement	Pump Lead Cement	5/11/2024	09:22:33	660 SACKS ISOBOND LEAD CEMENT. 185.72 BBLS. 13 PPG, ESTIMATED TOLC=3233'
14	Pump Tail Cement	Pump Tail Cement	5/11/2024	09:52:57	1565 SACKS ELASTICEM TAIL CEMENT. 437.60 BBLS. 13.2 PPG. ESTIMATED TOTC=7772'
15	Shutdown	Shutdown	5/11/2024	11:06:49	SHUTDOWN
16	Clean Lines	Clean Lines	5/11/2024	11:09:18	CLEAN PUMPS AND LINES W/23 BBLS FRESH WATER
17	Shutdown	Shutdown	5/11/2024	11:18:27	SHUTDOWN
18	Drop Top Plug	Drop Top Plug	5/11/2024	11:19:03	CITADEL TOP PLUG BY SAM
19	Pump Displacement	Pump Displacement	5/11/2024	11:19:35	414 BBLS FRESH WATER DISPLACEMENT. 1ST 20 BBLS HAS 10 GALLONS MICRO MATRIX CEMENT RETARDER. REMAINING HAS 5 GALLONS RIG PROVIDED BIOCID
20	Slow Rate	Slow Rate	5/11/2024	12:05:10	SLOW RATE 4 BPM
21	Other	Other	5/11/2024	12:08:54	FCP 2900 PSI/4 BPM. BUMP PRESSURE 3280 PSI
22	Check Floats	Check Floats	5/11/2024	12:12:19	FLOATS HOLD, 5 BBLS BACK. 40 BBLS CEMENT TO SURFACE.
23	End Job	End Job	5/11/2024	12:14:18	STOP RECORDING DATA
24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/11/2024	12:35:00	DISCUSS HAZARDS OF RIG-DOWN AND ANY OTHER HAZARDS THAT MAY EXIST
25	Rig-Down Equipment	Rig-Down Equipment	5/11/2024	12:40:00	RIG-DOWN EQUIPMENT
26	Rig-Down Completed	Rig-Down Completed	5/11/2024	13:30:00	RIG-DOWN COMPLETED
27	Crew Leave Location	Crew Leave Location	5/11/2024	14:00:00	CREW DEPARTS LOCATION. THANK YOU FOR CHOOSING HALLIBURTON.

3.0 Attachments

3.1 Real Time Job Chart

