

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, CO

State Bierstadt 4-65 35-34 2BH Production

Job Date: Saturday, April 20, 2024

Sincerely,

Meghan Van Zyl

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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 10

 Real Time iCem Job Chart 10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **State Bierstadt 4-65 35-34 2BH - 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.

Approximately 54 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 Rockies Cement Team

1.2 Job Overview

Job Details	
API #:	05-005-07554-00
City, County:	Aurora, Arapahoe
SO#:	909286560

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	4/20/2024	0630
Called Out Time:	4/19/2024	1900
Arrived On Location:	4/20/24	0030
Job Started:	4/20/2024	1054
Job Completed:	4/20/2024	1451
Departed Location:	4/20/24	17:30

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	65
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.7
4	Casing set depth (shoe)	ft	18,483
5	TVD	ft	8,023
6	Float collar depth	ft	18,478
7	Length of rate hole	ft	25
8	Previous casing shoe depth	ft	3503
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	780
12	Mud circulation pressure at start of cement	psi	650
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	TN
15	Calculated displacement	bbls	410
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	95
18	Fluid returns to surface	Spacer/Cement, bbls	54 CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2850
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1
22	Number of trucks used preparing/during job	-	12
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	60	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	500	ppm	3000 ppm	Can shorten thickening time

1.4 Actual Pump Schedule

	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	213	1.65	8.07	725	5850
Lead Cement	13	164.6	1.58	7.42	585	4340
Tail Cement	13.2	455.775	1.57	7.54	1630	12290
Top Plug	1					
Displacement Fluid	8.33	410				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	4/19/2024	19:00:00	Call out
2	Pre-Convoy Safety Meeting	4/19/2024	23:00:00	Pre-Convoy Safety Meeting
3	Crew Leave Yard	4/19/2024	23:05:00	Crew Leave Yard
4	Arrive at Location from Service Center	4/20/2024	00:30:00	Arrive at Location from Service Center
5	Pre-Rig Up Safety Meeting	4/20/2024	06:00:00	Pre-Rig Up Safety Meeting, Be aware of your surroundings, Use two spotters one in front and one in back of vehicle, Utilize hearing protection, Have good communication and make sure Line of Fire is clear before swinging hammer Identify points were hand/finger can get crushed
6	Rig-Up Equipment	4/20/2024	06:10:00	Rig Up equipment as far as possible, Rig running casing
7	Safety Meeting - Pre Job	4/20/2024	08:30:00	Safety Meeting-Pre job, Eyes on task Use impact gloves Have good communication to identify pinch points between steel hoses, iron and drill pipe and while making up the hammer unions. Identify points were hand/finger can get crushed
8	Start Job	4/20/2024	10:29:06	Start of Job. Begin recording.
9	Drop Bottom Plug	4/20/2024	10:55:31	Dropped bottom plug with driller and Josh.
10	Test Lines	4/20/2024	10:56:36	Filled lines with 3BBLs of fresh water and pressure tested to 6500PSI.

11	Pump Spacer 1	4/20/2024	11:01:39	Pumped 120BBLs of 11.5PPG Tuned Prime Spacer. Pumped at a rate of 6BPM with a pressure of 650PSI.
12	Pump Cap Cement	4/20/2024	11:23:28	Pumped 725s / 213.052BBLs of 13PPG Elasticem Cap cement. Pumped at a rate of 8BPM with a pressure of 850PSI. Pre job calculated 54.4BBLs of cap cement to surface.
13	Pump Lead Cement	4/20/2024	11:54:20	Pumped 585s / 164.6BBLs of 13PPG Isobond Lead cement. Pumped at a rate of 8BPM with a pressure of 1130PSI. Pre job calculated TOL cement was at 3,277.315FT.
14	Pump Tail Cement	4/20/2024	12:14:48	Pumped 1630s / 455.775BBLs of 13.2PPG Elasticem Tail cement. Pumped at a rate of 6BPM with a pressure of 750PSI. Pre job calculated TOT cement was at 7,312.045FT.
15	Shutdown	4/20/2024	13:39:46	Shutdown to wash pumps and lines.
16	Clean Lines	4/20/2024	13:40:13	Washed pumps and lines with 25BBLs of fresh water.
17	Shutdown	4/20/2024	13:47:04	Finished wash up.
18	Drop Top Plug	4/20/2024	13:47:12	Dropped top plug with Driller, Josh and Sam.
19	Pump Displacement	4/20/2024	13:47:14	Pumped 410BBLs of MMCR water. 100 Gallons of MMCR in displacement water. Also added Biocide throughout.
20	Bump Plug	4/20/2024	14:46:25	Bumped plug. FCP - 2850PSI. BMP - 3350PSI. 54BBLs of cement to surface.
21	End Job	4/20/2024	14:49:05	End of job. Finish recording.
22	Pre-Rig Down Safety Meeting	4/20/2024	14:51:00	Pre-Rig Down Safety Meeting
23	Rig-Down Equipment	4/20/2024	14:57:00	Rig-Down Equipment
24	Depart Location Safety Meeting	4/20/2024	15:00:00	Depart Location Safety Meeting, Verify all equipment has been thoroughly pre-tripped. All safety and quality issues should be resolved before proceeding.
25	Crew Leave Location	4/20/2024	15:15:00	Crew leave location.

3.0 Attachments

3.1 Real Time iCem Job Chart

