

# HALLIBURTON

iCem<sup>®</sup> Service

## **CRESTONE PEAK RESOURCES-EBUS**

Ft. Lupton District, Colorado

**State Bierstadt 4-64 35-34 3BH Production**

Job Date: Thursday, April 11, 2024

Sincerely,

**Meghan Van Zyl**

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## 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 **State Bierstadt 4-65 35-34 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.

**Approximately 57 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 #:	05-005-07556-00
City, County:	Aurora, Arapahoe
SO#:	909269323

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	04/11/2024	11:00
Called Out Time:	04/11/2024	00:30
Arrived On Location:	04/11/2024	10:00
Job Started:	04/11/2024	15:53
Job Completed:	04/11/2024	19:35
Departed Location:	04/11/2024	21:20

	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	9.5
4	Casing set depth (shoe)	ft	18,547
5	TVD	ft	8,128
6	Float collar depth	ft	18,542
7	Length of rate hole	ft	9
8	Previous casing shoe depth	ft	3,497
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	1160
12	Mud circulation pressure at start of cement	psi	740
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	411.6
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120 / 57
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2,650 @ 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	Y / 1
24	NPT? If Yes, put #	Y/N and hours	N

## 1.3 Water Field Test

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	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	67	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	<60	ppm	3000 ppm	Can shorten thickening time

## 1.4 Actual Pump Schedule

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	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		4,247
Cap Cement	13	213.05	1.65	8.07	725	5,851
Lead Cement	13	181.5	1.58	7.42	645	4,786
Tail Cement	13.2	444.6	1.57	7.54	1,590	11,989
Top Plug	1					
Displacement Fluid	8.33	411				17,262

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	4/11/2024	00:30:00	CIVITAS RESOURCES STATE BIERSTADT 4-65 35-34 # 3BH 5.5" PRODUCTION CASING JOB - On location 04/11/24 @ 11:00 AM
2	Safety Meeting - Service Center or other Site	4/11/2024	08:20:00	Review Journey Management And Route With Crew Members
3	Depart from Service Center or Other Site	4/11/2024	08:30:00	Depart From Yard
4	Arrive At Loc	4/11/2024	10:10:00	Talk To Company Man (Josh) : TD = 18,556', TP = 18,547', ST = 5', OH = 8.5", CSG = 5.5" 20#, Previous Casing 9 5/8" Set @ 3,497', WF = OBM @ 9.5#, Test Water = pH - 7, Chlorides - < 60 ppm, 67 F.
5	Safety Meeting - Assessment of Location	4/11/2024	10:30:00	Spot Equipment
6	Pre-Rig Up Safety Meeting	4/11/2024	10:40:00	Review JSA With Crew Members
7	Rig-Up Equipment	4/11/2024	10:50:00	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
8	Rig-Up Completed	4/11/2024	12:00:00	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
9	Rig-Up Completed	4/11/2024	13:45:00	Rig Up Plug Container And Rig Floor To Circulate With Rig Pumps. Rig Circulated From 13:45 PM To 15:45 PM At 420 GPM (10 BPM) With 1,100 psi, Good Returns.
10	Safety Meeting - Pre Job	4/11/2024	15:30:00	Review Job Procedure And JSA With Rig Hands, Co. Man, And HES Members
11	Start Job	4/11/2024	15:53:47	Start Recording Data



12	Drop Bottom Plug	4/11/2024	15:54:04	Drop Bottom Plug / Verified by Company Representative
13	Test Lines	4/11/2024	15:57:07	Pressure Test Lines to 6,804 PSI
14	Check Weight	4/11/2024	16:08:34	Weight Verified by Mud Scales
15	Pump Spacer	4/11/2024	16:12:20	Pump 120 bbls of Tuned Prime Spacer @ 11.5 PPG ( 2.57 ft3, 16.2 Gal/sk ). Total gallons 4,247. Pump Rate @ 5 BPM with 360 PSI. TOS=0'
16	Pump Cap Cement	4/11/2024	16:34:57	Pump 213.05 bbls of ElastiCem @ 13 PPG ( 725 sk, 1.65 ft3, 8.07 Gal/sk ). Total gallons 5,851. Pump Rate 8.5 BPM with 740 PSI. TOCC=0'
17	Check Weight	4/11/2024	16:40:24	Weight Verified by Mud Scales
18	Pump Lead Cement	4/11/2024	17:02:39	Pump 181.5 bbls of IsoBond @ 13 PPG ( 645 sk, 1.58 ft3, 7.42 Gal/sk ). Total gallons 4,786. Pump Rate 8.5 BPM with 945 PSI. TOLC=3,248'
19	Pump Tail Cement	4/11/2024	17:25:38	Pump 444.6 bbls of ElastiCem @ 13.2 PPG ( 1,590 sk, 1.57 ft3, 7.54 Gal/sk ). Total gallons 11,989. Pump Rate 8.5 BPM with 850 PSI. TOTC=7,653'
20	Check Weight	4/11/2024	17:31:35	Weight Verified by Mud Scales
21	Shutdown	4/11/2024	18:26:04	Shutdown Pumping Cement
22	Clean Lines	4/11/2024	18:27:58	Clean Pump and Lines
23	Drop Top Plug	4/11/2024	18:33:09	Drop Top Plug / Verified by Company Representative
24	Pump Displacement	4/11/2024	18:37:15	Pump 411 bbls of Fresh Water Displacement with MMCR. Total gallons 17,262. 57 bbls Cement to Surface.
25	Bump Plug	4/11/2024	19:31:23	Bump Plug / FCP is 2,650 PSI and took up to 3,200 PSI
26	Bleed Casing	4/11/2024	19:32:00	Bled Pressure Back To Zero And Got 4.5 bbls Back
27	Check Floats	4/11/2024	19:33:00	Floats Held Good.
28	End Job	4/11/2024	19:35:12	Stop Recording Data

29	Pre-Rig Down Safety Meeting	4/11/2024	19:40:00	Review JSA With HES Crew Members
30	Rig-Down Equipment	4/11/2024	20:00:00	Rig Down Iron, Plug Container, And Hoses Used On Job
31	Rig-Down Completed	4/11/2024	21:00:00	All Equipment Rigged Down With No Issues Or Incidents
32	Safety Meeting - Departing Location	4/11/2024	21:10:00	Review Journey Management And Route With Crew Members
33	Depart Location for Service Center or Other Site	4/11/2024	21:20:00	Depart location

3.0 Attachments

3.1 Real Time iCem Job Chart

