

# HALLIBURTON

iCem<sup>®</sup> Service

## **CRESTONE PEAK RESOURCES**

Ft. Lupton District, CO

Civitas BLUE 3-65 33-32 2BH Production

Job Date: Thursday, August 10, 2023

Sincerely,

**Rafael Giorgana**

## Legal Notice

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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 **Blue 3-65 2BH 5.5 Production Casing**. 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 45 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 #:	0500110552
City, County:	Aurora

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	8/10/2023	1330
Called Out Time:	8/10/2023	800
Arrived On Location:	8/10/2023	1300
Job Started:	8/10/2023	1650
Job Completed:	8/10/2023	2000
Departed Location:	8/10/2023	2145

	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	8.9
4	Casing set depth (shoe)	ft	18364
5	TVD	ft	7940
6	Float collar depth	ft	18359
7	Length of rate hole	ft	7ft
8	Previous casing shoe depth	ft	3292
9	Pre-job mud circulation time	hh:mm	1:00
10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	1150

12	Mud circulation pressure at start of cement	psi	450
13	Annual flow before the start of job	Y/N	yes
14	Pipe movement during cement job	Y/N	no
15	Calculated displacement	bbls	407.569
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	95
18	Fluid returns to surface	Spacer/Cement, bbls	45 CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2425
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1

### 1.3 Water Field Test

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	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
<b>pH</b>	7		6.0 - 8.0	Chemicals in water can cause severe retardation
<b>Temperature</b>	65	F	60 - 80 F	Can can pre-mature setting of cement
<b>Chlorides</b>	1000	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)
<b>Spacer Fluid</b>	11.5	120	2.57	16.21		
<b>Cap Cement</b>	13	204	1.65	8.07	695	5609
<b>Lead Cement</b>	13	189	1.58	7.43	670	4978
<b>Tail Cement</b>	13	425	1.56	7.52	1530	11506
<b>Top Plug</b>	1					
<b>Displacement Fluid</b>	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	8/10/2023	08:00:00	Call out
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/10/2023	11:45:00	Pre-Convoy Safety Meeting
3	Crew Leave Yard	Crew Leave Yard	8/10/2023	12:00:00	Crew Leave Yard
4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/10/2023	13:00:00	Arrive at Location from Service Center
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/10/2023	13:05:00	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	Rig-Up Equipment	8/10/2023	13:15:00	Rig Up equipment as far as possible, Rig running casing
7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/10/2023	16:30:00	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	Start Job	8/10/2023	16:51:32	Start Recording data.
9	Drop Bottom Plug	Drop Bottom Plug	8/10/2023	16:55:42	Dropped bottom plug with Josh.
10	Test Lines	Test Lines	8/10/2023	16:57:36	Tested HES lines to 4500Psi.
11	Pump Spacer 1	Pump Spacer 1	8/10/2023	17:02:01	Pumped 120Bbbls of 11.5ppg Tuned Prime Spacer cement. Pumped at a rate of 6bpm with a pressure of 350Psi.
12	Pump Cap Cement	Pump Cap Cement	8/10/2023	17:21:57	Pumped 695scks / 204Bbbls of 13ppg Elasticem Cap Cement. Pumped at a rate of 9Bpm with a pressure of 450Psi.
13	Pump Lead Cement	Pump Lead Cement	8/10/2023	17:47:56	Pumped 670scks / 189Bbbls of 13ppg Isobond Lead Cement. Pumped at a rate of 9bpm with a pressure of 470Psi. Pre job calculated TOL cement was 3,314.982Ft.
14	Pump Tail Cement	Pump Tail Cement	8/10/2023	18:09:14	Pumped 1530scks / 425Bbbls of 13.2ppg Elasticem Tail cement. Pumped at a rate of 9Bpm with a pressure 580Psi. Pre job calculated TOT cement was at 7,947.334Ft.
15	Shutdown	Shutdown	8/10/2023	19:03:00	Shutdown to wash pumps and lines. Pumped 20 bbls of fresh water to wash up.
16	Drop Top Plug	Drop Top Plug	8/10/2023	19:10:07	Drop Top plug with Josh.
17	Pump Displacement	Pump Displacement	8/10/2023	19:10:13	Pumped Fresh water displacement.
18	Bump Plug	Bump Plug	8/10/2023	20:04:47	Bumped Plug. FCP 2425Psi. Bump Pressure 3030psi.
19	Other	Other	8/10/2023	20:05:56	Check floats. Floats held. 4.5bbls back through release line.
20	End Job	End Job	8/10/2023	20:07:18	Stop recording. 45 Bbbls of cement to Surface.
21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/10/2023	20:30:00	Pre-Rig Down Safety Meeting
22	Rig-Down Equipment	Rig-Down Equipment	8/10/2023	20:35:00	Rig-Down Equipment

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23	Depart Location Safety Meeting	Depart Location Safety Meeting	8/10/2023	21:10:00	Depart Location Safety Meeting, Verify all equipment has been thoroughly pre-tripped. All safety and quality issues should be resolved before proceeding.
24	Crew Leave Location	Crew Leave Location	8/10/2023	21:15:00	Crew leave location

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3.0 Attachments

3.1 Real Time Job Chart

