

# HALLIBURTON

iCem<sup>®</sup> Service

## **CIVITAS RESOURCES-EBUS**

Ft. Lupton District, CO / Aurora

**For: Josh Johnson**

Date: Sunday, June 23, 2024

**BEAR 3-65 22-23 4BH**

Post Job Report

Sincerely,

**David Womack**

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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 **Bear 3-65 22-23 4BH – 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: 2,700psi @ 4bpm
- Returns to Surface: 120 bbl of spacer and 58 bbl of cement.
- Any deviation from plan: N
- Abnormalities on job chart: Recirculation density was used

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 #:	05-001-10557-00
City, County:	Aurora, Adams
SO#:	909419206

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	6/23/2024	03:30
Called Out Time:	6/22/2024	21:30
Arrived On Location:	6/23/2024	01:30
Job Started:	6/23/2024	04:23
Job Completed:	6/23/2024	08:15
Departed Location:	6/23/2024	10:10

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	64
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.5
4	Casing set depth (shoe)	ft	19,014
5	TVD	ft	7,740
6	Float collar depth	ft	19,009
7	Length of rate hole	ft	3
8	Previous casing shoe depth	ft	3,580
9	Pre-job mud circulation time	hh:mm	01:25
10	Pre-job mud circulation rate	bpm	12

11	Pre-job mud circulation volume	bbls	1,020
12	Mud circulation pressure at start of cement	psi	1,200
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	422
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120 spacer / 57.8 cement
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2,700 @ 4
20	Number of Centralizers	-	310
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

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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>	64	F	60 - 80 F	Can pre-mature setting of cement
<b>Chlorides</b>	<290	ppm	3000 ppm	Can shorten thickening time

## 1.4 Actual Pump Schedule

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### Stage 1

	Density (ppg)	Volume (bbl)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sk)	Total Water (gal)
<b>Spacer Fluid</b>	11.5	120	2.57	16.2	262	4,247
<b>Cap Cement</b>	13	205.7	1.65	8.07	695	5,972
<b>Lead Cement</b>	13	180.1	1.58	7.43	610	5,268
<b>Tail Cement</b>	13.2	440.4	1.56	7.54	1,830	11,913
<b>Top Plug</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>Displacement Fluid</b>	8.4	422	N/A	N/A	N/A	17,708

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Seq. No.	Activity	Graph Label	Date	Time	Comments
1	Call Out	Call Out	6/22/2024	21:30:00	Called out for Civitas Patterson 345 BEAR 3-65 22-23 4BH 5.5" Production with an on-location time of 03:30 6/23/2024.
2	Safety Meeting - Service Center or other Site	Safety Meeting - Service Center or other Site	6/22/2024	23:50:00	Review Journey Management and Route with Crew Members
3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/23/2024	00:00:00	Depart From Yard
4	Arrive At Loc	Arrive At Loc	6/23/2024	01:30:00	Talk To Company Man (Josh Johnson): TD = 19,017', TP = 19,014', ST = 5', OH = 8.5", CSG = 5 1/2" 20#, Previous Casing 9 5/8" 36# Set @ 3,580', WF = OBM @ 9.5#, Test Water = pH - 7, Chlorides - < 290 ppm, 64 F
5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	6/23/2024	01:35:00	Spot Equipment
6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/23/2024	01:40:00	Review JSA With Crew Members
7	Rig-Up Equipment	Rig-Up Equipment	6/23/2024	01:45:00	Rig Up Iron and Hoses Needed for Job
8	Circulate Well	Circulate Well	6/23/2024	02:50:00	Rig Circulated Well From 02:50 To 04:15 @ 12 BPM With 1200 psi. Had 75 units of gas and no losses/ gains during circulation.
9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/23/2024	04:10:00	Review Job Procedure and JSA With Rig Hands, Co. Man, And HES Members

10	Rig-Up Completed	Rig-Up Completed	6/23/2024	04:20:00	Rigged Up All Iron and Hoses Needed for CMT Job With No Issues or Incidents. 5.5 Modified Plug Container and Manifold with washup line to half round tank was rigged up as well.
11	Start Job	Start Job	6/23/2024	04:23:00	Rig shutdown pumps and gave well over to HES. All lines are confirmed tighten on plug container.
12	Drop Bottom Plug	Drop Bottom Plug	6/23/2024	04:23:30	Cap was removed from plug container to drop bottom plug. Customer verified bottom plug depart plug container by tattle tale.
13	Pump Water	Pump Water	6/23/2024	04:24:00	Filled lines with 5bbls of Fresh Water.
14	Pressure Test	Pressure Test	6/23/2024	04:25:00	Low pressure kickout was done to 500 psi before performing 6,500psi pressure test. Pressure held and climbed to 6,860 psi. Kickouts were set at 3,600psi for the job.
15	Check Weight	Check Weight	6/23/2024	04:28:30	Weight from downhole was verified with Pressurized mud scales.
16	Pump Spacer	Pump Spacer	6/23/2024	04:29:00	Mixed and Pumped 120 bbl of Tuned Prime Spacer at 11.5 ppg, yield: 2.57 ft3/sk, 16.2 gal/sk. 30 gal of D-air was used. Spacer was verified on pressurized mud scales.
17	Other	Other	6/23/2024	04:45:00	Downhole HPVT stopped reading density after we started pumping Spacer. Rate was then slowed down to verify that our mud scales were reading accurately with the F300 recirculation device. It was then decided that we would use the F300 density for our density reading to compare with our scale readings.
18	Pump Cap Cement	Pump Cap Cement	6/23/2024	04:57:00	Mixed and pumped 740 sacks (217 bbl) of ElastiCem Cap Cement at 13 ppg, yield: 1.65 ft3/sk, 8.07 gal/sk. Weight was verified on pressurized mud scales. Calculated top of cap cement at 0ft with 57.8 bbl to Surface.
19	Check Weight	Check Weight	6/23/2024	04:58:00	Weight from downhole was verified with Pressurized mud scales.
20	Pump Lead Cement	Pump Lead Cement	6/23/2024	05:31:00	Mixed and pumped 710 sacks(199.8bbl) of IsoBond Lead Cement at 13 ppg, yield: 1.58 ft3/sk, 7.42 gal/sk. Weight was verified on pressurized mud scales. Calculated top of lead cement 3,334'
21	Check Weight	Check Weight	6/23/2024	05:33:00	Weight from downhole was verified with Pressurized mud scales.

22	Other	Other	6/23/2024	05:44:00	When we pumped 100bbl of Lead cement blend, the Automatic Density Control system stopped making the correct adjustments in order to accurately mix. Operator then switched from ADC mode to Manual Mixing mode to achieve a more accurate density while mixing.
23	Pump Tail Cement	Pump Tail Cement	6/23/2024	06:01:00	Mixed and pumped 1,580 sacks(441.8bbl) of ElastiCem Tail Cement at 13.2 ppg, yield: 1.57 ft3/sk, 7.54 gals/sk. Weight was verified on pressurized mud scales. 30 gal of D-air used. Calculated top of tail cement 8,188'
24	Check Weight	Check Weight	6/23/2024	06:03:00	Weight from downhole was verified with Pressurized mud scales.
25	Clean Lines	Clean Lines	6/23/2024	07:09:00	Wash mix tub, pumps, and lines to open top tank.
26	Shutdown	Shutdown	6/23/2024	07:16:00	Shutdown and swap lines into washup tank.
27	Drop Top Plug	Drop Top Plug	6/23/2024	07:17:00	Cap was removed and plug was dropped by customer rep. He witnessed the plug leave by tattle tale.
28	Pump Displacement - Start	Pump Displacement	6/23/2024	07:17:30	Started displacement with MMCR in first 20bbls. The rest of displacement was done with rig's chemicals.
29	Cement Returns to Surface	Cement Returns to Surface	6/23/2024	07:52:00	At 244 bbl away we got Spacer to surface. 120 bbl of spacer and 57.8 bbl of Cap cement to surface. Held full returns through entire job.
30	Slow Rate	Slow Rate	6/23/2024	08:06:00	Slowed rate for last 20 bbl to 4bpm.
31	Bump Plug	Bump Plug	6/23/2024	08:11:00	Final circulating pressure was 2,700psi. Bumped pressure up to 3,200psi.
32	Check Floats	Check Floats	6/23/2024	08:12:00	Released pressure and received 4.5 bbl back to displacement tank.
33	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/23/2024	08:20:00	Review JSA With HES Crew Members. Crew washes up rig stack.
34	Rig-Down Equipment	Rig-Down Equipment	6/23/2024	08:25:00	Rig Down Iron, Plug Container, And Hoses Used on Job
35	End Job	End Job	6/23/2024	08:30:00	End Job was sent.

36	Rig-Down Completed	Rig-Down Completed	6/23/2024	09:30:00	All Equipment Rigged Down with No Issues Or Incidents
37	Depart Location Safety Meeting	Depart Location Safety Meeting	6/23/2024	09:50:00	Review Journey Management and Route With Crew Members
38	Depart Location	Depart Location	6/23/2024	10:10:00	Depart location

3.0 Attachments

3.1 Real time job chart

