HALLIBURTON

iCem® Service

CRESTONE PEAK RESOURCES

BLUE 3-65 33-32-31-36 4AH Production

Job Date: Friday, August 18, 2023

Sincerely,

Rafael Giorgana

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

Table of Contents

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **BLUE 3-65 33-32-31-36 4AH 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 – 100% , While pumping Cement 100 %, While Pumping Displacement 100 %**
- **Final Circulating Pressure and Pump Rate 2800 PSI 4 BPM**
- **Returns to Surface 50 BBL**
- **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 #:	5-001-10555-00
City, County:	WATKINS
SO#:	908793391

Job Times		
	Date (mm/dd/yyyy)	**Time (hh:mm)**
Requested Time On Location:	08/18/23	01:30
Called Out Time:	8/17/23	1800
Arrived On Location:	8/17/23	2200
Job Started:	8/18/23	0900
Job Completed:	8/18/23	1445
Departed Location:	8/18/2023	1600

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	78
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.3
4	Casing set depth (shoe)	ft	28849
5	TVD	ft	8085
6	Float collar depth	ft	28844
7	Length of rate hole	ft	3
8	Previous casing shoe depth	ft	3340
9	Pre-job mud circulation time	hh:mm	2
10	Pre-job mud circulation rate	bpm	10

11	Pre-job mud circulation volume	bbls	1200
12	Mud circulation pressure at start of cement	psi	1840
13	Annual flow before the start of job	Y/N	NO
14	Pipe movement during cement job	Y/N	NO
15	Calculated displacement	bbls	751
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	50 CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2800
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1
22	Number of trucks used preparing/during job	-	1
23	Add hours? If Yes, put #	Y/N and hours	4
24	NPT? If Yes, put #	Y/N and hours	0

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	74	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	<300	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	16.21	262	4249
Cap Cement	13	147	1.65	8.07	500	4035
Lead Cement	13	125	1.58	7.43	445	3306
Tail Cement	13.2	892	1.56	7.52	3210	24139
Top Plug						
Displacement Fluid	8.33	751				31542

Stage 2

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid						
Cap Cement						
Lead Cement						
Tail Cement						
Top Plug						
Displacement Fluid						

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Graph Label	Date	Time	Comments
1	Call Out	Call Out	8/17/2023	18:00:00	Call for production casing job.
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/17/2023	21:00:00	Journey management.
3	Arrive At Loc	Arrive At Loc	8/17/2023	22:00:00	arrive at location.
4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	8/17/2023	22:30:00	safety meeting jsa for rig up.
5	Rig-Up Completed	Rig-Up Completed	8/18/2023	01:30:00	Rigged up
6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/18/2023	08:30:00	JSA with customer and crew, cover job details.
7	Start Job	Start Job	8/18/2023	10:01:55	Start production casing job. TD=28852 FT TP-7"=7380 FT TP-5.5"=21469 FT SJ=5 FT PC=9.625 36# @ 3340 FT OH8.75=3340-16510 FT OH 8.5=16510 FT-28852 FT FC=28844 FT SET @28849 FT

					M.W=9.3 PPG TVD=8085 FT TOP AND BOTTOM PLUGS.
8	Break Formation	Break Formation	8/18/2023	10:03:18	Start pumping fresh water to fill HES lines to cement head.
9	Test Lines	Test Lines	8/18/2023	10:07:21	Test lines. 500 psi for kickout test. 5000 psi for job max. Good test.
10	Drop Bottom Plug	Drop Bottom Plug	8/18/2023	10:09:47	Drop bottom plug.
11	Pump Spacer 1	Pump Spacer 1	8/18/2023	10:11:00	Start pumping 120 bbl tuned prime spacer @ 11.5 ppg,
12	Check Weight	Check Weight	8/18/2023	10:16:09	Check weight on mud scales, good weight 11.5 ppg.
13	Pump Cap Cement	Pump Cap Cement	8/18/2023	10:28:59	Start pumping 147 bbl Cap cement @ 13 ppg, 500 sk,1.65yd, 8.07 gal/sk.
14	Check Weight	Check Weight	8/18/2023	10:35:06	Check weight on mud scales, good weight @ 13 ppg.
15	Pump Lead Cement	Pump Lead Cement	8/18/2023	10:46:48	Start pumping 125 bbl Lead cement @ 13 ppg, 445 sk,1.58 yd,7.43 gal/sk.
16	Check Weight	Check Weight	8/18/2023	10:58:15	Check weight on mud scales, good weight 13 ppg.
17	Pump Tail Cement	Pump Tail Cement	8/18/2023	11:03:45	Start pumping 892 bbl Tail cement @13.2 ppg, 3210 sk,1.56 yd, 7.52 gal/sk.
18	Check Weight	Check Weight	8/18/2023	11:16:14	Check weight 1st silo, good weight, 13.2 ppg.

19	Check Weight	Check Weight	8/18/2023	11:36:17	Check weight 2nd silo, good weight, 13.2 ppg.
20	Check Weight	Check Weight	8/18/2023	11:57:23	Check weight 3rd silo, good weight 13.2 ppg.
21	Check Weight	Check Weight	8/18/2023	12:27:45	Check weight 4th silo, good weight, 13.2 ppg.
22	Clean Lines	Clean Lines	8/18/2023	12:58:02	Clean pumps and lines to open top container.
23	Drop Top Plug	Drop Top Plug	8/18/2023	13:04:12	Drop top plug.
24	Pump Displacement	Pump Displacement	8/18/2023	13:04:15	Start pumping 751 bbl displacement. First 20 bbl MMCR water. Followed by customer supplied biocide treated water.
25	Bump Plug	Bump Plug	8/18/2023	14:36:30	Bump plug from 2800-3300 psi. Landed plug 11 bbl early.
26	Other	Other	8/18/2023	14:37:53	Bleed off casing pressure, Got 8.5 bbl back to truck. Floats holding good.
27	End Job	End Job	8/18/2023	14:41:19	End Casing job. 120 bbl spacer and 40 bbl cap cement back.
28	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	8/18/2023	14:45:00	Safety meeting jsa for rig down.
29	Rig-Down Completed	Rig-Down Completed	8/18/2023	15:30:00	rigged down
30	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/18/2023	15:45:00	Journey management.

31	Crew Leave Location	Crew Leave Location	8/18/2023	16:00:00	Crew leave customer location.

3.0 Attachments

3.1 Real Time Job Chart