

HALLIBURTON

iCem® Service

EXTRACTION OIL & GAS INC

Ft. Lupton District, Colorado

WARBLER 13W-27-19 Production

Job Date: Monday, October 23, 2023

Sincerely,

Rafael Giorgana

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **WARBLER 13W-27-19 / Production Job**. 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.

This space is provided to enter in a brief summary of the job. Below are some important items to discuss:

- **Quality of circulation – Prejob 100 % , While pumping Cement 100 % , While Pumping Displacement 100 %**
- **Final Circulating Pressure and Pump Rate / 2500 PSI and 4 BPM**
- **Returns to Surface / 120 Spacer / 52 Cement**
- **Any deviation from plan / NO**
- **Abnormalities on job chart / Yes**

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 #:	001-10547
City, County:	Brighton, Adams
SO#:	908934798

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	10/23/2023	04:00
Called Out Time:	10/22/2023	21:30
Arrived On Location:	10/23/2023	03:15
Job Started:	10/23/2023	08:29
Job Completed:	10/23/2023	12:46
Departed Location:	10/23/2023	14:40

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	43
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9
4	Casing set depth (shoe)	ft	21738
5	TVD	ft	7580
6	Float collar depth	ft	21733
7	Length of rate hole	ft	17
8	Previous casing shoe depth	ft	2617
9	Pre-job mud circulation time	hh:mm	01:30
10	Pre-job mud circulation rate	bpm	14

11	Pre-job mud circulation volume	bbls	1200
12	Mud circulation pressure at start of cement	psi	170
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	482.5
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120 / 52
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2500 / 4
20	Number of Centralizers	-	305
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

	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	<200	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	2.99	18.87		
Cap Cement	13	170.4	1.65	8.09	580	4,692
Lead Cement	13	208.2	1.58	7.43	740	5,498
Tail Cement	13.2	579.3	1.56	7.52	2085	15,679
Top Plug	1					
Displacement Fluid	8.33	482				20,244

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	10/22/2023	21:30:00	CIVITAS RESOURCES WARBLER 13W-27-19 5.5' PRODUCTION CASING JOB - On location 10/23/23 @ 04:00
2	Safety Meeting - Service Center or other Site	10/23/2023	02:00:00	Review Journey Management And Route With Crew Members
3	Depart from Service Center or Other Site	10/23/2023	02:15:00	Depart From Yard
4	Arrive At Loc	10/23/2023	03:15:00	Talk To Company Man () : TD = 21,755', TP = 21738, ST = 5', OH = 8.5", CSG = 5.5" 20#, Previous Casing 9 5/8" Set @ 2617', WF = OBM @ 9 #, Test Water = pH - 7, Chlorides - < 200 ppm, 58 F.
5	Safety Meeting - Assessment of Location	10/23/2023	03:30:00	Spot Equipment
6	Pre-Rig Up Safety Meeting	10/23/2023	03:40:00	Review JSA With Crew Members
7	Rig-Up Equipment	10/23/2023	03:50:00	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
8	Rig-Up Completed	10/23/2023	05:00:00	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.

9	Rig-Up Completed	10/23/2 023	07:00:0 0	Rig Up Plug Container And Rig Floor To Circulate With Rig Pumps. Rig Circulated From 07:00 AM To 08:30 AM At (14 BPM) With 1700 psi, Good Returns.
10	Safety Meeting - Pre Job	10/23/2 023	07:40:0 0	Review Job Procedure And JSA With Rig Hands, Co. Man, And HES Members
11	Start Job	10/23/2 023	08:30:1 0	Start Recording Data
12	Drop Bottom Plug	10/23/2 023	08:30:1 8	Drop Bottom Plug / Verified by Company Representative
13	Test Lines	10/23/2 023	08:33:5 2	Pressure Tested Lines to 4700 PSI
14	Pump Spacer 1	10/23/2 023	08:43:5 9	Pumped 120 bbls of Tuned Prime Spacer @ 11.5 PPG (2.99 ft3, 18.87 gal/sk). Total gallons 4,252. Pump Rate 5 BPM @ 250 PSI.
15	Check Weight	10/23/2 023	08:50:5 6	Weight Verified by Mud Scales
16	Pump Cap Cement	10/23/2 023	09:06:4 6	Pumped 170.4 bbls of ElastiCem @ 13 PPG (580 sks, 1.65 ft3, 8.09 gal/sk). Total gallons 4,692. Pump Rate 9 BPM @ 800 PSI. TOCC= 0'
17	Check Weight	10/23/2 023	09:14:5 9	Weight Verified by Mud Scales
18	Pump Lead Cement	10/23/2 023	09:31:0 5	Pumped 208.2 bbls of IsoBond @ 13 PPG (740 sks, 1.58 ft3, 7.43 gal/sk). Total gallons 5,498. Pump Rate 6 BPM @ 190 PSI. TOLC= 2,473'
19	Check Weight	10/23/2 023	09:38:1 0	Weight Verified by Mud Scales
20	Pump Tail Cement	10/23/2 023	10:08:3 7	Pumped 579.3 bbls of ElastiCem @ 13.2 PPG (2085 sks, 1.56 ft3, 7.52 gal/sk). Total gallons 15,679. Pump Rate 9 BPM @ 950 PSI. TOTC=7,542

21	Check Weight	10/23/2 023	10:12:0 8	Weight Verified by Mud Scales
22	Check Weight	10/23/2 023	10:38:2 3	Weight Verified by Mud Scales
23	Shutdown	10/23/2 023	11:30:4 9	Shutdown Pumping Cement
24	Clean Lines	10/23/2 023	11:31:0 6	Clean Pump and Lines
25	Drop Top Plug	10/23/2 023	11:42:3 5	Drop Top Plug / Verified by Company Representative
26	Pump Displacement	10/23/2 023	11:42:3 7	Pumped 482 bbls of Displacement. First 20 bbls with MMCR. The rest of Displacement pumped 10 gallons of Biocide provided by Customer. Total gallons 20,244. 52 bbls Cement to Surface
27	Bump Plug	10/23/2 023	12:44:0 0	Bump Top Plug 482 bbls into Displacement. FCP 2500 PSI and took up to 3009 PSI.
28	Bleed Casing	10/23/2 023	12:46:0 0	Bled Pressure Back To Zero And Got 6 bbls Back
29	Check Floats	10/23/2 023	12:47:0 0	Floats Held Good.
30	End Job	10/23/2 023	12:48:4 2	Stop Recording Data
31	Pre-Rig Down Safety Meeting	10/23/2 023	13:20:0 0	Review JSA With HES Crew Members
32	Rig-Down Equipment	10/23/2 023	13:30:0 0	Rig Down Iron, Plug Container, And Hoses Used On Job

33	Rig-Down Completed	10/23/2 023	14:20:0 0	All Equipment Rigged Down With No Issues Or Incidents
34	Safety Meeting - Departing Location	10/23/2 023	14:40:0 0	Review Journey Management And Route With Crew Members
35	Depart Location for Service Center or Other Site	10/23/2 023	14:50:0 0	Depart location

3.0 Attachments

3.1 Real Time Job Chart

