

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, Colorado

Property Reserve 4-65 3-4 1AH Production

Job Date: Monday, February 13, 2023

Sincerely,

Meghan Van Zyl

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 **Property Reserve 4-65 3-4 1AH - 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 53 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 #:	05-005-07522
City, County:	Watkins, Arapahoe Co

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	02/13/2023	02:00
Called Out Time:	02/12/2023	14:30
Arrived On Location:	02/13/2023	02:00
Job Started:	02/13/2023	06:24
Job Completed:	02/13/2023	06:24
Departed Location:	02/13/2023	12:00

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	32
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.6
4	Casing set depth (shoe)	ft	18720
5	TVD	ft	7918
6	Float collar depth	ft	18720
7	Length of rate hole	ft	15
8	Previous casing shoe depth	ft	3784
9	Pre-job mud circulation time	hh:mm	03:00
10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	1100

12	Mud circulation pressure at start of cement	psi	700
13	Annual flow before the start of job	Y/N	YES
14	Pipe movement during cement job	Y/N	YES
15	Calculated displacement	bbls	431
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	50/53
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2500
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1

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	65	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

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	50	3.83	24.16		1771
Cap Cement	13	171	1.67	8.25	575	4744
Lead Cement	13	241.5	1.55	7.16	875	6265
Tail Cement	13.2	432	1.59	7.79	1525	11880
Top Plug	1					
Displacement Fluid	8.33	431				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	2/12/2023	14:30:00	Crew called out at 1430 on 2/12/2023 for a requested-on location time of 0200 on 2/13/2023.
2	Safety Meeting	2/12/2023	20:55:00	Pre convoy safety meeting discussed route to location and hazards of driving at night.
3	Crew Leave Yard	2/12/2023	21:00:00	Crew Leaves yard in convoy at 2100 hrs.
4	Arrive At Loc	2/13/2023	02:00:00	Crew arrived on location at 0200 hrs. Meet with costumer TD 18735', 8.5 OH, TP 18720 5.5' 20#, FC 18715', TVD 7918', P/C 3784' 9.625 36#, OBM WEIGHT 9.6 PPG.
5	Safety Meeting - Pre Rig-Up	2/13/2023	02:15:00	Discuss hazards around rig up area.
6	Rig-Up Completed	2/13/2023	03:00:00	Rig up completed.
7	Safety Meeting - Pre Job	2/13/2023	06:00:00	Pre job safety meeting discussed all hazards prior to job and reviewed job procedure.
8	Start Job	2/13/2023	06:24:00	Start recording data.
9	Drop Bottom Plug	2/13/2023	06:24:09	Bottom plug verified by DSR.
10	Test Lines	2/13/2023	06:25:36	Pressure tested HES lines to 4500 psi.
11	Pump Spacer 1	2/13/2023	06:34:09	Pumped 50 bbls of tuned prime spacer @ 11.5 ppg, 3.83 ft3, 24.16 gal/sack. Pre calculated mix gallons were 1,771.

12	Pump Cap Cement	2/13/2023	06:46:10	Pumped 171 bbls (575 sks) of ElastiCem cap @ 13 ppg, 1.67 ft3, 8.25 gal/sack. Pre calculated mix gallons 4,744 gal. Estimated 53 bbls to surface. HOCC=2,228'.
13	Pump Lead Cement	2/13/2023	07:06:29	Pumped 241.5 bbls (875 sks) of IsoBond lead @ 13 ppg, 1.55 ft3, 7.16 gal/sack. Pre calculated mix gallons was 6,265 gal. HOLC=8,147', TOLC= 2,228'.
14	Pump Tail Cement	2/13/2023	07:33:31	Pumped 432 bbls (1525 sks) of ElastiCem tail @ 13.2 ppg, 1.59 ft3, 7.79 gal/sack. Pre calculated mix gallons was 11,880 gal. HOTC=10,588', TOTC= 8,147'.
15	Shutdown	2/13/2023	08:30:40	Shutdown swap over to wash up pit. Washed up with 27 bbls of fresh water.
16	Drop Top Plug	2/13/2023	08:38:16	Top plug verified by DSR.
17	Pump Displacement	2/13/2023	08:38:18	Pumped 431 bbls of freshwater displacement with 10 gal of MMCR in first 20 bbls.
18	Bump Plug	2/13/2023	09:24:00	FCP @4 BPM was 2500 psi bumped up to 3000 psi.
19	Check Floats	2/13/2023	09:25:25	4 bbls back to pump truck floats holding.
20	End Job	2/13/2023	09:28:53	Stop recording data. washed rig stack with 170 bbls of fresh water. 53 bbls of cement to surface.
21	Safety Meeting - Pre Rig-Down	2/13/2023	10:00:00	Discuss blow down and any new hazards that could have come up during job.
22	Rig-Down Completed	2/13/2023	11:45:00	Rig down completed.
23	Pre-Convoy Safety Meeting	2/13/2023	12:00:00	Fit for duty check and check road conditions.
24	Crew Leave Location	2/13/2023	12:00:00	Crew departs location. Thank you for using Halliburton.

3.0 Attachments

3.1 Real Time iCem Job Chart

