HALLIBURTON

iCem® Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, Colorado

Property Reserve 4-65 3-4 1BH Production

Job Date: Saturday, February 18, 2023

Sincerely,

Meghan Van Zyl

Legal Notice

Disclaimer:

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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 1BH - 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 52 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 #:	05-005-07523
City, County:	Watkins, Arapahoe

Job Times		
	Date (mm/dd/yyyy)	**Time (hh:mm)**
Requested Time On Location:	02/17/2023	23:00
Called Out Time:	02/17/2023	19:00
Arrived On Location:	02/18/2023	03:00
Job Started:	02/18/2023	04:30
Job Completed:	02/18/2023	08:00
Departed Location:	02/18/2023	10:30

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	30
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.6
4	Casing set depth (shoe)	ft	18,628
5	TVD	ft	7,982
6	Float collar depth	ft	18,623
7	Length of rate hole	ft	19’
8	Previous casing shoe depth	ft	3,618
9	Pre-job mud circulation time	hh:mm	5:00
10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	2000

12	Mud circulation pressure at start of cement	psi	500
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	414
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	50/52
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2,700
20	Number of Centralizers	-	283
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	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

	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	73	1,771
Cap Cement	13.0	171	1.67	8.25	575	4,744
Lead Cement	13.0	235	1.55	7.16	850	6,086
Tail Cement	13.2	432	1.59	7.78	1525	11,865
Top Plug						
Displacement Fluid	8.33	414				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	2/17/2023	19:00:00	CREW CALLED OUT FEBRUARY 17, 2023 @ 19:00, REQUESTED ON LOCATION @ 23:00. CREW WAS STILL PUMPING ON PREVIOUS JOB. BULK 660 11633848, PUMP 11323804, P/U 12992315, 12992454 AND COMPRESSOR TRACTOR 11562546.
2	Arrive at Location from Service Center	2/18/2023	02:00:00	MET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625” 36 LB/FT @ 3,618', 5.5" CASING: 20 LB/FT TOTAL 18,628’, 8.5” OH, TD 18,647', TVD- 7,982’, SHOE TRAC 5’, 283 CENTRALIZERS. CITADEL FLOAT EQUIPMENT TOP AND BOTTOM PLUG, WF 9.6 LB. RIG LANDED CASING @ 23:00 AND CIRCULATED WAITED FOR CREW UNTIL 04:00.
3	Pre-Rig Up Safety Meeting	2/18/2023	02:15:00	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
4	Rig-Up Equipment	2/18/2023	02:30:00	CREW STAGED EQUIPMENT, RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
5	Rig-Up Completed	2/18/2023	04:00:00	
6	Pre-Job Safety Meeting	2/18/2023	04:15:00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
7	Start Job	2/18/2023	04:40:28	BEGIN RECORDING JOB DATA.
8	Test Lines	2/18/2023	04:41:48	PRESSURE TESTED IRON TO 5,000 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 800 PSI, 5TH GEAR STALL OUT @ 2,500 PSI.

9	Pump Spacer 1	2/18/2023	04:50:20	PUMP 50 BBLS OF TUNED PRIME SPACER @ 11.5 LB/GAL, 3.83 FT3/SK, 24.16 GAL/SK. INJECTED 15 GALLONS D-AIR ON THE FLY, DRY SURFACTANTS MIXED IN WITH BLEND. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBLS/MIN @ 590 PSI.
10	Pump Cap Cement	2/18/2023	04:58:33	PUMPED 575 SKS OF ELASTICEM CAP @ 13.0 LB/GAL, 1.67 FT3/SK, 8.25 GAL/SK. 171 BBLS, HOC CALCULATED @ 2,491', TOC CALCULATED @ SURFACE GETTING 52 BBLS BACK TO SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBLS/MIN 290 PSI.
11	Check Weight	2/18/2023	05:03:06	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
12	Pump Lead Cement	2/18/2023	05:22:14	PUMPED 5850 SKS OF ISOBOND LEAD @ 13.0 LB/GAL, 1.55 FT3/SK, 7.16 GAL/SK. 234.64 BBLS, HOL CALCULATED @ 5,553', TOL CALCULATED @ 2,491'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 9 BBLS/MIN 690 PSI.
13	Check Weight	2/18/2023	05:26:39	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
14	Pump Tail Cement	2/18/2023	05:53:27	PUMPED 1525 SKS OF ELASTICEM TAIL @ 13.2 LB/GAL, 1.59 FT3/SK, 7.78 GAL/SK. 432 BBLS. HOT CALCULATED @ 10,585', TOL CALCULATED @ 8,044'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 9 BBLS/MIN 450 PSI.
15	Check Weight	2/18/2023	05:58:28	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
16	Shutdown	2/18/2023	06:51:16	WASH PUMPS AND LINES WITH 15 BBLS FRESH WATER.
17	Drop Top Plug	2/18/2023	06:59:53	TOP PLUG LOADED BY CUSTOMER.
18	Pump Displacement	2/18/2023	07:00:58	BEGIN CALCULATED DISPLACEMENT OF 414 BBLS FRESH WATER WITH 10-GALS MMCR IN FIRST 20 BBLS. SPACER TO SURFACE @ 290 AWAY, MUD ENGINEER OVERBOARDED AT 220 BBLS INTO DISPLACEMENT. CEMENT TO SURFACE @ 362 BBLS AWAY WITH TOTAL OF 52 BBLS CEMENT TO SURFACE. PUMP RATE 7 BBLS/MIN @ 3,200 PSI.
19	Bump Plug	2/18/2023	07:58:29	PLUG BUMPED AT CALCULATED DISPLACEMENT. FINAL CIRCULATING PRESSURE 2,770 PSI PRESSURED 500 PSI OVER BUMP.
20	Check Floats	2/18/2023	08:00:26	RELEASED PRESSURE, FLOATS HELD, 4.5 BBLS BACK.

21	End Job	2/18/2023	08:01:40	STOP RECORDING JOB DATA.
22	Safety Meeting - Pre Rig-Down	2/18/2023	08:15:00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION SPECIFIC HAZARDS, PINCH POINTS RIGGING DOWN/RACKING UP IRON AND HOSES.
23	Rig-Down Equipment	2/18/2023	08:45:00	RIG DOWN BULK AND MIXING EQUIPMENT.
24	Rig-Down Completed	2/18/2023	10:00:00	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL AND LOCATION WAS CLEAN.
25	Depart Location Safety Meeting	2/18/2023	10:15:00	CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
26	Crew Leave Location	2/18/2023	10:30:00	THANK YOU FOR USING HALLIBURTON – NICK PETERSON AND CREW.

3.0 Attachments

3.1 Real Time iCem Job Chart