

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

For: Josh Johnson

Date: Wednesday, March 15, 2023

COSSLETT 1E-22H-H168

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Job Date: Wednesday, March 15, 2023

Sincerely,

Nick Roles and Crew

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 COSSLETT 1E-22H-H168 Conductor. 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 25bbls 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 #:	05-123-51953
County:	Weld
Field:	Wattenberg
Legal Discription:	SENE SEC 22 TOWN 1N RANGE 68W

Job Times			
	Date (mm/dd/yyyy)	Time (hh:mm)	Time Zone
Requested Time On Location:	03/15/2023	12:00	MTN
Called Out Time:	03/15/2023	06:00	MTN
Arrived On Location:	03/15/2023	06:00	MTN
Job Started:	03/15/2023	14:20	MTN
Job Completed:	03/15/2023	16:00	MTN
Departed Location:	03/15/2023	17:00	MTN

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	65
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	WBM
3	Mud density	ppg	8.8
4	Casing set depth (shoe)	ft	606
5	TVD	ft	606
6	Float collar depth	ft	549
7	Length of rate hole	ft	10
8	Previous casing shoe depth	ft	145
9	Pre-job mud circulation time	hh:mm	00:30

10	Pre-job mud circulation rate	bpm	5
11	Pre-job mud circulation volume	bbls	60
12	Pre-job mud circulation pressure	psi	50
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	83
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	50
18	Fluid returns to surface	Spacer/Cement, bbls	Cement
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	110
20	Number of Centralizers	-	15
21	Number of plugs	-	2

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	
Chlorides	<3000	ppm	3000 ppm	Can shorten thickening time

1.4 Actual Pump Schedule

	Density (ppg)	Volume (bbls)	Yield (ft ³ /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid						
1st stage Cement	14.2	116	1.15	5.74	567	3254
2nd stage Cement	14.2	72.4	1.15	5.74	353	2026
Tail Cement	NA					
Top Plug	2					
1st stage Displacement Fluid	8.33	85				3570
2nd stage Displacement Fluid	8.33	46				1932

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/mi n)	Pump B Pressure (psi)	Cmb Stg Total (bbl)	Comments
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	3/15/2023	06:00:00	USER					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
Event	2	Call Out	Call Out	3/15/2023	06:00:00	USER					Called out by service coordinator for OL time of 1200.
Event	3	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/15/2023	11:45:00	USER					Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.

Event	4	Rig-Up Equipment	Rig-Up Equipment	3/15/20 23	12:00:0 0	USER						Begin rig up with crew.
Event	5	Other	Other	3/15/20 23	12:30:0 0	USER						Mix water test results- PH-7, Chlo-0, Temp-65F.
Event	6	Rig-Up Completed	Rig-Up Completed	3/15/20 23	12:30:0 0	USER						Complete rig up for job to nearest point before red zone.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/15/20 23	12:45:0 0	USER						Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
Event	8	Start Job	Start Job	3/15/20 23	13:20:1 0	NONE	8.06	0.00	3.68	0.00		TD-606', TP-596' 13.375" 54.5#, FC-549', OH-17.5", Cond.-145' 20# 19.5" ID, MUD-8.7#
Event	9	Test Lines	Test Lines	3/15/20 23	13:22:0 1	NONE	8.28	0.00	-1.38	2.99		Pumped 5bbls fresh water to fill lines, shutdown, closed manifold, performed 500psi k/o function test, continued with 5th gear stall at 1350psi, proceeded to bring pressure to 3500psi. Held well, no leaks.

Event	10	Pump Cement	Pump Cement	3/15/20 23	13:29:3 7	NONE	8.38	0.00	16.03	0.00	Pumped 567sks or 116bbbls of 14.2# 1.15y 5.74g/s SwiftCem at 4bpm 100psi.
Event	11	Check Weight	Check Weight	3/15/20 23	13:32:2 0	NONE	14.94	2.65	80.26	6.76	Weight verified with pressurized mud scales.
Event	12	Check Weight	Check Weight	3/15/20 23	13:34:0 3	NONE	15.15	3.38	122.91	12.09	Weight verified with pressurized mud scales.
Event	13	Check Weight	Check Weight	3/15/20 23	13:36:3 3	NONE	14.18	4.20	171.01	22.44	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	3/15/20 23	13:50:3 2	NONE	14.13	5.30	252.66	95.99	Weight verified with pressurized mud scales.
Event	15	Shutdown	Shutdown	3/15/20 23	13:56:0 3	NONE	14.93	0.00	99.64	121.00	
Event	16	Drop Top Plug	Drop Top Plug	3/15/20 23	13:59:5 8	NONE	14.98	0.00	9.65	121.00	Dropped by tool hand witnessed by HES supervisor and company man.
Event	17	Pump Displacement	Pump Displacement	3/15/20 23	14:00:0 0	NONE	14.98	0.00	9.73	0.00	Displaced first 10bbbls with cement water, followed by 75bbbls fresh water, total 85bbbl displacement.

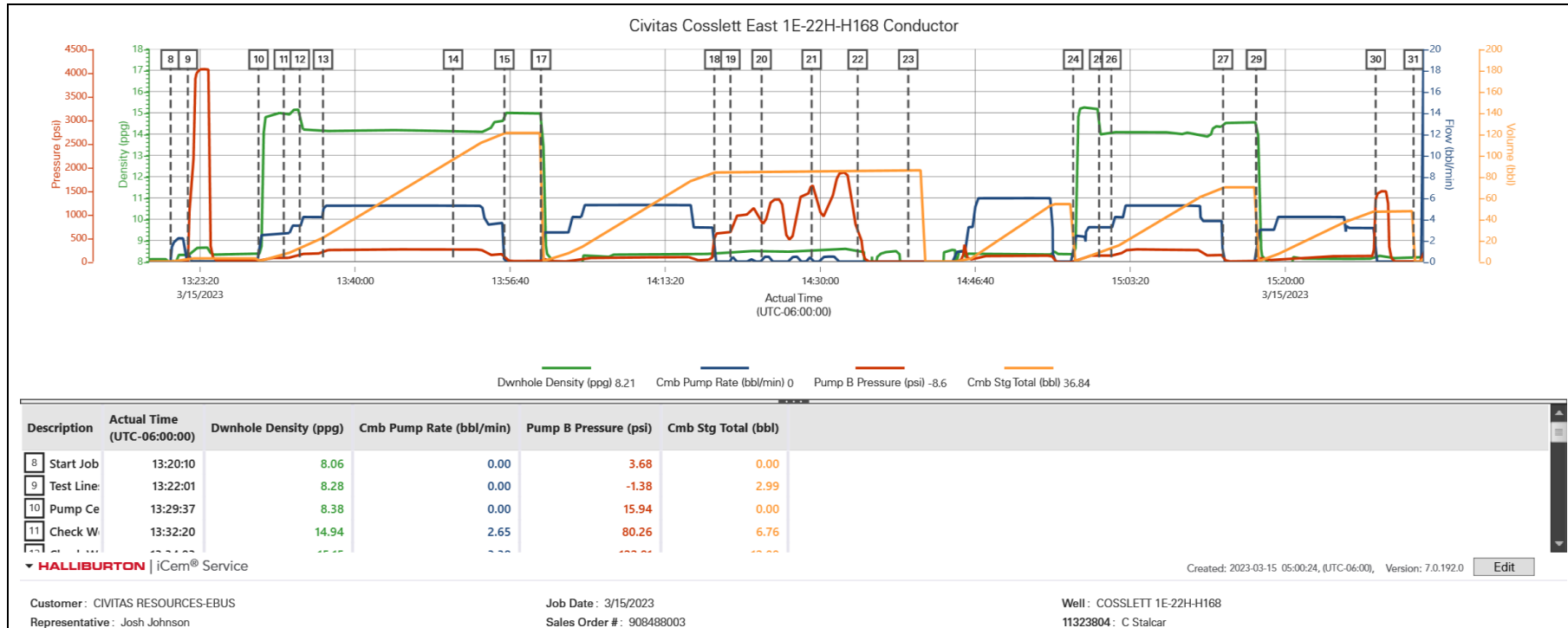
Event	18	Bump Plug	Bump Plug	3/15/20 23	14:18:3 7	NONE	8.41	0.00	503.21	83.91	Slowed down to 3bpm at 75bbls away, final circulating pressure- 50psi, Bump Pressure 600psi.
Event	19	Other	Other	3/15/20 23	14:20:2 1	NONE	8.43	0.00	614.12	83.91	Inflate packer to 850, 1140psi until opened and fell to 711psi, engaged at 1/2bpm to 1300psi.
Event	20	Other	Other	3/15/20 23	14:23:4 2	NONE	8.48	0.00	797.41	84.18	Released pressure to 600psi, 1/4bbl back.
Event	21	Other	Other	3/15/20 23	14:29:0 5	NONE	8.57	0.00	1636.81	85.13	Brought pressure up to 1800psi, released to 600psi, getting 1/2bbl back.
Event	22	Other	Other	3/15/20 23	14:34:0 2	NONE	8.50	0.00	595.66	85.89	Released pressure and got 1bbls back, floats held.
Event	23	Drop Opening Device For Multiple Stage Cementer	Drop Opening Device For Multiple Stage Cementer	3/15/20 23	14:39:2 8	USER	-0.84	0.00	-8.09	85.89	Dropped Bomb Opened Tool at 1bpm to 350psi, 1bbl to open. Continued pumping additional 50bbls to circulate clean.
Event	24	Pump Cement	Pump Cement	3/15/20 23	14:57:1 2	USER	8.36	0.00	-8.97	0.00	Pumped 353sks or 72.4bbl of 14.2# 1.15y 5.74g/s SwiftCem at 5bpm 110psi.

Event	25	Check Weight	Check Weight	3/15/20 23	14:59:5 9	NONE	14.00	3.24	122.64	7.73	Weight verified with pressurized mud scales.
Event	26	Check Weight	Check Weight	3/15/20 23	15:01:1 8	NONE	14.01	3.24	119.31	12.04	Weight verified with pressurized mud scales.
Event	27	Shutdown	Shutdown	3/15/20 23	15:13:1 9	NONE	14.55	0.00	91.99	69.92	
Event	28	Drop Top Plug	Drop Top Plug	3/15/20 23	15:16:5 1	NONE	14.55	0.00	5.27	69.92	Dropped by tool hand witnessed by HES supervisor and company man.
Event	29	Pump Displacement	Pump Displacement	3/15/20 23	15:16:5 3	NONE	14.55	0.00	5.18	0.00	Displaced first 10bbbls with cement water, followed by 36bbbls fresh water, total of 46bbbls Fresh water Displacement.
Event	30	Bump Plug	Bump Plug	3/15/20 23	15:29:4 3	NONE	8.27	0.00	1328.34	47.48	Slowed down to 3bpm at 36bbbls away, final circulating pressure-110psi, Bump Pressure 620psi.
Event	31	Check Floats	Check Floats	3/15/20 23	15:31:3 3	USER	8.17	0.00	24.90	47.48	Released pressure and got 1.5bbbls back, floats held.
Event	32	End Job	End Job	3/15/20 23	15:33:4 8	NONE	8.17	0.00	-7.19	0.00	Got 25bbbls cement to surface.

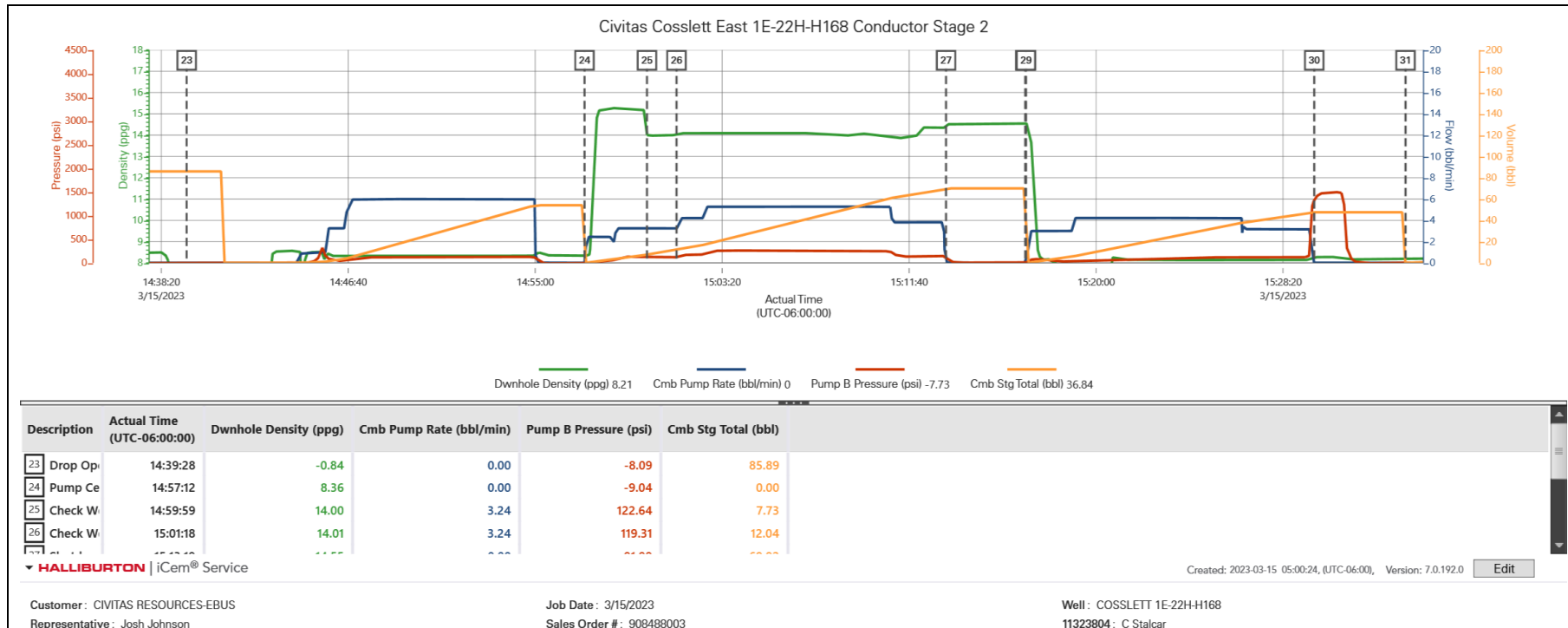
Event	33	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/15/2023	15:35:20	USER	8.19	15.03	257.79	10.98	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
Event	34	Rig Down Lines	Rig Down Lines	3/15/2023	15:40:00	USER	8.21	0.00	-8.84	36.84	Begin rig down
Event	35	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/15/2023	16:15:00	USER					Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.
Event	36	Rig-Down Completed	Rig-Down Completed	3/15/2023	16:15:00	USER					Rig down complete with no injuries, spills or damage to equipment.
Event	37	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	3/15/2023	16:30:00	USER					Depart location, if applicable journey will be submitted.

3.0 Attachments

3.1 COSSLETT 1E-22H-H168-Custom Results.png



3.2 Stage 2.png



3.3 Stage 1.png

