

# HALLIBURTON

iCem<sup>®</sup> Service

## **CRESTONE PEAK RESOURCES-EBUS**

**For: Sam Mares**

Date: Thursday, March 16, 2023

**COSSLETT 1F-22H-H168**

COSSLETT 1F-22H-H168

Job Date: Thursday, March 16, 2023

Sincerely,

**Nick Roles and Crew**

## Legal Notice

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### Disclaimer:

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## Table of Contents

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Cementing Job Summary .....	4
Executive Summary .....	4
Job Overview .....	5
Water Field Test .....	7
Actual Pump Schedule .....	7
Real-Time Job Summary .....	8
Job Event Log .....	8
Attachments .....	14
COSSLETT 1F-22H-H168-Custom Results.png .....	14
Stage 2.png .....	15
Stage 1.png .....	16

## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the COSSLETT 1F-22H-H168 CONDUCTOR 2 STAGE. 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 #:	05-123-51950
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:	03/16/2023	00:30	MTN
Called Out Time:	03/15/2023	18:30	MTN
Arrived On Location:	03/16/2023	00:00	MTN
Job Started:	03/16/2023	01:20	MTN
Job Completed:	03/16/2023	03:20	MTN
Departed Location:	03/16/2023	17:00	MTN

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	35
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	WBM
3	Mud density	ppg	8.8
4	Casing set depth (shoe)	ft	594
5	TVD	ft	594
6	Float collar depth	ft	547.4
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

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	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
<b>pH</b>	7		6.0 - 8.0	Chemicals in water can cause severe retardation
<b>Temperature</b>	65	F	60 - 80 F	
<b>Chlorides</b>	<3000	ppm	3000 ppm	Can shorten thickening time

### 1.4 Actual Pump Schedule

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	Density (ppg)	Volume (bbls)	Yield (ft <sup>3</sup> /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
<b>Spacer Fluid</b>						
<b>1<sup>st</sup> stage Cement</b>	14.2	116	1.15	5.74	567	3254
<b>2<sup>nd</sup> stage Cement</b>	14.2	72.4	1.15	5.74	353	2026
<b>Tail Cement</b>	NA					
<b>Top Plug</b>	2					
<b>1<sup>st</sup> stage Displacement Fluid</b>	8.33	85				3570
<b>2<sup>nd</sup> stage Displacement Fluid</b>	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	Call Out	Call Out	3/15/2023	18:30:00	USER					Called out by service coordinator for OL time of 0030.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/15/2023	20:45:00	USER					Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	3/15/2023	21:00:00	USER					Depart from service center or other job site.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	3/15/2023	22:00:00	USER					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.

Event	5	Other	Other	3/15/20 23	23:30:0 0	USER					Mix water test results- PH-7, Chlo-0, Temp- 65F.
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/16/20 23	00:00:0 0	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	7	Rig-Up Equipment	Rig-Up Equipment	3/16/20 23	00:05:0 0	USER					Begin rig up with crew.
Event	9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/16/20 23	00:30:0 0	USER	8.27	0.00	-20.56	0.00	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
Event	8	Rig-Up Completed	Rig-Up Completed	3/16/20 23	00:30:0 0	USER	8.27	0.00	-20.56	0.00	Complete rig up for job to nearest point before red zone.
Event	10	Start Job	Start Job	3/16/20 23	01:30:2 4	NONE	8.26	0.00	0.48	0.00	TD-604', TP-594' 13.375" 54.5#, FC- 547.4', OH-17.5", Cond.-145' 20# 19.5" ID, MUD-8.7#

Event	11	Test Lines	Test Lines	3/16/2023	01:32:49	NONE	8.35	0.00	51.13	3.06	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	12	Pump Cement	Pump Cement	3/16/2023	01:35:43	NONE	8.30	0.00	117.04	0.00	Pumped 567sks or 116bbls of 14.2# 1.15y 5.74g/s SwiftCem at 5bpm 250psi.
Event	13	Check Weight	Check Weight	3/16/2023	01:42:29	NONE	14.00	2.76	120.25	5.63	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	3/16/2023	01:45:52	NONE	14.27	4.19	236.98	19.70	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check Weight	3/16/2023	01:50:15	NONE	14.33	5.45	342.49	40.66	Weight verified with pressurized mud scales.
Event	16	Shutdown	Shutdown	3/16/2023	02:05:30	NONE	15.18	0.00	95.52	113.86	
Event	17	Drop Top Plug	Drop Top Plug	3/16/2023	02:09:45	NONE	15.08	0.00	21.14	113.86	Dropped by tool hand witnessed by HES supervisor and company man.

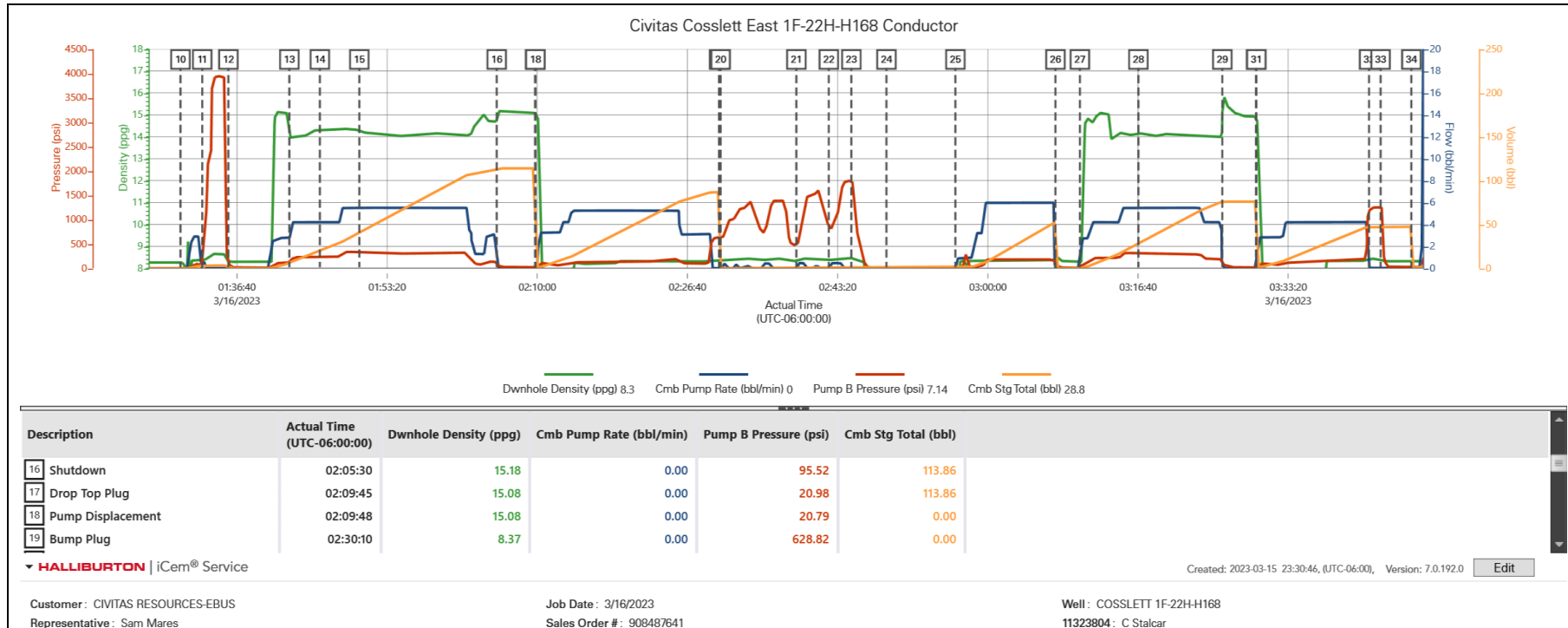
Event	18	Pump Displacement	Pump Displacement	3/16/2023	02:09:48	NONE	15.08	0.00	20.87	0.00	Displaced first 10bbls with cement water, followed by 75bbls fresh water, total 85bbl displacement.
Event	19	Bump Plug	Bump Plug	3/16/2023	02:30:10	NONE	8.37	0.00	628.82	0.00	Slowed down to 3bpm at 75bbls away, final circulating pressure-95psi, Bump Pressure 600psi.
Event	20	Other	Other	3/16/2023	02:30:21	NONE	8.37	0.00	626.55	0.00	Inflate packer to 990, 1225psi until opened at 1396psi and fell to 711psi, engaged at 1/2bpm to 1400psi.
Event	21	Other	Other	3/16/2023	02:38:45	NONE	8.33	0.00	473.39	0.74	Released pressure to 650psi, 1/2bbl back.
Event	22	Other	Other	3/16/2023	02:42:21	NONE	8.38	0.00	845.13	1.26	Brought pressure up to 1450psi, released to 1630psi, dropped to 700psi. Closed at 1790psi. released to 650psi getting 1/2bbl back.
Event	23	Other	Other	3/16/2023	02:44:51	NONE	8.47	0.00	1794.86	1.91	Released pressure and got 1bbls back, floats held.
Event	24	Drop Ball	Drop Ball	3/16/2023	02:48:45	NONE	-1.11	0.00	5.07	1.91	Dropped Bomb

Event	25	Other	Other	3/16/20 23	02:56:2 4	NONE	-1.14	0.00	4.02	1.91	Opened Tool at 1bpm to 360psi, 1bbl to open. Pumped additional 50bbls fresh water at 5bpm to ensure circulation and circulate bottoms up.
Event	26	Pump Cement	Pump Cement	3/16/20 23	03:07:3 0	NONE	7.94	0.00	91.99	0.00	Pumped 353sks or 72.4bbl of 14.2# 1.15y 5.74g/s SwiftCem at 5bpm 110psi.
Event	27	Check Weight	Check Weight	3/16/20 23	03:10:1 3	NONE	8.32	0.00	4.78	0.00	Weight verified with pressurized mud scales.
Event	28	Check Weight	Check Weight	3/16/20 23	03:16:4 2	NONE	14.16	5.47	298.08	27.90	Weight verified with pressurized mud scales.
Event	29	Shutdown	Shutdown	3/16/20 23	03:26:0 1	NONE	15.12	0.00	131.37	75.90	
Event	30	Drop Top Plug	Drop Top Plug	3/16/20 23	03:29:4 5	NONE	14.92	0.00	16.34	75.90	Dropped by tool hand witnessed by HES supervisor and company man.
Event	31	Pump Displacement	Pump Displacement	3/16/20 23	03:29:4 8	NONE	14.92	0.00	16.54	0.00	Displaced first 10bbls with cement water, followed by 36bbls fresh water, total of

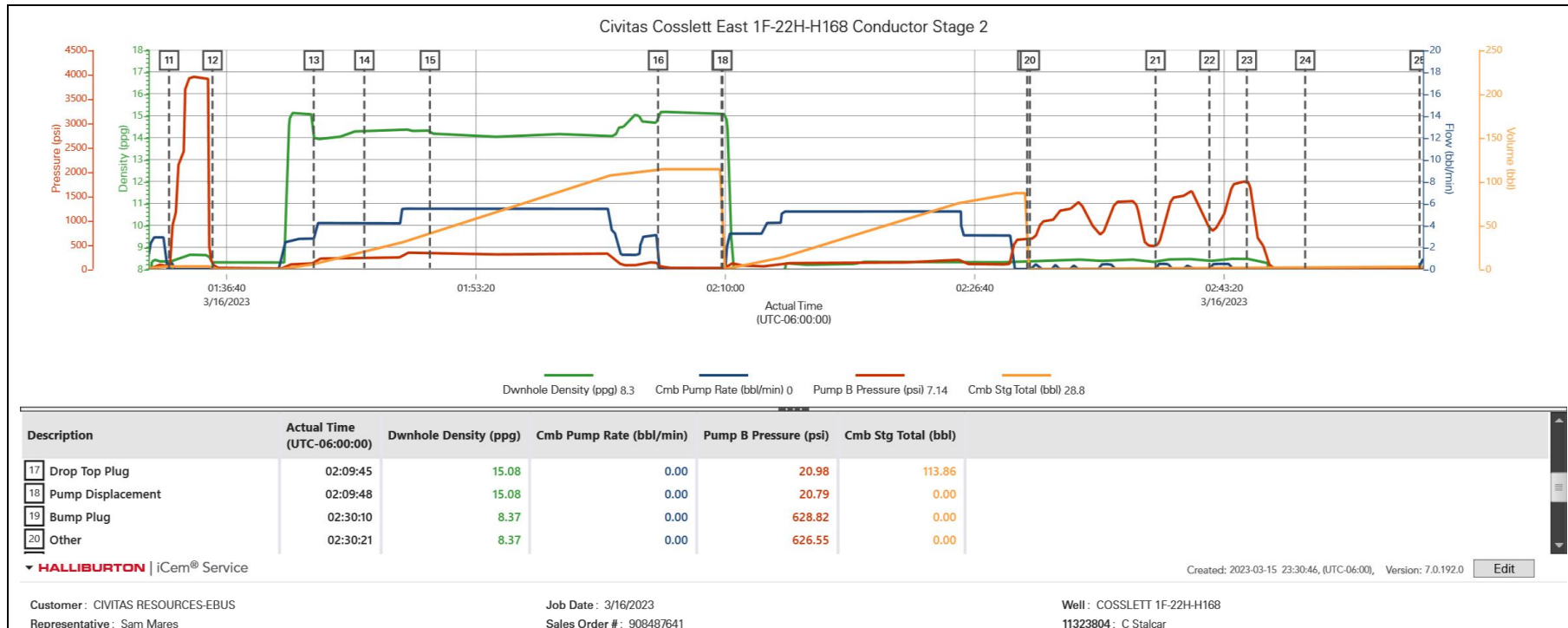
												46bbls Fresh water Displacement.
Event	32	Bump Plug	Bump Plug	3/16/20 23	03:42:1 8	NONE	8.44	0.00	1175.68	47.31		Slowed down to 3bpm at 36bbls away, final circulating pressure-110psi, Bump Pressure 1220psi.
Event	33	Other	Other	3/16/20 23	03:43:3 5	NONE	8.43	0.00	1247.54	47.31		Released pressure and got 1.5bbls back, floats held.
Event	34	End Job	End Job	3/16/20 23	03:47:0 0	NONE	8.31	0.00	9.58	0.00		Got 25bbls cement to surface.
Event	35	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/16/20 23	03:50:0 0	USER	8.33	8.01	389.11	26.23		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	36	Rig Down Lines	Rig Down Lines	3/16/20 23	04:00:0 0	USER						Begin rig down
Event	37	Rig-Down Completed	Rig-Down Completed	3/16/20 23	04:30:0 0	USER						Rig down complete with no injuries, spills, or damage to equipment.

3.0 Attachments

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



3.2 Stage 2.png



3.3 Stage 1.png

