

# HALLIBURTON

iCem<sup>®</sup> Service

## **CRESTONE PEAK RESOURCES-EBUS**

**For: Josh Johnson**

Date: Friday, March 17, 2023

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

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Job Date: Friday, March 17, 2023

Sincerely,

**Nick Roles and Crew**

## Legal Notice

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### Disclaimer:

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## 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 1H-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 #:	05-123-51942
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:	03/17/2023	06:00	MTN
Called Out Time:	03/17/2023	00:00	MTN
Arrived On Location:	03/17/2023	00:00	MTN
Job Started:	03/17/2023	07:40	MTN
Job Completed:	03/17/2023	09:30	MTN
Departed Location:	03/17/2023	10:00	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	598
5	TVD	ft	598
6	Float collar depth	ft	551.6
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	85
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	85
18	Fluid returns to surface	Spacer/Cement, bbls	Cement
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	235
20	Number of Centralizers	-	15
21	Number of plugs	-	1

### 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>1<sup>st</sup> stage Cement</b>	14.2	116	1.15	5.74	567	3254
<b>2<sup>nd</sup> stage Cement</b>	NA	NA	NA	NA	NA	NA
<b>Tail Cement</b>	NA					
<b>Top Plug</b>	1					
<b>1<sup>st</sup> stage Displacement Fluid</b>	8.33	86				3612
<b>2<sup>nd</sup> stage Displacement Fluid</b>	NA	NA				NA

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	3/17/2023	00:00:00	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	3/17/2023	00:00:00	USER					Called out by service coordinator for OL time of 0600.
Event	3	Other	Other	3/17/2023	05:45:00	USER					Mix water test results- PH-7, Chlo-0, Temp-65F.
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/17/2023	06:00:00	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	5	Rig-Up Equipment	Rig-Up Equipment	3/17/20 23	06:15:0 0	USER					Begin rig up with crew.
Event	6	Rig-Up Completed	Rig-Up Completed	3/17/20 23	06:45:0 0	USER	-1.15	0.00	-34.30	0.00	Complete rig up for job to nearest point before red zone.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/17/20 23	06:45:0 0	USER	-1.15	0.00	-34.30	0.00	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	3/17/20 23	07:40:2 8	NONE	8.66	0.00	-10.66	0.00	TD-608', TP-598' 13.375" 54.5#, FC-551.6', OH-17.5", Cond.-145' 20# 19.5" ID, MUD-8.7#
Event	9	Pump Cement	Pump Cement	3/17/20 23	07:44:2 2	NONE	8.60	0.00	3882.31	0.00	Pumped 567sks or 116bbbls of 14.2# 1.15y 5.74g/s SwiftCem at 4bpm 100psi.
Event	10	Check Weight	Check Weight	3/17/20 23	07:50:4 3	NONE	15.24	2.69	115.88	5.79	Weight verified with pressurized mud scales.
Event	11	Check Weight	Check Weight	3/17/20 23	07:53:5 8	NONE	14.34	4.21	246.86	19.14	Weight verified with pressurized mud scales.

Event	12	Check Weight	Check Weight	3/17/20 23	08:04:2 7	NONE	14.23	4.19	214.63	63.17	Weight verified with pressurized mud scales.
Event	13	Shutdown	Shutdown	3/17/20 23	08:16:3 7	NONE	14.85	0.00	51.08	108.84	
Event	14	Drop Top Plug	Drop Top Plug	3/17/20 23	08:19:1 4	NONE	14.81	0.00	-2.24	108.84	Dropped by tool hand witnessed by HES supervisor and company man.
Event	15	Pump Displacement	Pump Displacement	3/17/20 23	08:19:1 6	NONE	14.81	0.00	-2.35	0.00	Displaced first 10bbls with cement water, followed by 75bbls fresh water, total 85bbl displacement.
Event	16	Bump Plug	Bump Plug	3/17/20 23	08:38:4 4	USER	8.35	3.14	214.76	84.22	Slowed down to 3bpm at 75bbls away, final circulating pressure- 235psi, Bump Pressure 620psi.
Event	17	Other	Other	3/17/20 23	08:41:1 9	NONE	8.37	0.00	699.95	0.00	Slowed down to 3bpm at 75bbls away, final circulating pressure- 40psi, Bump Pressure 550psi.
Event	18	Other	Other	3/17/20 23	08:44:3 9	USER	8.42	0.00	1155.53	0.28	Inflate packer to 750, 950, 1150psi until opened at 1280psi and fell to 890psi holding.

Event	19	Other	Other	3/17/20 23	08:50:3 4	USER	8.45	0.00	1459.54	0.63	Released pressure to 750psi, 1/4bbl back.
Event	20	Other	Other	3/17/20 23	08:57:1 3	NONE	8.34	0.00	622.51	1.24	Brought pressure up to 725psi, 950psi, 1345psi, Released at 1490psi dropped to 725psi. released to 725psi getting 1/4bbl back.
Event	21	Other	Other	3/17/20 23	09:07:5 4	NONE	5.69	0.00	-18.95	1.24	Released pressure and got 1bbls back, floats held.
Event	22	Drop Ball	Drop Ball	3/17/20 23	09:13:0 1	NONE	8.24	0.00	-19.09	0.00	Dropped DV Closing plug, pressured up to 1480psi holding.
Event	23	Other	Other	3/17/20 23	09:19:1 3	NONE	8.30	0.00	286.94	1.25	Released pressure, check floats, 1bbl back.
Event	24	Other	Other	3/17/20 23	09:22:5 6	USER	8.38	0.49	613.41	0.89	Pressure up to 1250psi, hold 5min.
Event	25	Other	Other	3/17/20 23	09:27:4 2	NONE	8.29	0.00	241.68	0.96	Released pressure, 3/4bbl back. Floats holding.
Event	26	End Job	End Job	3/17/20 23	09:30:0 2	NONE	8.27	0.00	-23.96	0.00	Got 25bbls cement to surface. Did not pump 2nd stage.

Event	27	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/17/2023	09:35:00	USER	8.25	0.00	-22.58	0.00	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	28	Rig Down Lines	Rig Down Lines	3/17/2023	09:45:00	USER					Begin rig down
Event	29	Rig-Down Completed	Rig-Down Completed	3/17/2023	10:30:00	USER					Rig down complete with no injuries, spills or damage to equipment.

## 3.0 Attachments

### 3.1 COSSLETT 1H-22H-H168 -Custom Results (1).png

