

# HALLIBURTON

iCem<sup>®</sup> Service

## **CRESTONE PEAK RESOURCES-EBUS**

Ft. Lupton District, Colorado

**For: Sam Mars**

Date: Thursday, March 30, 2023

**Cosslett East**

Weld, Cosslett

Job Date: Thursday, March 30, 2023

Sincerely,

**Luke Kosakewich**

## 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 **Well Name and Number - Job Type**. 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 XX 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 #:	05-123-51953
City, County:	Erie, Weld
Field:	WATTENBERG
Legal Description:	SENE S22 T1N R68W

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	03/29/2023	22:30
Called Out Time:	03/29/2023	16:30
Arrived On Location:	03/29/2023	16:30
Job Started:	03/30/2023	03:47
Job Completed:	03/30/2023	05:01
Departed Location:	03/30/2023	06:15

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	26
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	Water
3	Mud density	ppg	8.7
4	Casing set depth (shoe)	ft	2,544'
5	TVD	ft	2,544'
6	Float collar depth	ft	2,495'
7	Length of rate hole	ft	15'
8	Previous casing shoe depth	ft	604'
9	Pre-job mud circulation time	hh:mm	00:30

10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	147
12	Mud circulation pressure at start of cement	psi	400
13	Annual flow before the start of job	Y/N	No
14	Pipe movement during cement job	Y/N	No
15	Calculated displacement	bbls	192.8
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	99
18	Fluid returns to surface	Spacer/Cement, bbls	23
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	900 psi, 2 bbl/min
20	Number of Centralizers	-	21
21	Number of bottom 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>	60	F	60 - 80 F	Can can pre-mature setting of cement
<b>Chlorides</b>	0	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 Fresh Water</b>	8.33	20				
<b>Cement</b>	14.2	176	1.15	5.74	860	4936
<b>Displacement Fluid Fresh Water</b>	8.33	192.8				

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Pump A Pressure (psi)	Dnwhol e Density (ppg)	Cmb Pump Rate (bbl/min)	Cmb Stg Total (bbl)	Comments
Event	1	Call Out	Call Out	3/29/2023	17:30:00	USER					Crew was Called out at 16:30 March 29th for an on-location time of 22:30. Crew was on location at time of call out completing their 10-hour reset. Crews DOT reset was completed at 19:00.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/29/2023	19:55:00	USER					Held a pre convoy safety meeting.
Event	3	Arrive at Shop	Arrive at Shop	3/29/2023	20:30:00	USER					Crew had a safety huddle, and all got all equipment ready for the job.
Event	4	Depart from Service Center or Other Site	Depart from Service Center or Other Site	3/29/2023	21:00:00	USER					Left the yard and on routed to rig.

Event	5	Arrive at Location from Service Center	Arrive at Location from Service Center	3/29/2023	21:30:00	USER						Arrived back at location with oil for the oilers. and checked in with the company man. Discussed the job with the Company Man. Well bore: OH: 12.25", CSG: 9.625", 36#, PC: 11.375", 54.4#, TD:2,559', TP: 2,544', ST; 49', FC: 2,495'.
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/29/2023	21:40:00	USER						Held a pre rig up safety meeting. pe rig up safety meeting with the crew.
Event	7	Rig-Up Equipment	Rig-Up Equipment	3/29/2023	21:50:00	USER						Rigged up all line's pumps and hoses for the job.
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/30/2023	03:20:00	USER	-0.62	-1.15	0.00	1.78		Held a pre job safety meeting with all affected personnel.
Event	9	Start Job	Start Job	3/30/2023	03:47:00	NONE	103.84	8.73	0.00	3.54		Pumped 3 bbls of fresh water at 3 bbl/min. to fill lines.

Event	10	Test Lines	Test Lines	3/30/20 23	03:47:1 0	NONE	84.92	8.72	0.00	3.54	Shut in the manifold. pressured up to 2,459 psi to test lines. Pressure was falling 1 psi. for ever three seconds. Pressure held and test was good. Bled off pressure.
Event	11	Pump Spacer 1	Pump Spacer 1	3/30/20 23	03:49:5 0	NONE	50.31	8.64	0.00	0.00	Pumped 20 bbls of freshwater spacer with green dye at 3 bpm.
Event	12	Pump Cement	Pump Cement	3/30/20 23	03:56:2 3	USER	101.32	8.71	3.16	0.21	Pumped 176 bbls of Swifter away at 7 bbl/min with a pressure of 450 psi. Density was 14.2 ppg., Yield is 1.15 cubic ft/sk, 5.74 gal/sk requirement.
Event	13	Check Weight	Check Weight	3/30/20 23	04:07:3 9	NONE	423.87	14.13	7.04	75.85	Cement weighed up at 14.2 ppg. Density was verified by pressurized scales.
Event	14	Shutdown	Shutdown	3/30/20 23	04:23:4 3	NONE	78.70	17.29	0.00	181.34	Pumped all cement away and shut down to up lines.

Event	15	Drop Top Plug	Drop Top Plug	3/30/20 23	04:24:3 1	NONE	9.41	17.03	0.00	181.34	Dropped top plug witnessed by the customer. verified by tattle tale.
Event	16	Pump Displacement	Pump Displacement	3/30/20 23	04:24:3 3	NONE	9.28	17.01	0.00	0.00	Pumped 193 bbls of fresh water at 8 bpm. to displace the plug.
Event	17	Spacer Returns to Surface	Spacer Returns to Surface	3/30/20 23	04:46:1 0	USER	893.59	7.48	8.03	145.74	Started to return spacer freshwater spacer with green dye to surface.
Event	18	Other	Other	3/30/20 23	04:48:4 3	NONE	963.77	7.48	7.38	165.44	Pumped cement returns to surface 165 bbl into displacement.
Event	19	Bump Plug	Bump Plug	3/30/20 23	04:58:0 6	NONE	834.59	7.44	1.97	188.41	Bumped the plug 500 psi over 900 psi at 2 bbl/min.
Event	20	Other	Other	3/30/20 23	04:58:4 0	NONE	1341.74	7.49	0.00	188.90	Held pressure at 1350 psi for two minutes for a casing test. Test was good.
Event	21	Other	Other	3/30/20 23	05:00:1 6	NONE	989.41	7.44	0.00	188.90	Bled off pressure.
Event	22	Other	Other	3/30/20 23	05:01:1 9	NONE	10.30	7.36	0.00	188.90	Check floats. Floats held. Got 1 bbl of fresh water to surface.

Event	23	End Job	End Job	3/30/20 23	05:01:3 4	NONE	9.19	7.36	0.00	0.00	Blew down all pumps and lines until clean and dry.
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/30/20 23	06:00:0 0	USER					Held a pre rig down safety meeting with HSE and rig.
Event	25	Rig-Down Equipment	Rig-Down Equipment	3/30/20 23	06:05:0 0	USER					Rigged down all pumps iron and hoses.
Event	26	Depart Location Safety Meeting	Depart Loc Safty meeting	3/30/20 23	06:15:0 0	USER					Held a pre depart location safety meeting. with my HSE crew.

3.0 Attachments

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