HALLIBURTON

iCem® Service

CRESTONE PEAK RESOURCES

Ft. Lupton District, Colorado

Cosslett East 1L-22H-H168 Production

Job Date: Friday, May 26, 2023

Sincerely,

Rafael Giorgana

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 East 1L-22H-H168 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 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 #:	0512351952
City, County:	Erie, Weld
Field:	Wattenburg

Job Times		
	Date (mm/dd/yyyy)	**Time (hh:mm)**
Requested Time On Location:	05/25/2023	23:00
Called Out Time:	05/25/2023	13:30
Arrived On Location:	05/25/2023	10:00
Job Started:	05/26/2023	04:20
Job Completed:	05/26/2023	08:09
Departed Location:	05/26/2023	09:15

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	65
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.0
4	Casing set depth (shoe)	ft	19,805’
5	TVD	ft	7,837’
6	Float collar depth	ft	19,800’
7	Length of rate hole	ft	7’
8	Previous casing shoe depth	ft	2,543’
9	Pre-job mud circulation time	hh:mm	01:30
10	Pre-job mud circulation rate	bpm	390

11	Pre-job mud circulation volume	bbls	No
12	Mud circulation pressure at start of cement	psi	No
13	Annual flow before the start of job	Y/N	440
14	Pipe movement during cement job	Y/N	HES
15	Calculated displacement	bbls	100%
16	Job displaced by	Rig/HES	120 bbl of spacer 51 bbl of Cement
17	Estimated returns % during job	%	2,200
18	Fluid returns to surface	Spacer/Cement, bbls	300
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	1
20	Number of Centralizers	-	390
21	Number of bottom plugs	-	No

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	Can can pre-mature setting of cement
Chlorides	00	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)
Bottom Plug	1 Bottom Plug					
Spacer Fluid	11.5	120	3.835	24.17	176	4,247
Cap Cement	13	171	1.64	7.96	585	4,657
Lead Cement	13	279	1.57	7.32	996	7,291
Tail Cement	13.2	428	1.56	7.52	1540	11,581
Top Plug	1 Top Plug					
Displacement Fluid	8.33	440	N/A			18,480

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Graph Label	Date	Time	Comments
1	Call Out	Call Out	5/25/2023	13:30:00	Crew was called out 13:30 for an on-location time of 23:00 pm.
2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	5/25/2023	21:00:00	Held a pre convoy safety meeting and 5 checks to go discussion with crew.
3	Crew Leave Yard	Crew Leave Yard	5/25/2023	21:30:00	Cement crew mobilized all equipment and supplies and departed for location.
4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/25/2023	22:00:00	Check in with the Company Man and discussed job processes and well bore schematics. MD: 8.5” OH was drilled to 19,812’, TP: 5.5” 20# set @ 19,805’ Float Collar Set @ 19,800’, TVD: 7,837’, PC: 9.625” 36# Set @ 2,543’, Mud: 9.0 ppg, centralizers: 300.
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/25/2023	22:15:00	Held a JSA with HES crew about rigging up safety. Set the expectations for SQ and designated roles and responsibilities.
6	Rig-Up Equipment	Rig-Up Equipment	5/25/2023	22:30:00	Crew rigged up all line, hoses, pump trucks, bulk vessels, and high-pressure discharge iron.
7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	5/26/2023	02:00:00	Held a safety meeting with all HES and involved third party personnel.

8	Start Job	Start Job	5/26/2023	04:20:00	Pumped 3 bbls of fresh water at 3 bbl/min. Pressure was 390 psi. Shutdown to pressure test and load the top plug.
9	Check Weight	Check Weight	5/26/2023	04:27:54	Batched up spacer and checked weight. Spacer weighed up at 11.5 ppg. Density was verified with pressurized scales.
10	Test Lines	Test Lines	5/26/2023	04:27:57	Pressure tested lines to 4,200 psi. Pressure held. Held pressure for 2 minutes. Bled off pressure.
11	Drop Bottom Plug	Drop Bottom Plug	5/26/2023	04:32:42	Loaded and dropped the bottom plug. Plug drop was verified by the customer and HSE Cement Supervisor on location.
12	Pump Spacer 1	Pump Spacer 1	5/26/2023	04:32:56	Mixed and pumped 120bbls (176 sks) of Tuned Prime Spacer at 6 bbl/min with a density of 11.5 ppg, yield of 3.835 Cu/sk, water requirement: 24.17 gal/sk. Density was verified by pressurized scales.
13	Pump Cap Cement	Pump Cap Cement	5/26/2023	04:53:31	Mixed and pumped 171 bbls (585 sks) of Cap Cement at 9 bbl/min with a density of 13, yield of 1.64 cu/ft, water requirement: 7.96 gsl/sk. Density was verified by pressurized scales.
14	Check Weight	Check Weight	5/26/2023	05:01:19	Cap cement weighed up at 13.0. Density was verified by pressurized scales.
15	Pump Lead Cement	Pump Lead Cement	5/26/2023	05:13:35	Mixed and pumped 279 bbls (996 sks) of Lead Cement at 9 bbl/min with a density of 13, yield of 1.57 cu/ft, water requirement: 7.32 gsl/sk. Density was verified by pressurized scales.

16	Check Weight	Check Weight	5/26/2023	05:18:57	Lead cement weighed up at 12.85. Density was verified by pressurized scales.
17	Check Weight	Check Weight	5/26/2023	05:21:45	Lead cement weighed up at 13. Density was verified by pressurized scales.
18	Pump Tail Cement	Pump Tail Cement	5/26/2023	05:46:17	Mixed and pumped 428 bbls (1540 sks) of Tail cement at 9 bbl/min with a density of 13.2, yield of 1.56 cu/ft, water requirement: 7.53 gsl/sk. Density was verified by pressurized scales.
19	Shutdown	Shutdown	5/26/2023	05:46:51	Cement delivery from silo was very poor due to a popoff valve prematurely releasing pressure.
20	Resume Pumping	Resume Pumping	5/26/2023	05:50:30	Resolved the cement delivery and air supply issue and resumed pumping cement.
21	Shutdown	Shutdown	5/26/2023	06:47:34	Pumped all cement away and shutdown to wash pumps and lines.
22	Clean Lines	Clean Lines	5/26/2023	06:49:38	Pumped 20 bbls of fresh water until lines were and pumps were clean.
23	Shutdown	Shutdown	5/26/2023	06:57:21	Shutdown to load and drop the Top plug. The customer loaded and dropped the bottom plug. HES and Company representative both witnessed the plug drop.
24	Pump Displacement	Pump Displacement	5/26/2023	07:02:46	Pumped 440 bbls of fresh water with MMCR in the first 20 bbls and Biocide throughout the rest of displacement.
25	Bump Plug	Bump Plug	5/26/2023	08:04:04	Bump the plug at 2 bpm 500 psi over 2,200. Final bump pressure was 2,700 psi. Held for 2 minutes. Casing held pressure and casing test was good.
26	Other	Other	5/26/2023	08:08:50	Bled off pressure to check floats. Floats held. Returned 4.5 bbls flowed back to the truck.
27	End Job	End Job	5/26/2023	08:15:59	Estimated tops Cements based on an estimated 120 bbls of Spacer, 51 bbls of Cement back to surface, and differential pressure is TOC: 0', TOL: 2,502', TOT: 9,321'.
28	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	5/26/2023	08:23:41	Crew held a pre rig down safety meeting.

29	Rig-Down Equipment	Rig-Down Equipment	5/26/2023	08:25:28	Crew rigged down iron and stowed away all tool, iron, and equipment.
30	Safety Meeting - Departing Location	Safety Meeting - Departing Location	5/26/2023	08:59:03	Crew held a departing location safety meeting. Discussed rout of travel.
31	Crew Leave Location	Crew Leave Location	5/26/2023	09:15:00	Crew left location. Crew members started their mandatory ten hour reset.

3.0 Attachments

3.1 iCem Real Time Job Chart