

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Ft. Lupton District, CO

Bishop A06-722 Surface

Job Date: Wednesday, February 07, 2024

Sincerely,

Chris Yeung

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 **Bishop A06-722 Surface**. 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 43 bbls of cement were returned to surface. Final pumping pressure was 650psi, followed by a 30-min casing test where floats held bringing 1.5 bbls back to the truck.

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 #:	05-123-52065
City, County:	Eaton WELD
SO#:	909140834

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	2/6/24	20:00
Called Out Time:	2/6/24	14:00
Arrived On Location:	2/6/24	19:00
Job Started:	2/6/24	23:08
Job Completed:	2/7/24	01:17
Departed Location:	2/7/24	03:00

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	60
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	H2O
3	Mud density	ppg	8.33
4	Casing set depth (shoe)	ft	2,062
5	TVD	ft	2,062
6	Float collar depth	ft	2,015.7
7	Length of rate hole	ft	10FT
8	Previous casing shoe depth	ft	NA
9	Pre-job mud circulation time	hh:mm	1:00
10	Pre-job mud circulation rate	bpm	8BPM

11	Pre-job mud circulation volume	bbls	300
12	Mud circulation pressure at start of cement	psi	100
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	155
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	95
18	Fluid returns to surface	Spacer/Cement, bbls	43CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	650
20	Number of Centralizers	-	
21	Number of bottom plugs	-	
22	Number of trucks used preparing/during job	-	5
23	Add hours? If Yes, put #	Y/N and hours	N
24	NPT? If Yes, put #	Y/N and hours	N

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	60	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	1000	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)
Spacer Fluid	8.33	30				
Lead Cement	13.5	197.6	1.79	9.52	620	5902
Tail Cement	14.8	25.4	1.4	6.7	102	684
Top Plug	1					
Displacement Fluid	8.33					

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	2/6/2024	14:00:00	Call out
2	Pre-Convoy Safety Meeting	2/6/2024	17:00:00	Pre-Convoy Safety Meeting
3	Crew Leave Yard	2/6/2024	17:05:00	Crew Leave Yard
4	Arrive at Location from Service Center	2/6/2024	19:00:00	Arrive at Location from Service Center
5	Pre-Rig Up Safety Meeting	2/6/2024	19:30:00	Pre-Rig Up Safety Meeting, Be aware of your surroundings, Use two spotters one in front and one in back of vehicle, Utilize hearing protection, Have good communication and make sure Line of Fire is clear before swinging hammer Identify points were hand/finger can get crushed
6	Rig-Up Equipment	2/6/2024	19:35:00	Rig Up equipment as far as possible, Rig running casing
7	Safety Meeting - Pre Job	2/6/2024	21:56:15	Safety Meeting-Pre job, Eyes on task Use impact gloves Have good communication to identify pinch points between steel hoses, iron and drill pipe and while making up the hammer unions. Identify points were hand/finger can get crushed
8	Start Job	2/6/2024	23:08:09	Begin Recording.

9	Test Lines	2/6/2024	23:10:12	Filled HES lines and Pressure Tested to 4000PSI.
10	Pump Spacer 1	2/6/2024	23:12:09	Pumped 30BBLS of Green Dye Water Spacer. Pumped at a rate of 5.5BPM with a pressure of 100PSI.
11	Pump Lead Cement	2/6/2024	23:17:00	Pumped 620S / 197.655Bbls of 13.5PPG Swiftcem Lead Cement. Pumped at a rate of 6.5BPM with a pressure of 180PSI. Pre job calculated 43BBLS of Lead cement to surface.
12	Pump Tail Cement	2/6/2024	23:53:33	Pumped 102S / 25.4BBLS of 14.8PPG Varicem Tail Cement. Pumped at a rate of 3.5BPM with a pressure of 100PSI. Pre job calculated TOT cement was at 1643.747FT.
13	Shutdown	2/7/2024	00:02:16	Shutdown to Drop Top Plug.
14	Drop Top Plug	2/7/2024	00:09:27	Dropped Top Plug with Scott.
15	Pump Displacement	2/7/2024	00:09:29	Pumped 155BBLS of fresh water displacement. 43BBLS of cement to surface. FCP - 650PSI. BMP P- 1250PSI.
16	Bump Plug	2/7/2024	00:40:22	Plug bumped. 43BBLS of cement to surface. FCP - 650PSI. BMP P- 1250PSI.
17	Pressure Up Well	2/7/2024	00:42:21	Pressured up well to 2612PSI.
18	Other	2/7/2024	00:44:29	Holding 2600PSI for a 30 minute casing test.
19	Other	2/7/2024	01:15:17	25 Minute mark of 30MIN test: 2646PSI.
20	Other	2/7/2024	01:15:19	30 Min mark of 30 MIN Test: 2653PSI. Test Complete. 1.5BBLS back to truck from floats. Floats held. 43BBLS of cement to surface.
21	End Job	2/7/2024	01:16:32	Complete Recording.
22	Pre-Rig Down Safety Meeting	2/7/2024	03:00:00	Pre-Rig Down Safety Meeting
23	Rig-Down Equipment	2/7/2024	03:15:00	Rig-Down Equipment

24	Depart Location Safety Meeting	2/7/2024	04:00:00	Depart Location Safety Meeting, Verify all equipment has been thoroughly pre-tripped. All safety and quality issues should be resolved before proceeding.
25	Crew Leave Location	2/7/2024	04:10:00	Crew leave location

3.0 Attachments

3.1 Case 1-Custom Results.png

