HALLIBURTON

iCem® Service

NOBLE ENERGY INC-EBUS

Ft. Lupton District, CO

Bishop A05-783 Surface
Job Date: Thursday, February 08, 2024

Sincerely,
Chris Yeung

Legal Notice

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Table of Contents

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Bishop A05-783 - 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 48 bbls of cement were returned to surface. Final pumping pressure was 625psi, followed by a 30-min casing Test.

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 #:	05-123-52067-00
City, County:	Eaton, WELD
SO#:	909140490

Job Times		
	Date (mm/dd/yyyy)	**Time (hh:mm)**
Requested Time On Location:	2/8/24	07:00
Called Out Time:	2/8/24	01:00
Arrived On Location:	2/8/24	05:00
Job Started:	2/8/24	08:43
Job Completed:	2/8/24	10:46
Departed Location:	2/8/24	12:30

	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	2,056.6
5	TVD	ft	2056.6
6	Float collar depth	ft	2010
7	Length of rate hole	ft	10
8	Previous casing shoe depth	ft	
9	Pre-job mud circulation time	hh:mm	1:00
10	Pre-job mud circulation rate	bpm	8

11	Pre-job mud circulation volume	bbls	350
12	Mud circulation pressure at start of cement	psi	150
13	Annual flow before the start of job	Y/N	yes
14	Pipe movement during cement job	Y/N	No
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	48 CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	625
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	no
24	NPT? If Yes, put #	Y/N and hours	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	800	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	683
Top Plug	1					
Displacement Fluid	8.33	155				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	2/8/2024	01:00:00	Call out
2	Pre-Convoy Safety Meeting	2/8/2024	03:00:00	Pre-Convoy Safety Meeting
3	Crew Leave Yard	2/8/2024	03:05:00	Crew Leave Yard
4	Arrive at Location from Service Center	2/8/2024	05:00:00	Arrive at Location from Service Center
5	Pre-Rig Up Safety Meeting	2/8/2024	05:30:00	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	2/8/2024	05:40:00	Rig Up equipment as far as possible, Rig running casing
7	Safety Meeting - Pre Job	2/8/2024	08:00:00	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	2/8/2024	08:42:32	Begin Recording.

9	Test Lines	2/8/2024	08:44:22	Filled lines with fresh water and pressure tested HES lines to 4000PSI.
10	Pump Spacer 1	2/8/2024	08:49:04	Pumped 30BBLs of fresh water/Green Dye Spacer. Pumped at a rate of 5.5BPM with a pressure of 150PSI.
11	Pump Lead Cement	2/8/2024	08:56:38	Pumped 620s / 197.6BBLs of 13.5PPG Swiftcem Lead cement. Pumped at a rate of 7.5BPM with a pressure of 250PSI. Pre job calculated 43.2BBLs of Lead cement to surface.
12	Pump Tail Cement	2/8/2024	09:26:51	Pumped 102S / 25.4BBLs of 14.8PPG Varicem Tail Cement. Pumped at a rate of 4.5BPM with a pressure of 130PSI. Pre job calculated TOT cement was at 1764.279FT
13	Shutdown	2/8/2024	09:34:55	Shutdown to load top plug.
14	Drop Top Plug	2/8/2024	09:40:06	Loaded top plug with John.
15	Pump Displacement	2/8/2024	09:40:08	Pumped 155BBLs of fresh water displacement.
16	Bump Plug	2/8/2024	10:10:46	Plug bumped. FCP - 625PSI BMP - 1200PSI.
17	Pressure Up Well	2/8/2024	10:11:12	Brought pressure up to 2600PSI for a casing test. Start of test - 2593PSI @ 10:14AM 25 Minute mark - 2640PSI @10:38 30 Minute mark - 2649PSI @10:43 48BBLs of cement to surface.
18	End Job	2/8/2024	10:45:49	48BBLs of cement to surface. JOB COMPLETE. End Recording.
19	Pre-Rig Down Safety Meeting	2/8/2024	12:00:00	Pre-Rig Down Safety Meeting
20	Rig-Down Equipment	2/8/2024	12:05:00	Rig-Down Equipment
21	Depart Location Safety Meeting	2/8/2024	12:15:00	Depart Location Safety Meeting, Verify all equipment has been thoroughly pre-tripped. All safety and quality issues should be resolved before proceeding.

22	Crew Leave Location	2/8/2024	12:20:00	Crew leave location

3.0 Attachments

3.1 gc.png