HALLIBURTON

iCem® Service

NOBLE ENERGY INC-EBUS

Ft. Lupton District, CO

Noble Bishop A05-755 Surface
WELD
Chevron
Job Date: Saturday, February 10, 2024
SO#909141502

Sincerely,
Chris Yeung

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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 A05-755 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 54 bbls of cement were returned to surface. Final pumping pressure was 580psi, followed by a 30-min casing test where floats held bringing 2.0 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 #:	05-123-52070-00
City, County:	Eaton, WELD
SO#:	909141502

Job Times		
	Date (mm/dd/yyyy)	**Time (hh:mm)**
Requested Time On Location:	2/10/24	0830
Called Out Time:	2/10/24	0330
Arrived On Location:	2/10/24	0730
Job Started:	2/10/24	1212
Job Completed:	2/10/24	1426
Departed Location:	2/10/24	1600

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	61
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	H20
3	Mud density	ppg	8.33
4	Casing set depth (shoe)	ft	2107.5
5	TVD	ft	2107.5
6	Float collar depth	ft	2060.5
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	300
12	Mud circulation pressure at start of cement	psi	150
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	159
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	95
18	Fluid returns to surface	Spacer/Cement, bbls	54CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	580
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	
24	NPT? If Yes, put #	Y/N and hours	

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	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					

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	2/10/2024	03:30:00	Call out
2	Pre-Convoy Safety Meeting	2/10/2024	06:30:00	Pre-Convoy Safety Meeting
3	Crew Leave Yard	2/10/2024	06:35:00	Crew Leave Yard
4	Arrive at Location from Service Center	2/10/2024	07:30:00	Arrive at Location from Service Center
5	Pre-Rig Up Safety Meeting	2/10/2024	07:40:00	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	2/10/2024	07:45:00	Rig Up equipment as far as possible, Rig running casing
7	Safety Meeting - Pre Job	2/10/2024	11:30:00	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	2/10/2024	12:11:43	Begin Recording.
9	Test Lines	2/10/2024	12:14:50	Filled HES lines with fresh water and pressure tested to 4000PSI.
10	Pump Spacer 1	2/10/2024	12:19:40	Pumped 30BBLs of fresh water/green dye spacer. Pumped at a rate of 4BPM with a pressure of 100PSI.
11	Pump Lead Cement	2/10/2024	12:33:54	Pumped 620s / 197.655BBLs of 13.5PPG Swiftcem lead Cement. Pumped at rate 7BPM with a pressure of 270PSI. Pre job calculated 38.9BBLs of cement to surface.
12	Pump Tail Cement	2/10/2024	13:02:14	Pumped 102s / 25.432BBLs of 14.8PPG Varicem Tail cement. Pumped at a rate of 4BPM with a pressure of 200PSI. Pre job calculated TOT was 1815.179FT.
13	Drop Top Plug	2/10/2024	13:15:22	Dropped top plug with John.
14	Pump Displacement	2/10/2024	13:15:25	Pumped 159BBLS of fresh water displacement.
15	Bump Plug	2/10/2024	13:48:50	Bumped plug. FCP - 580PSI. BMP - 1200PSI.
16	Pressure Up Well	2/10/2024	13:54:42	Pressured well to from 1200PSI to 2573PSI. Start of 30 minute casing test. 25min - 2605PSI 30Min - 2613PSI
17	End Job	2/10/2024	14:26:43	Checked floats. 2Bbls back. 54bbls of cement to surface. END JOB.
18	Pre-Rig Down Safety Meeting	2/10/2024	14:35:00	Pre-Rig Down Safety Meeting
19	Rig-Down Equipment	2/10/2024	14:40:00	Rig-Down Equipment
20	Depart Location Safety Meeting	2/10/2024	15:15:00	Depart Location Safety Meeting, Verify all equipment has been thoroughly pre-tripped. All safety and quality issues should be resolved before proceeding.

21	Crew Leave Location	2/10/2024	15:20:00	Crew leave location

3.0 Attachments

3.1 Chevron-Custom Results.png