

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Ft. Lupton District, Colorado

Bishop A18-733 Surface

Job Date: Monday, December 25, 2023

Sincerely,

Meghan Van Zyl

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 A18-733 - 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 44 bbls of cement were returned to surface. Final pumping pressure was 650psi, followed by a 30-min casing test where floats held bringing 1.5bbl 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 #:	05-123-52072-00
City, County:	Galeton, Weld
SO#:	909060268

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	12/25/2023	06:00
Called Out Time:	12/25/2023	00:00
Arrived On Location:	12/25/2023	05:00
Job Started:	12/25/2023	12:52
Job Completed:	12/25/2023	15:03
Departed Location:	12/25/2023	16:40

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	19
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	WBM
3	Mud density	ppg	8.9
4	Casing set depth (shoe)	ft	2069
5	TVD	ft	2068
6	Float collar depth	ft	1993.5
7	Length of rate hole	ft	11
8	Previous casing shoe depth	ft	109
9	Pre-job mud circulation time	hh:mm	00:40
10	Pre-job mud circulation rate	bpm	11

11	Pre-job mud circulation volume	bbls	440
12	Mud circulation pressure at start of cement	psi	250
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	154
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	30 / 44
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	650 @ 2
20	Number of Centralizers	-	17
21	Number of bottom plugs	-	0
22	Number of trucks used preparing/during job	-	3
23	Add hours? If Yes, put #	Y/N and hours	Y / 1
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	63	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	<200	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				1260
Lead Cement	13.5	193.2	1.79	9.52	606	5769
Tail Cement	14.8	25.4	1.4	6.7	102	683
Top Plug	1					
Displacement Fluid	8.33	154				6468

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	12/25/2023	00:00:00	CHEVRON BISHOP A18-733 9 5/8" SURFACE CASING JOB - On location 12/25/23 @ 06:00 AM
2	Safety Meeting - Service Center or other Site	12/25/2023	03:15:00	Review Journey Management And Route With Crew Members
3	Depart from Service Center or Other Site	12/25/2023	03:30:00	Depart From Yard
4	Arrive At Loc	12/25/2023	05:00:00	Talk To Company Man (Dave) : TD = 2079', TP = 2069', ST = 46.5', OH = 13.5", CSG = 9 5/8" 36#, Previous Casing 16" Set @ 109', WF = WBM @ 8.9#, Test Water = pH - 7, Chlorides - < 200 ppm, 63 F.
5	Safety Meeting - Assessment of Location	12/25/2023	05:15:00	Spot Equipment
6	Pre-Rig Up Safety Meeting	12/25/2023	05:30:00	Review JSA With Crew Members
7	Rig-Up Equipment	12/25/2023	06:00:00	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
8	Rig-Up Completed	12/25/2023	07:30:00	Rigged Up All Iron And Hoses Needed For CMT Job With No Issues Or Incidents.
9	Rig-Up Completed	12/25/2023	12:00:00	Rig Up Circulating Swedge and Rig Circulated With Rig Pumps. Rig Circulated From 12:00 PM To 12:40 PM At 460 GPM (11 BPM) With 540 psi, Good Returns.
10	Safety Meeting - Pre Job	12/25/2023	12:40:00	Review Job Procedure And JSA With Rig Hands, Co. Man, And HES Members
11	Start Job	12/25/2023	12:52:05	Start Recording Data
12	Test Lines	12/25/2023	12:54:38	Pressure Test Lines to 3000 PSI

13	Pump Spacer 1	12/25/2023	12:57:54	Pumped 30 bbls of Fresh Water Spacer with Uranine 2313- Green Dye. Total gallons 1260. Pump Rate 6 BPM with 200 PSI.
14	Pump Lead Cement	12/25/2023	13:05:00	Pumped 193.2 bbls of SwiftCem @ 13.5 PPG (606 sk, 1.79 ft3, 9.52 gal/sk). Total gallons 5769. Pump Rate @ 6 BPM with 250 PSI. TOLC=0'
15	Check Weight	12/25/2023	13:07:13	Weight Verified by Mud Scales
16	Pump Tail Cement	12/25/2023	13:36:59	Pumped 25.4 bbls of VariCem @ 14.8 PPG (102 sk, 1.4 ft3, 6.7 gal/sk). Total gallons 683. Pump Rate @ 6 BMP with 200 PSI. TOTC=1,817'
17	Check Weight	12/25/2023	13:40:45	Weight Verified by Mud Scales
18	Shutdown	12/25/2023	13:43:51	Shutdown Pumping Cement
19	Pump Displacement	12/25/2023	13:49:47	Pumped 154 bbls of Fresh Water Displacement. Total gallons 6468. Total 44 bbls Cement to Surface
20	Bump Plug	12/25/2023	14:23:42	Bump Plug / FCP was 650 PSI and took up to 1245 PSI
21	Other	12/25/2023	14:28:16	Start of 30 minute Casing Test with 2608 PSI, 25 Minute into Test Pressure was 2608 PSI. 30 Minutes into Test Pressure was 2607 PSI.
22	Bleed Casing	12/25/2023	14:59:38	Bled Pressure Back To Zero And Got 1.5 bbls Back
23	Check Floats	12/25/2023	15:01:00	Floats Held Good.
24	End Job	12/25/2023	15:03:00	Stop Recording Data
25	Pre-Rig Down Safety Meeting	12/25/2023	15:30:00	Review JSA With HES Crew Members
26	Rig-Down Equipment	12/25/2023	15:40:00	Rig Down Iron, Plug Container, And Hoses Used On Job
27	Rig-Down Completed	12/25/2023	16:15:00	All Equipment Rigged Down With No Issues Or Incidents
28	Safety Meeting - Departing Location	12/25/2023	16:30:00	Review Journey Management And Route With Crew Members

29 Depart Location for Service Center
or Other Site 12/25/2023 16:40:00 Depart location

3.0 Attachments

3.1 Real Time iCem Job Chart

