

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Guttersen CC32-765

Production Casing

Job Date: Sunday, May 29, 2022

Sincerely,

Nick Roles and Crew

Legal Notice

Disclaimer:

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the Guttersen CC32-765 production casing. 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.

Job was pumped per design with an average cement density of 13.13 ppg at 7.63 bbl/min. Cement was displaced with 20 bbl. of treated water with retarder and 315 bbl. of treated freshwater displacement. Plug was landed at 2,413 psi and bumped to 3,004 psi. Pressure was bled off and 4.5 bbl. of fluid was returned to the truck. Approximately 65 bbl. of spacer was returned to surface indicating a top of cement around 1,148'.

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 Fort Lupton

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3932129		Quote #:		Sales Order #: 0907894982				
Customer: NOBLE ENERGY INC-EBUS					Customer Rep: Jim Turner					
Well Name: GUTTERSEN			Well #: CC32-765			API/UWI #: 05-123-49270-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD			State: COLORADO			
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 517						
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX41066					Srv Supervisor: Nicholas Roles					
Job										
Job depth MD		14477ft			Job Depth TVD		6670ft			
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36			0	1949	0	1949
Casing		5.5	4.892	17			0	14477	0	6670
Open Hole Section			8.5				1949	14490	1949	6670
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5	1	CITADEL	14477		Top Plug	5.5	2	CITADEL	
Float Collar	5.5	1	CITADEL	14458		Bottom Plug	5.5	2	CITADEL	
						Centralizers	5.5	179	SUMMIT	

Fluid Data									
Stage #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Spacer	Tuned Prime Cement Spacer	120	bbl	11.5	3.88	0	6	4244
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Cap Cement	ElastiCem™	140	sack	13.2	1.6	7.63	6	1068
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Lead Cement	ElastiCem™	696	sack	13.2	1.67	8.03	9	5589
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Tail Cement	NeoCem™	854	sack	13.2	2.04	9.79	9	8361
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Displacement	Fresh Water with MMCR	20	bbl	8.33	0	0	10	830
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
6	Displacement	Treated Fresh Water	315	bbl	8.33	0	0	10	13200
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	
Mix Water:		pH 7	Mix Water Chloride:		0 ppm		Mix Water Temperature:		65 °F
Plug Bumped?		Yes	Plug Displaced by:		8.33 lb/gal		Disp. Temperature:		65 °F
Cement Returns:		0 bbl.	Bump Pressure:		2413 psi		Floats Held?		Yes
Comment: Got 65bbbls spacer to surface. Centralizers-179 between 987'-14394'. Calculated TOCap-988', TOL-1823', TOT-6879'.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	5/28/2022	17:00:00	Called out by service coordinator for OL time of 2300.
2	Pre-Convoy Safety Meeting	5/28/2022	19:45:00	Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
3	Depart from Service Center or Other Site	5/28/2022	20:00:00	Depart from service center or other job site.
4	Arrive at Location from Service Center	5/28/2022	21:00:00	Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
5	Pre-Rig Up Safety Meeting	5/28/2022	23:30:00	Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.
6	Other	5/28/2022	23:30:00	Mix water test results- PH-7, Chlo-0, Temp-65F.
7	Rig-Up Equipment	5/28/2022	23:45:00	Begin rig up with crew.
8	Rig-Up Completed	5/29/2022	01:30:00	Complete rig up for job to nearest point before red zone.
9	Safety Meeting - Pre Job	5/29/2022	02:30:00	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
10	Start Job	5/29/2022	02:52:08	TD-14490', TP-14477' 5.5" 17#, LC-14458', FC-14470', TVD-6670', SURF-1949' 9.625" 36#, OH-8.5" MUD-9.8#
11	Test Lines	5/29/2022	02:54:04	Pumped 5bbls fresh water to fill lines, closed 2" lo torc, performed 500psi k/o function test, followed with 5th gear stall at 1290psi, perform 4500psi test on line. Held pressure, no leaks. Bled off pressure, pumped 1bbl to ensure lines still full and closed valve. Proceeded to bring pressure to 2000psi on Kelly line, pressure stabilized and held with no leaks.

12	Drop Bottom Plug	5/29/2022	02:59:36	Dropped by HES supervisor, witnessed by company man.
13	Pump Spacer 1	5/29/2022	02:59:39	Pumped 120bbls Tuned Prime 11.5# 3.88y 24.46g/s with 20g D-Air at 6bpm 340psi
14	Check Weight	5/29/2022	03:07:39	Weight verified with pressurized mud scales.
15	Drop Bottom Plug	5/29/2022	03:24:35	Dropped by HES supervisor, witnessed by company man.
16	Pump Cap Cement	5/29/2022	03:24:41	Pumped 140sks or 40bbls ElastiCem w/o CBL 13.2# 1.6y 7.63g/s at 6bpm 580psi.
17	Check Weight	5/29/2022	03:27:04	Weight verified with pressurized mud scales.
18	Check Weight	5/29/2022	03:30:00	Weight verified with pressurized mud scales.
19	Pump Lead Cement	5/29/2022	03:34:07	Pumped 696sks or 207bbls ElastiCem w/CBL 13.2# 1.67y 8.03g/s at 9bpm 612psi.
20	Check Weight	5/29/2022	03:37:29	Weight verified with pressurized mud scales.
21	Pump Tail Cement	5/29/2022	04:01:55	Pumped 854sks or 310bbls 13.2# 2.04y 9.79g/s NeoCem at 9bpm 900psi.
22	Check Weight	5/29/2022	04:05:46	Weight verified with pressurized mud scales.
23	Check Weight	5/29/2022	04:24:11	Weight verified with pressurized mud scales.
24	Shutdown	5/29/2022	04:42:14	Shutdown, washed up through pumps and down wash up line to pits until clean water was seen. Pumped total of 20bbls to clean truck and lines.
25	Clean Lines	5/29/2022	04:49:52	Pumped 4bbls green dye/MMCR water to establish MMCR at IBOP.
26	Drop Top Plug	5/29/2022	04:53:01	Dropped 1500psi top plug by HES supervisor, witnessed by company Man.
27	Pump Displacement	5/29/2022	04:53:04	Pumped 3bbls MMCR water, Shutdown.
28	Drop Top Plug	5/29/2022	04:54:37	Dropped 3000psi top plug by HES supervisor, witnessed by company Man.
29	Pump Displacement	5/29/2022	04:55:11	Pumped 335bbls production water with 10g MMCR in remaining 17bbls (20bbls total), 10gal MCMX and 20gal Bellacide throughout.
30	Bump Plug	5/29/2022	05:47:37	Slowed down to 2bpm at 310bbls away, final circulating pressure- 2413psi, Bump pressure-2900psi. Held for 5min casing test.

31	Other	5/29/2022	05:52:28	Released pressure and got 4.5bbls fresh water to truck, floats held.
32	Other	5/29/2022	05:55:30	Pumped 3bbls to bump 3000psi top plug at 1bpm.
33	Standby - Other - see comments	5/29/2022	06:01:16	Bumped 1500psi top plug to rupture at 3730psi.
34	Bump Plug	5/29/2022	06:03:50	Bumped 3000psi top plug, final circulating-2300psi bump pressure-2900psi.
35	Other	5/29/2022	06:09:14	Released pressure and got 4.5bbls fresh water to truck, floats held. Held for 30min float check.
36	End Job	5/29/2022	06:33:32	Got 65bbls spacer to surface. Centralizers-179 between 987'-14394'. Calculated TOCap-988', TOL-1823', TOT-6879'.
37	Pre-Rig Down Safety Meeting	5/29/2022	06:40:00	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
38	Rig Down Lines	5/29/2022	06:50:00	Begin rig down
39	Pre-Convoy Safety Meeting	5/29/2022	07:45:00	Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.
40	Rig-Down Completed	5/29/2022	07:45:00	Rig down complete with no injuries, spills or damage to equipment.
41	Depart Location for Service Center	5/29/2022	08:00:00	Depart location

3.0 Attachments

3.1 Job Chart

