

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Guttersen D10-715

Production Casing

Job Date: Wednesday, February 09, 2022

Sincerely,

Brandon L Parker

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 Guttersen D10-715 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 13.17 ppg at 7.61 bbl/min. Cement was displaced with 20 bbl. of treated water with retarder and 386 bbl. of treated freshwater displacement. Plug was landed at 2,589 psi and bumped to 3,398 psi. Pressure was bled off and 6 bbl. of fluid was returned to the truck. Approximately 42 bbl. of spacer was returned to surface indicating a top of cement around 1,668'.

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 #: 3925430		Quote #:		Sales Order #: 0907666181				
Customer: NOBLE ENERGY INC-EBUS					Customer Rep: Charles Collver					
Well Name: GUTTERSEN			Well #: D10-715			API/UWI #: 05-123-48917-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD			State: COLORADO			
Legal Description: SWSE-34-4N-64W-465FSL-1625FEL										
Contractor: H & P DRLG					Rig/Platform Name/Num: H & P 517					
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX41066					Srvc Supervisor: Brandon Parker					
Job										
Job depth MD 17524ft Job Depth TVD 6730ft										
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	17524	0	6730
Open Hole Section			8.5				1949	17534	1949	6730
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5	1	HES	17524		Top Plug	5.5	1	HES	
Float Collar	5.5	1	HES	17481		Bottom Plug	5.5	2	HES	
						Centralizers	5.5	210	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	3.92	24.67	7.5	4237
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	8	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™	724	sack	13.2	1.67	8.03	8	5814
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™	1173	sack	13.2	2.04	9.79	8	11484
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	Treated Fresh Water	406	bbl	8.33			8.5	17017
Cement Left In Pipe									
Amount	44 ft			Reason				Shoe Joint	
Mix Water:	pH 6	Mix Water Chloride:	0 ppm			Mix Water Temperature:	65 °F		
Plug Bumped?	Yes	Plug Displaced by:	8.33 lb/gal Treated Water			Disp. Temperature:	65 °F		
Cement Returns:	0 bbl.	Bump Pressure:	2589 psi			Floats Held?	Yes		

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	2/9/2022	01:30:00	HES crew called out to Chevron 5.5" production. On location time 07:30. pu 12992453, pu 12992454, elite 12644849-11368474, 1 660 11273333-11398319
2	Pre-Convoy Safety Meeting	2/9/2022	06:15:00	meeting with all HES personnel to discuss route of travel and safety/hazards associated with traveling to location. also discussed cmt volumes on bulk trks, confirmed silo packet volumes.
3	Depart from Service Center or Other Site	2/9/2022	06:20:00	
4	Arrive at Location from Service Center	2/9/2022	07:15:00	arrived location. met with Mr.Charles and went over job numbers, water sources and iron placement. Rig was reaming and washing when hes arrived
5	Assessment Of Location Safety Meeting	2/9/2022	07:20:00	checked silos for required cmt volumes, checked air compressor skid for fuel, started unit for job, checked water upright volumes and tested water in all three uprights. chlo 0, water temp 65 deg, ph 6. TD 17534, TP 17524.4, SP 1949, SJ 43.79FT, FC 17480.61, kop 6196, eob 7278, 5.5" 17# P-110 Casing, MW 10.1 OBM, OH 8.5", CNT used 210, (17481ft to 1257ft) HES plugs (2bottom and 1 top plug), HES float equipment. summit centralizers
6	Safety Meeting - Pre Rig-Up	2/9/2022	07:25:00	meeting with HES personnel to discuss safety/hazards associated with rigging up HES equipment
7	Rig-Up Equipment	2/9/2022	07:30:00	HES rigged up bulk and water hoses. could not spot pumping unit until casing was pre loaded 100 percent on racks by catwalk
8	Standby Other	2/9/2022	08:00:00	HES went into standby mode while rig finished reaming and running casing. parked out of the way to allow loader to run casing to pipe wrangler
9	End Standby Not Due to HES	2/9/2022	09:30:00	HES spotted in pumping unit to begin rigging up

10	Rig-up Lines	2/9/2022	09:34:00	spot in HES equipment, rig up HES iron to red zone
11	Rig-Up Equipment	2/9/2022	10:40:00	finish rigging HES iron to stand pipe, send iron to rig floor
12	Casing on Bottom	2/9/2022	10:44:00	rig landed casing.
13	Circulate Well	2/9/2022	10:45:00	rig began circulating well at 10bpm and average psi 900
14	Pre-Job Safety Meeting	2/9/2022	11:50:00	meeting with all personnel on location to discuss safety/hazards associated with job. also covered job procedures, all personnel signed jsa
15	Stop Circulation/KO Pumps	2/9/2022	12:00:00	ko rig mud pumps
16	Start Job	2/9/2022	12:14:00	start recording real time data
17	Drop Bottom Plug	2/9/2022	12:15:00	loaded bottom plug into the 5.5casing prior to filling lines with fw
18	Fill Lines FW	2/9/2022	12:17:29	pumped 3bbls of fw at 3bpm and top psi was 134.
19	Test Lines	2/9/2022	12:20:09	test eko on both pumps, 5th gear stall and tested lines to 4905, psi lined out to 1psi/12sec
20	Test IBOP	2/9/2022	12:28:08	driller closed ibop, HES tested ibop to 2300, psi held solid
21	Pump Spacer	2/9/2022	12:30:57	pumped 120bbls of tuned prime 11.5ppg, 3.92 yield and 24.67 gal/sk. pumped at 7.5bpm and average psi was 500. calculated all 71.6 bbls of spacer to surface. weight confirmed using pressurized mud scales.
22	Shutdown	2/9/2022	12:49:00	HES shutdown to drop HES bottom plug
23	Drop Bottom Plug	2/9/2022	12:53:48	dropped (preloaded before coming back online) bottom plug witnessed by HES supervisor and Mr. Charles with Chevron
24	Pump Cap Cement	2/9/2022	12:55:29	pumped cap cmt, 140sks, 40bbls, 13.2ppg, 1.6 yield, 7.63gal/sk pumped at 6bpm and average psi was 525. weight confirmed using pressurized mud scales, weight confirmed by HES operator. wet sample left on location. calculated top of cap cmt at 1009.55ft

25	Pump Lead Cement	2/9/2022	13:02:22	pumped 215.3bbbls of lead cmt, 724sks, 13.3ppg, 1.67 yield, 8.03 gal/sk, pumped at 8.5bpm and average psi was 800. weight confirmed using pressurized scales. calculated top of lead cmt at 1844.62ft
26	Slow Rate	2/9/2022	13:26:45	slowed rate before swapping to tail cmt, blew lead silo down
27	Pump Tail Cement	2/9/2022	13:30:33	pumped 426.2bbbls of tail cmt, 1173sks, 13.2ppg, 2.04 yield, 9.79 gal/sk pumped at 8.5bpm and average psi was 1200. weight confirmed using pressurized mud scales, weight confirmed by HES operator. calculated top of tail cmt 7102.83ft on a gauged hole
28	Slow Rate	2/9/2022	13:45:00	slowed rate before swapping to last silo of tail, blew tail silo down
29	Shutdown	2/9/2022	14:25:00	done pumping cmt
30	Clean Lines	2/9/2022	14:30:00	clean lines and pump to 4sided tank at bottom of the slide on driller side, pumped 19bbbls
31	Shutdown	2/9/2022	14:35:00	pump and lines clean
32	Drop Top Plug	2/9/2022	14:35:34	dropped top plug witnessed by HES supervisor and Mr. Charles with Chevron
33	Pump Displacement	2/9/2022	14:36:34	pumped 405.6bbbls of fw treated with 10gal of MMCR in the first 20bbbls of displacement, 5 gallons of D-Air and 10 gallons MC MX 820-6 and 15 gallons of Bellacide 300w. fc set at 17480.61ft X .0232= 405.6bbbls
34	Displ Reached Cement	2/9/2022	14:38:00	displacement caught cmt at 16bbbls away
35	Slow Rate	2/9/2022	15:25:00	slow rate at 385bbbls, psi at 7bpm 2950 and psi at 4bpm was 2600
36	Bump Plug	2/9/2022	15:29:00	bumped plug at calculated volume 406.5bbbls, final circulation psi was 2650 ko pumps at 3200. psi climbed to 3350 and held solid
37	Check Floats	2/9/2022	15:34:00	HES floats held, 6bbbls back to the pumping unit
38	End Job	2/9/2022	15:36:15	job complete, no SQ or HSE issues
39	Spacer Returns to Surface	2/9/2022	15:38:45	rig took back 41.6bbbls of tuned prime spacer

40	Pre-Rig Down Safety Meeting	2/9/2022	15:40:00	meeting with all HES personnel to discuss safety/hazards associated with rigging down HES equipment
41	Rig-Down Equipment	2/9/2022	15:45:00	
42	Pre-Convoy Safety Meeting	2/9/2022	17:15:00	meeting with all HES personnel to discuss safety/hazards associated with traveling to call center
43	Depart Location for Service Center or Other Site	2/9/2022	17:30:00	
44	Other	2/9/2022	17:31:00	Thank You for Choosing Halliburton Cement. Parker and Crew. (970)397-4969

3.0 Attachments

3.1 Job Chart

