

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

United States of America, COLORADO

Date: Friday, June 15, 2018

Hurley H26-762 Production

Job Date: Wednesday, June 06, 2018

Sincerely,

Adam McKay

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 **Hurley H26-762** cement **Production** casing job. 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.

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 [Ft. Lupton]

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3877982		Quote #:		Sales Order #: 0904901706	
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: Gary Stapleton			
Well Name: HURLEY			Well #: H26-762		API/UWI #: 05-123-46767-00		
Field: WATTENBERG		City (SAP): HUDSON		County/Parish: WELD		State: COLORADO	
Legal Description: SE NW-26-3N-65W-2366FNL-1341FWL							
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 517			
Job BOM: 7523 7523							
Well Type: HORIZONTAL OIL							
Sales Person: HALAMERICA\HB70026				Srv Supervisor: Kendall Broom - H194727			
Job							

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type		BHST	230 degF
Job depth MD	16196ft	Job Depth TVD	
Water Depth		Wk Ht Above Floor	
Perforation Depth (MD)	From		To

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	1925	0	1925
Casing		5.5	4.778	20			0	16196	0	7020
Open Hole Section			8.5					7270		
Open Hole Section			8.5					16196		

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5					Top Plug	5.5		HES
Float Shoe	5.5			16196		Bottom Plug	5.5		HES
Float Collar	5.5					SSR plug set	5.5		HES
Insert Float	5.5					Plug Container	5.5		HES
Stage Tool	5.5					Centralizers	5.5		HES

Fluid Data									
Stage/Plug #: 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	11.5 lb/gal Tuned Spacer III w/ Chems	Tuned Spacer III	120	bbl	11.5	3.73			

35.10 gal/bbl	FRESH WATER
0.60 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)
149.34 lbm/bbl	BARITE, BULK (100003681)
0.60 gal/bbl	MUSOL(R) A, 5 GAL PAIL (100064220)

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	ElastiCem	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57			7.53

7.53 Gal	FRESH WATER
0.90 %	SCR-100 (100003749)

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	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	533	sack	13.2	1.6			7.69

0.40 %	SCR-100 (100003749)
7.69 Gal	FRESH WATER

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	NeoCem NT1	NeoCem TM	1005	sack	13.2	2.04			9.75

9.75 Gal	FRESH WATER
0.08 %	SCR-100 (100003749)

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	Displacement	358	bbl	8.33				

Cement Left In Pipe	Amount	45 ft	Reason	Shoe Joint
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Mix Water:	pH 6	Mix Water Chloride:	0 ppm	Mix Water Temperature:	68 °F °C
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Plug Bumped?	Yes	Floats Held?	Yes
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Comment	Got 17 bbls Tuned Spacer back to surface			
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2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate <i>(bbl/min)</i>	DH Density <i>(ppg)</i>	DS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	6/5/2018	21:30:00	USER					Called crew out to be on location at 0330
Event	2	Depart Shop for Location	Depart Shop for Location	6/6/2018	01:30:00	USER					Held a safety meeting before leaving for location
Event	3	Arrive At Loc	Arrive At Loc	6/6/2018	02:15:00	USER					Arrive at location and met with the company man
Event	4	Rig-up Lines	Rig-up Lines	6/6/2018	02:30:00	USER					Held a hazard hunt before spotting in trucks and rigging up
Event	5	Safety Meeting	Safety Meeting	6/6/2018	04:45:00	USER					Held a safety meeting with the rig to discuss the operation and safety
Event	6	Start Job	Start Job	6/6/2018	05:13:56	COM5					Filled lines with 3 bbls water
Event	7	Test Lines	Test Lines	6/6/2018	05:36:17	COM5		8.47	4529.00		Tested rig stand pipe to 3000psi with a 500 psi kick out and a 5th gear stall. Tested our lines to 4500 psi
Event	8	Pump Spacer 1	Pump Spacer 1	6/6/2018	05:38:25	COM5	3.90	11.52	370.00		Pumped 120 bbls Tuned spacer. Dual spacer and Musol were added on the fly. Pumped at 4 bpm and 470 psi.
Event	9	Shutdown	Shutdown	6/6/2018	06:08:24	COM5					
Event	10	Drop Plug	Drop Plug	6/6/2018	06:08:33	COM5					Dropped bottom plug by the company man.
Event	11	Pump Lead Cement	Pump Lead Cement	6/6/2018	06:12:32	COM5	6.60	13.26	491.00		Pumped 41.91 bbls Lead cement. Pumped 150 sks, 13.2#, 1.57 yield, 7.53 gal/sks. Pumped at 8 bpm and 860 psi. Calculated TOLC 2506.51
Event	12	Pump Lead Cement	Pump Lead Cement	6/6/2018	06:18:42	COM5	8.00	13.37	619.00		Pumped 151.88 bbls second Lead. 533sks, 13.2#, 1.6 yield, 7.69 gal/sks. Pumped at 8 bpm and 877 psi. Calculated TOLC 3534.45
Event	13	Pump Tail Cement	Pump Tail Cement	6/6/2018	06:38:49	COM5	8.00	13.17	674.00		Pumped 365.14 bbls Neocem, 1005 sks, 13.2#, 2.04 yield, 9.75 gal/sks. Pumped at 8 bpm and 875 psi. calculated TOTC 7256.99
Event	14	Check Weight	Check Weight	6/6/2018	06:53:59	COM5					Verified weight with the pressurized scale
Event	15	Shutdown	Shutdown	6/6/2018	07:26:36	COM5					Shut down and blew the lines out with rig air. Washed lines and head.

Event	16	Drop Top Plug	Drop Top Plug	6/6/2018	07:38:45	COM5				Dropped the top plug and witnessed by the company man
Event	17	Pump Displacement	Pump Displacement	6/6/2018	07:38:55	COM5		1.53		Pumped 358 bbls water displacement. first 20 had MMCR and the balance had biocide. Pumped at 10 bpm and 2300 psi.
Event	18	Bump Plug	Bump Plug	6/6/2018	08:19:40	COM5	3.00	8.31	2089.00	Bumped plug at 3 bpm and final lift was 1990 psi. got 17 bbls spacer back to surface. Checked floats and got 5 bbls water back to the truck. Floats held.
Event	19	End Job	End Job	6/6/2018	08:24:09	COM5	0.00	8.27	-49.00	
Event	20	Rig Down Lines	Rig Down Lines	6/6/2018	08:30:00	USER				Held a safety meeting before rigging down lines
Event	21	Depart Location	Depart Location	6/6/2018	10:00:00	USER				Held a safety huddle before leaving location

3.0 Attachments

3.1 Hurley H26-762-Custom Results.png

