

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Date: Friday, June 15, 2018

Hurley H26-756 Production

Job Date: Friday, June 01, 2018

Sincerely,

Adam McKay

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 **Hurley H26-756** 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 #: 3877848		Quote #:		Sales Order #: 0904886782					
Customer: NOBLE ENERGY INC-EBUS						Customer Rep: Chrs Ewng					
Well Name: HURLEY			Well #: H26-756			API/UWI #: 05-123-46772-00					
Field: WATTENBERG		City (SAP): HUDSON		County/Parish: WELD		State: COLORADO					
Legal Description: SE NW-26-3N-65W-2366FNL-1364FWL											
Contractor: H & P DRLG					Rig/Platform Name/Num: H & P 517						
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB70026					Srvc Supervisor: Nicholas Roles						
Job											
Form Type				BHST		230 degF					
Job depth MD		16174ft		Job Depth TVD		7260ft					
Water Depth				Wk Ht Above Floor		0					
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	1922	0	1922	
Casing		5.5	4.778	20			0	16174	0	7260	
Open Hole Section			8.5				2521	7276	2521	7260	
Open Hole Section			8.5				7276	16186	0		
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			16173.5		Top Plug	5.5	1	HES		
Float Shoe	5.5					Bottom Plug	5.5	2	HES		
Float Collar	5.5			16126.8			5.5		HES		
	5.5					Plug Container	5.5	1	HES		
	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		6	
34.70 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 A, 330 GAL TOTE - (790828)							
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		5	7.53
1 lbm		SILICALITE, COMPACTED - 2200 LB (870283)							
7.52 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		8	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	1002	sack	13.2	2.04		8	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			8	
Cement Left In Pipe		Amount	47 ft		Reason			Shoe Joint	
Mix Water:	pH 07	Mix Water Chloride:	1000 ppm		Mix Water Temperature:			65°F	
Cement Temperature:	70 °F °C	Plug Displaced by:	8.33 lb/gal		Disp. Temperature:			65 °F °C	
Plug Bumped?	Yes	Bump Pressure:	2360psi MPa		Floats Held?			Yes	
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3		Returns Temperature:			## °F °C	
Comment Got 10bbls spacer to surface. Estimated TOL#1-2361', TOL#2-3391',TOT-7117'									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	5/31/2018	14:00:00	USER				Called out by Service Coordinator for O/L at 1800
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	5/31/2018	16:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	5/31/2018	17:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/31/2018	18:00:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment. Rig had 2000' Casing left to run.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/31/2018	18:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	5/31/2018	19:00:00	USER				Water test- PH-6, Chlor-0, Temp-85.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/31/2018	21:00:00	USER				Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	5/31/2018	22:45:41	COM4				TD-16186', TP-16173.5' 5.5" 20#, FC-16126.8', TVD-7260', SURF-1922' 9.625" 36#, OH-8.5" MUD-9.6#
Event	9	Drop Bottom Plug	Drop Bottom Plug	5/31/2018	22:46:26	USER				Dropped by HES supervisor, witnessed by company man.
Event	10	Test Lines	Test Lines	5/31/2018	22:48:22	COM4	8.45		4610.00	Pumped 5bbls fresh water to fill lines, closed 2" lo torc, performed 500psi k/o function test, followed with 5th gear stall at 1980psi, Performed 3000psi test on Rig Kelly Line. Held pressure, no leaks. proceeded to bring pressure to 4500psi, pressure stabilized and held with no leaks.
Event	11	Pump Spacer 1	Pump Spacer 1	5/31/2018	23:01:19	COM4	11.40	4.00	370.00	Pumped 120bbls Tuned Spacer III 11.5# 3.78y 23.5g/s with 70g Musol A, 70g Dual Spacer B and 20g D-Air at 6bpm 440psi.
Event	12	Drop Bottom Plug	Drop Bottom Plug	5/31/2018	23:22:09	COM4				Dropped by HES supervisor, witnessed by company man.
Event	13	Pump Lead Cement	Pump Lead Cement	5/31/2018	23:24:09	COM4	13.51	4.80	249.00	Pumped 150sks or 41.9bbls Elasticem w/o CBL 13.2# 1.57y 7.53g/s

at 5bpm 310psi.

Event	14	Pump Lead Cement	Pump Lead Cement	5/31/2018	23:32:06	COM4	13.14	5.50	297.00	
Event	15	Check Weight	Check Weight	5/31/2018	23:36:40	COM4	13.16	8.00	550.00	Weight verified with pressurized mud scales.
Event	16	Check Weight	Check Weight	5/31/2018	23:40:24	COM4	13.13	8.00	544.00	Weight verified with pressurized mud scales.
Event	17	Pump Tail Cement	Pump Tail Cement	5/31/2018	23:53:50	COM4	13.14	4.00	214.00	Pumped 1002sks or 364bbbls 13.2# 2.04y 9.75g/s Neocem at 8bpm 745psi.
Event	18	Check Weight	Check Weight	5/31/2018	23:59:35	COM4	13.20	8.00	747.00	Weight verified with pressurized mud scales.
Event	19	Shutdown	Shutdown	6/1/2018	00:45:19	COM4				Shutdown, rig blew air through lines to pits, followed with 5bbbls fresh water through pumps and lines.
Event	20	Drop Top Plug	Drop Top Plug	6/1/2018	00:53:18	COM4				Dropped by HES supervisor, witnessed by company man.
Event	21	Pump Displacement	Pump Displacement	6/1/2018	00:53:20	COM4	8.12	7.90	259.00	Pumped 358bbbls fresh water with 10g MMCR in first 20bbbls, 15g Algicide throughout.
Event	22	Bump Plug	Bump Plug	6/1/2018	01:43:06	COM4	8.10	3.00	1862.00	Slowed down to 3bpm at 335bbbls away, final circulating pressure-1870psi, Bump pressure-2360psi.
Event	23	Check Floats	Check Floats	6/1/2018	01:48:21	USER				Released pressure and got 4.5bbbls fresh water to truck, floats held.
Event	24	End Job	End Job	6/1/2018	01:51:52	COM4				Got 10bbbls spacer to surface. Estimated TOL#1-2361', TOL#2-3391',TOT-7117'
Event	25	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	6/1/2018	01:55:00	USER				All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/1/2018	03:45:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	6/1/2018	04:00:00	USER				Pre journey managment prior to departure.

3.0 Attachments

3.1 Hurley H26-756-Custom Results.png

