

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC - EBUS

United States of America, COLORADO

Date: Friday, June 15, 2018

Hurley H26-768 Production

Job Date: Sunday, June 10, 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 H26-768** 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 #: 3877772		Quote #:		Sales Order #: 0904912788	
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: Garry			
Well Name: HURLEY			Well #: H26-768		API/UWI #: 05-123-46766-00		
Field: WATTENBERG		City (SAP): HUDSON		County/Parish: WELD		State: COLORADO	
Legal Description: SW NW-26-3N-65W-2366FNL-1319FWL							
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: Ryan Stevens			
Job							

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type		BHST	230 degF
Job depth MD	16136ft	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	new	9.625	8.921	36			0	1832	0	1832
Casing	New	5.5	4.778	20	BTC		0	16136	0	6978
Open Hole Section			8.5		Top lead		2535	7190	0	0
Open Hole Section			8.5		Top Tail		7190	16146	0	0

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5					Top Plug	5.5	1	
Float Shoe	5.5	1		16136		Bottom Plug	5.5	1	
Float Collar	5.5	1		16089		SSR plug set	5.5		
Insert Float	5.5					Plug Container	5.5	1	HES
Stage Tool	5.5					Centralizers	5.5		

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	23.3	5	4,175

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	8	1129

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	523	sack	13.2	1.6	7.69	8	4021

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	1009	sack	13.2	2.04	9.75	8	9837

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	357.17	bbl	8.33				

Cement Left In Pipe	Amount	47 ft	Reason	Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	>200 ppm	Mix Water Temperature:	78 °F
Cement Temperature:		Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	78 °F
Plug Bumped?	Yes	Bump Pressure:	2200 psi	Floats Held?	Yes
Cement Returns:		Returns Density:		Returns Temperature:	

Comment Top of spacer @ surface.

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	DS Pump Press <i>(psi)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comments
Event	1	Call Out	Call Out	6/10/2018	08:30:00	USER				CREW CALLED OUT FOR JOB @ 08:30. CUSTOMER REQUESTED ON LOCATION @ 13:00. CREW PICKED UP BULK TRUCKS, PUMP 11645460 , CHEMICALS AND PLUG CONTAINER FROM FORT LUPTON YARD.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/10/2018	11:30:00	USER				CREW DISCUSSED HAZARDS ALONG ROUTTE OF TRAVEL.
Event	3	Crew Leave Yard	Crew Leave Yard	6/10/2018	12:07:02	USER				STARTED JOURNEY MANAGEMENT
Event	4	Arrive At Loc	Arrive At Loc	6/10/2018	13:00:00	USER				MEET WITH COMPANY MAN AND DISSCUSE JOB PROCEDURES. TD @ 16,146, TP @ 16,136 SHOE TRACK 47'. FLOAT COLLAR 16089. FRESH WATER DISPLACEMENT FIRST 20 WITH MMCR AND BIO-CIDE THROUGH OUT.
Event	5	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/10/2018	16:30:00	USER				MEETING WITH RIG CREW AND HES PERSONEL. DISCUSSED JOB PROCEDURES AND JSA.
Event	6	Start Job	Start Job	6/10/2018	16:48:33	COM4				START RECORDING JOB DATA
Event	7	Drop Bottom Plug	Drop Bottom Plug	6/10/2018	16:53:46	USER				VERIFIED BY COMPANY REP.
Event	8	Prime Pumps	Prime Pumps	6/10/2018	16:55:59	COM4				LOAD LINES WITH 4 BBLS OF WATER
Event	9	Test Lines	Test Lines	6/10/2018	17:03:38	COM4	8.29	3360.00	0.00	PRESSURE TEST TOP DRIVE TO 3180 PSI.SET EKO TO 500, KICKED OUT AT 631 PSI, 5TH GEAR STALL AT 1770 PSI
Event	10	Test Lines	Test Lines	6/10/2018	17:07:29	COM4	8.35	5027.00	0.00	PRESSURE TEST HALLIBURTON LINE TO 4600 PSI
Event	11	Pump Spacer 1	Pump Spacer 1	6/10/2018	17:11:55	COM4	11.12	388.00	3.80	PUMP 120 BBSL OF TUNED SPACER @ 11.5 PPG YIELD 3.73 MIX WATER 23.3 VERIFIED WEIGHT WITH PRESSURIEZED MUD SCALE.
Event	12	Drop Bottom Plug	Drop Bottom Plug	6/10/2018	17:43:34	USER				VERIFIED BY CMPANY REP.
Event	13	Pump Lead Cement	Pump Lead Cement	6/10/2018	17:48:46	COM4	13.35	585.00	7.80	PUMP 150 SXS OF ELASTICEM @ 13.2 PPG. YIELD 1.57 MIX WATER 7.53 VERIFIED WEIGHT WITH PRESSURIEZED MUD SCALE
Event	14	Pump Lead Cement	Pump Lead Cement	6/10/2018	17:53:44	COM4	13.37	613.00	7.80	PUMP 523 SXS OF ELASTICEM @ 13.2 PPG YIELD 1.6 MIX WATER

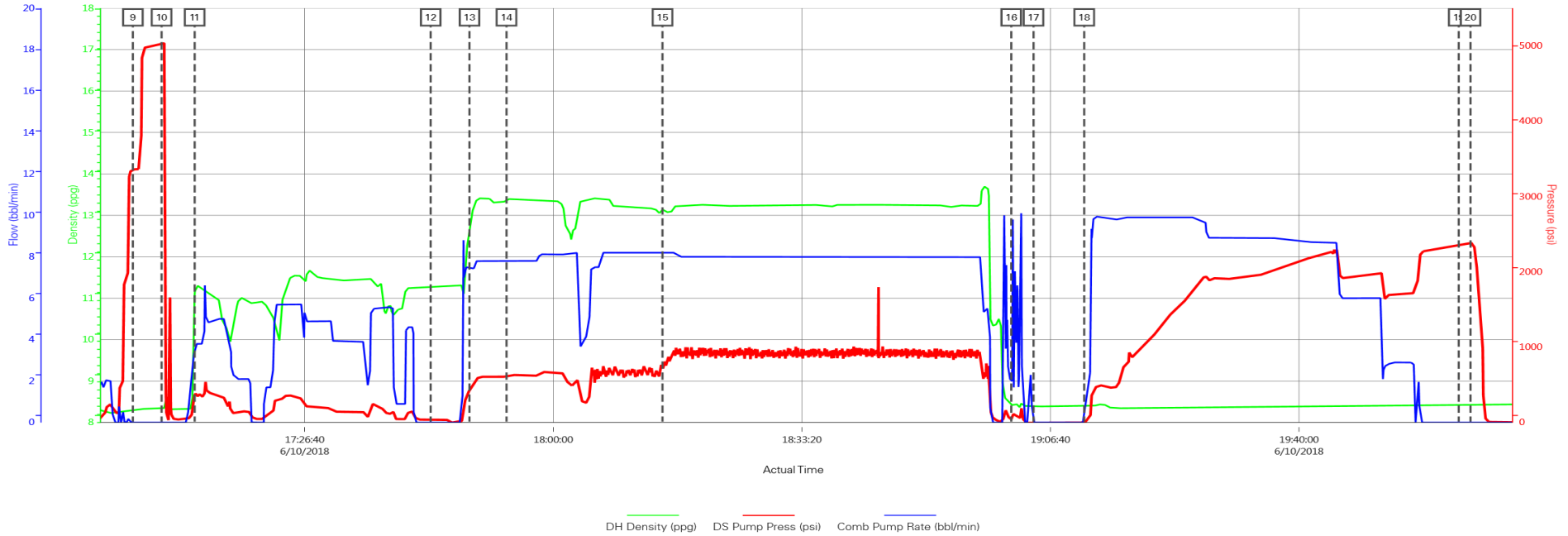
7.69 VERIFIED WEIGHT WITH PRESSURIEZED MUD SCALE

Event	15	Pump Tail Cement	Pump Tail Cement	6/10/2018	18:14:39	COM4	13.10	725.00	8.20	PUMP 1,009 SXS OF NEOCEM YIELD 2.04 MIX WATER 9.75. VERIFIED WEIGHT WITH PRESSURIEZED MUD SCALE
Event	16	Shutdown	Shutdown	6/10/2018	19:01:25	COM4				WASH PUMPS AND LINES
Event	17	Drop Top Plug	Drop Top Plug	6/10/2018	19:04:24	USER				VERIFIED BY COPANY REP.
Event	18	Pump Displacement	Pump Displacement	6/10/2018	19:11:12	COM4	8.41	480.00	9.90	PUMP CALCULATED DISPLACEMENT OF 357 BBLS WITH THE FIRST 20 BBLS OF MMCR. RIGS BIO-SIDE THROUGH OUT DISPLACEMENT. SAW TRACES OF SPACER AT THE END OF DISLACEMENT.
Event	19	Bump Plug	Bump Plug	6/10/2018	20:01:25	COM4	8.43	1728.00		BUMP PLUG @ CALCULATED DISPLACEMENT. HAD TRACES OF SPCR COME BACK. FINAL CIRCULATING PRESSURE @ 1,690 BUMPED @ 2200 PSI @ 3BPM.
Event	20	Check Floats	Check Floats	6/10/2018	20:03:00	USER				FLOATS HELD / 5.5 BBLS BACK.
Event	21	End Job	End Job	6/10/2018	20:34:01	COM4				STOP RECORDING JOB DATA
Event	22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/10/2018	20:38:00	USER				CREW DISSCUSSED HAZARDS ASSOCIATED WITH RIG DOWN.
Event	23	Rig-Down Completed	Rig-Down Completed	6/10/2018	21:17:00	USER				ALL EQUIPMENT WAS RIGGED DOWN AND READY FOR TRAVEL. LOCATION WAS LEFT CLEAN.
Event	24	Crew Leave Location	Crew Leave Location	6/10/2018	22:15:00	USER				THANKS RYAN STEVENS AND CREW. THANKS FOR CHOOSING HALLIBURTON.

3.0 Attachments

3.1 H & P 517-Custom Results (1).png

Noble Hurey H26-768 5.5 Production



DH Density (ppg) DS Pump Press (psi) Comb Pump Rate (bbl/min)

3.2 H & P 517-Custom Results.png

