

# HALLIBURTON

iCem<sup>®</sup> Service

## **NOBLE ENERGY INC**

Date: Friday, October 20, 2017

### **Hullabaloo State Y21-726 Production**

Job Date: Thursday, October 19, 2017

Sincerely,

Adam McKay

## Legal Notice

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Hullabaloo State Y21-726** 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]**

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## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3819612		Quote #:		Sales Order #: 0904370211				
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: CHARLES COLVER						
Well Name: HULLABALOO STATE			Well #: Y21-726		API/UWI #: 05-123-45234-00					
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO				
Legal Description: NE NE-16-2N-64W-445FNL-930FEL										
Contractor: Noble				Rig/Platform Name/Num: H&P 524						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB70026				Srv Supervisor: Jason Welton						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST		230 degF				
Job depth MD		17309ft		Job Depth TVD		7022				
Water Depth				Wk Ht Above Floor		4				
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		J-55	0	2022	0	2022
Casing	0	5.5	4.778	20	BTC	P-110	0	17309	0	7020
Open Hole Section			8.5				2022	17326	2022	7020
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			17326		Top Plug	5.5	1	HES	
Float Shoe	5.5					Bottom Plug	5.5	2	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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	80	bbl	11.5	3.78		5		
34.70 gal/bbl		FRESH WATER								
0.60 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
0.60 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
147.42 lbm/bbl		BARITE, BULK (100003681)								

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(v. 4.4.18)

Created: Friday, October 20, 2017

## HALLIBURTON

## Cementing Job Summary

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		6	7.53
7.53 Gal		FRESH WATER							
0.80 %		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	563	sack	13.2	1.6		6	7.69
7.69 Gal		FRESH WATER							
0.30 %		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
4	NeoCem NT1	NeoCem TM	1194	sack	13.2	2.04		6	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	MMCR Displacement	MMCR Displacement	20	bbl	8.33				
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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	Displacement	363	bbl	8.33				
Cement Left In Pipe		Amount	46 ft			Reason			Shoe Joint
Mix Water:		pH ##	Mix Water Chloride:## ppm			Mix Water Temperature:## °F °C			
Cement Temperature:## °F °C		Plug Displaced by:## lb/gal kg/m3 XXXX				Disp. Temperature:## °F °C			
Plug Bumped?		Yes/No	Bump Pressure:#### psi MPa			Floats Held?Yes/No			
Cement Returns:## bbl m3		Returns Density:## lb/gal kg/m3			Returns Temperature:## °F °C				
CommentJOB WENT AS PER DESIGN. ALL SPACERS AND SLURRIES MIXED WELL WITH NO ISSUES. TOP PLUG DISPLACED WITH 383BBLs FRESHWATER. PLUG LANDED ON TIME WITH FULL RETURNS THROUGHOUT.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Arrive At Loc	Arrive At Loc	10/19/2017	07:00:00	USER				CREW CALLED OUT AT 0230/REQUESTED ON LOCATION AT 0830/RIG RUNNING CASING 5000' OFF BOTTOM
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	10/19/2017	07:30:00	USER				TEST WATER/NOBLE SAFETY ORIENTATION
Event	3	Wait on Customer or Contractor Equip - Start Time	Wait on Customer or Contractor Equip - Start Time	10/19/2017	07:45:00	USER				WAIT UNTIL ALL CASING MOVED TO LAST PIPE RACK PRIOR TO RIGGING UP PER CUSTOMER
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	10/19/2017	08:40:00	USER				WATCH FOR SNAKES/SWA
Event	5	Rig-Up Equipment	Rig-Up Equipment	10/19/2017	08:55:00	USER				
Event	6	Rig-Up Completed	Rig-Up Completed	10/19/2017	10:30:00	USER				HES READY
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	10/19/2017	11:30:00	USER				REVIEW JOB AND SAFETY PROCEDURES
Event	8	Start Job	Start Job	10/19/2017	12:56:16	COM4				
Event	9	Test Lines	Test Lines	10/19/2017	12:58:45	COM4	4670.00	8.50		500PSI LOW/4500PSI HIGH/TESTS GOOD/DROP 1ST BOTTOM PLUG
Event	10	Pump Spacer 1	Pump Spacer 1	10/19/2017	13:07:13	COM4	91.00	12.03	3.00	80BBLS TUNED SPACER III @ 11.5PPG/4BPM/150PSI
Event	11	Shutdown	Shutdown	10/19/2017	13:21:24	COM4				DROP 2ND BOTTOM PLUG
Event	12	Pump Lead Cement	Pump Lead Cement	10/19/2017	13:24:24	COM4	199.00	13.43	3.90	150SKS @ 13.2PPG/42BBLS/4BPM/178PSI
Event	13	Pump Lead Cement	Pump Lead Cement	10/19/2017	13:32:45	COM4	694.00	13.46	8.10	563SKS @ 13.2PPG/160BBLS/7BPM/704PSI
Event	14	Check Weight	Check weight	10/19/2017	13:39:15	COM4	629.00	13.50	7.30	DENSITY VERIFIED
Event	15	Pump Tail Cement	Pump Tail Cement	10/19/2017	13:55:19	COM4	505.00	13.30	6.70	1194SKS @ 13.2PPG/434BBLS/7BPM/781PSI
Event	16	Check Weight	Check weight	10/19/2017	13:58:37	COM4	842.00	13.50	7.00	DENSITY VERIFIED

Event	17	Shutdown	Shutdown	10/19/2017	14:58:04	COM4				RIG BLOW LINES CLEAN
Event	18	Clean Lines	Clean Lines	10/19/2017	15:02:45	COM4				TO HALF RACK
Event	19	Drop Plug	Drop Plug	10/19/2017	15:08:32	COM4				HES TOP PLUG
Event	20	Pump Displacement	Pump Displacement	10/19/2017	15:08:36	COM4	549.00	8.40	10.20	383BBLS FRESHWATER/FIRST 20 TREATED WITH MMCR/REMAINDER TREATED WITH ALGAE-CIDE/10BPM/552PSI
Event	21	Bump Plug	Bump Plug	10/19/2017	15:48:57	COM4	1810.00	8.44	3.00	PLUG LANDED AT CALCULATED DISPLACEMENT/2420PSI/FULL RETURNS THROUGHOUT JOB/DID NOT CIRCULATE ANY SPACER OR CEMENT TO SURFACE
Event	22	Other	Other	10/19/2017	15:52:28	COM4				CHECK FLOATS/HELD-48BLS BACK
Event	23	End Job	End Job	10/19/2017	15:58:22	COM4				
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/19/2017	16:00:00	USER				
Event	25	Rig-Down Equipment	Rig-Down Equipment	10/19/2017	16:05:00	USER				
Event	26	Rig-Down Completed	Rig-Down Completed	10/19/2017	17:15:00	USER				
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/19/2017	17:30:00	USER				
Event	28	Depart Location	Depart Location	10/19/2017	18:00:00	USER				THANK YOU



## 3.0 Attachments

### 3.1 JOB CHART.png



