

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Date: Monday, October 16, 2017

Hullabaloo State Y21-756 Production

Job Date: Wednesday, October 11, 2017

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 **Hullabaloo State Y21-756** 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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3819712		Quote #:		Sales Order #: 0904354327					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: JOHN							
Well Name: HULLABALOO STATE				Well #: Y21-756		API/UWI #: 05-123-45240-00					
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO					
Legal Description: NE NW-16-2N-64W-445FNL-2617FWL											
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 517							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL				Srcv Supervisor: David Hahn							
Sales Person: HALAMERICA\HB70026				Job							
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST		230 degF				
Job depth MD		17112ft			Job Depth TVD		6925				
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	2050	0	2050	
Casing	0	5.5	4.778	20	BUTTRESS	P-110	0	17112	0	6925	
Open Hole Section			8.5				2500	7276	2500	6925	
Open Hole Section			8.5				7276	17112			
Fluid Data											
Stage/Plug #: 1											
Fluid #	Stage Type	Fluid Name		Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III w/ Chems	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)									
	147.42 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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	ElastiCem Cap	ELASTICEM (TM) SYSTEM		150	sack	13.2	1.57		8	7.53	
	0.80 %	SCR-100 (100003749)									

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Cementing Job Summary

7.53 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
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	569	sack	13.2	1.6		8	7.69
7.69 Gal		FRESH WATER							
0.25 %		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	1164	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	378	bbl	8.33			3	
Cement Left In Pipe	Amount	52		Reason				Shoe Joint	
Mix Water: pH ##	Mix Water ## ppm Chloride:		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						
Comment									

2.0 Real-Time Job Summary

2.1 Job Event Log

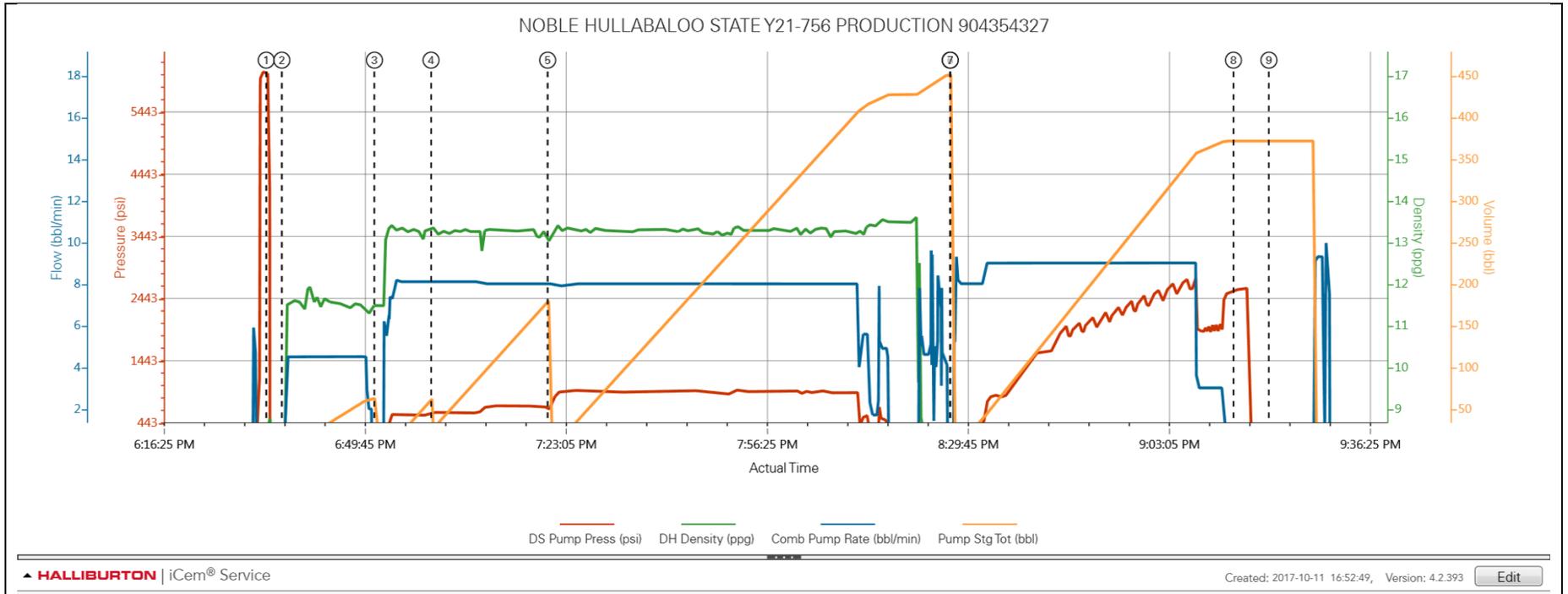
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comments
Event	1	Call Out	Call Out	10/11/2017	08:00:00	USER				CALLED OUT FROM EL ERNO OKLAHOMA
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	10/11/2017	11:00:00	USER				LEAVE YARD AFTER SAFTEY MEETING
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	10/11/2017	12:30:00	USER				ARRIVED ON LOCATION AND TALKED TO COMPANY MAN ABOUT JOB FIGURES AND THE SPOTTING OF OUR EQUIPMENT
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	10/11/2017	13:00:00	USER				ASSESSED LOCATION AN TOOK WATER SAMPLE
Event	5	Other	Other	10/11/2017	13:05:00	USER				TD: _ , TP _ , SJ: _ , OH: _ , Casing: Size/Weight/Grade: _ , Previous Casing Shoe: _
Event	6	Other	Other	10/11/2017	13:15:00	USER				Water test=pH: 7___, Cl: _1200___ , temp _50___degrees Tannin-Lignin:___NEG___; Sulfate: _200_____
Event	7	Other	Other	10/11/2017	13:30:00	USER				Spacer: _80 bbl TOS 109 FT_ Lead Cement: 42_ bbl, _150 sks, TOC 1779_ Lead Cement: 162_ bbl, _569 sks, TOC 2773_ Tail Cement: 423_ bbl, 1164_ sks, TOC 6744_ Displacement: _378_ bblCMT left in Pipe _52 Reason _SJ
Event	8	Rig-Up Equipment	Rig-Up Equipment	10/11/2017	16:00:00	USER				SPOTTED EQUIPMENT AND RIGGED UP TO FLOOR RIG IS RUNNING CASING
Event	9	Rig-Up Completed	Rig-Up Completed	10/11/2017	18:00:00	USER				RIG UP COMPLETE SAFETY MEETING WITH RIG HANDS AND HALLIBURTON ABOUT THE DANGERS OF OUR EQUIPMENT AND WENT OVER JOB FIGURES. READY TO TEST LINES
Event	10	Drop Bottom Plug	Drop Bottom Plug	10/11/2017	18:32:00	USER				HES BOTTOM PLUG
Event	11	Test Lines	Test Lines	10/11/2017	18:33:47	COM6	6058.00	8.53		500 LOW 6000 HIGH
Event	12	Pump Spacer 1	Pump Spacer 1	10/11/2017	18:36:22	COM6	334.00	11.62	4.50	80 BBL TUNED SPACER @ 11.5 PPG

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Event	13	Drop Bottom Plug	Drop Bottom Plug	10/11/2017	18:50:00	USER					HES BOTTOM PLUG
Event	14	Pump Lead Cement	Pump Lead Cement	10/11/2017	18:51:43	COM6	590.00	13.42	7.20		150 SKS 42 BBL @ 13.2 PPG
Event	15	Pump Cement	Pump Cement	10/11/2017	19:01:06	COM6	624.00	13.35	8.10		569 SKS 162 BBL @ 13.2 PPG
Event	16	Pump Tail Cement	Pump Tail Cement	10/11/2017	19:20:27	COM6	714.00	13.24	8.00		1164 SKS 423 BBL @ 13.2 PPG
Event	17	Drop Top Plug	Drop Top Plug	10/11/2017	20:27:11	COM6					HES TOP PLUG
Event	18	Pump Displacement	Pump Displacement	10/11/2017	20:27:13	COM6	384.00	8.21	8.00		PUMP 378 BBL FRESH WATER DISPLACEMENT
Event	19	Slow Rate	Slow Rate	10/11/2017	21:10:00	USER	1923.00	8.31	3.00		SLOW RATE TO 3 BPM
Event	20	Bump Plug	Bump Plug	10/11/2017	21:14:10	COM6	2030.00	8.33	3.00		BUMP PLUG @ 1976 TAKE TO 2610
Event	21	Check Floats	Check Floats	10/11/2017	21:19:00	USER					FLOATS HELD GOT 4.5 BBL BACK AND COMPANY MAN IS HAPPY
Event	22	End Job	End Job	10/11/2017	21:20:03	COM6					
Event	23	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	10/11/2017	21:30:00	USER					SAFETY MEETING OVER RIGGING DOWN
Event	24	Rig-Down Equipment	Rig-Down Equipment	10/11/2017	22:00:00	USER					RIG DOWN EQUIPMENT AND HOSES
Event	25	Rig-Down Completed	Rig-Down Completed	10/11/2017	22:45:00	USER					RIG DOWN COMPLETE
Event	26	Safety Meeting - Departing Location	Safety Meeting - Departing Location	10/11/2017	23:00:00	USER					SAFETY MEETING OVER DEPARTURE AND JOURNEY HOME
Event	27	Depart Location for Home	Depart Location for Home	10/11/2017	23:30:00	USER					LEAVE LOCATION

3.0 Attachments

3.1 Case 1-Custom Results.png



3.2 Case 1-Custom Results .png

