

# HALLIBURTON

iCem<sup>®</sup> Service

## **NOBLE ENERGY INC-EBUS**

Date: Wednesday, January 09, 2019

## **Guttersen D29-778 Production**

Job Date: Sunday, December 30, 2018

Sincerely,

Adam McKay

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 345242		<b>Ship To #:</b> 3908531		<b>Quote #:</b>		<b>Sales Order #:</b> 0905372822	
<b>Customer:</b> NOBLE ENERGY INC-EBUS				<b>Customer Rep:</b> Tim Simkins			
<b>Well Name:</b> GUTTERSEN			<b>Well #:</b> D29-778		<b>API/UWI #:</b> 05-123-48038-00		
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> KEENESBURG		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO	
<b>Legal Description:</b> SW NW-29-3N-64W-2356FNL-973FWL							
<b>Contractor:</b> H & P DRLG				<b>Rig/Platform Name/Num:</b> H & P 321			
<b>Job BOM:</b> 7523 7523							
<b>Well Type:</b> HORIZONTAL OIL							
<b>Sales Person:</b> HALAMERICA\HB70026				<b>Srvc Supervisor:</b> Nicholas Cummins			

**Job**

<b>Formation Name</b>							
<b>Formation Depth (MD)</b>	<b>Top</b>	1946ft		<b>Bottom</b>	17682ft		
<b>Form Type</b>				<b>BHST</b>	230 degF		
<b>Job depth MD</b>	17662ft			<b>Job Depth TVD</b>	6923ft		
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>	3ft		
<b>Perforation Depth (MD)</b>	<b>From</b>			<b>To</b>			

**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	0	9.625	8.921	36			0	1946	0	
Casing	0	5.5	4.778	20			0	17662	6923	
Open Hole Section			8.5				2500	6486	6923	
Open Hole Section			8.5				6486	17682	6923	

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
<b>Guide Shoe</b>	5.5	1	HES	17662	<b>Top Plug</b>	5.5	1	HES
					<b>Bottom Plug</b>	5.5	2	HES
<b>Float Collar</b>	5.5	1	HES	17615				

**Fluid Data**

<b>Stage/Plug #: 1</b>										
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 w/ Chems	Tuned Spacer III	120	bbl	11.5	3.78	23.5	4		

0.60 gal/bbl	<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>
147.42 lbm/bbl	<b>BARITE, BULK (100003681)</b>
0.60 gal/bbl	<b>MUSOL(R) A, 5 GAL PAIL (100064220)</b>
34.70 gal/bbl	<b>FRESH WATER</b>

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	140	sack	13.2	1.68		8	8.04
8.04 Gal		<b>FRESH WATER</b>							
0.95 %		<b>SCR-100 (100003749)</b>							

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	417	sack	13.2	1.68		6	8.06
0.55 %		<b>SCR-100 (100003749)</b>							
8.06 Gal		<b>FRESH WATER</b>							

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	1251	sack	13.2	2.04		8	9.75
9.75 Gal		<b>FRESH WATER</b>							
0.08 %		<b>SCR-100 (100003749)</b>							

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	391	bbl	8.33			10	

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Cement Left In Pipe	Amount	47 ft	Reason	Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	<400 ppm	Mix Water Temperature:	65 F
		Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	75 °F
Plug Bumped?	Yes	Bump Pressure:	1860 psi	Floats Held?	Yes
Cement Returns:	0 bbl				

**Comment**

## 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	Call Out	Call Out	12/29/2018	09:00:00	USER				The crew was called out on 12/29/18 at 0900. The customer requested HES on location at 1400 on 12/29/18.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	12/29/2018	13:00:00	USER				The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey. The crew departed service center.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	12/29/2018	14:10:00	USER				The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 19,975', TP 17,662' 5 1/2" 20# P-110, FC 17,615', PC 1,946' 9 5/8" 36# J-55, TVD 6,923', OH 8 1/2", Mud 9.8 ppg.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	12/29/2018	14:20:00	USER				Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/29/2018	14:30:00	USER				Crew held a safety meeting discussing the rig up procedure. Also all potential hazards associated with rigging up all HES equipment and lines.
Event	6	Rig-Up Equipment	Rig-Up Equipment	12/29/2018	14:40:00	USER				The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	12/29/2018	18:30:00	USER				Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	12/29/2018	19:50:00	USER				The crew and all personal involved with cement job discussed all potential hazards associated with job. Followed by the job procedure to ensure everyone understood the plan of action
Event	9	Start Job	Start Job	12/29/2018	20:42:05	COM6				Primed up pumps and lines. Started Recording data from 11826999.
Event	10	Drop Bottom Plug	Drop Bottom Plug	12/29/2018	20:43:08	COM6				Company man dropped bottom plug.
Event	11	Test Lines	Test Lines	12/29/2018	20:50:33	COM6	2493.30	8.62		We pressure tested the rigs IBOP to 2,500 psi. Then we pressure tested all HES lines to 4,700 psi.
Event	12	Pump Spacer 1	Pump Spacer 1	12/29/2018	20:59:38	COM6	272.30	11.65	4.10	We pumped 120 bbls of spacer with surfactants at 4 bpm. Pressure was at 280 psi. 11.5 ppg 3.78 yield 23.5 gal/sk. We

verified density using pressurized scales.

Event	13	Shutdown	Shutdown	12/29/2018	21:22:18	COM6				Shutdown to drop bottom plug and batch cap cement.
Event	14	Drop Bottom Plug	Drop Bottom Plug	12/29/2018	21:25:00	USER				
Event	15	Pump Cap Cement	Pump Cap Cement	12/29/2018	21:32:01	COM6	411.30	13.46	6.20	We pumped 42 bbls (140 sks) of cap cement at 8 bpm. Pressure was at 600 psi. 13.2 ppg 1.68 yield 8.04 gal/sk. We verified density using pressurized scales.
Event	16	Pump Lead Cement	Pump Lead Cement	12/29/2018	21:39:26	COM6	561.12	13.03	8.00	We pumped 125 bbls (417 sks) of lead cement at 5 bpm. Pressure was at 350 psi. 13.2 ppg 1.68 yield 8.06 gal/sk. We verified density using pressurized scales.
Event	17	Pump Tail Cement	Pump Tail Cement	12/29/2018	22:00:30	COM6	619.30	13.00	8.00	We pumped 455 bbls (1,251 sks) of Tail cement at 8 bpm. Pressure was at 750 psi. 13.2 ppg 2.04 yield 9.75 gal/sk. We verified density using pressurized scales.
Event	18	Clean Lines	Clean Lines	12/29/2018	23:05:15	COM6				Shutdown and blew air from the rig floor to the wash up tank. The company man loaded the bottom plug. We washed pumps and lines to the wash up tank.
Event	19	Drop Top Plug	Drop Top Plug	12/29/2018	23:17:04	COM6				Bottom plug dropped.
Event	20	Pump Displacement	Pump Displacement	12/29/2018	23:19:48	COM6	482.30	8.27	10.10	We pumped the calculated displacement of 391 bbls at 10 bpm. With MMCR in the first 20 bbls and Biocide throughout till the last 30 bbls. We slowed rate as needed.
Event	21	Bump Plug	Bump Plug	12/30/2018	00:06:28	COM6	1886.3	8.28	3.30	We bumped the plug. Final circulating pressure was 1,860 psi. We pressured up to 2,350 before shutting down.
Event	22	Other	Check Floats	12/30/2018	00:11:01	COM6				We bled pressure off the well back to the truck. We got 4.5 bbls back.
Event	23	End Job	End Job	12/30/2018	00:14:16	COM6				Cement job complete. Estimated top of cap cement 2,515'. Estimated top of lead cement 3,544'. Estimated top of tail cement 6,608'. We got 4 bbls of spacer to surface.
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/30/2018	00:15:00	USER				Crew held a safety meeting discussing the rig down procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	25	Rig-Down Equipment	Rig-Down Equipment	12/30/2018	00:25:00	USER				The crew rigged down all HES equipment and lines.
Event	26	Rig-Down Completed	Rig-Down Completed	12/30/2018	01:25:00	USER				Rig down completed no one got hurt.

Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/30/2018	01:30:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	28	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	12/30/2018	01:40:00	USER	Nick Cummins and crew would like to thank you for your business, and choosing Halliburton Cement! Please feel free to call if you have any questions.

3.0 Attachments

3.1 Cement Job With Events.png

