

## Cementing Job Summary

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 345242		<b>Ship To #:</b> 3919703		<b>Quote #:</b>		<b>Sales Order #:</b> 0906144941				
<b>Customer:</b> NOBLE ENERGY INC-EBUS				<b>Customer Rep:</b> Tim Simkins						
<b>Well Name:</b> GUTTERSEN STATE			<b>Well #:</b> DD30-735		<b>API/UWI #:</b> 05-123-48668-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> ROGGEN		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> SE SE-30-3N-63W-482FSL-892FEL										
<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\HB31357				<b>Srvc Supervisor:</b> Michael Loughran						
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>				<b>Bottom</b>				
<b>Form Type</b>						<b>BHST</b>				
<b>Job depth MD</b>		17232ft				<b>Job Depth TVD</b>				
<b>Water Depth</b>						<b>Wk Ht Above Floor</b>				
<b>Perforation Depth (MD)</b>		<b>From</b>				<b>To</b>				
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing		9.625	8.921	36			0	1923.6	0	1923.6
Casing		5.5	4.892	17			0	17030	0	6752
Open Hole Section			8.5				1923.6	17052		6752
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	5.5					Top Plug	5.5	1	HES	
Float Shoe	5.5			17030		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	
<b>Fluid Data</b>										
<b>Stage/Plug #:</b> 1										

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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	Tuned Prime Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	120	bbl	11.5	3.87		7	
1 lbm/bbl		FE-2, 2000 LB BAG - (1005549)							
145.09 lbm/bbl		BARITE, BULK (100003681)							
3.50 lbm/bbl		SEM-94P, 35 LB SACK - (1023987)							
3.50 lbm/bbl		SEM-93P, 35 LB SACK - (1023977)							
0.10 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)							
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
2	ElastiCem	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.67		8	8.04
8.03 Gal		FRESH WATER							
0.40 %		SCR-100, 1200 LB BAG - (1126328)							
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
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	482	sack	13.2	1.67		8	8.04
8.04 Gal		FRESH WATER							
0.27 %		SCR-100, 1200 LB BAG - (1126328)							
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
4	NeoCem NT1	NeoCem TM	1137	sack	13.2	2.04		8	9.79
0.08 %		FE-2, 2000 LB BAG - (1005549)							
9.79 Gal		FRESH WATER							
0.08 %		SCR-100, 1200 LB BAG - (1126328)							
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
5	Displacement	Displacement	394	bbl	8.33			8	
Cement Left In Pipe		Amount	50.1 ft		Reason			Shoe Joint	

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Mix Water:	pH 7	Mix Water Chloride:	Less 200 ppm	Mix Water Temperature:	55°F
Cement Temperature:		Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	
Plug Bumped?	Yes	Bump Pressure:	3100 psi	Floats Held?	Yes
Cement Returns:		Returns Density:		Returns Temperature:	
<b>Comment</b> Good returns throughout job. Floats held, 5 bbl. Back to pump truck. 8 bbl. Spacer to surface. Estimated tops TOTC 6934', TOLC 3420', TOPC 2399'					

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	12/2/2019	08:38:00	USER	Crew called out for on location time of 1500 hrs. 12/2/2019
Event	2	Crew Leave Yard	Crew Leave Yard	12/2/2019	13:00:00	USER	Crew Leaves Yard
Event	3	Arrive At Loc	Arrive At Loc	12/2/2019	14:30:00	USER	Arrive at location, Rig running casing, Meet with customer, TP 17030 17# P-110, TD 17052, 8.50 Hole, FC 16979.9, TVD 6752, PC 1923.6' 9.625 J-55 36#, WF 9.6 OBM, Top and 2 Bottom plug provided by customer, Water 55 Deg., PH 7, Chlorides and sulfates less than 200 ppm
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/2/2019	15:00:00	USER	Pre rig up safety meeting
Event	5	Rig-Up Equipment	Rig-Up Equipment	12/2/2019	15:10:00	USER	Rig up all service lines and iron to buffer zone
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/2/2019	23:30:00	USER	Discuss job procedures, Discuss job hazards and hazards of Halliburton Equipment.
Event	7	Start Job	Start Job	12/2/2019	23:52:24	COM4	Begin recording data, Rig circulated 10 bpm@900psi
Event	8	Drop Bottom Plug	Drop Bottom Plug	12/2/2019	23:53:48	COM4	Verified by Tim
Event	9	Test Lines	Test Lines	12/2/2019	23:54:37	COM4	Test lines to 4500 psi
Event	10	Test Lines	Test Lines	12/2/2019	23:58:05	COM4	Test lbop to 2500 psi

Event	11	Pump Spacer 1	Pump Spacer 1	12/3/2019	00:01:18	COM4	120 bbl. Tuned Prime spacer 11.5 ppg, 3.87 yield, 24.5 gal/sack
Event	12	Shutdown	Shutdown	12/3/2019	00:22:24	COM4	Shutdown to drop bottom plug
Event	13	Drop Bottom Plug	Drop Bottom Plug	12/3/2019	00:23:10	COM4	Verified by Tim
Event	14	Pump Cap Cement	Pump Cap Cement	12/3/2019	00:25:14	COM4	140 sacks ElastiCem, 41.64 bbl., 13.2ppg, 1.67 yield, 8.04 gal/sack
Event	15	Shutdown	Shutdown	12/3/2019	00:36:23	COM4	Shutdown due to turbo failure
Event	16	End Job	End Job	12/3/2019	01:23:57	USER	Stop recording data. Relief pump arrives 0345 hrs. 2 bulk trucks arrive at 0615 hrs., 1 bulk truck with lead cement arrives 0745 hrs. Wait on labs until 0930 hrs.
Event	17	Start Job	Start Job	12/3/2019	09:43:29	COM4	Begin recording data
Event	18	Test Lines	Test Lines	12/3/2019	09:51:25	COM4	Test lines 3800 psi
Event	19	Drop Bottom Plug	Drop Bottom Plug	12/3/2019	09:55:03	COM4	Verified by Dave
Event	20	Pump Spacer 1	Pump Spacer 1	12/3/2019	09:55:08	COM4	120 bbl. Tuned Prime Spacer. 11.5 ppg, 3.87 yield, 24.5 gal/sack
Event	21	Shutdown	Shutdown	12/3/2019	10:19:26	COM4	Shutdown to drop plug
Event	22	Drop Bottom Plug	Drop Bottom Plug	12/3/2019	10:20:11	COM4	Verified by Dave
Event	23	Pump Cap Cement	Pump Cap Cement	12/3/2019	10:21:16	COM4	140 sacks ElastiCem, 41.64 bbl., 13.2 ppg, 1.67 yield, 8.04 gal/sack
Event	24	Pump Lead Cement	Pump Lead Cement	12/3/2019	10:28:16	COM4	482 sacks ElastiCem, 143.36 bbl., 13.2 ppg, 1.67 yield, 8.04 gal/sack

Event	25	Pump Tail Cement	Pump Tail Cement	12/3/2019	10:52:49	COM4	1137 sacks NeoCem Tail Cement, 413.09 bbl., 13.2 ppg, 2.04 yield, 9.79 gal/sack
Event	26	Shutdown	Shutdown	12/3/2019	11:51:13	COM4	Shutdown to wash pumps and lines
Event	27	Drop Top Plug	Drop Top Plug	12/3/2019	12:00:27	COM4	Verified by Dave
Event	28	Pump Displacement	Pump Displacement	12/3/2019	12:00:30	COM4	394 bbl. fresh water displacement. First 20 bbl. has 10 gal micro matrix retarder, 6 Lbs. BE-3 throughout
Event	29	Bump Plug	Bump Plug	12/3/2019	12:54:44	COM4	FCP 2600 psi @ 3 BPM, Bump pressure 3100 psi
Event	30	Check Floats	Check Floats	12/3/2019	12:58:30	USER	Check Floats, Floats hold, 3 bbl. back, Approx. 8 bbl. spacer to surface. Calculated TOTC 6934', TOLC 3420', TOPC 2399'
Event	31	End Job	End Job	12/3/2019	13:00:42	COM4	Stop recording data
Event	32	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/3/2019	13:05:00	USER	JSA safe Rig-Down
Event	33	Rig-Down Equipment	Rig-Down Equipment	12/3/2019	13:10:00	USER	Rig down equipment
Event	34	Crew Leave Location	Crew Leave Location	12/3/2019	15:00:00	USER	Thanks for choosing Halliburton Energy Services!

## 3.0 Attachments

### 3.1 Job Chart

