

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3919220		Quote #:		Sales Order #: 0906108785					
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: Gary Stapleton							
Well Name: GUTTERSEN STATE			Well #: DD30-755			API/UWI #: 05-123-48661-00					
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO					
Legal Description: SE SW-30-3N-63W-450FSL-2613FWL											
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 321							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB31357				Srv Supervisor: Nicholas Cummins							
Job											
Formation Name											
Formation Depth (MD)		Top	1940ft		Bottom	16659ft					
Form Type				BHST							
Job depth MD		16644ft		Job Depth TVD		6784ft					
Water Depth				Wk Ht Above Floor		3ft					
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			0	1940	0	0	
Casing		5.5	4.892	17			0	16644	0	0	
Open Hole Section			8.5				1940	16659	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Alpha Sleeve	5.5	1		16500		Top Plug	5.5	1	HES		
Float Shoe	5.5	1	HES	16644		Bottom Plug	5.5	2	HES		
Float Collar	5.5	1	HES	16597		SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5				
Stage Tool	5.5					Centralizers	5.5	178			
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	Tuned Prime Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS			120	bbl	11.5	3.87	24.5	5.5	4266
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	1.67	8.04	8	1126
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	470	sack	13.2	1.67	8.04	8	3779
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	1101	sack	13.2	2.04	9.79	8	10799
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	385	bbl	8.33				
Cement Left In Pipe		Amount	47 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		7 ppm		Mix Water Temperature:		70 °F
Cement Temperature:		78 °F	Plug Displaced by:		8.33 lb/gal		Disp. Temperature:		70 °F
Plug Bumped?		Yes	Bump Pressure:		2800 psi		Floats Held?		Yes
Cement Returns:		0 bbl	Returns Density:		N/A		Returns Temperature:		N/A
Comment									
120 bbls Spacer									
42 bbls Cap									
140 bbls Lead									
400 bbls Tail									
385 bbls Displacement with MMCR in the first 20 bbls									
Final lift2,200psi									
Bump pressure 2,800									
5 bbls back to truck, floats held									
No Spacer to surface									
Estimated top of Cap 2,379'									
Estimated top of Lead 3,409'									
Estimated top of Tail 6,840'									

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)	Pump Stg Tot (bbl)	Water Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	11/17/2019	04:30:00	USER						The crew was called out on 11/17/19 at 0430. The customer requested HES on location at 1030 on 11/17/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	11/17/2019	09:00:00	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	11/17/2019	10:05:00	USER						The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 16,659', TP 16,644' 5 1/2" 17# P-110, FC 16,597', PC 1,940' 9 5/8" 36# J-55, TVD 6,784', OH 8 1/5", Mud 9.5 ppg Alpha Sleeve 16,500, Centralizers 178.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/17/2019	10:06:00	USER						Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	11/17/2019	10:20:00	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	11/17/2019	10:20:00	USER						The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	11/17/2019	12:00:00	USER	6.00	7.97	1.70	65.50	4.00	Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	11/17/2019	14:20:00	USER	-6.00	8.36	0.00	0.00	0.00	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	11/17/2019	14:45:47	COM1	-11.00	8.35	0.00	2.40	0.57	Started recording data from Elite 11189145.
Event	10	Drop Bottom Plug	Drop Bottom Plug	11/17/2019	14:46:50	USER	-10.00	8.34	0.00	0.00	0.57	Company man loaded bottom plug.
Event	11	Other	Fill Lines	11/17/2019	14:47:07	COM1	-8.00	8.34	0.00	0.00	0.57	Filled lines with 5 bbls of water at 3 bpm. Pressure was at 200 psi.
Event	12	Test Lines	Test Lines	11/17/2019	14:50:19	COM1	72.00	8.33	0.00	0.00	0.57	Pressure tested all HES lines to 4,700 psi. The pressure test passed. Then pressure tested the rigs IBOP to 2,500 psi. The pressure test passed
Event	13	Pressure Test	Pressure Test	11/17/2019	14:58:48	USER	18.00	8.60	0.50	0.80	0.05	
Event	14	Pump Spacer 1	Pump Spacer 1	11/17/2019	15:02:52	COM1	25.00	8.72	0.00	1.70	0.05	Pumped 120 bbls of spacer with dry surfactants at 5.5 bpm. Pressure was at 200 psi. 11.5 ppg 3.87 yield 24.5

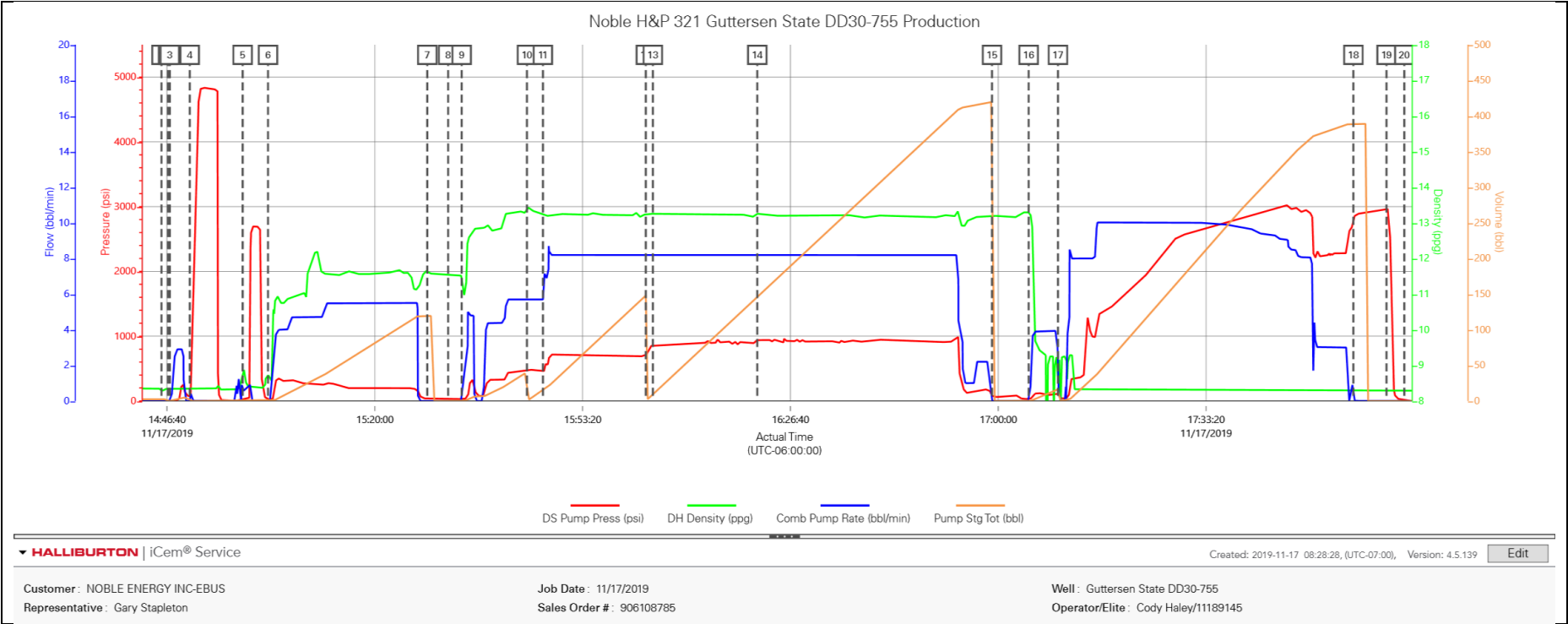
												gal/sk. We verified density using pressurized scales. Mix Water gal 4,266 actual 3,290 gal.
Event	15	Drop Bottom Plug	Drop Bottom Plug	11/17/2019	15:28:25	COM1	35.00	11.59	0.00	119.40	77.52	Company man loaded bottom plug.
Event	16	Check Weight	Check Weight	11/17/2019	15:31:46	COM1	30.00	11.54	0.00	0.00	1.57	The sample weighed up at 13.2 ppg.
Event	17	Pump Cap Cement	Pump Cap Cement	11/17/2019	15:33:56	COM1	30.00	11.52	0.00	0.00	0.00	We pumped 42 bbls (140 sks) of cap cement at 6 bpm. Pressure was at 460 psi. 13.2 ppg 1.67 yield 8.04 gal/sk. We verified density using pressurized scales. Mix Water gal 1,126 actual 885 gal.
Event	18	Pump Lead Cement	Pump Lead Cement	11/17/2019	15:44:24	COM1	457.00	13.42	5.70	0.00	0.02	We pumped 140 bbls (470 sks) of lead cement at 8 bpm. Pressure was at 730 psi. 13.2 ppg 1.67 yield 8.04 gal/sk. We verified density using pressurized scales. Mix Water gal 3,779 actual 3,520 gal.
Event	19	Check Weight	Check Weight	11/17/2019	15:46:58	COM1	441.00	13.23	5.70	14.60	7.83	The sample weighed up at 13.2 ppg.
Event	20	Pump Tail Cement	Pump Tail Cement	11/17/2019	16:03:28	COM1	706.00	13.21	8.20	148.00	83.76	We pumped 400 bbls (1,101 sks) of Tail cement at 8 bpm. Pressure was at 990 psi. 13.2 ppg 2.04 yield 9.79 gal/sk. We verified density using pressurized scales. Mix Water gal 10,779 actual 10,106 gal.
Event	21	Check Weight	Check Weight	11/17/2019	16:04:36	COM1	859.00	13.24	8.20	9.30	5.29	The sample weighed up at 13.2 ppg.

Event	22	Check Weight	Check Weight	11/17/2019	16:21:21	COM1	963.00	13.26	8.20	145.90	84.76	The sample weighed up at 13.2 ppg.
Event	23	Shutdown	Shutdown	11/17/2019	16:59:00	COM1	92.00	13.17	0.00	419.40	240.62	Shutdown to drop top plug and wash pumps and lines.
Event	24	Clean Lines	Clean Lines	11/17/2019	17:04:53	COM1	30.00	13.29	0.00	0.00	7.38	Shutdown and aligned valves to pump to wash up tank. Pumped 15 bbls of fresh water to wash pumps and lines.
Event	25	Drop Top Plug	Drop Top Plug	11/17/2019	17:09:35	COM1	104.00	8.96	0.90	16.30	11.90	Company man loaded top plug.
Event	26	Pump Displacement	Pump Displacement	11/17/2019	17:09:40	USER	82.00	8.68	0.90	0.00	0.00	Pumped the calculated displacement of 385 bbls at 10 bpm. We adjusted rate to 3 bpm the last 20 bbls. With MMCR in the first 20 bbls and BE-3 throughout until the last 50 bbls.
Event	27	Bump Plug	Bump Plug	11/17/2019	17:56:58	COM1	2812.00	8.31	0.00	388.90	382.02	Bumped the plug calculated. Final lift pressure was 2,200 psi. Pressured up to 2,800 psi before shutting down.
Event	28	Other	Check Floats	11/17/2019	18:02:17	COM1	2973.00	8.30	0.00	0.00	1.29	Bled pressure back to the truck. 5 bbls back, Floats held.
Event	29	End Job	End Job	11/17/2019	18:05:08	COM1	27.00	8.29	0.00	0.00	1.29	Cement job complete. Stopped recording data from Elite 11189145. No spacer to surface. Estimated top of Cap 2,379'. Estimated top of Lead 3,409'. Estimated top of Tail 6,840'.
Event	30	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	11/17/2019	18:06:00	USER	0.00	8.29	0.00	0.00	1.29	Crew held a safety meeting discussing the rig down

							procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	31	Rig-Down Equipment	Rig-Down Equipment	11/17/2019	18:16:00	USER	The crew rigged down all HES equipment and lines.
Event	32	Rig-Down Completed	Rig-Down Completed	11/17/2019	19:08:00	USER	Rig down completed no one got hurt.
Event	33	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/17/2019	19:30:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	34	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	11/17/2019	19:40:00	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 Gutttersen State DD30-755-Custom Results.png



3.2 Cement Job Without Events.png

