

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3768175		Quote #:		Sales Order #: 0903918134					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: Woodie Beardsley							
Well Name: WELLS RANCH STATE			Well #: AA33-744		API/UWI #: 05-123-43878-00						
Field: WATTENBERG		City (SAP): GILL		County/Parish: WELD			State: COLORADO				
Legal Description: SE SW-21-6N-63W-255FSL-2540FWL											
Contractor: H & P DRLG					Rig/Platform Name/Num: H & P 517						
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB70026					Srcv Supervisor: Nathaniel Moore						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST		215 degF				
Job depth MD		16456ft			Job Depth TVD						
Water Depth					Wk Ht Above Floor						
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	1925	0	1925
Casing			5.5	4.778	20			0	16441	0	6719
Open Hole Section				8.5				2500	6719		
Open Hole Section				8.5				6719	16456		
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	11.5 lb/gal Tuned Spacer III w/ Chems	Tuned Spacer III			40	bbl	11.5	3.78			
35.10 gal/bbl		FRESH WATER									
0.40 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)									
147.42 lbm/bbl		BARITE, BULK (100003681)									
0.40 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)									
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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III			40	bbl	11.5	3.79			
35.90 gal/bbl		FRESH WATER									

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147.42 lbm/bbl		BARITE, BULK (100003681)							
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	ELASTICEM™ SYSTEM	150	sack	13.2	1.57		6	7.53
7.53 Gal		FRESH WATER							
0.90 %		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	ElastiCem w/ SCBL	ELASTICEM™ SYSTEM	574	sack	13.2	1.6		6	7.69
0.50 %		SCR-100 (100003749)							
7.69 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
5	NeoCem NT1	NeoCem TM	1109	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
6	Displacement	Displacement	360	bbl	8.33				
Cement Left In Pipe	Amount	Reason						Shoe Joint	
	5 bbl spacer to surface								

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	3/24/2017	06:00:00	USER				OL time 1230. Verify equipment and materials. Rolled pump truck from another job.
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	3/24/2017	12:00:00	USER				Sign in with customer. Spot in and rig up equipment. Rig running casing. TD 16456' 8.5" open hole. TP 16441' 5.5" 20# P-110. Float collar 16394'. Surface 1926' 9.625" 36# J-55. MW 9.2 ppg TVD 6700'. Water PH 7 Chlorides <100 Sulfates <200 Temp 75 degrees.
Event	3	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/24/2017	14:45:00	USER				Discuss job procedure with HES and rig crew
Event	4	Start Job	Start Job	3/24/2017	15:10:58	COM1				Drop 1st bottom plug. Fill lines 3 bbl water
Event	5	Test Lines	Test Lines	3/24/2017	15:15:35	COM1	8.63		4629.00	500 psi kickout test and 4800 psi pressure test against 2" lo-torc
Event	6	Test Lines	Test Lines	3/24/2017	15:22:47	COM1	8.61		3598.00	3500 psi pressure test agains rig's IBOP.
Event	7	Pump Spacer 1	Pump Spacer 1	3/24/2017	15:30:40	COM1	11.50	4.50	23.00	80 bbl tuned spacer 11.5 ppg wth surfactants in first 40 bbl.
Event	8	Drop Bottom Plug	Drop Bottom Plug	3/24/2017	15:47:14	COM1				Drop 2nd bottom plug
Event	9	Pump Lead Cement	Pump Lead Cement	3/24/2017	15:53:10	COM1	13.20	4.00	170.00	724 sks/206 bbl 13.2 ppg 1.6 ft3/sk 7.69 gal/sk. No CBL in first 150 sks
Event	10	Check Weight	Check weight	3/24/2017	15:53:58	COM1	12.95	4.90	334.00	13.2 ppg verified with pressurized scales
Event	11	Check Weight	Check weight	3/24/2017	16:05:05	COM1	13.29	8.00	757.00	13.2 ppg
Event	12	Pump Tail Cement	Pump Tail Cement	3/24/2017	16:21:38	COM1	13.23	6.10	498.00	1109 sks/403 bbl 13.2 ppg 2.04 ft3/sk 9.75 gal/sk
Event	13	Check Weight	Check weight	3/24/2017	16:23:43	COM1	13.27	8.00	1034.00	13.2 ppg
Event	14	Check Weight	Check weight	3/24/2017	16:50:08	COM1	13.28	8.00	1035.00	13.2 ppg
Event	15	Shutdown	Shutdown	3/24/2017	17:24:28	COM1				Wash pumps and lines/blow down iron from rig floor
Event	16	Drop Top Plug	Drop Top Plug	3/24/2017	17:24:33	COM1				Witnessed by customer rep

Event	17	Pump Displacement	Pump Displacement	3/24/2017	17:25:41	COM1	8.24	10.00	18.00	360 bbl water displacement with Aldecide. MMCR in first 10 bbl. 5 bbl spacer to surface
Event	18	Bump Plug	Bump Plug	3/25/2017	18:03:59	COM1			2308.00	1900 psi final pump pressure. Pressured up to 2350 psi.
Event	19	Other	Check floats	3/25/2017	18:05:55	COM1				4 bbl back. Floats held
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/25/2017	18:10:00	USER				
Event	21	End Job	End Job	3/25/2017	18:12:28	COM1				
Event	22	Depart Location Safety Meeting	Depart Location Safety Meeting	3/25/2017	19:30:00	USER				