

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3783214		Quote #:		Sales Order #: 0904182578					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: .							
Well Name: WELLS RANCH			Well #: AF07-666			API/UWI #: 05-123-44240-00					
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO					
Legal Description: SE NE-8-5N-62W-2275FNL-175FEL											
Contractor: H & P DRLG					Rig/Platform Name/Num: H & P 517						
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB70026					Srcv Supervisor: Nathaniel Moore						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type											
BHST											
Job depth MD		16540ft			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		J-55	0	1936	0	1936	
Casing	0	5.5	4.778	20	BUTTRESS	P-110	0	16531	0	6470	
Open Hole Section			8.5				1936	6470	1936	6470	
Open Hole Section			8.5				6470	16540	0	6470	
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	40	bbl	11.5	3.78					
35.10 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	ELASTICEM™ SYSTEM	150	sack	13.2	1.57		6	7.53		
7.52 Gal		FRESH WATER									

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	ElastiCem w/ SCBL	ELASTICEM™ SYSTEM	499	sack	13.2	1.6		6	7.69
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/mi n	Total Mix Fluid Gal
4	NeoCem NT1	NeoCem TM	1149	sack	13.2	2.04		6	9.75
9.75 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
5	Displacement	Displacement	365	bbl	8.33				
Cement Left In Pipe	Amount	Reason						Shoe Joint	

3 bbl spacer to surface.

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	7/25/2017	08:00:00	USER				OL time 1400. Verify equipment and materials.
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	7/25/2017	13:30:00	USER				Sign in with customer. Spot in and rig up equipment. TD 16540' 8.5" hole. TP 16531' 5.5" 20# P-110. FC 16490'. Surface 1936' 9.625" 36#. TVD 6460'. MW 9.4 ppg.
Event	3	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/25/2017	17:30:00	USER				Discuss job procedure with HES and rig crew.
Event	4	Start Job	Start Job	7/25/2017	17:53:16	COM1				
Event	5	Other	Fill lines	7/25/2017	18:15:00	USER				Drop 1st bottom plug. Fill lines with 4 bbl water
Event	6	Test Lines	Test Lines	7/25/2017	18:18:30	COM1	3059.00	8.53		500 psi kickout test and 3000 psi pressure test against rig's ibop.
Event	7	Pump Spacer 1	Pump Spacer 1	7/25/2017	18:21:25	COM1	573.00	11.37	5.90	80 bbl tuned spacer 11.5 ppg with surfactants. 3.78 ft3/sk 23.5 gal/sk
Event	8	Shutdown	Shutdown	7/25/2017	18:55:05	COM1				3" flow meter quit working. Shutdown for 10 minutes to diagnose issue. Flow meter impeller was broken. Discussed with company rep and decided to continue with job and mix without ADC.
Event	9	Drop Bottom Plug	Drop Bottom Plug	7/25/2017	19:10:57	COM1				Drop 2nd bottom plug
Event	10	Pump Lead Cement	Pump Lead Cement	7/25/2017	19:16:04	COM1	467.0	13.26	5.80	150 sks without CBL and 499 sks with. 185 bbl ElastiCem. 13.2 ppg 1.6 ft3/sk 7.69 gal/sk
Event	11	Check Weight	Check weight	7/25/2017	19:22:49	COM1	490.00	13.30	6.00	13.2 ppg verified with pressurized scales.
Event	12	Check Weight	Check weight	7/25/2017	19:27:40	COM1	601.00	13.32	6.00	13.2 ppg
Event	13	Pump Tail Cement	Pump Tail Cement	7/25/2017	19:45:42	COM1	612.00	13.20	7.00	1149 sks/417 bbl NeoCem Tail 13.2 ppg 2.04 ft3/sk 9.75 gal/sk
Event	14	Check Weight	Check weight	7/25/2017	19:48:57	COM1	833.00	13.17	6.90	13.2 ppg
Event	15	Shutdown	Shutdown	7/25/2017	20:48:58	COM1				Wash pumps and lines/blow down with rig air.
Event	16	Drop Top Plug	Drop Top Plug	7/25/2017	20:56:31	COM1				Witnessed by company rep.

Event	17	Pump Displacement	Pump Displacement	7/25/2017	20:56:38	COM1	577.00	8.08	10.00	365 bbl water displacement with retarder in first 20 bbl and biocide throughout.
Event	18	Bump Plug	Bump Plug	7/25/2017	21:41:42	COM1	2026.00	8.09	4.00	1900 psi final pump pressure. Pressured up to 2500 psi and held for 5 minutes.
Event	19	Other	Check floats	7/25/2017	21:46:59	USER				4.5 bbl back. Floats held
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/25/2017	21:47:00	USER				
Event	21	End Job	End Job	7/25/2017	21:49:39	COM1				Estimated Top of Tail: 6310'. Top 2nd lead 2965'. Top of 1st lead 1750'. 3 bbl spacer to surface.
Event	22	Depart Location Safety Meeting	Depart Location Safety Meeting	7/25/2017	23:30:00	USER				