

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3630420		Quote #:		Sales Order #: 0903493472					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: John							
Well Name: REAGAN			Well #: LD06-675			API/UWI #: 05-123-40819-00					
Field: WILDCAT		City (SAP): RAYMER		County/Parish: WELD		State: COLORADO					
Legal Description: NE NE-5-9N-58W-735FNL-330FEL											
Contractor: H & P DRLG					Rig/Platform Name/Num: H & P 517						
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB61755					Srvc Supervisor: Nathaniel Moore						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST		230 degF				
Job depth MD		16038ft			Job Depth TVD		5875				
Water Depth		0 ft			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	1908	0	1908	
Casing		5.5	4.778	20			0	18024	0	5785	
Open Hole Section			8.5				1908	18038	1908	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			18024		Top Plug	5.5	1	HES		
Float Shoe	5.5					Bottom Plug	5.5	1	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		
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 lb/gal Tuned Spacer III	Tuned Spacer III			40	bbl	11	4.72		5	
0.40 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)									
118.19 lbm/bbl		BARITE, BULK (100003681)									
0.40 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)									
36.20 gal/bbl		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/min	Total Mix Fluid Gal	
2	11 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11	4.72		5		
118.19 lbm/bbl		BARITE, BULK (100003681)								
36.20 gal/bbl		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	
3	Elasticem w/o CBL	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		5	7.53	
7.53 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	
4	ElastiCem W/ CBL	ELASTICEM (TM) SYSTEM	486	sack	13.2	1.6		5	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/min	Total Mix Fluid Gal	
5	EconoCem	ECONOCEM (TM) SYSTEM	1411	sack	13.5	1.68		5	7.98	
7.98 Gal		FRESH WATER								
0.40 %		HR-5, 50 LB SK (100005050)								
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	354	bbl	8.33					
Cement Left In Pipe		Amount	46 ft		Reason			Shoe Joint		

No spacer to surface

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Driv-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	Call Out	8/24/2016	22:30:00	USER					OL time 0530 Verify Equipment and materials
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	8/25/2016	02:00:00	USER					Journey management with crew
Event	3	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/25/2016	04:45:00	USER					Sign in at safety shack. Spot equipment.
Event	4	Other	Meet with customer rep	8/25/2016	05:00:00	USER					Stetson Nielsen. TD 16038' 8.5" open hole. TP 16024' 5.5" 20# P-110 casing. TVD 5785'. Surface 1908' 9.625" 36# J-55. MW 10.4 ppg PV 18 YP 15.
Event	5	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/25/2016	10:30:00	USER	-9.00	8.34	0.00	0.0	Rig circulated 2 bottoms up. Discuss job procedure with HES and rig crew.
Event	6	Start Job	Start Job	8/25/2016	10:58:33	COM1	-12.00	8.36	0.00	0.0	
Event	7	Prime Pumps	Prime Pumps	8/25/2016	10:59:13	COM1	-3.00	8.29	0.00	0.0	
Event	8	Test Lines	Test Lines	8/25/2016	11:09:16	COM1	4532.00	8.51	0.00	2.5	Test iron to 4700 psi with 500 psi kick-out test
Event	9	Test Lines	Test Lines	8/25/2016	11:16:06	COM1	2706.00	8.45	0.00	3.9	Test rig kelly hose to 3000 psi.
Event	10	Pump Spacer 1	Pump Tuned spacer	8/25/2016	11:21:49	COM1	12.00	8.43	0.00	0.0	11 ppg tuned spacer. 40 bbl with surfactants and 40 bbl without.
Event	11	Pump Lead Cement	Pump Lead Cement	8/25/2016	11:41:09	COM1	427.00	13.20	4.00	0.1	150 sks / 42 bbl 13.2 ppg 1.57 ft3/sk 7.53 gal/sk Without CBL
Event	12	Pump Lead Cement	Pump Lead Cement	8/25/2016	11:50:47	COM1	614.00	13.19	7.50	0.2	486 sks / 138 bbl 13.2 ppg 1.6 ft3/sk 7.69 gal/sk with CBL
Event	13	Pump Tail Cement	Pump Tail Cement	8/25/2016	12:08:20	COM1	686.00	13.38	7.50	139.9	1411 sks / 422 bbl 13.5 ppg 1.68 ft3/sk 7.98 gal/sk
Event	14	Other	Shutdown/Clean lines	8/25/2016	13:10:00	USER	33.00	8.27	5.10	10.1	Wash pumps and lines to cement tank. Blow back stand pipe and kelly hose with rig air.

Event	15	Drop Top Plug	Drop Top Plug	8/25/2016	13:18:26	COM1	-6.00	1.30	0.00	0.0	Plug placed into casing by company rep.
Event	16	Pump Displacement	Pump Displacement	8/25/2016	13:20:21	COM1	-7.00	1.74	0.00	0.0	354 bbl water displacement with MMCR in the first 20 and biocide throughout. No spacer returns to surface.
Event	17	Bump Plug	Bump Plug	8/25/2016	13:59:26	COM1	1346.00	8.30	3.00	356.2	1380 psi final circulating pressure. Pressured up to 2200 psi.
Event	18	Other	Shut in back side	8/25/2016	14:02:00	USER	1975.00	8.31	0.00	356.9	Annulus still flowing after bumping plug and shutting down. Rig will shut it in for 1.5 hours.
Event	19	Other	Check floats	8/25/2016	14:18:10	USER	2058.00	8.43	0.00	0.0	4 bbl back. Floats held.
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/25/2016	14:20:00	USER	-22.00	8.30	0.00	0.0	Safety meeting with HES crew
Event	21	End Job	End Job	8/25/2016	14:20:39	COM1	-16.00	8.30	0.00	0.0	
Event	22	Depart Location Safety Meeting	Depart Location Safety Meeting	8/25/2016	15:30:00	USER					Journey management with crew