

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3783320		Quote #:		Sales Order #: 0904171133				
Customer: NOBLE ENERGY INC - EBUS				Customer Rep:						
Well Name: WELLS RANCH			Well #: AF07-659			API/UWI #: 05-123-44246-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO				
Legal Description: SE NE-8-5N-62W-2313FNL-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:						
Job										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type					BHST					
Job depth MD		16445ft			Job Depth TVD		6500ft			
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	1930	0	1930
Casing	0	5.5	4.778	20	BUTTRESS	P-110	0	16435	0	6500
Open Hole Section			8.5				1930	6535	0	6500
Open Hole Section			8.5				6535	16445	0	6500
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		80	bbl	11.5	3.78		5	
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		150	sack	13.2	1.57		6	7.53
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		500	sack	13.2	1.6		8	7.69
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

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4	NeoCem NT1	NeoCem TM	1140	sack	13.2	2.04		8	9.75
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
5	Displacement	Displacement	363.9	bbl	8.33			10	
Cement Left In Pipe		Amount	44ft		Reason			Shoe Joint	
Comment Full returns throughout the job. Got 1 bbl of interphase back. Estimated Top of tail 6,331', Top of Lead #2 2,839', Top of Lead #1 1,828', Top of Spacer 158'. Floats held, got 4.5bbls. back to the truck.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comments
Event	1	Call Out	Call Out	7/20/2017	10:00:00	USER				Crew was called out at 10:00 for an on location time of 16:00.
Event	2	Safety Meeting - Departing Location	Safety Meeting - Departing Location	7/20/2017	12:50:00	USER				Held a pre journey safety meeting and JSA.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/20/2017	13:00:00	USER				Started journey management with dispatch and the crew left the yard.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/20/2017	15:15:00	USER				Performed a hazard hunt and site assessment. Checked in with the customer and discussed numbers needed to calculate the job and rig up. Rig was running casing. Surface Casing: 9.625" 36# set at 1,930'. Production Casing: 5.5" 20# set at 16,435'. Float Collar: 16,391'. TVD: 6,500'. OH: 8.5" Mud#: 9.3ppg. Water test, Temp: 79 degrees F. PH: 7.5 Chlorids: 0 ppm.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	7/20/2017	15:30:00	USER				Held pre rig up safety meeting and JSA.
Event	6	Rig-Up Equipment	Rig-Up Equipment	7/20/2017	15:45:00	USER				Spotted trucks in and rigged up all iron and hoses for the job.
Event	7	Safety Meeting	Safety Meeting	7/20/2017	18:45:00	USER				Held pre job safety meeting and JSA with all personnel on location.
Event	8	Start Job	Start Job	7/20/2017	20:27:02	COM4				Pumped 3 bbls of fresh water at 3 bpm. to fill lines. Circulating pressure was 225 psi.
Event	9	Test Lines	Test Lines	7/20/2017	20:30:38	COM4		4333.00	8.49	Pressure tested lines to 4,500 psi. with a 500 psi. electronic kick out test.
Event	10	Drop Bottom Plug	Drop Bottom Plug	7/20/2017	20:35:41	COM4				Dropped bottom plug witnessed by customer.
Event	11	Pump Spacer 1	Pump Spacer 1	7/20/2017	20:38:42	COM4	2.80	290.00	11.46	Pumped 80 bbls. of Tuned Spacer mixed at 11.5 ppg. Density was verified by pressurized scales.
Event	12	Drop Bottom Plug	Drop Bottom Plug	7/20/2017	21:02:40	COM4				Dropped bottom plug witnessed by customer.
Event	13	Pump Lead Cement	Pump Lead Cement	7/20/2017	21:05:46	COM4	3.60	214.00	13.22	Pumped 42 bbls (150 sks) of Elasticem Mixed at 13.2 ppg. Density

was verified by pressurized scales.

Event	14	Pump Lead Cement	Pump Lead Cement	7/20/2017	21:13:29	COM4	6.40	531.00	13.22	Pumped 143 bbls (500 sks) of Elasticem Mixed at 13.2 ppg. Density was verified by pressurized scales.
Event	15	Pump Tail Cement	Pump Tail Cement	7/20/2017	21:36:13	COM4	5.00	343.00	13.04	Pumped 414 bbls. (1140 sks) of Neocem mixed at 13.2 ppg. Density was verified by pressurized scales.
Event	16	Shutdown	Shutdown	7/20/2017	22:29:45	COM4				
Event	17	Clean Lines	Clean Lines	7/20/2017	22:40:58	COM4				Washed pumps and lines until clean.
Event	18	Drop Top Plug	Drop Top Plug	7/20/2017	22:48:25	COM4				Dropped top plug witnessed by customer.
Event	19	Pump Displacement	Pump Displacement	7/20/2017	22:50:30	COM4	10.10	526.00	7.87	Pumped 363 bbls. of fresh water with MMCR in the first 20 bbls and Biocide throughout the rest of displacement.
Event	20	Rig-Down Equipment	Rig-Down Equipment	7/20/2017	23:05:00	USER				Rigged down all lines, hoses, and equipment.
Event	21	Bump Plug	Bump Plug	7/20/2017	23:31:50	COM4	3.00	1870.00	7.94	Bumped the plug at 3 bpm. Finale circulating pressure was 1,870 psi. Brought pressure up to 2,700 psi for five minutes.
Event	22	Check Floats	Check Floats	7/20/2017	23:37:12	USER				Bled off pressure to check floats. Floats held and got 4.5 bbls of fluid back to the truck.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/20/2017	23:50:00	USER				Held pre rig down safety meeting and JSA.
Event	24	Depart Location Safety Meeting	Depart Location Safety Meeting	7/21/2017	01:00:00	USER				Held pre journey safety meeting and JSA
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/21/2017	01:10:00	USER				Started journey management with dispatch and the crew left location.