

HALLIBURTON

*Cementing Job Summary**The Road to Excellence Starts with Safety*

Sold To #: 345242		Ship To #: 3714683		Quote #:		Sales Order #: 0904092067				
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: Tim Simkins						
Well Name: CONSTITUTION FEDERAL		Well #: LC21-655		API/UWI #: 05-123-42632-00						
Field: UNDESIGNATED	City (SAP): KEOTA	County/Parish: WELD		State: COLORADO						
Legal Description: SW NW-22-9N-59W-2175FNL-401FWL										
Contractor: Noble		Rig/Platform Name/Num: H&P 524								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB70026				Srv Supervisor: Nicholas Roles						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST		215 degF				
Job depth MD		11111ft		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	1931	0	1931
Casing		5.5	4.778	20		P-110	0	11111	0	6115
Open Hole Section			8.5				6104	11121	6104	6115
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	Tuned Spacer III		80	bbl	11.5	3.78		5	
147.42 lbm/bbl		BARITE, BULK (100003681)								
0.60 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
36.09 gal/bbl		FRESH WATER								
0.60 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
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 (TM) SYSTEM		150	sack	13.2	1.57		6	7.54
7.54 Gal		FRESH WATER								
0.25 %		SCR-100 (100003749)								

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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
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	458	sack	13.2	1.6		8	7.69
0.20 %		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
4	NeoCem NT1	NeoCem TM	565	sack	13.2	2.04		8	9.75
9.75 Gal		FRESH WATER							
0.05 %		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
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33			10	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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	245	bbl	8.33			10	
Cement Left In Pipe		Amount	50'		Reason			Shoe Joint	
Comment Got 0bbls spacer to surface. Estimated TOL#1-1886', TOL#2-2905',TOT-6104'									

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)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	6/15/2017	14:00:00	USER				Crew call out for o/l at 2000
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/15/2017	19:15:00	USER				All crew aware of hazards and directions. All fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/15/2017	19:30:00	USER				Started journey management.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	6/15/2017	21:30:00	USER				Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment. Rig had 1000ft casing left to run.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/15/2017	21:45:00	USER				All hse present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	6	Other	Other	6/15/2017	22:30:00	USER				Water Test- PH-6 Chlo-0 Temp-60 Cement temp-70
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/16/2017	00:05:14	USER				Discussed job associated hazards, contingencies and job procedure with all job associated personnel.
Event	8	Start Job	Start Job	6/16/2017	00:36:51	COM4				TD-11121', TP-11111' 5.5" 20#, FC-11061', TVD-6115', SURF-1931' 9.625" 36#, OH-8.5" MUD-9.3#
Event	9	Test Lines	Test Lines	6/16/2017	00:39:54	COM4	8.50		4663.00	Pumped 5bbls fresh water to fill lines, closed 2" lo torc, performed 500psi k/o function test, followed with 5th gear stall at 1760psi, proceeded to bring pressure to 4500psi, held good no leaks.
Event	10	Drop Bottom Plug	Drop Bottom Plug	6/16/2017	00:47:50	COM4				Dropped by HES supervisor, witnessed by company man.
Event	11	Pump Spacer 1	Pump Spacer 1	6/16/2017	00:47:55	COM4	11.60	4.00	225.00	Pumped 80bbls Tuned Spacer III 11.5# 3.78y 23.8g/s with 50g Musol A, 50g Dual Spacer B and 20g D-Air at 5bpm 212psi.
Event	12	Drop Bottom Plug	Drop Bottom Plug	6/16/2017	01:09:05	COM4				Dropped by HES supervisor, witnessed by company man.
Event	13	Pump Lead Cement	Pump Lead Cement	6/16/2017	01:12:25	COM4	13.46	6.10	480.00	Pumped 150sks or 41.9bbls Elasticem w/o CBL 13.2# 1.57y 7.53g/s at 6bpm 458psi.

Event	14	Check Weight	Check Weight	6/16/2017	01:17:07	COM4	13.19	6.10	471.10	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check Weight	6/16/2017	01:20:20	COM4	13.28	6.10	490.70	Weight verified with pressurized mud scales.
Event	16	Pump Lead Cement	Pump Lead Cement	6/16/2017	01:22:58	COM4	12.98	6.10	438.23	Pumped 458sks or 130.5bbls Elasticem w/CBL 13.2# 1.6y 7.69g/s at 8bpm 667psi.
Event	17	Check Weight	Check Weight	6/16/2017	01:35:55	COM4	13.18	8.00	641.08	Weight verified with pressurized mud scales.
Event	18	Pump Tail Cement	Pump Tail Cement	6/16/2017	01:43:46	COM4	13.03	8.00	642.80	Pumped 565sks or 205.3bbls 13.2# 2.04y 9.75g/s Neocem at 8bpm 860psi.
Event	19	Check Weight	Check Weight	6/16/2017	01:44:29	COM4	12.94	8.00	759.74	Weight verified with pressurized mud scales.
Event	20	Check Weight	Check Weight	6/16/2017	02:00:10	USER	13.17	8.00	842.69	Weight verified with pressurized mud scales.
Event	21	Shutdown	Shutdown	6/16/2017	02:11:04	COM4				Shutdown, rig blew air through lines to pits, followed with 5bbls fresh water through pumps and lines.
Event	22	Pump Displacement	Pump Displacement	6/16/2017	02:24:23	COM4	8.01	10.10	477.00	Pumped 245.5bbls fresh water with 10g MMCR in first 20bbls, 20g Algicide throughout.
Event	23	Drop Top Plug	Drop Top Plug	6/16/2017	02:24:59	COM4				Dropped by HES supervisor, witnessed by company man.
Event	24	Bump Plug	Bump Plug	6/16/2017	02:55:33	COM4	8.37		1740.00	Slowed down to 3bpm at 230bbls away, final circulating pressure-1740psi, bump pressure-2361psi
Event	25	Check Floats	Check Floats	6/16/2017	03:00:30	USER				Released pressure and got 3bbls back to truck, floats held.
Event	26	End Job	End Job	6/16/2017	03:02:58	COM4				Got 0bbls spacer to surface. Estimated TOT-6104', TOL#2-2905', TOL#1-1886'.
Event	27	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	6/16/2017	03:15:00	USER				All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	28	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/16/2017	14:00:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	29	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	6/16/2017	14:15:00	USER				Pre journey managment prior to departure.