

HALLIBURTON

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

Sold To #: 300466	Ship To #: 3786949	Quote #: 0022313558	Sales Order #: 0904092875							
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep: Carlton Cooley								
Well Name: BUTTERBALL	Well #: 25N-34HZ	API/UWI #: 05-123-44408-00								
Field: WATTENBERG	City (SAP): IONE	County/Parish: WELD	State: COLORADO							
Legal Description: NE NW-10-2N-67W-820FNL-2265FWL										
Contractor: NABORS DRLG		Rig/Platform Name/Num: NABORS X22								
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Steven Markovich								
<b>Job</b>										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	15894ft	Job Depth TVD								
Water Depth		Wk Ht Above Floor								
Perforation Depth (MD)	From	To								
<b>Well Data</b>										
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	1837	0	1837
Casing		5.5	4.892	17	LTC	HCP110	0	15894	0	6572
Open Hole Section			7.875				1837	15904	1837	6572
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			15894		Top Plug	5.5		Weatherford	
Float Shoe	5.5					Bottom Plug	5.5		Weatherford	
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	
<b>Fluid Data</b>										
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	Tuned Spacer III	Tuned Spacer III	60	bbl	10.5	6.43				
0.70 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
86.45 lbm/bbl		BARITE, BULK (100003681)								
37.58 gal/bbl		FRESH WATER								
0.70 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003685)								

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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	ElastiCem - Cap Cement	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		6	7.53
7.52 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
3	ElastiCem	ELASTICEM (TM) SYSTEM	390	sack	13.2	1.57		6	7.54
0.35 %		SCR-100 (100003749)							
7.54 Gal		FRESH WATER							
0.10 %		SUPER CBL, 50 LB PAIL (100003668)							
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	EconoCem	ECONOCEM (TM) SYSTEM	1070	sack	13.5	1.68		6	7.98
8 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
5	Biocide Water and MMCR	Biocide Water and MMCR	40	bbl	8.34				
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	Biocide Water	Biocide Water	248.69	bbl	8.34				
Comment Spacer to surface at 364bbls away bringing 4bbls of spacer to surface. Estimated Top of Tail Cement 5534' Estimated top of Lead Cement with CBL 2005' Estimated Top of Lead Cement 1070' See job log for job details...									

## 2.0 Real-Time Job Summary

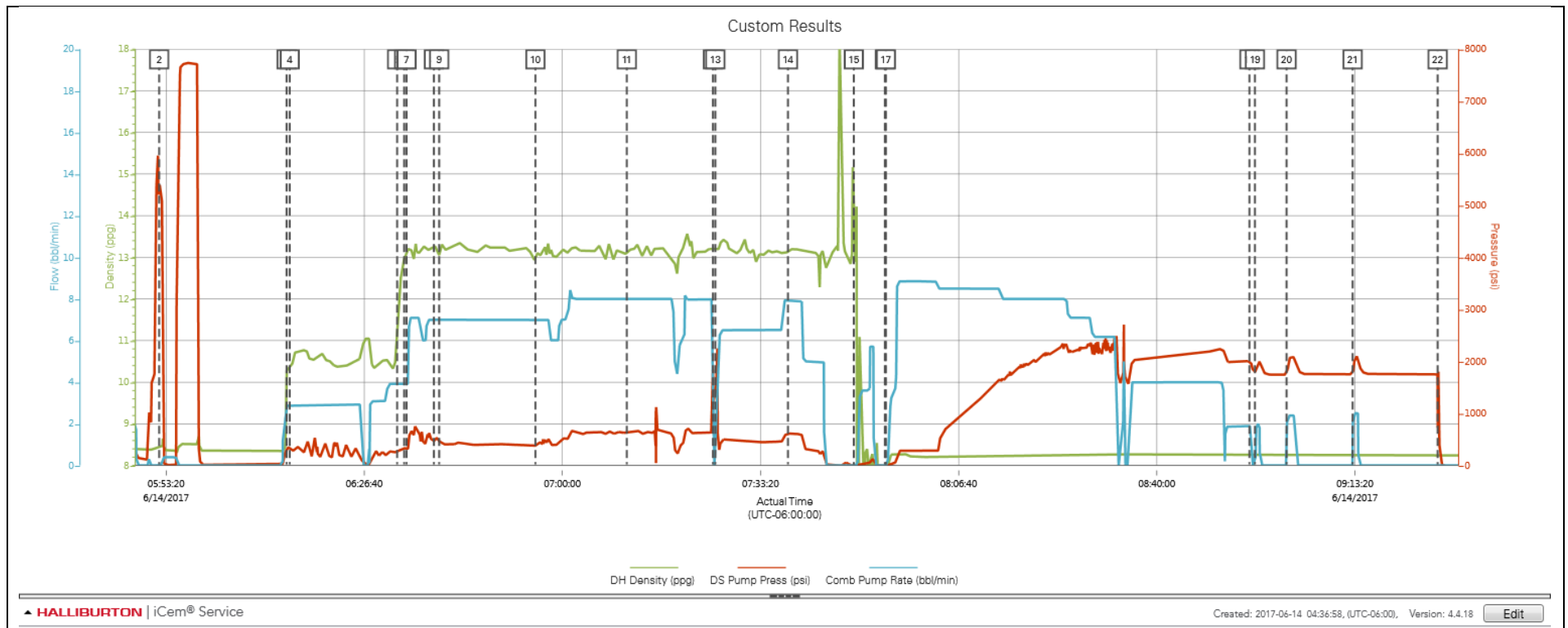
## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Start Job	Start Job	6/14/2017	05:45:25	COM4	8.14	2.00	0.00	TD 15904' TP 15894' FC 15892' 5 1/2 17# CSG 7 7/8 OPH 9 5/8 36# Sur CSG 1837' Estimated Top of Tail Cement 5534' Estimated Top of Lead Cement with CBL 2005' Estimated Top of Lead Cement 1070'
Event	2	Test Lines	Test Lines	6/14/2017	05:52:11	COM4	8.47	5299.00	0.00	500psi kick out test then bring up pressure to 7500psi. While bringing up to 7500psi pop off went off as its set for 5000psi. Put a 1" low torque valve on pop off and re did pressure test to 7500psi
Event	3	Check Weight	Check Weight	6/14/2017	06:13:36	COM4	10.17	372.00	2.90	Weight verified by pressurized scales.
Event	4	Pump Spacer 1	Pump Spacer 1	6/14/2017	06:14:08	COM4	10.40	327.00	2.90	Pump 60bbls of 10.5ppg 6.43yield Tuned Spacer III with surfactants. Pumped spacer at 3bbl/min 372psi
Event	5	Drop Top Plug	Drop Top Plug	6/14/2017	06:32:12	COM4	11.02	269.00	3.90	HES plug container loaded and verified by company rep Carlton Cooley. Dropped Weatherford yellow bottom plug.
Event	6	Check Weight	Check Weight	6/14/2017	06:33:23	COM4	12.96	335.00	4.00	Weight verified by pressurized scales.
Event	7	Pump Lead Cement	Pump Lead Cement	6/14/2017	06:33:48	COM4	13.20	348.00	4.00	Pump 41.94bbls of 13.2ppg 1.57yield Lead cement. Pumped at 4bbl/min 275psi
Event	8	Check Weight	Check Weight	6/14/2017	06:38:23	COM4	13.28	511.00	7.00	Weight verified by pressurized scales.
Event	9	Pump Lead Cement	Pump Lead Cement	6/14/2017	06:39:16	USER	13.06	462.00	7.00	Pump 109.05bbls of 13.2ppg 1.57yield Lead cement w/super CBL. Pumped at 7bbl/min 430psi.
Event	10	Pump Tail Cement	Pump Tail Cement	6/14/2017	06:55:27	COM4	13.07	380.00	7.00	Pump 320.15bbls of 13.2ppg 1.68 Tail Cement. Pumped at 7bbl/min 380psi
Event	11	Check Weight	Check Weight	6/14/2017	07:10:50	COM4	13.15	647.00	8.00	Weight verified by pressurized scales.
Event	12	Other	Other	6/14/2017	07:25:19	USER	13.18	1840.00	7.90	While pumping tail cement pressure came up and kicked out our pumps. Pressure came up to 1840psi and the kick outs were set at 2500psi.

Event	13	Other	Other	6/14/2017	07:25:44	USER	13.20	1392.00	0.00	Re-set kick outs back to 2500psi and kicked pumps back on. pressure spiked up to 2277psi then dropped and maintained around 450psi.
Event	14	Check Weight	Check Weight	6/14/2017	07:37:57	COM4	13.12	640.00	7.90	Weight verified by pressurized scales.
Event	15	Clean Lines	Clean Lines	6/14/2017	07:49:02	COM4	14.48	-7.00	0.00	Shutdown. Had rig blow down lines to 4 sided tank then washed pumps and lines.
Event	16	Drop Top Plug	Drop Top Plug	6/14/2017	07:54:15	COM4	4.23	-11.00	0.00	HES plug container loaded and verified by company rep Carlton Cooley. Dropped Weatherford orange top plug.
Event	17	Pump Displacement	Pump Displacement	6/14/2017	07:54:25	COM4	4.49	-11.00	0.00	Pump 368.69bbls. First 40bbls of H2O with MMCR then 328bbls of biocide water. Pumped at 8bbls/min slowing down incrementally with pressure climbing. Spacer came to surface at 364 away, bringing 4bbls of spacer to surface.
Event	18	Shutdown	Shutdown	6/14/2017	08:55:35	USER	8.25	2004.00	1.90	Shutdown, as we reached calculated displacement of 368.69bbls
Event	19	Other	Other	6/14/2017	08:56:31	USER				After speaking with James company rep, we kicked the pumps back in and pumped 1bbl to see if we would bump the plug. Shutdown at 1bbl away as we did not pumped the plug.
Event	20	Other	Other	6/14/2017	09:01:49	USER	8.26	1745.00	0.00	After company rep spoke with his engineer he had us pump 3 more bbls. Kicked in pumps and pumped 3bbls, however still did not bump plug.
Event	21	Other	Other	6/14/2017	09:12:57	USER	8.26	1757.00	0.50	Company rep James spoke with his engineer again and wanted us to get back to working pressure then count 1 more bbl to see if we would pump. Kicked in pump and got pressure back up to 2100psi and pumped 1bbl and we still did no bump the plug
Event	22	Check Floats	Check Floats	6/14/2017	09:27:14	USER	8.26	1753.00	0.00	Pressure was holding at 1753psi prior to checking floats, Company rep has us check floats and surge the release line a few times before fully releasing pressure. Got 2bbl of water back and the floats held. After checking floats, went to rig floor and popped the cap the HES plug container to verify plug was gone and it was.
Event	23	End Job	End Job	6/14/2017	09:37:00	COM4	8.24	-19.00	0.00	Thank you Steve Markovich and crew.

## 3.0 Attachments

### 3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart with Events

