

*The Road to Excellence Starts with Safety*

Sold To #: 300466	Ship To #: 3786943	Quote #: 0022310096	Sales Order #: 0904066375
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep: Carlton Cooley	
Well Name: BUTTERBALL	Well #: 25C2-34HZ	API/UWI #: 05-123-44412-00	
Field: WATTENBERG	City (SAP): IONE	County/Parish: WELD	State: COLORADO
Legal Description: NE NW-10-2N-67W-820FNL-2310FWL			
Contractor: NABORS DRLG		Rig/Platform Name/Num: NABORS X22	
Job BOM: 7523 7523			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Bryan Kraft	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	15830ft	Job Depth TVD	7460ft
Water Depth		Wk Ht Above Floor	4ft
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	1866	0	1866
Casing		5.5	4.892	17	BUTTRESS	P-110	0	15830	0	7460
Open Hole Section			7.875				1866	15836	1866	7460

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe					Top Plug	5.5	1	WF
Float Shoe	5.5	1		15830	Bottom Plug	5.5	1	WF
Float Collar	5.5	1		15827	SSR plug set			
Insert Float					Plug Container	5.5	1	HES
Stage Tool					Centralizers			

**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	Spacer	TUNE SPACER III	60	bbl	10.5	6.43	41.3	3	2189
86.45 lbm/bbl		<b>BARITE, BULK (100003681)</b>							
0.70 gal/bbl		<b>MUSOL(R) A, BULK (100003696)</b>							

37.58 gal/bbl		<b>FRESH WATER</b>							
0.70 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
2	Cap Cement	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57	7.53	8	1128
7.52 Gal		<b>FRESH WATER</b>							
0.90 %		<b>SCR-100 (100003749)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
3	Lead Cement	ELASTICEM (TM) SYSTEM	390	sack	13.2	1.57	7.53	8	2953
0.30 %		<b>SCR-100 (100003749)</b>							
7.54 Gal		<b>FRESH WATER</b>							
0.10 %		<b>SUPER CBL, 50 LB PAIL (100003668)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
4	Tail Cement	ECONOCEM (TM) SYSTEM	1060	sack	13.5	1.68	7.98	5	8459
8 Gal		<b>FRESH WATER</b>							
0.40 %		<b>HR-5, 50 LB SK (100005050)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
5	Displacement	BIOCIDE WATER AND MMCR	40	bbl	8.34			9	1680
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
6	Displacement	BIOCIDE WATER	327	bbl	8.34			7	13734
Cement Left In Pipe	<b>Amount</b>	3 ft			<b>Reason</b>				<b>Shoe Joint</b>

Mix Water:	pH 6.0	Mix Water Chloride:	<20 ppm	Mix Water Temperature:	<b>55 °F</b>
Cement Temperature:	N/A	Plug Displaced by:	8.3 lb/gal Fresh Water	Disp. Temperature:	<b>55 °F</b>
Plug Bumped?	Yes	Bump Pressure:	2250 psi	Floats Held?	<b>Yes</b>
Cement Returns:	0	Returns Density:	N/A	Returns Temperature:	<b>N/A</b>
<b>Comment</b> 8 BBLS spacer returned to surface. Floats Held, 4 bbl back before shearing the pin, 2.5 bbls back after shearing					

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	6/2/2017	15:30:00	USER	CREW CALLED OUT AT 15:30 6/2/2017, REQUESTED ON LOCATION 21:00 6/2/2017. CREW PICKED UP CEMENT, CHEMICALS (42 GAL MUSOL A, 42 GAL DUAL SPACER B, 20 GAL D-AIR, 20 GAL MMCR, 100LBS SUGAR, MANIFOLD, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 11360555/11633846, BULK BACKUP AIR: 12350112/11566182, PUMP 11897034/11645460.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/2/2017	19:25:00	USER	DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	6/2/2017	19:30:00	USER	STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location	6/2/2017	20:00:00	USER	END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" @ 1866', CASING: 5.5" 17# P-110 @ 15830', 3' SHOE JOINT, 7.875" OPEN HOLE, TVD @ 7460', 9 PPG WELL FLUID, FRESH WATER DISPLACEMENT. CASING LANDED @ 22:15 6/2/2017.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/2/2017	20:10:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/2/2017	20:15:00	USER	CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/3/2017	00:30:00	USER	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	6/3/2017	00:59:02	COM4	BEGIN RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	6/3/2017	01:03:36	COM4	PRESSURE TESTED IRON TO 7500 PSI.

KICKOUTS SET @ 500 PSI, KICKED OUT @ 1300 PSI, 5TH GEAR STALL OUT @ 1800 PSI. 1ST PRESSURE TEST FAILED DUE TO LEAKING HAMMER UNION. FIXED ISSUE AND 2ND TEST PASSED.

Event	10	Pump Spacer 1	Pump Tuned Spacer @ 10.5 ppg	6/3/2017	01:16:56	COM4	PUMP 60 BBLS OF TUNED SPACER @ 10.5 LB/GAL, ADDED 42 GAL MUSOL A, 42 GAL DUAL SPACER B, 20 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	11	Drop Bottom Plug	Drop Bottom Plug	6/3/2017	01:33:44	USER	DROP BOTTOM PLUG, VERIFIED BY CO. MAN.
Event	12	Pump Lead Cement	Pump Cap Cement @ 13.2 ppg	6/3/2017	01:34:44	COM4	PUMP 150 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.57 GAL/SK, 42 BBLS, TOP @ 1073', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Pump Lead Cement	Pump Lead Cement @ 13.2 ppg	6/3/2017	01:40:36	USER	PUMP 390 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.57 GAL/SK, 109 BBLS, TOL @ 1993', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Pump Tail Cement	Pump Tail Cement @ 13.5 ppg	6/3/2017	01:54:59	COM4	PUMP 1060 SKS OF ECONOCEM @ 13.5 LB/GAL, 1.68 YIELD, 7.98 GAL/SK, 317 BBLS, TOT @ 5571', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	15	Shutdown	Shutdown	6/3/2017	02:50:31	USER	SHUTDOWN DUE TO A WATER TRUCK FILLING THE TANK HES WAS TIED INTO AND SENT AIR WHILE BLOWNING DOWN. LOST PRIME ON 4X4. REGAINED PRIME AND CONTINUED PUMPING AS SCHEDULED.
Event	16	Shutdown	Shutdown	6/3/2017	02:59:30	USER	SHUTDOWN TO WASH PUMPS/ LINES AND DROP TOP PLUG.
Event	17	Clean Lines	Clean Lines	6/3/2017	03:04:04	COM4	WASH UP ELITES PUMPS AND LINES.
Event	18	Drop Top Plug	Drop Top Plug	6/3/2017	03:08:58	COM4	DROP TOP PLUG, VERIFIED BY CO. MAN.
Event	19	Pump Displacement	Pump Fresh Water Displacement	6/3/2017	03:09:38	COM4	BEGIN CALCULATED DISPLACEMENT OF 367 BBLS WITH FRESH WATER.

Event	20	Spacer Returns to Surface	Spacer Returns to Surface	6/3/2017	04:11:38	USER	SPACER TO SURFACE @ 359 BBLS INTO DISPLACEMENT. 8 BBLS OF TUNED SPACER TO SURFACE.
Event	21	Bump Plug	Bump Plug	6/3/2017	04:15:23	USER	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 500 PSI OVER FINAL CIRCULATING PRESSURE OF 2250 PSI.
Event	22	Other	Casing Pressure Test	6/3/2017	04:19:21	COM4	PRESSURE TEST CASING TO 3000 PSI FOR 15 MINUTES.
Event	23	Check Floats	Check Floats	6/3/2017	04:34:59	USER	RELEASED PRESSURE, FLOATS HELD, 4 BBLS BACK. PRESSURE UP WELL TO SHEAR PINS.
Event	24	Other	Shear Pins	6/3/2017	04:40:15	USER	PINS SHEARED @ 4810 PSI.
Event	25	Pump Displacement	Pump Wet Shoe	6/3/2017	04:40:29	USER	PUMP 3 BBLS FRESH WATER WET SHOE.
Event	26	Check Floats	Check Floats	6/3/2017	04:42:43	USER	RELEASED PRESSURE, FLOATS HELD, 2.5 BBLS BACK.
Event	27	End Job	End Job	6/3/2017	04:45:12	COM4	STOP RECORDING JOB DATA.
Event	28	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/3/2017	05:00:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	29	Rig-Down Completed	Rig-Down Completed	6/3/2017	05:30:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	30	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/3/2017	05:45:00	USER	DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	31	Depart Location	Depart Location	6/3/2017	06:00:00	USER	THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.

3.0 Attachments

3.1 Job Chart

