

**ANADARKO PETROLEUM CORP - EBUS  
DO NOT MAIL - PO BOX 4995  
THE WOODLANDS, Texas**

Highway 160 37N-2HZ

**Majors 29**

## **Post Job Summary** **Cement Surface Casing**

Date Prepared: 10/31/213  
Version: 1

Service Supervisor: PICKELL, CHRISTOPHER

Submitted by: TRIER, DEREK

**HALLIBURTON**

# HALLIBURTON

## Wellbore Geometry

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Job Tubulars					MD		Shoe Joint Length ft
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	
Casing	9 5/8" Surface Casing	9.63	8.921	36.00	0.00	1,229.00	42.00
Open Hole Section	13 1/2" Open Hole Section		13.500		0.00	1,233.00	0.00

# HALLIBURTON

## Pumping Schedule

Stage / Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	Fresh Water Spacer	8.33	2.00	10.0 bbl	10.0 bbl
1	2	Spacer	MudFlush	8.40	2.00	12.0 bbl	12.0 bbl
1	3	Spacer	Fresh Water Spacer	8.33	3.00	10.0 bbl	10.0 bbl
1	4	Cement Slurry	SwiftCem B2	14.20	5.00	465.0 sacks	465.0 sacks

## Fluids Pumped

**Stage/Plug # 1      Fluid 1:**      Fresh Water Spacer  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 10.00 bbl  
Pump Rate: 2.00 bbl/min

**Stage/Plug # 1      Fluid 2:**      MudFlush  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL  
10 lbm/Mgal      Mud Flush III  
10 lbm/bbl      Mud Flush III

Fluid Density: 8.40 lbm/gal  
Fluid Volume: 12.00 bbl  
Pump Rate: 2.00 bbl/min

**Stage/Plug # 1      Fluid 3:**      Fresh Water Spacer  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 10.00 bbl  
Pump Rate: 3.00 bbl/min

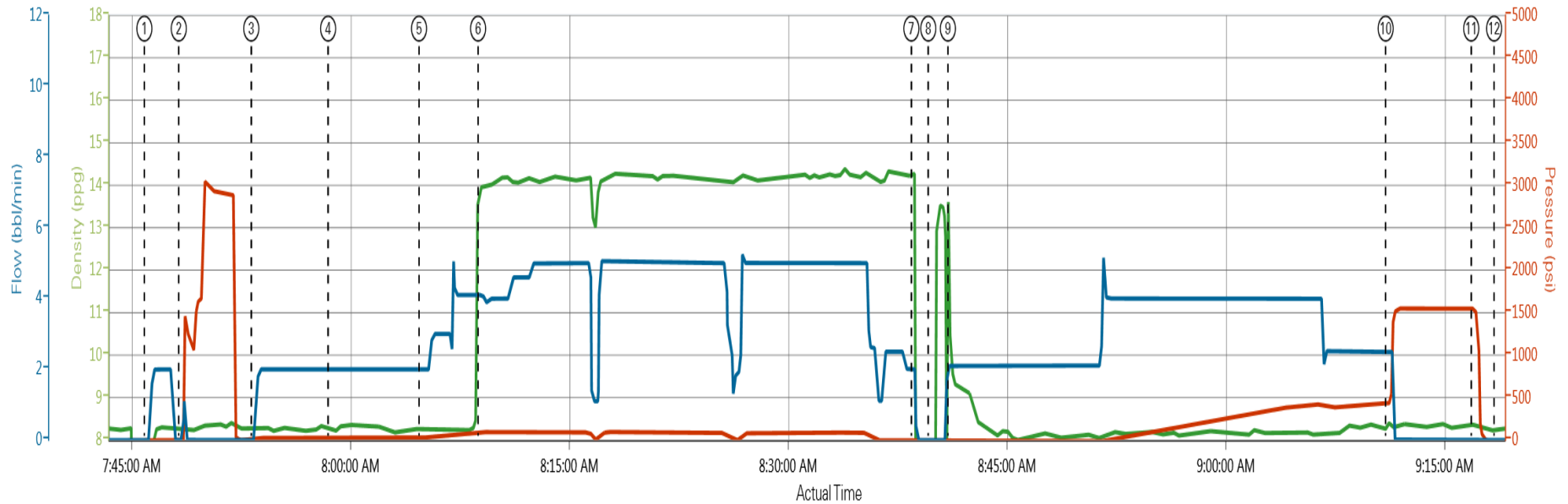
**Stage/Plug # 1      Fluid 4:**      SwiftCem B2  
SWIFTCEM (TM) SYSTEM

Fluid Weight: 14.20 lbm/gal  
Slurry Yield: 1.54 ft<sup>3</sup>/sack  
Total Mixing Fluid: 7.66 Gal  
Surface Volume: 465.0 sacks  
Sacks: 465.0 sacks

# HALLIBURTON

## Data Acquisition

HIGHWAY 160 37N-2HZ



DH Density (ppg) PS Pump Press (psi) Comb Pump Rate (bbl/min)

① Start Job -0.06;-8;0    ④ Pump Mudflush 8.35;27;2    ⑦ Shutdown 14.27;0;2    ⑩ Bump Plug 8.44;437;2.5  
 ② Test Lines 8.26;0;0    ⑤ Pump Water 8.24;31;2    ⑧ Drop Top Plug -0.05;-18;0    ⑪ Check Floats 8.37;1548;0  
 ③ Pump Water 8.28;-1;0    ⑥ Pump Swiftcem 14.2# 13.98;98;4.1    ⑨ Pump Displacement 10.16;-2;2.1    ⑫ End Job 8.3;-17;0

▲ HALLIBURTON | iCem® Service

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# HALLIBURTON

## Service Supervisor Reports

### Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
10/26/2013 02:30		Call Out							CREW CALLED OUT AT 0230 TO BE ON LOCATION AT 0700. PICKELL, JEWELL, NESBITT, CORRONADO
10/26/2013 06:00		Depart from Service Center or Other Site							SAFETY MEETING FOR JOURNEY TO LOCATION. LEAVE YARD FOR MAJOR 29
10/26/2013 06:30		Arrive At Loc							ARRIVE AT LOCATION 30 MINUTES EARLY. RIG ALREADY ON BOTTOM CIRCULATING
10/26/2013 06:40		Rig-Up Equipment							CONTAINMENT SET UP BY HOT SHOTS HAULING. THEN EQUIPMENT SPOTTED IN AND RIGGED UP
10/26/2013 07:30		Pre-Job Safety Meeting							SAFETY MEETING WITH ALL PERSONEL ON LOCATION TO DISCUSS JOB SAFETY AND PROCEDURE
10/26/2013 07:46		Start Job							
10/26/2013 07:48		Test Lines	1	3				2500.0	PRESSURE TEST LINES TO 2500 PSI. CHECK FOR VISIBLE LEAKS AND PRESSURE LOSS
10/26/2013 07:53		Pump Spacer 1	2	10				25.0	PUMP WATER
10/26/2013 07:58		Pump Spacer 2	2	12				25.0	PUMP MUDFLUSH
10/26/2013 08:04		Pump Spacer 1	3	10				30.0	PUMP WATER
10/26/2013 08:08		Pump Cement	5	127.5				80.0	PUMP SWIFCEM CEMENT 465 SKS 14.2 PPG 1.54 CUFT/SK 7.66 GAL/SK
10/26/2013 08:38		Shutdown							WASH PUMPS AND LINES ON TOP OF THE PLUG
10/26/2013 08:39		Drop Top Plug							PLUG PRELOADED. WITNESSED BY COMPANY MAN
10/26/2013 08:41		Pump Displacement	4	93				490.0	PUMP DISPLACEMENT USING WATER. CALCULATED DISPLACEMENT WAS 91.8 BBL
10/26/2013 09:11		Bump Plug	2.5					437.0	CALCULATED PRESSURE TO LAND WAS 362. PLUG LANDED WITH 437 PSI TAKING IT 1000 PSI OVER TO 1450
10/26/2013 09:16		Check Floats						1518.0	PRESSURE WAS HELD FOR 5 MINUTES THEN RELEASED. FLOATS HELD. 3/4 BBL BACK TO TANKS
10/26/2013 09:18		End Job							26 BBL OF CEMENT TO SURFACE
10/26/2013 09:20		Pre-Rig Down Safety Meeting							PRE RIG DOWN SAFETY MEETING
10/26/2013 09:25		Rig-Down Equipment							RIG DOWN ALL EQUIPMENT. FINISH WASHING UP PUMP TRUCK
10/26/2013 10:00		Depart Location for Service Center or Other Site							SAFETY MEETING TO DISCUSS JOURNEY BACK TO THE YARD THEN LEAVE LOCATION

### The Road to Excellence Starts with Safety

Sold To #: 300466	Ship To #: 3162938	Quote #:	Sales Order #: 900850554
Customer: ANADARKO PETROLEUM CORP - EBUS		Customer Rep: BULKENBUSH, BOB	
Well Name: Highway 160		Well #: 37N-2HZ	API/UWI #:
Field: WATTENBERG	City (SAP): FORT LUPTON	County/Parish: Weld	State: Colorado
Contractor: Majors		Rig/Platform Name/Num: Major 29	
Job Purpose: Cement Surface Casing			
Well Type: Development Well		Job Type: Cement Surface Casing	
Sales Person: PLIENESS, RYAN		Srv Supervisor: PICKELL, CHRISTOPHER	MBU ID Emp #: 396838

### Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
CORRONADO, EDI	0.0	123456	JEWELL, WILLIAM Uris	0.0	503358	NESBITT, ROY Iverson	0.0	537416
PICKELL, CHRISTOPHER Lee	0.0	396838						

### Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10248062C	10 mile	11605597	10 mile	11667703C	10 mile	11764054C	10 mile
11764737	10 mile						

### Job

Formation Name				Job Times			
Formation Depth (MD)	Top	Bottom		Called Out	Date	Time	Time Zone
Form Type	BHST			On Location	26 - Oct - 2013	06:30	MST
Job depth MD	1232. ft			Job Started	26 - Oct - 2013	07:46	MST
Water Depth	Wk Ht Above Floor			Job Completed	26 - Oct - 2013	09:18	MST
Perforation Depth (MD)	From	To		Departed Loc	26 - Oct - 2013	10:00	MST

### Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
13 1/2" Open Hole Section				13.5				.	1233.		
9 5/8" Surface Casing	Unknown		9.625	8.921	36.		J-55	.	1229.		

### Fluid Data

Stage/Plug #: 1											
Fluid #	Stage Type	Fluid Name			Qty	Qty uom	Mixing Density lbm/gal	Yield ft3/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk

1	Fresh Water Spacer		10.00	bbl	8.33			2.0	
2	MudFlush		12.00	bbl	8.4			2.0	
10 lbm/Mgal		MUD FLUSH III - SBM (528788)							
10 lbm/bbl		MUD FLUSH III, 40 LB SACK (101633304)							
3	Fresh Water Spacer		10.00	bbl	8.33			3.0	
4	SwiftCem B2	SWIFTCM (TM) SYSTEM (452990)	465.0	sacks	14.2	1.54	7.66	5.0	7.66
7.66 Gal		FRESH WATER							
<b>Calculated Values</b>		<b>Pressures</b>		<b>Volumes</b>					
Displacement		Shut In: Instant		Lost Returns		Cement Slurry		Pad	
Top Of Cement		5 Min		Cement Returns	26.0	Actual Displacement	93.0	Treatment	
Frac Gradient		15 Min		Spacers	32.0	Load and Breakdown		Total Job	
<b>Rates</b>									
Circulating		Mixing		Displacement		Avg. Job			
Cement Left In Pipe	Amount	42 ft	Reason	Shoe Joint					
Frac Ring # 1 @	ID		Frac ring # 2 @	ID		Frac Ring # 3 @	ID		Frac Ring # 4 @
The Information Stated Herein Is Correct				Customer Representative Signature					

