

# HALLIBURTON

iCem<sup>®</sup> Service

**ANADARKO PETROLEUM CORP - EBUS**

**For: RANDY CASE**

Date: Friday, May 23, 2014

**BERRY FARMS 31C-8HZ**

BERRY FARMS 31C-8HZ

Sincerely,

**CHRISTOPHER PICKELL**

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## **1.1 Executive Summary**

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Halliburton appreciates the opportunity to perform the cementing services on the **Berry Farms 31C-8HZ** cement **Surface** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton [Brighton]**

**Job Times**

	<b>Date</b>	<b>Time</b>	<b>Time Zone</b>
<b>Called Out</b>	4/6/2014	07:30	
<b>On Location</b>	4/6/2014	10:30	
<b>Job Started</b>	4/6/2014	13:23	
<b>Job Completed</b>	4/6/2014	14:33	
<b>Departed Location</b>	4/6/2014	14:39	

## 1.2 Cementing Job Summary

Sold To #: 300466		Ship To #: 3286178		Quote #:		Sales Order #: 0901251096				
Customer: ANADARKO PETROLEUM CORP - EBUS				Customer Rep: Randy Case						
Well Name: BERRY FARMS		Well #: 31C-8 HZ		API/UWI #: 05-123-38896-00						
Field: WATTENBERG		City (SAP): PLA		County/Parish: WELD		State: COLORADO				
Legal Description: SE NE-8-3N-67W-1337FNL-300FEL										
Contractor: Randy Case				Rig/Platform Name/Num: Majors 29						
Job BOM: 7521										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX46524				Srv Supervisor: Christopher Pickell						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		819ft		Job Depth TVD		819 FT				
Water Depth				Wk Ht Above Floor		4 FT				
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	809		0
Open Hole Section			13.5				0	819		
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	9.625	1		809	Top Plug	9.625	1	HES		
Float Shoe	9.625				Bottom Plug	9.625		HES		
Float Collar	9.625	1		765.51	SSR plug set	9.625		HES		
Insert Float	9.625				Plug Container	9.625	1	HES		
Stage Tool	9.625				Centralizers	9.625	8	HES		
Miscellaneous Materials										
Gelling Agt		Conc		Surfactant		Conc	Acid Type		Qty	Conc
Treatment Fld		Conc		Inhibitor		Conc	Sand Type		Size	Qty
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Mud Flush III (Powder)	Mud Flush III	12	bbl	8.4					
42 gal/bbl		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	Lead Cement	SWIFTCEN (TM) SYSTEM	334	Sack/Ton	14.2	1.54	7.64	6		
		VERSASET, 55 LB SK (101376573)								
		POLY-E-FLAKE (101216940)								
		ENHANCER 923, BULK (101894003)								
		ECONOLITE (100001580)								
		CAL-SEAL 60, 50 LB BAG (101217146)								
		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
3	Displacement	Displacement	59.8	bbl	8.33					
Cement Left In Pipe		Amount	43 ft	Reason		Shoe Joint				
Comment										

## Planned Pumping Schedule

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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	2.0	10.0 bbl	10.0 bbl
1	1	Spacer	Mud Flush	8.50	2.0	12.0 bbl	12.0 bbl
1	1	Spacer	Fresh Water Spacer	8.33	5.0	10.0 bbl	10.0 bbl
1	2	Cement Slurry	SwiftCem B2	14.2	5.0	334.0 sacks	334.0 sacks

## 1.3 Job Overview

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		Units	Description
1	Surface temperature at time of job	°F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	
4	Time circulated before job	HH:MM	
5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	
9	Time from end mud circulation to start of job	HH:MM	
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	59.6
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	Y
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	10
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	N

**1.4 Job Event Log**

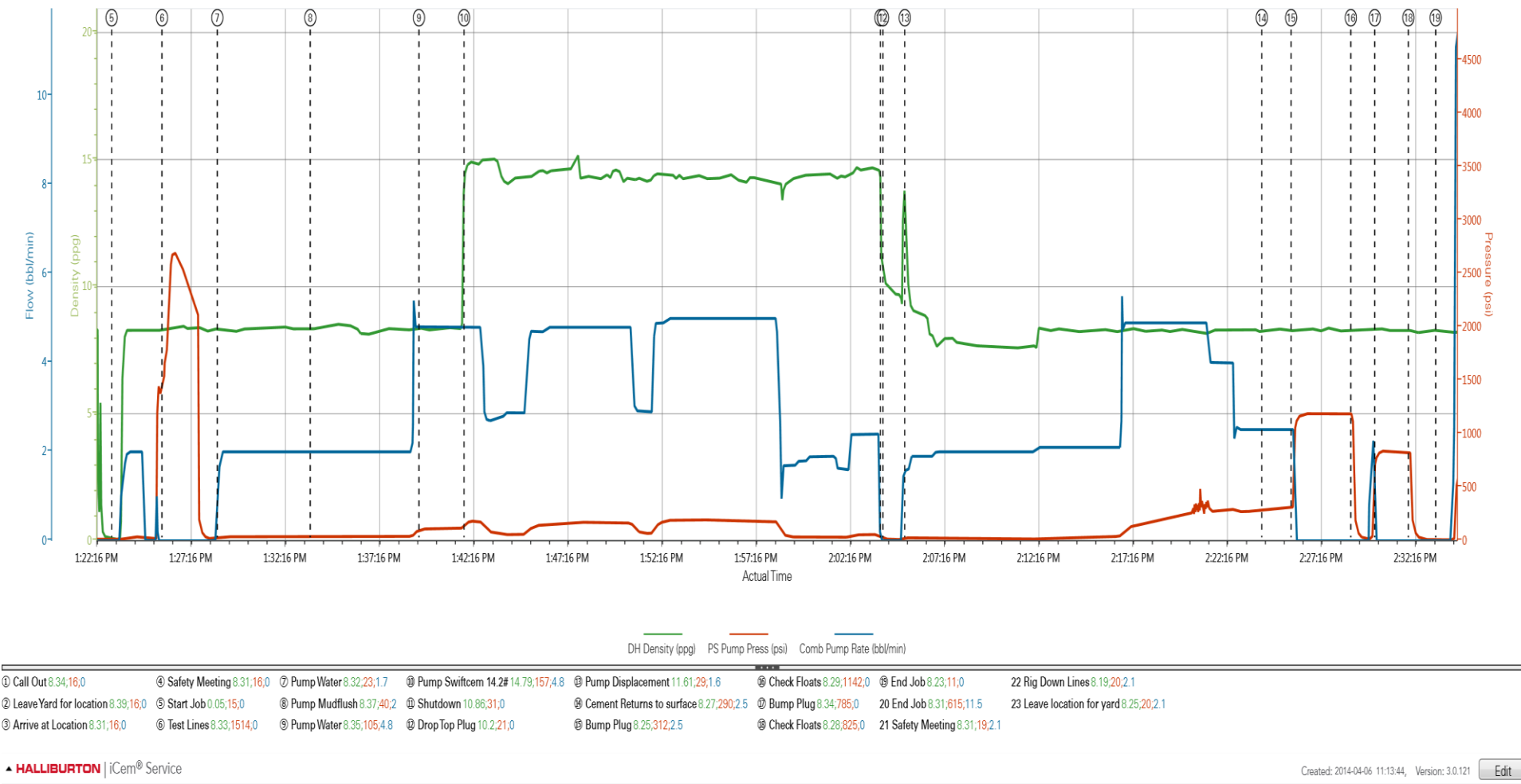
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Total (bbl/min)	
Event	1	Call Out	Call Out	4/6/2014	07:3000	USER	8.34	16.00		Called out at 0730 to be on location 1130. Crew was Chris Pickell, Keaton Simmons, Roy Nesbitt
Event	2	Leave yard for location	Leave Yard for location	4/6/2014	10:00:00	USER	8.39	16.00		Safety meeting held for journey. Left the yard for Major 29
Event	3	Arrive At Loc	Arrive at Location	4/6/2014	10:30:00	USER	8.31	16.00		Arrive at location 1 hour early. Rig had 15 joints left to run. Casing on bottom at 1220.
Event	4	Safety Meeting	Safety Meeting	4/6/2014	13:00:00	USER	8.31	16.00		Safety meeting with rig crew to discuss job safety and procedures
Event	5	Start Job	Start Job	4/6/2014	13:23:09	COM5	0.05	15.00		Quick latch plug container used on job
Event	6	Test Lines	Test Lines	4/6/2014	13:25:49	COM5	8.33	1514.00	2	Pressure test lines to 2500 psi
Event	7	Pump Spacer 1	Pump Water	4/6/2014	13:28:45	COM5	8.32	23.00	12	Pump 10 bbl water
Event	8	Pump Spacer 2	Pump Mudflush	4/6/2014	13:33:41	COM5	8.37	40.00	24	Pump 12 bbl mudflush
Event	9	Pump Spacer 1	Pump Water	4/6/2014	13:39:27	COM5	8.35	105.00	34	Pump 10 bbl water
Event	10	Pump Cement	Pump Swiftcem 14.2#	4/6/2014	13:41:51	COM5	14.79	157.00	91.6	Pump Swiftcem cement 334 sks 14.2 ppg 1.54 cuft/sk 7.76 gal/sk 91.6 bbl
Event	11	Shutdown	Shutdown	4/6/2014	14:03:57	COM5	10.86	31.00	121.6	Wash pumps and lines on top of plug
Event	12	Drop Top Plug	Drop Top Plug	4/6/2014	14:04:05	COM5	10.20	21.00		Plug preloaded. Witnessed by company man
Event	13	Pump Displacement	Pump Displacement	4/6/2014	14:05:15	COM5	11.61	29.00	181.4	Pump 59.8 bbl water displacement
Event	14	Cement Returns to Surface	Cement Returns to surface	4/6/2014	14:24:12	USER	8.27	290.00		Cement returns to surface with 49.5 bbl away
Event	15	Bump Plug	Bump Plug	4/6/2014	14:25:45	COM5	8.25	312.00		Calculated pressure to land was 234. Plug Landed with 312 psi going 500 psi over final lift
Event	16	Other	Check Floats	4/6/2014	14:28:56	COM5	8.29	1142.00		Pressure was held for 3 minutes then released. Floats held. ½ bbl back to tanks
Event	17	Bump Plug	Bump Plug	4/6/2014	14:30:12	COM5	8.34	785.00		Re-bump plug at Anadarko request
Event	18	Other	Check Floats	4/6/2014	14:31:59	COM5	8.28	825.00		Pressure held then was released after 2 minutes. Floats held. ½ bbl back to tanks
Event	19	End Job	End Job	4/6/2014	14:33:26	USER	8.23	11.00		All preflush and 10 bbl cement to surface
Event	20	End Job	End Job	4/6/2014	14:35:48	COM5	8.31	615.00		

Event	21	Safety Meeting	Safety Meeting	4/6/2014	14:39:13	USER	8.31	19.00	Safety meeting held for rig down with HES
Event	22	Rig Down Lines	Rig Down Lines	4/6/2014	14:39:31	USER	8.19	20.00	Wash up pump truck. Blow down lines. Rig down all equipment.
Event	23	Other	Leave location for yard	4/6/2014	14:39:57	USER	8.25	20.00	Leave location for they yard

2.0 Custom Graphs

2.1 Custom Graph

BERRY FARMS 31C-8HZ (9 5/8" SURFACE)





### 3.0 Appendix

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Insert additional information regarding the job here (i.e. bulk and pilot testing, pre-job modeling, etc....)