

HALLIBURTON

iCem[®] Service

Post Job Report

ANADARKO PETROLEUM CORP - EBUS

For: Toby Yates

Date: Friday, June 20, 2014

Howard 29C-29HZ

Sincerely,
Devin Birchell

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Howard 29C-29HZ** 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

	Date	Time	Time Zone
Called Out	6/20/2014	16:00:21	MT
On Location	6/20/2014	20:00:14	MT
Job Started	6/20/2014	23:06:34	MT
Job Completed	6/21/2014	00:10:26	MT
Departed Location	6/21/2014	01:00:25	MT

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

Sold To #: 300466		Ship To #: 3117335		Quote #:		Sales Order #: 0901433150				
Customer: ANADARKO PETROLEUM CORP - EBUS					Customer Rep: Toby Yates					
Well Name: Howard			Well #: 29C-29HZ			API/UWI #: 05-123-37909-00				
Field: WATTENBERG		City (SAP): BRIGHTON		County/Parish: WELD			State: COLORADO			
Legal Description: SW NW-32-1N-67W-22287FNL-450FWL										
Contractor:				Rig/Platform Name/Num: Majors 29						
Job BOM: 7521										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HB47901				Srvc Supervisor: Devin Birchell						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type					BHST					
Job depth MD		989ft			Job Depth TVD					
Water Depth					Wk Ht Above Floor					
Perforation Depth (MD)				To						
Well Data										
	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	979	0	
Open Hole Section			13.5				0	989	0	
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625					Top Plug	9.625	1	HES	
Float Shoe	9.625			979		Bottom Plug	9.625		HES	
Float Collar	9.625			989		SSR plug set	9.625		HES	
Insert Float	9.625					Plug Container	9.625	1	HES	
	9.625					Centralizers	9.625	14	HES	
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	Mud Flush III (Powder)	Mud Flush III	12	bbl	8.4				
42 gal/bbl									
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	Lead Cement	SWIFTCEM (TM) SYSTEM	400	sack	14.2	1.54		6	7.64
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	Displacement	Displacement	72	bbl	8.33				
ft In Pipe		Amount	42 ft						
Comment									

1.4 Planned Pumping Schedule



Anadarko - Major 42 Barefoot# 30N-25HZ - Surface Job Procedure

Time	#	Event/Stage	Amount bbls	Rate bpm	Requested Quantity	Density ppg	Yield ft³/sk	Water Rq. gal/sk	Total Water bbls
	1	Start Job	***Pre Pump Iron Inspection. Verify and communicate all valves are lined up to pump***						
	4	Fill Lines	3	2	3 bbls	8.3			3
	6	Pressure Test	5000 psi	***Reset Kick Outs to Maximum Job Pressure: 1500 psi***					
	9	Pump Water Spacer	10	5	10 bbls	8.3			10
	10	Pump Mud Flush III	12	5	12 bbls	8.4			12
	9	Pump Water Spacer	10	5	10 bbls	8.3			10
	15	Pump Tail Cement	109	5	400 sks	14.2	1.54	7.64	72.7
	48	Shutdown/Wash Pumps/Drop Plug	Estimated Shutdown Time: 10 Minutes						
	23	Pump Water Displacement	72	6	72 bbls	8.3			72
	4	Slow Rate	Last 10	3	***Adjust rates as needed for job***				
	26	Pressure to Land Plug	402 psi	***+	500 psi over Final Circulating Pressure***				
	4	Check Floats	Estimated Job Pump Time		1.08 hrs		Total Water For Job (Including Wash Up)		179.7 bbls
	2	End Job							

1.5 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	70
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	
4	Actual mud Plastic Viscosity (PV)	cP	
5	Actual mud Yield Point (YP)	lb _f /100ft ²	
6	Actual mud 30 min Gel Strength	lb _f /100ft ²	
7	Time circulated before job	HH:MM	
8	Mud volume circulated	Bbls	
9	Rate at which well was circulated	Bpm	
10	Pipe movement during hole circulation	Y/N	N
11	Rig pressure while circulating	Psi	
12	Time from end mud circulation to start of job	HH:MM	
13	Pipe movement during cementing	Y/N	N
14	Calculated displacement	Bbls	72
15	Job displaced by	Rig/HES	HES
16	Annular flow before job	Y/N	
17	Annular flow after job	Y/N	
18	Length of rat hole	Ft	10
19	Units of gas detected while circulating	Units	
20	Was lost circulation experienced at any time?	Y/N	N

1.6 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pressure (psi)	Density (ppg)	Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	6/20/2014	02:30:00	USER				Crew called out for job
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/20/2014	04:30:00	USER				Met w/crew to discuss route to location.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/20/2014	05:00:00	USER				Gate check and leave yard
Event	4	Arrive At Loc	Arrive At Loc	6/20/2014	05:30:00	USER				Sign in at Co. Rep. Shack.
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	6/20/2014	05:35:00	USER				Met w/crew to discuss the layout and location of materials.
Event	6	Other	Spot Trucks	6/20/2014	05:40:00	USER				Move trucks in place.
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/20/2014	05:55:00	USER				Met w/crew to discuss rig-up, safety and hazards.
Event	8	Rig-Up Equipment	Rig-Up Equipment	6/20/2014	06:00:00	USER				Rig up as far as safe. Then wait on casing.
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/20/2014	08:30:00	USER				Met w/crew, Co. Rep, and rig crew to discuss job procedure, hazards and backup plans.
Event	10	Rig-up Lines	Rig-up Lines	6/20/2014	08:45:00	USER	-3.00	0.42	0.00	Rig up the floor, load plug, and stab plug container.
Event	11	Start Job	Start Job	6/20/2014	08:56:57	COM13	-4.00	8.88	0.00	
Event	12	Other	Fill Lines	6/20/2014	08:57:52	COM13	-5.00	8.77	0.00	Fill lines w/2 bbls water.
Event	13	Test Lines	Start Pressure Test	6/20/2014	09:02:02	COM13	5390.00	8.98	0.00	Test pump & lines to 5000 psi
Event	14	Test Lines	End Pressure Test	6/20/2014	09:04:06	USER	5137.00	8.99	0.00	Test good - Lost 250 psi over 3 min.
Event	15	Pump Spacer 1	Pump Water Spacer	6/20/2014	09:06:31	COM13	4.00	8.80	1.10	10 bbls water spacer
Event	16	Pump Spacer 1	Pump MudFlush	6/20/2014	09:08:31	USER	35.00	8.83	3.00	12 bbls Mud Flush
Event	17	Pump Spacer 1	Pump Water Spacer	6/20/2014	09:14:20	COM13	46.00	8.87	3.00	10 bbls water spacer
Event	18	Pump Lead Cement	Pump Lead Cement	6/20/2014	09:17:47	COM13	47.00	9.54	3.00	550 sks SwiftCem @ 14.2 lbm/gal, 1.54 cuft/sk, 7.64 gal/sk
Event	19	Shutdown	Shutdown / Drop Plug	6/20/2014	09:57:50	COM13	25.00	0.46	0.00	Shutdown to drop plug.
Event	20	Pump Displacement	Pump Displacement	6/20/2014	10:00:24	COM13	-12.00	0.35	0.00	Calculated displacement = 101.2 bbls

										fresh water. getting good returns.
Event	21	Displ Reached Cmnt	Displ Reached Cmnt	6/20/2014	10:07:16	COM13	59.00	8.37	5.00	Caught pressure @ 33 bbls away
Event	22	Other	Slow Rate	6/20/2014	10:19:41	COM13	441.00	8.42	3.00	Slow rate to bump plug.
Event	23	Bump Plug	Bump Plug	6/20/2014	10:23:25	COM13	708.00	8.44	0.00	Bump plug 500 psi over final circulating pressure (470 psi)
Event	24	Other	Check Floats	6/20/2014	10:27:24	COM13	865.00	8.47	0.00	Floats held - 1/2 bbl back.
Event	25	End Job	End Job	6/20/2014	10:30:00	USER	-11.00	8.29	0.00	Approx. 20 bbls cement back to surface.
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	6/20/2014	10:35:00	USER	-11.00	8.38	0.00	Met w/crew to discuss the job, and rig down.
Event	27	Rig-Down Equipment	Rig-Down Equipment	6/20/2014	10:45:00	USER	-16.00	8.38	0.00	Blow down the truck & lines, then rig everything down.
Event	28	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/20/2014	11:50:00	USER				Met w/crew to discuss the travel home.
Event	29	Depart Location	Depart Location	6/20/2014	12:00:00	USER				Thanks for using Halliburton!!!

