HALLIBURTON

iCem® Service

ANADARKO PETROLEUM CORP - EBUS

Date: Saturday, July 05, 2014

NRC 28C-32HZ Surface

Case 1

Sincerely,
Derek Trier

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **NRC 28C-32HZ** 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	5/5/2014	0000	MT
On Location	5/5/2014	0445	MT
Job Started	5/5/2014	0537	MT
Job Completed	5/5/2014	0653	MT
Departed Location	5/5/2014	0800	MT

1.2 Cementing Job Summary

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466	**Ship To #:** 3471368	**Quote #:**	**Sales Order #:** 0901318500
Customer: ANADARKO PETROLEUM CORP - EBUS		**Customer Rep:** Bob Porter	
Well Name: NRC	**Well #:** 28C-32HZ		**API/UWI #:** 05-123-39290-00
Field: WATTENBERG	**City (SAP):** ION	**County/Parish:** WELD	**State:** COLORADO
Legal Description: NE NW-8-1N-67W-612FNL-2125FWL			
Contractor:		**Rig/Platform Name/Num:** Majors 42	
Job BOM: 7521			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HB47901		**Srvc Supervisor:** Matthew Bulinski	

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	1219ft		**Job Depth TVD**	
Water Depth			**Wk Ht Above Floor**	
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
Open Hole Section			13.5				0	1229		0
Casing		9.625	8.921	36		J-55	0	1219		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625			1219		Top Plug	9.625		HES
Float Shoe	9.625					Bottom Plug	9.625		HES
Float Collar	9.625			1179.7		SSR plug set	9.625		HES
Insert Float	9.625					Plug Container	9.625		HES
Stage Tool	9.625					Centralizers	9.625		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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Mud Flush III (Powder)	Mud Flush III	12	bbl	8.4			4.5	
42 gal/bbl		FRESH WATER							

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

last updated on 5/5/2014 7:28:59 AM

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Cementing Job Summary

2	Lead Cement	SWIFTCEM (TM) SYSTEM	437	sack	14.2	1.54		4.5	7.64
7.64 Gal		FRESH WATER							

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	91	bbl	8.33			4.5	

Cement Left In Pipe	Amount	39.3 ft	Reason	Shoe Joint
Comment				

1.3 Job Overview

		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	91
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	N

1.4 Job Event Log

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901318500
Anadarko NRC 28C-32HZ

3.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comment
Event	1	Depart Yard Safety Meeting	Depart Yard Safety Meeting	5/5/2014	04:00:00	USER				JSA on Job materials, pre-tripping trucks, and driving to location
Event	2	Arrive At Loc	Arrive At Loc	5/5/2014	04:45:00	USER				Arrived 15mins early and rig is circulating ready to go
Event	3	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	5/5/2014	04:52:00	USER				JSA on Hazard hunt, rigging up bulk trucks and iron to rig
Event	4	Rig-Up Equipment	Rig-Up Equipment	5/5/2014	05:00:00	USER				
Event	5	Rig-Up Completed	Rig-Up Completed	5/5/2014	05:15:00	USER	8.33	19.00	0.00	
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/5/2014	05:20:00	USER	8.36	12.00	0.00	JSA with Company Man, Rig hands, Third party, and HES on pump scheduale
Event	7	Start Job	Start Job	5/5/2014	05:37:04	COM5	8.30	11.00	0.00	
Event	8	Test Lines	Test Lines	5/5/2014	05:41:40	COM5	8.33	55.00	1.00	3000psi Pressure Test lines
Event	9	Pump Spacer 1	Pump Spacer 1	5/5/2014	05:45:01	COM5	8.31	-7.00	0.00	10bbls H20 Spacer pumped at 4.5bbl/min Avg. 98psi
Event	10	Pump Spacer 2	Pump Spacer 2	5/5/2014	05:48:30	COM5	8.14	95.00	4.30	12bbls Mud Flush Spacer pumped at 4.5bbl/min Avg 98psi
Event	11	Pump Spacer 1	Pump Spacer 1	5/5/2014	05:51:48	COM5	8.09	106.00	4.60	10bbls H20 Spacer Pumped at 4.5bbl/min Avg 100psi
Event	12	Pump Lead Cement	Pump Lead Cement	5/5/2014	05:53:52	COM5	13.74	134.00	4.60	437sks Swiftcem, 14.2ppg, 1.54yield, 7.64gal/sk, Mixed with rig water and verify 3x's by Pressurized mud scales. Pumped at 4.5bbl/min Avg. 110psi
Event	13	Shutdown	Shutdown	5/5/2014	06:25:09	COM5	8.83	23.00	0.00	
Event	14	Drop Top Plug	Drop Top Plug	5/5/2014	06:26:18	COM5	-0.15	-17.00	0.00	Pre-Loaded
Event	15	Pump Displacement	Pump Displacement	5/5/2014	06:26:23	COM5	-0.20	-17.00	0.00	91bbls H20 displacement. Pumped at 5bbl/min Avg

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										210psi and 20bbls Cmt to Surface
Event	16	Bump Plug	Bump Plug	5/5/2014	06:51:20	COM5	8.31	442.00	3.30	Slowed down last 20bbls to Bump. Plug landed at 423psi and brought to 1080psi for 2mins. Floats Held
Event	17	End Job	End Job	5/5/2014	06:53:47	COM5	8.26	-13.00	0.00	
Event	18	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	5/5/2014	07:00:00	USER	-0.17	-23.00	0.00	JSA on rigging down bulk trucks, and iron from rig
Event	19	Rig-Down Equipment	Rig-Down Equipment	5/5/2014	07:10:00	USER				
Event	20	Rig-Down Completed	Rig-Down Completed	5/5/2014	07:45:00	USER				
Event	21	Safety Meeting - Departing Location	Safety Meeting - Departing Location	5/5/2014	08:00:00	USER				JSA on Location walk around, pre-tripping trucks, and driving back to Brighton yard

2.0 Custom Graphs

2.1 Custom Graph