

# HALLIBURTON

iCem® Service

## Post Job Report

**ANADARKO PETROLEUM CORP - EBUS**

**For: BOB BALKENBUSH**

Date: Monday, June 23, 2014

**MULGA 28C-23 HZ SURFACE CASING**

ANADRKO MULGA 28C-23 HZ

Sincerely,

**Derek Trier**

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## 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Mulga 28C-23HZ** 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
<b>Requested Time On Location</b>	06/02	1400	MST
<b>Called Out</b>	06/02	1100	
<b>On Location</b>	06/02	1400	
<b>Job Started</b>	06/02	1615	
<b>Job Completed</b>	06/02	1744	
<b>Departed Location</b>	06/02	1840	

## 1.2 Cementing Job Summary

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## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466	Ship To #: 3468358	Quote #:	Sales Order #: 0901397647
Customer: ANADARKO PETROLEUM CORP - EBUS		Customer Rep: BOB BALKENBUSH	
Well Name: MULGA	Well #: 28C-23 HZ	API/UMI #: 05-123-39255-00	
Field: WATTENBERG	City (SAP): IONE	County/Parish: WELD	State: COLORADO
Legal Description: SE SW-23-2N-67W-275FSL-2237FWL			
Contractor:		Rig/Platform Name/Num: Majors 29	
Job BOM: 7521			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA/HX46524		Srvc Supervisor: Kendall Broom	
Job			
Formation Name			
Formation Depth (MD)	Top	Bottom	
Form Type	BHST		
Job depth MD	12348	Job Depth TVD	
Water Depth	Wk Ht Above Floor		
Perforation Depth (MD)	From	To	
Well Data			
Description	New / Used	Size in	ID in
Casing		9.625	8.901
Open Hole Section			13.5
Tools and Accessories			
Type	Size in	Qty	Make
Guide Shoe	9.625		1225
Float Shoe	9.625		
Float Collar	9.625		1182
Insert Float	9.625		
Stage Tool	9.625		
Top Plug	8.625		HES
Bottom Plug	9.625		HES
SSR plug set	9.625		HES
Plug Container	9.625		HES
Centralizers	9.625		HES
Miscellaneous Materials			
Gelling Agt	Conc	Surfactant	Conc
Treatment Fld	Conc	Inhibitor	Conc
Fluid Data			
Stage/Plug #: 1			
Fluid #	Stage Type	Fluid Name	Qty
1	Mud Flush III (Powder)	Mud Flush III	12
42 gal/bbl		FRESH WATER	
Fluid #	Stage Type	Fluid Name	Qty

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*Cementing Job Summary*

2	SwiftCem B2	SWIFTCM (TM) SYSTEM	463	sack	14.2	1.54		5	7.64
Fluid #	Stage Type	Fluid Name	Qty	Qty Unit	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	91	bol	8.33			6	
Cement Left in Pipe		Amount 42 ft		Reason			Shoe Joint		
Comment									

**1.3 Planned 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	8.33	4.00	10.0 bbl	10.0 bbl
1	2	Spacer	Mud Flush III	8.40	5.00	12.0 bbl	12.0 bbl
1	3	Spacer	Fresh Water	8.33	5.00	10.0 bbl	10.0 bbl
1	4	Cement Slurry	SwiftCem	14.20	7.00	463.0 sacks	463.0 sacks

**1.4 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	Actual mud Plastic Viscosity (PV)	cP	
5	Actual mud Yield Point (YP)	lb <sub>f</sub> /100ft <sup>2</sup>	
6	Actual mud 30 min Gel Strength	lb <sub>f</sub> /100ft <sup>2</sup>	
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	91
15	Job displaced by	Rig/HES	HES
16	Annular flow before job	Y/N	N
17	Annular flow after job	Y/N	N
18	Length of rat hole	Ft	
19	Units of gas detected while circulating	Units	
20	Was lost circulation experienced at any time?	Y/N	N

**1.5 Job Event Log**

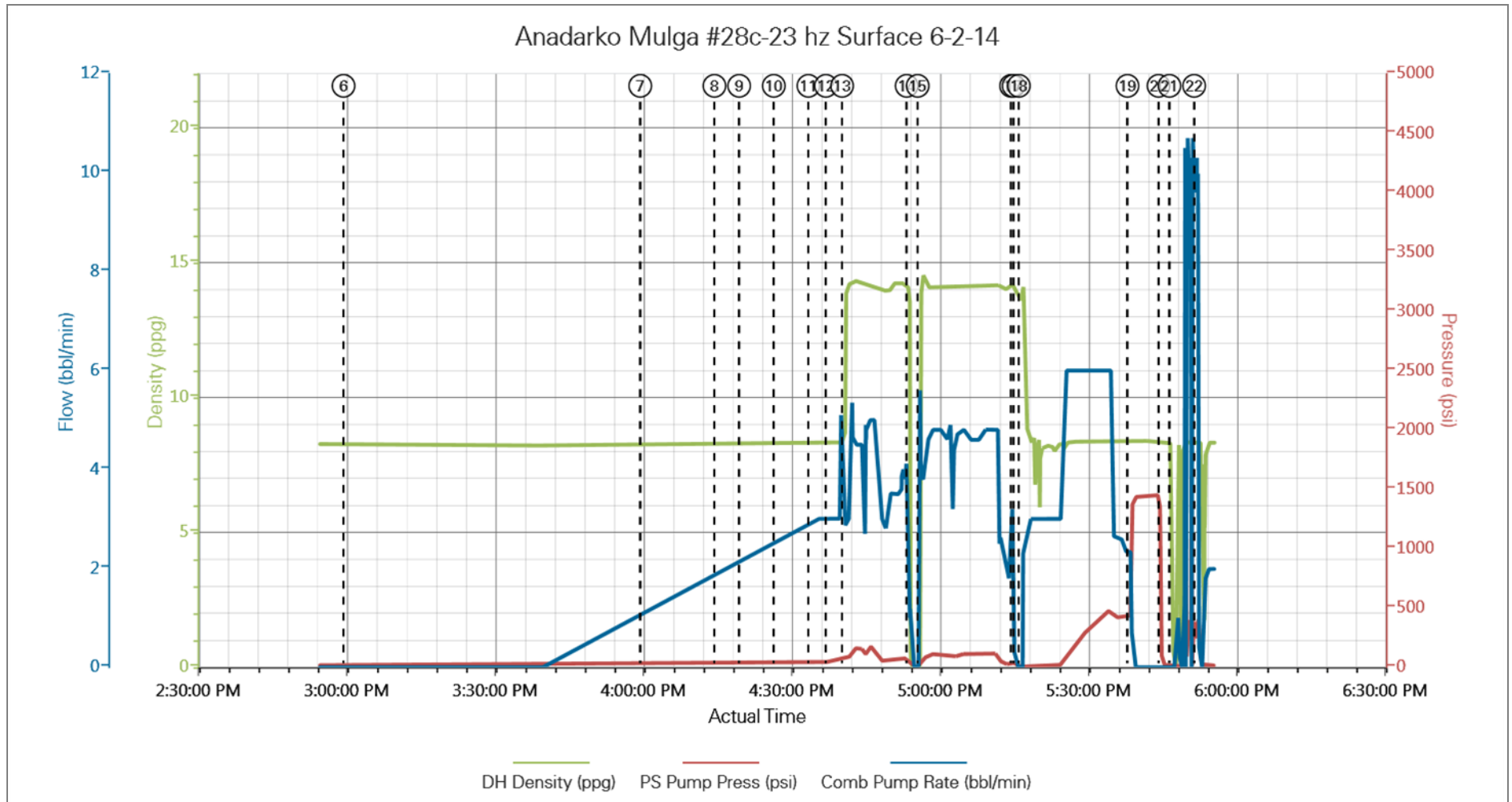
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	6/2/2014	11:00:00	USER				
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	6/2/2014	13:00:00	USER				JSA on Job materials, pre-tripping trucks, and driving to location
Event	3	Arrive At Loc	Arrive At Loc	6/2/2014	14:00:00	USER				Arrived 1.5hrs early and rig is on schedule running csg. Finished running Csg at 15:30 and Circulate 1hr
Event	4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	6/2/2014	14:05:00	USER				JSA on Hazard Hunt, rigging up bulk trucks and iron to rig.
Event	5	Rig-Up Equipment	Rig-Up Equipment	6/2/2014	14:15:00	USER				
Event	6	Rig-Up Completed	Rig-Up Completed	6/2/2014	15:00:00	USER	8.16	18.00	0.00	
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/2/2014	16:00:00	USER				JSA with Company Man, Rig hands, 3rd party, and HES on rigging up head and pump schedule.
Event	8	Start Job	Start Job	6/2/2014	16:15:00	USER				
Event	9	Pressure Test	Pressure Test	6/2/2014	16:20:00	USER				2500psi Pressure Test Lines
Event	10	Pump Spacer 1	Pump Spacer 1	6/2/2014	16:27:00	USER				10bbls H2O Spacer at Avg of 3bbl/min with 46psi
Event	11	Pump Spacer 2	Pump Spacer 2	6/2/2014	16:34:00	USER				12bbls Mud Flush Spacer at Avg of 3bbl/min 50psi
Event	12	Pump Spacer 1	Pump Spacer 1	6/2/2014	16:37:32	COM4	8.37	45.00	3.00	10bbls H2O Spacer at Avg of 3.5bbl/min with 60psi
Event	13	Pump Cement	Pump Cement	6/2/2014	16:40:48	COM4	13.81	77.00	3.00	463sks Swiftcem, 14.2ppg, 1.54yield, 7.64gal/sk, Mixed with rig water and # verify 3x's by pressurized mud scales.. Avg of 5bbl/min with 162psi
Event	14	Shutdown	Shutdown	6/2/2014	16:53:52	COM4	0.92	18.00	0.00	Shutdown Check weight with pressurized mud scales 14.21ppg
Event	15	Resume	Resume	6/2/2014	16:56:05	USER	14.52	48.00	3.80	Resume Pumping 14.2ppg Cmt at Avg 4.6bbl/min with 103psi
Event	16	Shutdown	Shutdown	6/2/2014	17:14:59	COM4	13.89	22.00	0.00	
Event	17	Drop Top Plug	Drop Top Plug	6/2/2014	17:15:30	COM4	13.67	0.00	0.00	Drop Plug Pre-Loaded Company Man Verify

Event	18	Pump Displacement	Pump Displacement	6/2/2014	17:16:32	COM4	13.51	0.00	0.30	91bbls H2O Displacement, Returns would slow up and speed up throughout.. Avg. 5bbl/min with 190psi.. 23bbls Cmt Back To Surface
Event	19	Bump Plug	Bump Plug	6/2/2014	17:38:30	COM4	8.38	961.00	2.30	Slowed down last 10bbls to 2.5bbl/min to Bump... Plug landed at 493psi and brought to 1439psi for 2mins
Event	20	End Job	End Job	6/2/2014	17:44:47	COM4				
Event	21	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	6/2/2014	17:47:00	USER	0.58	10.00	0.00	JSA on rigging down bulk trucks and iron from rig
Event	22	Rig-Down Equipment	Rig-Down Equipment	6/2/2014	17:52:00	USER	8.33	401.00	10.00	
Event	23	Rig-Down Completed	Rig-Down Completed	6/2/2014	18:35:00	USER				
Event	24	Safety Meeting - Departing Location	Safety Meeting - Departing Location	6/2/2014	18:40:00	USER				JSA on Location walk around, pre-tripping trucks, and driving back to Brighton Yard



## 2.0 Custom Graphs

### 2.1 Custom Graph



### 3.0 Appendix

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