

HALLIBURTON

iCem[®] Service

Post Job Report

ANADARKO PETROLEUM CORP - EBUS

For: Alan Seacrest

Date: Sunday, June 08, 2014

Benson Farms 23C-19HZ Surface

Benson Farms 23C-19HZ

Sincerely,

Steven Markovich

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Benson Farms 23C-19HZ** 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
Requested Time On Location	6/8	17:30	
Called Out	6/8	12:30	
On Location	6/8	17:10	
Job Started	6/8	18:36	
Job Completed	6/8	20:20	
Departed Location	6/8	21:00	

1.2 Cementing Job Summary

Sold To #: 300466	Ship To #: 3475242	Quote #:	Sales Order #: 0901405345
Customer: ANADARKO PETROLEUM CORP - EBUS		Customer Rep: Alan Seacrest	
Well Name: BENSON FARMS	Well #: 23C-19HZ	API/UWI #: 05-123-39394-00	
Field: WATTENBERG	City (SAP): MEAD	County/Parish: WELD	State: COLORADO
Legal Description: NW SW-24-3N-68W-2045FSL-50FWL			
Contractor:		Rig/Platform Name/Num: Majors 42	

Job BOM: 7521

Well Type: HORIZONTAL GAS

Sales Person: HALAMERICA\HX46524

Srv Supervisor: Steven Markovich

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type			BHST
Job depth MD	1241ft		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	3	9.625	8.921	36		J-55	0	1241	0	1226
Open Hole Section			13.5				0	1241	0	1236

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625			1241		Top Plug	9.625		HES
Float Shoe	9.625					Bottom Plug	9.625		HES
Float Collar	9.625					SSR plug set	9.625		HES
Insert Float	9.625					Plug Container	9.625		HES
	9.625					Centralizers	9.625		HES

Miscellaneous Materials

Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty			
Treatment Fld		Conc				Conc		Sand Type					

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Lead Cement	SWIFTCEM (TM) SYSTEM	460	sack	14.2	1.54		6	7.64
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	91	bbl	8.33				
		Amount	40 ft						
Comment 15bbbls of Cement to surface									

1.4 Planned Pumping Schedule

1.5 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	50
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	8.4
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	01:00
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	00:10
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

1.6 Water Field Test

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7.0	----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	<3000	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	<1500	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness	<500	ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium	<500	ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity	<1000	ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates	<1000	ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium	<5000	ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	<300	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	57	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

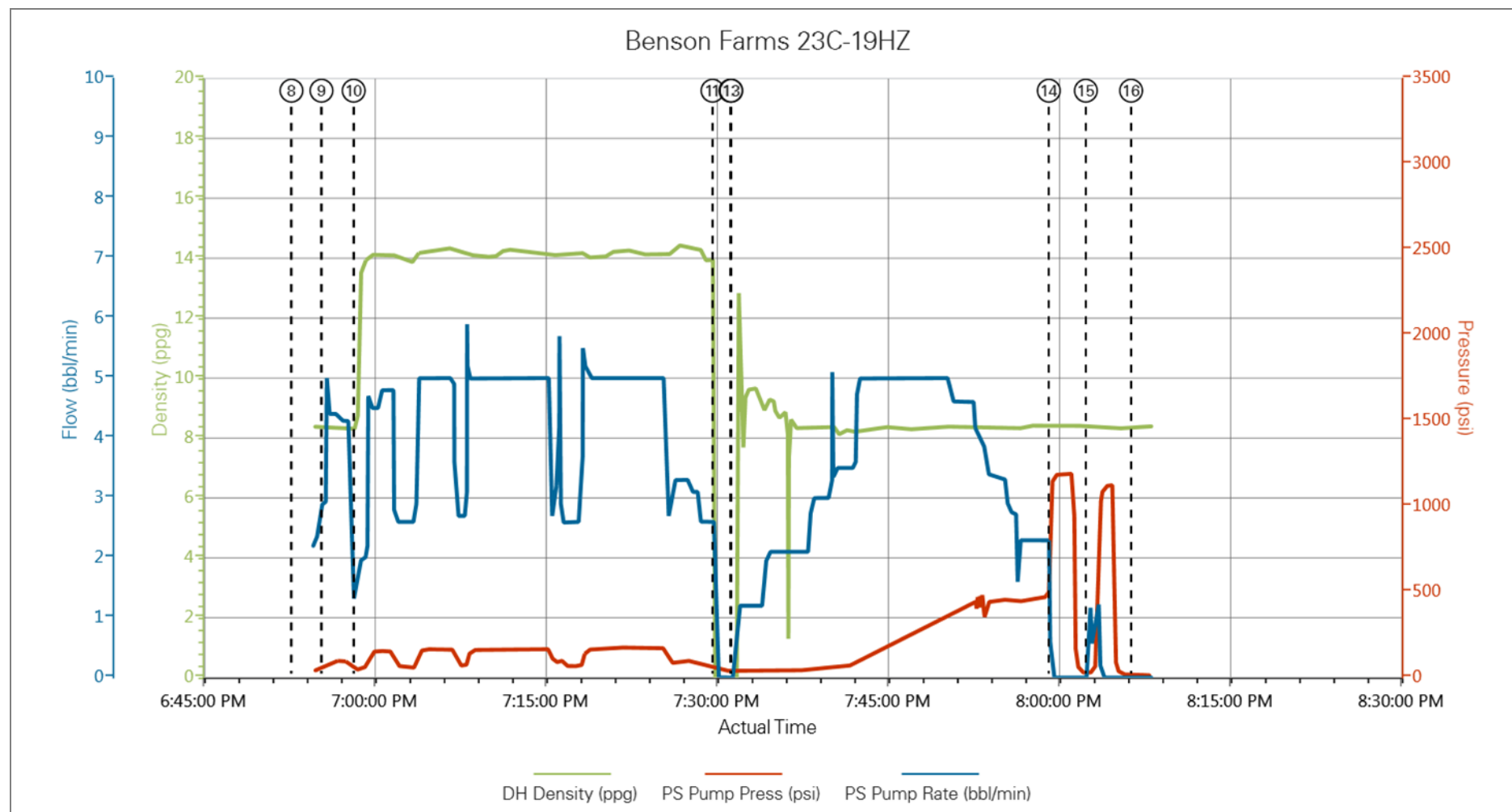
Submitted Respectfully by: Steven Markovich

1.7 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Pass-Side Pump Rate (bbl/min)	Comment
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	6/8/2014	17:15:00	USER				Arrived on location rig ready for us
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	6/8/2014	17:20:00	USER				JSA and Hazard hunt with HES crew
Event	3	Rig-Up Equipment	Rig-Up Equipment	6/8/2014	17:30:00	USER				Rig up HES equipment
Event	4	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/8/2014	18:15:00	USER				JSA with HES and rig crew on job procedure
Event	5	Start Job	Start Job	6/8/2014	18:36:00	USER				
Event	6	Test Lines	Test Lines	6/8/2014	18:40:00	USER				Test lines to 2500psi
Event	7	Pump Spacer 1	Pump Spacer 1	6/8/2014	18:43:00	USER				Pump 10bbbls of Water
Event	8	Pump Spacer 2	Pump Spacer 2	6/8/2014	18:53:00	USER				Pump 12bbbls of Mud Flush
Event	9	Pump Spacer 1	Pump Spacer 1	6/8/2014	18:55:38	COM6	8.29	55.00	2.90	Pump 10bbbls of Water
Event	10	Pump Cement	Pump Cement	6/8/2014	18:58:27	COM6	8.49	44.00	1.50	Pump 126bbbls of 14.2ppg Cement
Event	11	Shutdown	Shutdown	6/8/2014	19:29:54	COM6	-6.98	64.00	0.00	
Event	12	Drop Top Plug	Drop Top Plug	6/8/2014	19:31:28	COM6	-11.43	40.00	0.00	Plug pre loaded in HSE head
Event	13	Pump Displacement	Pump Displacement	6/8/2014	19:31:33	COM6	-11.43	40.00	0.00	Pump 91bbbls of Water. Cement to surface at 76bbbls away. 15bbbls of cement to surface
Event	14	Bump Plug	Bump Plug	6/8/2014	19:59:23	COM6				Fianl lift pressure 480psi took 500 over and checked floats
Event	15	Other	Other	6/8/2014	20:02:38	COM6	8.37	25.00	0.00	Bump plug again to verify. Floats good.
Event	16	End Job	End Job	6/8/2014	20:06:36	COM6				Thanks Markovich and crew

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix
