

HALLIBURTON

iCem[®] Service

ANADARKO PETROLEUM CORP - EBUS

For: BOB PORTER

Date: Friday, May 23, 2014

ELLIOT STATE 8N-17HZ

GRENNEMYER 14C-3HZ

ELLIOT STATE 8N-17HZ

Sincerely,

CHRISTOPHER PICKELL

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Elliott State 8N-17HZ** 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			
On Location			
Job Started	4/4/14	14:11:31	
Job Completed	4/4/14	15:31:41	
Departed Location			

1.2 Cementing Job Summary

Sold To #: 300466		Ship To #: 3363065		Quote #:		Sales Order #: 0901248755				
Customer: ANADARKO PETROLEUM CORP - EBUS				Customer Rep: BOB PORTER						
Well Name: ELLIOTT STATE		Well #: 8N-17 HZ		API/UWI #: 05-123-39079-00						
Field: WATTENBERG		City (SAP): PLA		County/Parish: WELD		State: COLORADO				
Legal Description: SW NW-17-3N-67W-1546FNL-809FWL										
Contractor: Bob Porter				Rig/Platform Name/Num: Majors 42						
Job BOM: 7521										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX46524				Srvc Supervisor: Christopher Pickell						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		1240 FT		Job Depth TVD						
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	1230		0
Open Hole Section			13.5				0	1240		0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625	0				Top Plug	9.625	1	HES	
Float Shoe	9.625	1		1230		Bottom Plug	9.625		HES	
Float Collar	9.625	1		1189		SSR plug set	9.625		HES	
Insert Float	9.625	1				Plug Container	9.625	1	HES	
Stage Tool	9.625	1				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 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		FRESH WATER								
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	

1.3

2	Lead Cement	SWIFTCEN (TM) SYSTEM	481	Sack/Ton	14.2	1.54	7.78	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 ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	6	bbl	8.33				
Cement Left In Pipe		Amount	42 ft	Reason		Shoe Joint			
Comment									

1.4 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 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	481 sacks	481 sacks

1.5 Job Overview

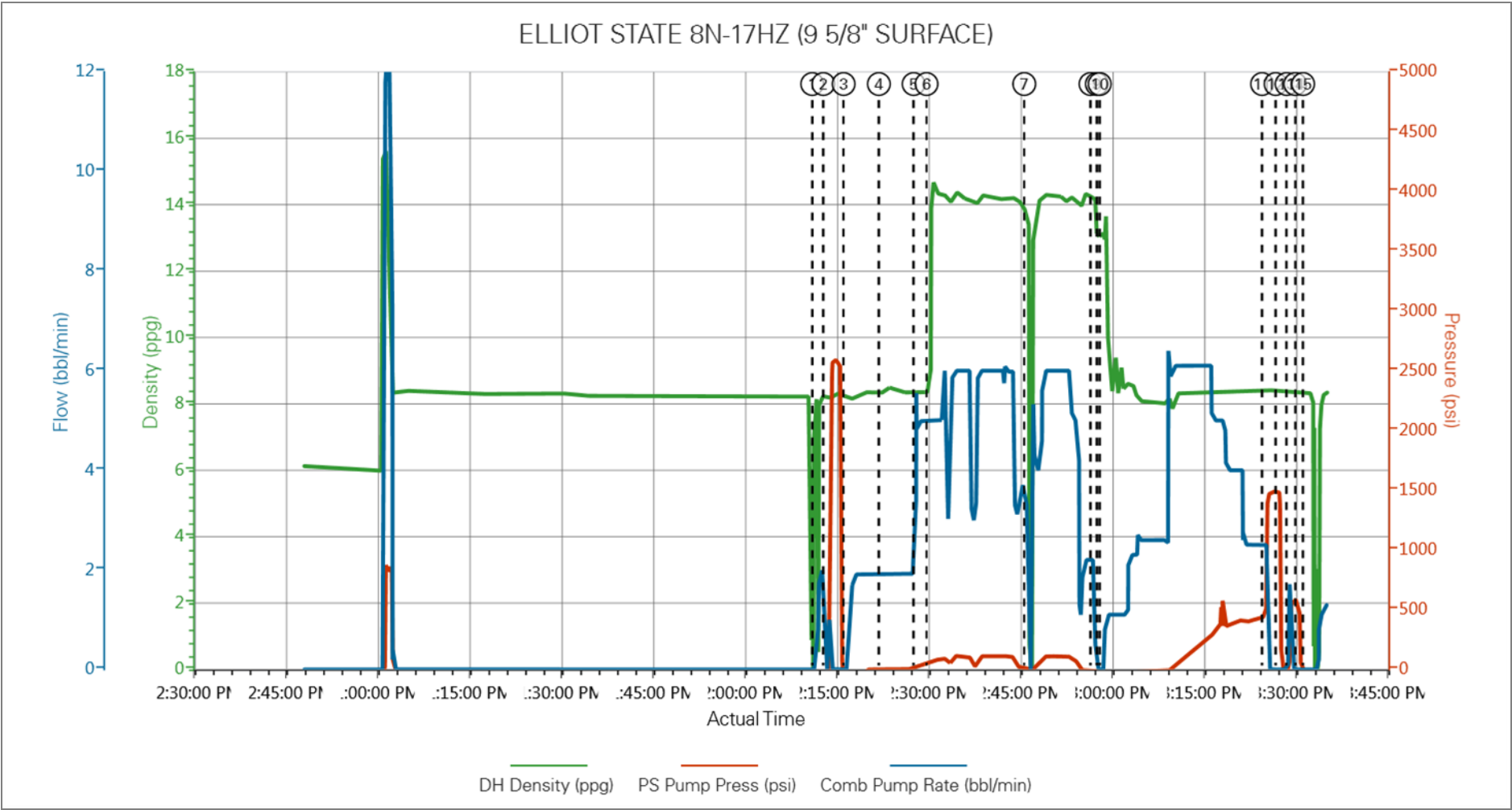
		Units	Description
1	Surface temperature at time of job	°F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	
4	Time circulated before job	HH:MM	
5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure 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	91.9 bbl
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

1.6 Job Event Log

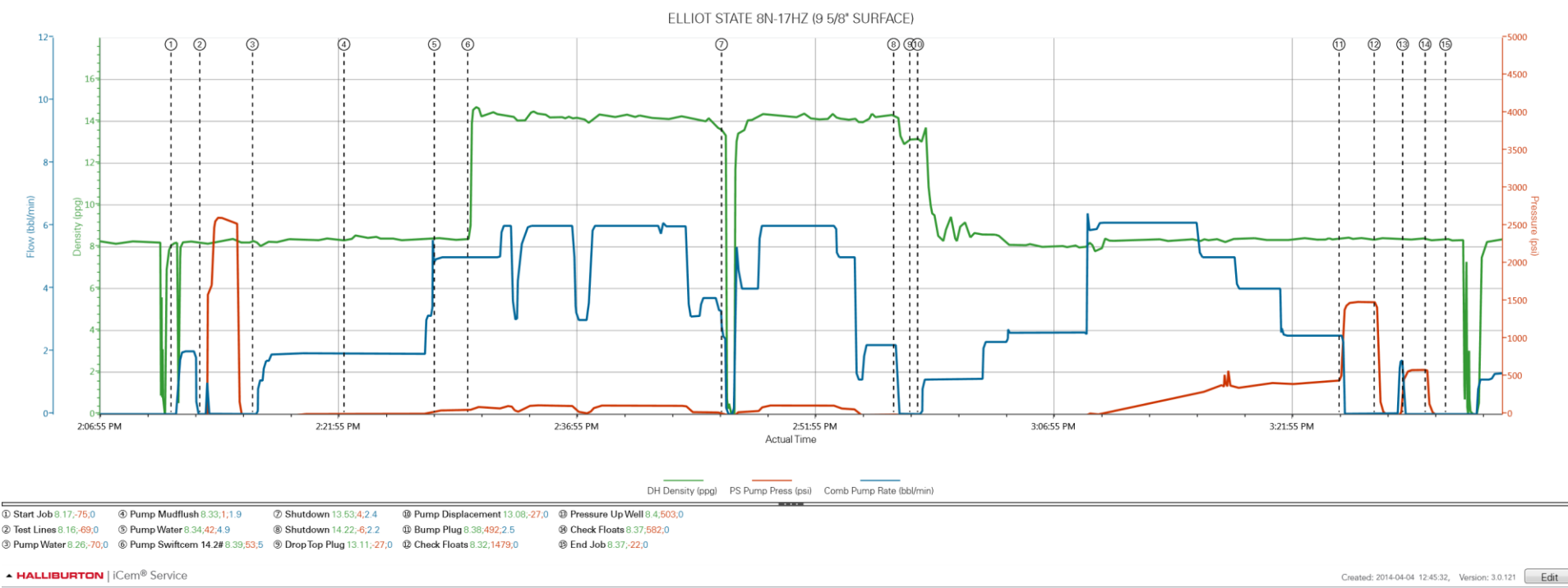
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Comment
Event	1	Start Job	Start Job	4/4/2014	14:11:31	COM5	8.17	-75.00	0.00	Arrive on location 30 minutes early. Rig had 15 joints left. Casing on bottom at 1330. Safety meeting held. Rig up completed then job started.
Event	2	Test Lines	Test Lines	4/4/2014	14:13:19	COM5	8.16	-69.00	0.00	Pressure test lines to 2500 psi. Check for visible leaks and pressure loss
Event	3	Pump Spacer 1	Pump Water	4/4/2014	14:16:38	COM5	8.26	-70.00	0.00	Pump Water
Event	4	Pump Spacer 2	Pump Mudflush	4/4/2014	14:22:24	COM5	8.33	1.00	1.90	Pump Mudflush
Event	5	Pump Spacer 1	Pump Water	4/4/2014	14:28:05	COM5	8.34	42.00	4.90	Pump Water
Event	6	Pump Cement	Pump Swiftcem 14.2#	4/4/2014	14:30:11	COM5	8.39	53.00	5.00	Pump Swiftcem Cement 481 sks 14.2 ppg 1.54 cuft/sk 7.76 gal/sk
Event	7	Shutdown	Shutdown	4/4/2014	14:46:09	USER	13.53	4.00	2.40	Had to shutdown do to poor delivery from bulk truck. Weight brought back up. Pumping then continued.
Event	8	Shutdown	Shutdown	4/4/2014	14:56:58	USER	14.22	-6.00	2.20	Shutdown to drop plug. Pumps and lines washed on top of the plug.
Event	9	Drop Top Plug	Drop Top Plug	4/4/2014	14:57:59	USER	13.11	-27.00	0.00	Plug preloaded. Witnessed by driller.
Event	10	Pump Displacement	Pump Displacement	4/4/2014	14:58:29	COM5	13.08	-27.00	0.00	Pump displacement using water
Event	11	Bump Plug	Bump Plug	4/4/2014	15:24:59	COM5	8.38	492.00	2.50	Calculated pressure to land was 362. Plug landed with 492 psi going 500 over
Event	12	Other	Check Floats	4/4/2014	15:27:12	COM5	8.32	1479.00	0.00	Pressure was held for 2 minutes then relaxed.

										Floats held. 1/2 bbl back
Event	13	Pressure Up Well	Pressure Up Well	4/4/2014	15:29:00	USER	8.40	503.00	0.00	Company man requested to pressure back up to 500 psi then recheck floats
Event	14	Check Floats	Check Floats	4/4/2014	15:30:24	USER	8.37	582.00	0.00	Pressure held for 1 minute then released. Floats held.
Event	15	End Job	End Job	4/4/2014	15:31:41	COM5	8.37	-22.00	0.00	2 bbl of cement to surface. Then rig down meeting held. All equipment blown down and rigged down

2.0 Custom Graphs



2.1 Custom Graph



3.0 Appendix

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