

# HALLIBURTON

iCem<sup>®</sup> Service

**ANADARKO PETROLEUM CORP - EBUS**

**Sickler 28N-34HZ**

Sincerely,  
**Steven Markovich**

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**1.1 Executive Summary**

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Halliburton appreciates the opportunity to perform the cementing services on the **Sickler 28N-34HZ** 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**

	<b>Date</b>	<b>Time</b>	<b>Time Zone</b>
<b>On Location</b>	5/25	1130	MST
<b>Job Started</b>	5/25	1325	MST
<b>Job Completed</b>	5/25	1513	MST

1.2 Cementing Job Summary

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*Cementing Job Summary*

*The Road to Excellence Starts with Safety*

Sold To #: 300466		Ship To #: 3475372		Quote #:		Sales Order #: 0901374159					
Customer: ANADARKO PETROLEUM CORP - EBUS				Customer Rep: Bob Porter							
Well Name: SICKLER			Well #: 28N-34HZ			API/UWI #: 05-123-39375-00					
Field: WATTENBERG		City (SAP): IONE		County/Parish: WELD			State: COLORADO				
Legal Description: SW SE-34-2N-67W-327FSL-1545FEL											
Contractor:				Rig/Platform Name/Num: MAJOR 42							
Job BOM: 7521											
Well Type: HORIZONTAL GAS											
Sales Person: HALAMERICA\HX46524					Srcv Supervisor: Steven Markovich						
<b>Job</b>											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		850ft			Job Depth TVD						
Water Depth					Wk Ht Above Floor						
Perforation Depth (MD)		From			To						
<b>Well Data</b>											
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	850			
Open Hole Section			13.5				0	850			
<b>Tools and Accessories</b>											
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make			
Guide Shoe	9.625			850	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			
Stage Tool	9.625				Centralizers	9.625		HES			
<b>Miscellaneous Materials</b>											
Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty	
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size Qty	
<b>Fluid Data</b>											
Stage/Plug #: 1											
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /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								

**HALLIBURTON**

*Cementing Job Summary*

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	Lead Cement	SWIFTCEM (TM) SYSTEM	500	sack	14.2	1.54		6	7.64	
3	Displacement	Displacement	96	bbbl	8.33					
<b>Cement Left In Pipe</b>		<b>Amount</b>	42 ft		<b>Reason</b>			Shoe Joint		
<b>Comment</b>										

**Planned Pumping Schedule**

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- 1. Fill Lines with Water**
- 2. Pressure Test Lines to 2500psi**
- 3. Pump 10 Fresh Water Spacer**
  - a. Density = 8.33 lb/gal
  - b. Volume = 10 bbl
  - c. Rate = 2 bpm
- 4. Pump Mud Flush III Spacer**
  - a. Density = 8.4 lb/gal
  - b. Volume = 12 bbl
  - c. Rate = 2 bpm
- 5. Pump Fresh Water Spacer**
  - a. Density = 8.33 lb/gal
  - b. Volume = 10 bbl
  - c. Rate = 2 bpm
- 6. Pump SwiftCem**
  - a. Density = 14.2 ppg
  - b. Yield = 1.54 ft<sup>3</sup>/sk
  - c. Water Requirement = 7.63 gal/sk
  - d. Volume = 500 sks (137 bbls)
  - e. Rate = 5 bpm
- 7. Drop Top Plug**
- 8. Start Displacement**
- 9. Pump Displacement Water**
  - a. Density = 8.33 lb/gal
  - b. Volume = 96 bbls
  - c. Rate = 5 bpm
10. Land Plug – Anticipated Final Circulation Pressure 400 psi

**Calculated Total Displacement = 96 bbls**



## 1.3 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Comment
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	5/25/2014	11:30:00	USER			Arrived at location rig running casing approx 10 joints
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	5/25/2014	11:35:00	USER			JSA and Hazard hunt with HES crew
Event	3	Rig-Up Date/Time	Rig-Up Date/Time	5/25/2014	12:30:00	USER			Rig up HES Equipment
Event	4	Pre-Job Safety Meeting	0 Ppg Sand	5/25/2014	13:00:00	USER			JSA with HES and Rig crew on job procedure
Event	5	Start Job	Start Job	5/25/2014	13:25:00	USER	0.00	8.31	
Event	6	STRTJOB	STRTJOB	5/25/2014	13:25:31	COM4	0.00	6.87	
Event	7	Pressure Test	Pressure Test	5/25/2014	13:31:00	USER	2295.00	8.42	Test lines to 2500psi
Event	8	TESTLINE	TESTLINE	5/25/2014	13:31:59	COM4	2259.00	8.44	
Event	9	Pump Spacer 1	Pump Spacer 1	5/25/2014	13:32:00	USER	27.00	8.44	Pump 10bbls of Water
Event	10	Pump Spacer 2	Pump Spacer 2	5/25/2014	13:40:00	USER	27.00	8.36	Pump 12bbls of Mud Flush
Event	11	Pump Spacer 1	Pump Spacer 1	5/25/2014	13:47:00	USER	26.00	8.33	Pump 10bbls of Water
Event	12	Pump Cement	Pump Cement	5/25/2014	13:50:00	USER	66.00	14.2	Pump 137bbls of 14.2ppg Cement
Event	13	Shutdown	Shutdown	5/25/2014	14:22:00	USER			
Event	14	Drop Top Plug	Drop Top Plug	5/25/2014	14:23:00	USER			Plug preloaded in head
Event	15	Pump Displacement	Pump Displacement	5/25/2014	14:24:00	USER	50.00	8.33	Pump 96bbls of water. Cement to surface at 92 away 4bbls of cement to surface.
Event	16	Bump Plug	Check Floats	5/25/2014	14:50:00	USER	477.00	8.38	Final lift pressure 502psi
Event	17	Check Floats	Check Floats	5/25/2014	14:52:00	USER	1370.00	8.30	Floats good
Event	18	Pressure Test	Pressure Test	5/25/2014	14:52:01	USER	1370.00	8.31	Casing test to 1500psi for 10 mins
Event	19	TESTLINE	TESTLINE	5/25/2014	14:54:54	COM4			

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Event	20	End Job	End Job	5/25/2014	15:00:00	USER	End Job thanks Markovich and crew
Event	21	ENDJOB	ENDJOB	5/25/2014	15:13:00	COM4	

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## 2.0 Custom Graphs

### 2.1 Custom Graph



