

QUICKSILVER RESOURCES INC-EBUSINESS  
DO NOT MAIL - 801 CHERRY ST  
FORT WORTH, Texas

Stoddard 33-30

DHS 6

## **Post Job Summary**

# **Cement Production Casing**

Prepared for: Ryan Gord  
Date Prepared: September 11, 2011  
Version: 1

Service Supervisor: PAUU, SEMISI

Submitted by: Joshua Anglin

**HALLIBURTON**

# HALLIBURTON

## Wellbore Geometry

Job Tubulars					MD		TVD		Excess	Shoe Joint Length
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	Top ft	Bottom ft	%	ft
Casing	Intermediate Casing	7.00	6.276	26.00	0.00	6,400.00				40.00
Open Hole Section	Production Open Hole		6.125		6,400.00	8,300.00				0.00
Casing	Production Casing	4.50	3.920	13.50	0.00	8,300.00				40.00

## Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	TUNED SPACER III	9.00	0.00	20.0 bbl	20.0 bbl
1	2	Spacer	Mud Recovery Spacer	9.00	0.00	65.0 bbl	65.0 bbl
1	3	Spacer	Mud Flush III Spacer	9.00	0.00	20.0 bbl	20.0 bbl
1	4	Cement Slurry	LifeCem	13.50		185.0 sacks	185.0 sacks
1	5	Spacer	KCl Displacement	8.40	5.00	124.0 bbl	124.0 bbl

# HALLIBURTON

## Fluids Pumped

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**Stage/Plug # 1      Fluid 1:**      TUNED SPACER III      0.125 gal/bbl      D-AIR 3000L  
TUNED SPACER III - SBM (483826)      Fluid Density:      9.00 lbm/gal  
39.81 gal/bbl      Fresh Water      Fluid Volume:      20.00 bbl  
44.3 lbm/bbl      Tuned Spacer III      Pump Rate:      0.00 bbl/min  
0.125 gal/bbl      Musol(R) A  
7.5 lbm/bbl      Barite  
0.125 gal/bbl      SEM-7

**Stage/Plug # 1      Fluid 2:**      Mud Recovery Spacer  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL      Fluid Density:      9.00 lbm/gal  
38 lbm/bbl      Barite      Fluid Volume:      65.00 bbl  
31.25      Halliburton Gel      Pump Rate:      0.00 bbl/min  
lbm/bbl  
0.05 gal/bbl      Anhib II

**Stage/Plug # 1      Fluid 3:**      Mud Flush III Spacer  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL      Fluid Density:      9.00 lbm/gal  
4 lbm/bbl      Mud Flush III      Fluid Volume:      20.00 bbl  
Pump Rate:      0.00 bbl/min

**Stage/Plug # 1      Fluid 4:**      LifeCem  
LIFECM (TM) CEMENT  
Fluid Weight:      13.50 lbm/gal  
Slurry Yield:      1.73 ft3/sack  
Total Mixing Fluid:      7.25 Gal  
Surface Volume:      185.0 sacks  
Sacks:      185.0 sacks  
Calculated Fill:      2,400.00 ft  
Calculated Top of Fluid:      4,600.00 ft  
Estimated Top of Fluid:

**Stage/Plug # 1      Fluid 5:**      KCl Displacement  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL      Fluid Density:      8.40 lbm/gal  
7.15 lbm/bbl      KCL      Fluid Volume:      124.00 bbl  
Pump Rate:      5.00 bbl/min

# HALLIBURTON

## ***Job Summary***

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### **Job Information**

<b>Job Start Date</b>	8/7/2011 3:00:00 AM
<b>Job MD</b>	8,300.0 ft
<b>Job TVD</b>	8,300.0 ft
<b>Height of Plug Container/Swage Above Rig Floor</b>	4.0 ft
<b>Surface Temperature at Time of Job</b>	52 degF
<b>Mud Type</b>	INTEGRADE
<b>Actual Mud Density</b>	10 lbm/gal
<b>Time Circulated before job</b>	1.50 hour(s)
<b>Rate at Which Well was Circulated</b>	6.000 bbl/min
<b>Time From End Mud Circ. to Job Start</b>	30.00 minute
<b>Pipe Movement During Cementing</b>	None
<b>Calculated Displacement</b>	124.00 bbl
<b>Job Displaced by (rig/halco)</b>	Cement Unit HP Pumps

### **Cementing Equipment**

<b>Pipe Centralization</b>	Through Entire Cement Column
<b>Did Float Equipment Hold?</b>	Yes
<b>Plug set used?</b>	Yes
<b>Brand of Plug set used?</b>	HALLIBURTON
<b>Did Plugs Bump?</b>	Yes
<b>Calculated Pressure to Bump Plugs</b>	500.0 psig

## Service Supervisor Reports

### Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
08/06/2011 17:30		Call Out							
08/06/2011 20:25		Pre-Convoy Safety Meeting							
08/06/2011 20:30		Depart from Service Center or Other Site							
08/06/2011 23:30		Arrive At Loc							
08/07/2011 00:00		Safety Meeting - Assessment of Location							
08/07/2011 00:15		Pre-Rig Up Safety Meeting							
08/07/2011 01:00		Rig-Up Equipment							
08/07/2011 02:50		Rig-Up Completed							
08/07/2011 03:00		Pre-Job Safety Meeting							
08/07/2011 03:32		Pressure Test	2				5000.0		Pressure tested lines to 5000 psi, no leaks
08/07/2011 03:39		Pump Spacer 1	4				375.0		Pumped 20 bbl TSIII with Musol and Sem-7
08/07/2011 03:43		Pump Spacer	5				340.0		Pumped 65 bbl of Mud Recovery
08/07/2011 03:57		Pump Spacer 1	5				500.0		Pumped 20 bbl MudFlush
08/07/2011 04:01		Pump Cement	3.5				500.0		Pumped 57 bbl LifeCem at 13.5#/gal 1.73 Yield 7.25 gal/sks
08/07/2011 04:07		Slow Rate	1	25			500.0		Slowed Rate due to issue getting product to the truck
08/07/2011 04:18		Other							Finished pumping Cement.
08/07/2011 04:19		Clean Lines							
08/07/2011 04:25		Drop Plug							4.5" HWE top plug dropped by Mike Still

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
08/07/2011 04:26		Pump Displacement	8					200.0	Started 123.9 bbl Displacement with 7% Potassium Chloride
08/07/2011 04:31		Other	6	32				450.0	Caught the Plug/Slowed Rate to 6 bbl/min
08/07/2011 04:37		Slow Rate	5	70				580.0	Slowed Rate due to increase in pressure
08/07/2011 04:46		Slow Rate	3	115				1180.0	Slowed Rate in preparation to landing the plug
08/07/2011 04:48		Bump Plug	3	122.5				1750.0	Bumped plug at 1250 psi, pressured 500 over to 1750 psi
08/07/2011 04:50		Check Floats							Checked floats back to Truck. Floats held, 1bbl Back
08/07/2011 04:55		Safety Meeting - Pre Rig-Down							
08/07/2011 05:00		Rig-Down Equipment							
08/07/2011 06:30		Rig-Down Completed							
08/07/2011 06:45		Pre-Convoy Safety Meeting							
08/07/2011 07:00		Depart from Service Center or Other Site							This Job was completed safely by Semisi Pauu and crew. Thank you for choosing Halliburton Cementing

## The Road to Excellence Starts with Safety

<b>Sold To #:</b> 346707	<b>Ship To #:</b> 2868987	<b>Quote #:</b>	<b>Sales Order #:</b> 8374467
<b>Customer:</b> QUICKSILVER RESOURCES INC-EBUSINESS		<b>Customer Rep:</b> Hord, Ryan	
<b>Well Name:</b> Stoddard		<b>Well #:</b> 33-30	<b>API/UWI #:</b>
<b>Field:</b>	<b>City (SAP):</b> CRAIG	<b>County/Parish:</b> Moffat	<b>State:</b> Colorado
<b>Contractor:</b> DHS		<b>Rig/Platform Name/Num:</b> 6	
<b>Job Purpose:</b> Cement Production Casing			
<b>Well Type:</b> Exploratory / Wildcat		<b>Job Type:</b> Cement Production Casing	
<b>Sales Person:</b> SCOTT, KYLE		<b>Srvc Supervisor:</b> PAUU, SEMISI	<b>MBU ID Emp #:</b> 445202

## Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
BROWN, PAUL		481062	DEAN, MARK Christophe		454214	PAUU, SEMISI Tu'a		445202
STILL, MICHEAL Wayne		258213	WEYERMAN, JEREMY Todd		477287			

## Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way

## Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours

TOTAL	Total is the sum of each column separately							
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## Job

## Job Times

Formation Name										Date	Time	Time Zone	
Formation Depth (MD)		Top			Bottom				Called Out	06 - Aug - 2011	05:30	MST	
Form Type					BHST					On Location	06 - Aug - 2011	23:30	MST
Job depth MD		8300. ft			Job Depth TVD		8300. ft			Job Started	07 - Aug - 2011	03:00	MST
Water Depth					Wk Ht Above Floor		4. ft			Job Completed	07 - Aug - 2011	05:00	MST
Perforation Depth (MD)		From			To				Departed Loc	07 - Aug - 2011	07:00	MST	

## Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Production Open Hole				6.125				6400.	8300.		
Intermediate Casing	Unknown		7.	6.276	26.		L-80	.	6400.		
Production Casing	Unknown		4.5	3.92	13.5		P-110	.	8300.		

Sales/Rental/3<sup>rd</sup> Party (HES)

Description	Qty	Qty uom	Depth	Supplier
MILEAGE FOR CEMENTING CREW,ZI	160	MI		
SUGAR - GRANULATED	50	LB		
PLUG,CMTG,TOP,4 1/2,HWE,3.65 MIN/4.14 MA	1	EA		

## Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			

Insert Float										Plug Container			
Stage Tool										Centralizers			

### 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/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	TUNED SPACER III	TUNED SPACER III - SBM (483826)	20.00	bbl	9.	5.91	41.71	.0	
	39.81 gal/bbl	FRESH WATER							
2	Mud Recovery Spacer		65.00	bbl	9.	.0	.0	.0	
	38 lbm/bbl	BARITE, BULK (100003681)							
	31.25 lbm/bbl	HALLIBURTON GEL, 50 LB SK (100064040)							
	0.05 gal/bbl	ANHIB II (100003821)							
3	Mud Flush III Spacer		20.00	bbl	9.	.0	.0	.0	
	4 lbm/bbl	MUD FLUSH III, 40 LB SACK (101633304)							
	42 gal/bbl	FRESH WATER							
4	LifeCem	LIFECM (TM) CEMENT (532084)	185.0	sacks	13.5	1.73	7.25		7.25
	7.25 Gal	FRESH WATER							
5	KCI Displacement		124.00	bbl	8.4	.0	.0	5.0	
	7.15 lbm/bbl	POTASSIUM CHLORIDE 7% (100001585)							
	42 gal/bbl	WATER - FRESH - GAL (24047)							

### Calculated Values

### Pressures

### Volumes

Displacement		Shut In: Instant		Lost Returns		Cement Slurry		Pad	
Top Of Cement		5 Min		Cement Returns		Actual Displacement		Treatment	
Frac Gradient		15 Min		Spacers		Load and Breakdown		Total Job	

### Rates

Circulating		Mixing		Displacement		Avg. Job	
Cement Left In Pipe	Amount	40 ft	Reason	Shoe Joint			
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID

The Information Stated Herein Is Correct	Customer Representative Signature
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# HALLIBURTON

## Lab Data

## HALLIBURTON

Cementing Rockies, Vernal

### LAB RESULTS - Primary

#### Job Information

Request/Slurry	166819/1	Rig Name	DHS DRILLING #6	Date	04/AUG/2011
Submitted By	Isaac Whorl	Job Type	Production Casing	Bulk Plant	Vernal
Customer	Quicksilver Resources Inc.	Location	Moffat	Well	Stoddard 33-30

#### Well Information

Casing/Liner Size	4 1/2"	Depth MD	8300 ft	BHST	241 F
Hole Size	6 1/8"	Depth TVD	0 ft	BHCT	169 F

#### Cement Information - Primary Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
7.31	gal/sack	LifeCem Fresh Water	Lab	May 29, 2011	5-29-2011	Slurry Density	13.50 PPG
						Slurry Yield	1.73 ft3/sk
						Water Requirement	7.31 GPS
						Water Source	Fresh Water

#### Operation Test Results Request ID 166819/1

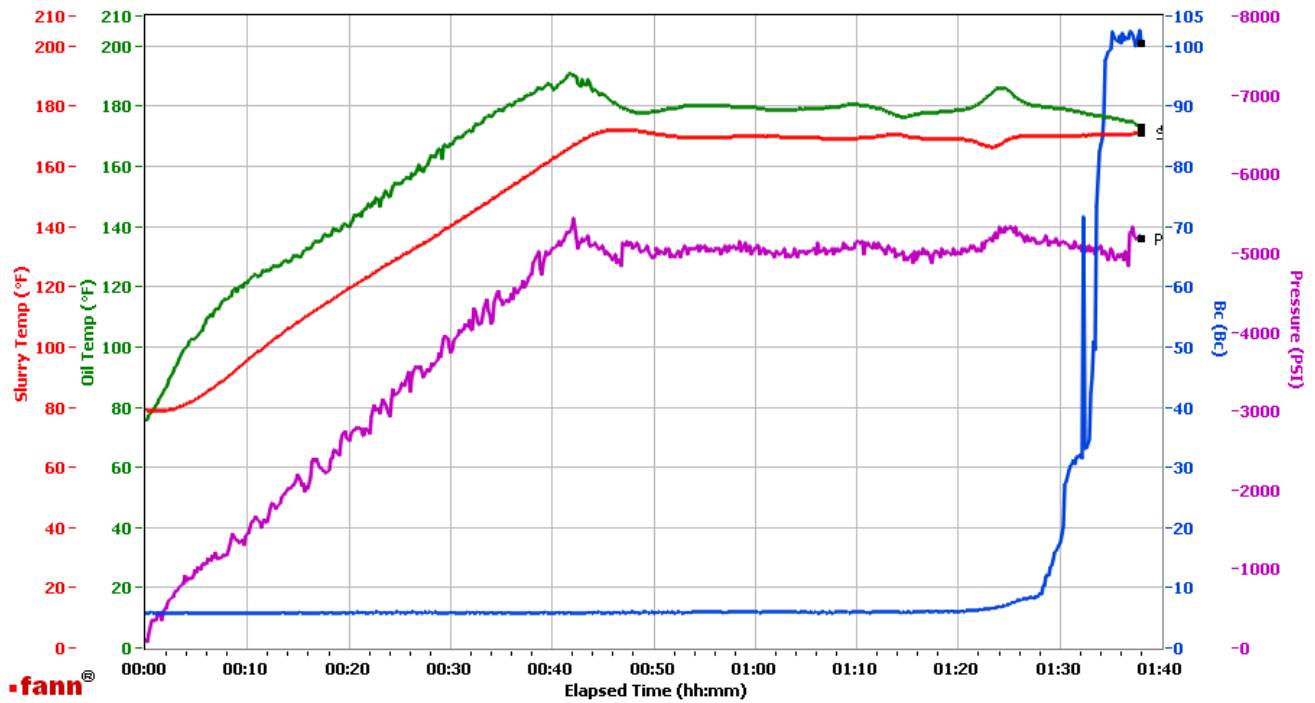
##### Thickening Time, Request Test ID:1667249

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
169	5,110	42	4	01:31	01:33	01:33	01:35

# HALLIBURTON

## VERNAL

Fields	Values	Fields	Values	Events	Results
Project Name	QUICKSILVER 166819-1A	Job Type	PROD PRIMARY OPN	30.00 Bc	01h:31m
Test ID	166819-1A	Cement Type	V	50.00 Bc	01h:33m
Request ID	HPHT #4	Cement Weight	Light Weight	60.00 Bc	01h:33m
Tested by	PBL	Test Date	08/04/11	70.00 Bc	01h:33m
Customer	QUICKSILVER	Test Time	03:18 PM	100.00 Bc	01h:35m
Well No	STODDARD 33-30	Temp. Units	degF	200.00 Bc	NaN
Rig	DHS #6	Pressure Units	PSI	01h:10m	5.96
Casing/Liner Size	4.5			06h:00m	NaN

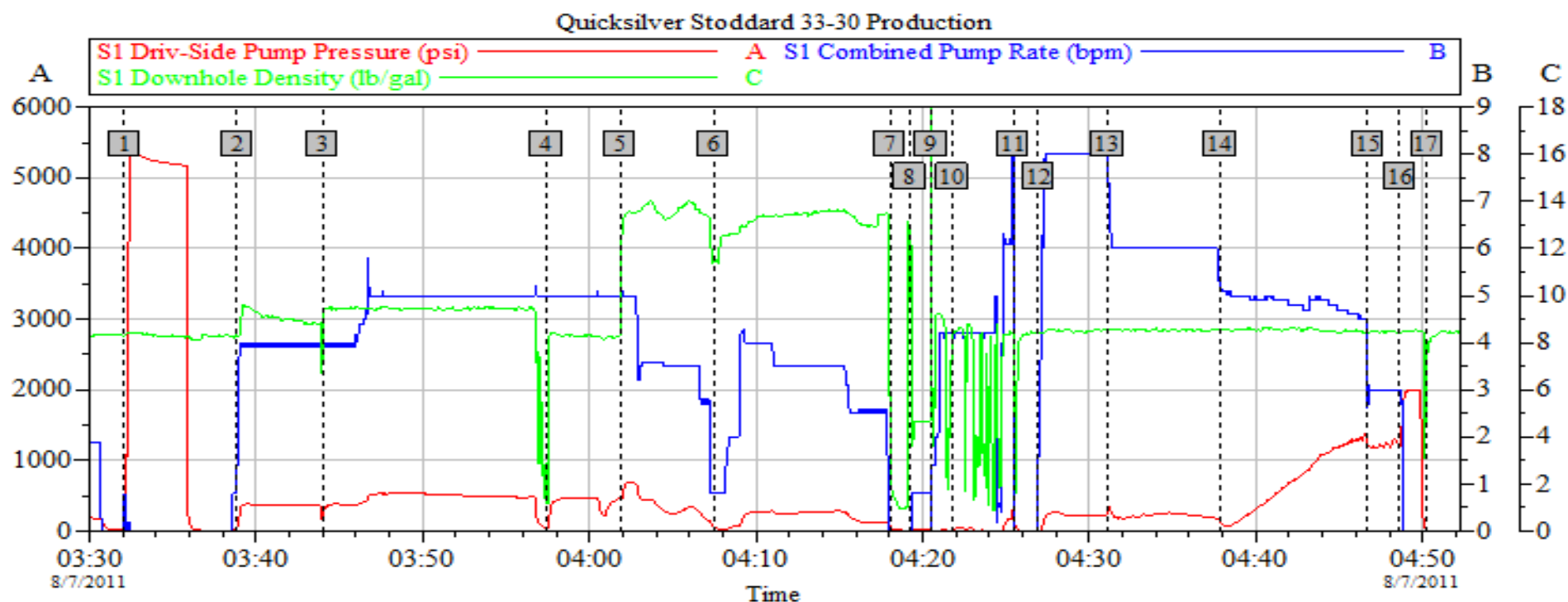


Data File O:\HPHT Data Files\Vernal Consistometer #4\QUICKSILVER 166819-1A.tdms

Comments TYPE V/POZ 50/50%, HR-601 0.20%, DEN 13.503, YLD 1.73

# HALLIBURTON

## Data Acquisition



### Global Event Log

1 Test Lines 5000 psi	03:32:05	2 Pump TSIII	03:38:51	3 Pump Mud Rec	03:43:59
4 Pump Mudflush	03:57:24	5 Pump Cement	04:01:51	6 Swap pods	04:07:27
7 Finished Cement	04:18:02	8 Clean Lines	04:19:14	9 Start Job	04:20:29
10 Start Job	04:21:47	11 Drop Plug	04:25:26	12 Pump Displacement	04:26:57
13 Caught Plug/slow rate	04:31:08	14 Slow Rate	04:37:51	15 Slow Rate	04:46:43
16 Bump Plug	04:48:38	17 Check Floats	04:50:16		

Customer:  
Well Description:

Job Date: 07-Aug-2011  
UWI:

Sales Order #: 8374467

OptiCem v6.4.9  
11-Sep-11 11:23