

EXXONMOBIL CORPORATION

HOUSTON, Texas

PCU 296-6B9

H&P 215 970-942-7060

## **Post Job Summary**

### **Cement Multiple Stages**

Prepared for: Haley Holub  
Date Prepared: July 31, 2011  
Version: 1

Service Supervisor: ANDERSON, BENJAMIN

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
Cement Stage Tool	Multiple Stage Cementer		.000		1,687.00	1,687.00				0.00
Open Hole Section	Surface Open Hole		14.750		0.00	1,687.00	0.00	1,674.00		0.00
Open Hole Section	Surface Open Hole		14.750		1,687.00	4,413.00	1,674.00	4,371.00		0.00
Casing	Surface Casing	10.75	9.950	45.50	0.00	4,413.00	0.00	4,371.00		80.00

## Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	FreshWater Ahead	8.33	6.00	50.0 bbl	50.0 bbl
1	2	Cement Slurry	First Stage Lead Cement	12.70	6.00	820.0 sacks	820.0 sacks
1	3	Cement Slurry	First Stage Tail Cement	15.80	6.00	355.0 sacks	355.0 sacks
1	4	Spacer	Drilling Fluid / Mud	8.90	6.00	416.0 bbl	416.0 bbl
2	1	Spacer	Freshwater Ahead	8.33	6.00	60.0 bbl	60.0 bbl
2	2	Cement Slurry	Second Stage Lead Cement	12.70	6.00	850.0 sacks	850.0 sacks
2	3	Spacer	Drilling Fluid / Mud	8.90	6.00	163.0 bbl	163.0 bbl
2	4	Cement Slurry	Top Out	15.80	2.00		163.0 bbl

# HALLIBURTON

## Fluids Pumped

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**Stage/Plug # 1      Fluid 1:**      FreshWater Ahead  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 50.00 bbl  
Pump Rate: 6.00 bbl/min

**Stage/Plug # 1      Fluid 2:**      First Stage Lead  
Cement  
ECONOCEM (TM) SYSTEM  
5 lbm Cal-Seal 60  
0.8 % Econolite  
0.68 % HR-7  
0.25 lbm Poly-E-Flake  
3 lbm Silicalite Compacted

Fluid Weight: 12.70 lbm/gal  
Slurry Yield: 1.87 ft<sup>3</sup>/sack  
Total Mixing Fluid: 9.93 Gal  
Surface Volume: 820.0 sacks  
Sacks: 820.0 sacks  
Calculated Fill: 2,351.00 ft  
Calculated Top of Fluid: 1,704.00 ft  
Estimated Top of Fluid:  
Pump Rate: 6.00 bbl/min

**Stage/Plug # 1      Fluid 3:**      First Stage Tail Cement  
HALCEM (TM) SYSTEM  
0.25 % HR-800  
0.25 lbm Poly-E-Flake

Fluid Weight: 15.80 lbm/gal  
Slurry Yield: 1.15 ft<sup>3</sup>/sack  
Total Mixing Fluid: 4.99 Gal  
Surface Volume: 355.0 sacks  
Sacks: 355.0 sacks  
Calculated Fill: 500.00 ft  
Calculated Top of Fluid: 4,055.00 ft  
Estimated Top of Fluid:  
Pump Rate: 6.00 bbl/min

**Stage/Plug # 1      Fluid 4:**      Drilling Fluid / Mud  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.90 lbm/gal  
Fluid Volume: 416.00 bbl  
Pump Rate: 6.00 bbl/min

**Stage/Plug # 2      Fluid 1:**      Freshwater Ahead  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.33 lbm/gal  
Fluid Volume: 60.00 bbl  
Pump Rate: 6.00 bbl/min

**Stage/Plug # 2      Fluid 2:**      Second Stage Lead  
Cement  
ECONOCEM (TM) SYSTEM  
0.25 lbm Poly-E-Flake

Fluid Weight: 12.70 lbm/gal  
Slurry Yield: 1.87 ft<sup>3</sup>/sack  
Total Mixing Fluid: 9.96 Gal  
Surface Volume: 850.0 sacks  
Sacks: 850.0 sacks  
Calculated Fill: 1,704.00 ft  
Calculated Top of Fluid: 0.00 ft  
Estimated Top of Fluid:  
Pump Rate: 6.00 bbl/min

# HALLIBURTON

**Stage/Plug # 2      Fluid 3:**      Drilling Fluid / Mud  
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 8.90 lbm/gal  
Fluid Volume: 163.00 bbl  
Pump Rate: 6.00 bbl/min

**Stage/Plug # 2      Fluid 4:**      Top Out  
Top Out

94 lbm      Premium Cement  
2 %      Calcium Chloride

Fluid Weight: 15.80 lbm/gal  
Slurry Yield: 1.17 ft<sup>3</sup>/sack  
Total Mixing Fluid: 5.02 Gal  
Estimated Top of Fluid:  
Pump Rate: 2.00 bbl/min

## ***Job Summary***

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### **Job Information**

<b>Job Start Date</b>	7/3/2011 8:00:00 PM
<b>Job MD</b>	4,440.0 ft
<b>Job TVD</b>	4,440.0 ft
<b>Height of Plug Container/Swage Above Rig Floor</b>	4.0 ft
<b>Surface Temperature at Time of Job</b>	60 degF
<b>Mud Type</b>	Water Based Mud
<b>Actual Mud Density</b>	9 lbm/gal
<b>Pipe Movement During Cementing</b>	Reciprocated
<b>Calculated Displacement</b>	416.00 bbl
<b>Amount of Cement Returns</b>	84.00 bbl
<b>Job Displaced by (rig/halco)</b>	Cement Unit HP Pumps
<b>Annular flow Before Job? (Water/Gas)</b>	Unknown
<b>Annular flow After Job? (Water/Gas)</b>	Unknown
<b>Length of Rat Hole</b>	15.00 ft

### **Cementing Equipment**

<b>Did Float Equipment Hold?</b>	Yes
<b>Plug set used?</b>	Yes
<b>Brand of Plug set used?</b>	Weatherford
<b>Did Plugs Bump?</b>	Yes
<b>Calculated Pressure to Bump Plugs</b>	658.0 psig
<b>Did Stage Cementing Tool Open Properly?</b>	Yes

## Service Supervisor Reports

### Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
07/03/2011 07:30		Call Out							CREW CALLED OUT, GOT TRUCKS PREPPED FOR CONVOY AND JOB
07/03/2011 09:00		Pre-Convoy Safety Meeting							DISCUSSED CONVOY PROCEDURES, ROUTE, STOPS, WILDLIFE, TRAFFIC, ROAD HAZARDS, EMERGENCY, AND BREAKDOWN PROCEDURES
07/03/2011 13:00		Arrive At Loc							RIG IS RUNNING CASING
07/03/2011 13:20		Pre-Rig Up Safety Meeting							DISCUSSED RIG UP PROCEDURES, RED ZONES, PINCH POINT, LIFTING, HAMMERING, AND SLIPS/TRIPS/FALLS
07/03/2011 13:30		Rig-Up Equipment							RIGGED UP SAFELY AND TO BOTH HALLIBURTON AND EXXON
07/03/2011 16:30		Other							CASING IS ON BOTTOM, RIG IS CIRCULATING A BOTTOMS UP
07/03/2011 20:00		Pre-Job Safety Meeting							DISCUSSED JOB PROCEDURES, RIG ISSUES, SAFETY ISSUES, HAZARDS WITH PRESSURE, EMERGENCY, AND EVACUATION PROCEDURES
07/03/2011 20:49	7	Test Lines						250.0	LOW PRESSURE TEST IS GOOD
07/03/2011 20:53	8	Test Lines						5000.0	HIGH PRESSURE TEST IS GOOD
07/03/2011 21:00	9	Pump Spacer	5					282.0	PUMP FRESH WATER @ 8.33 PPG

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
07/03/2011 21:10	10	Pump Lead Cement	6				496.0	MIXED @ 12.7 PPG, 820 SKS, YLD1.88, WTR 10.02 WITH 0.8% ECONOLITE, 5 LBM CAL-SEAL 60, 0.68% HR-7, 0.25 LBM POLY-E-FLAKE, 3 LBM SILICALITE ADDITIVES
07/03/2011 22:05	11	Pump Tail Cement	4				304.0	MIXED @ 15.8 PPG, 355 SKS, YLD 1.15, WTR 5.0 WITH 0.25% HR-800, 0.25 LBM POLY-E-FLAKE ADDITIVES
07/03/2011 22:22	12	Drop Top Plug						PLUG DROPPED BY THE WEATHERFORD TOOL HAND
07/03/2011 22:28	13	Pump Displacement	8				464.0	PUMPED MUD @ 9.3 PPG AND FRESH WATER @ 8.33 PPG
07/03/2011 22:50	14	Slow Rate	3				84.0	SLOWED RATE TO 3 BBLS/MIN FOR 20 BBLS TO GO THRU THE DV TOOL
07/03/2011 22:56	15	Resume	8				443.0	RESUMED RATE BACK TO PREVIOUS RATE
07/03/2011 23:30	16	Bump Plug	3				1303.0	BUMPED @ 803 PSI AND TOOK PRESSURE 500 PSI OVER AS PER THE COMPANY MAN AND TOOL HAND
07/03/2011 23:31		Other						RECIPE FOR DISPLACEMENT IS AS FOLLOWS, 10 BLS WATER, 243 BBLS MUD, 60 BBLS WATER, 113 BBLS MUD
07/03/2011 23:34	17	Check Floats						FLOATS HELD, GOT 2 BBLS BACK
07/03/2011 23:40	18	Drop Opening Device For Multiple Stage Cementer						OPENING DEVICE WAS DROPPED BY THE WEATHERFORD TOOL HAND
07/03/2011 23:50	19	Pressure Up						PRESSURED UP TO OPEN THE TOOL, TOOL OPENED @ 604 PSI

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
07/03/2011 23:51	21	Circulate Well	6					335.0	PUMPED MUD @ 9.3 PPG TO BREAK CIRCULATION
07/03/2011 23:55	23	Wait on Orders - Start Time							SHUTDOWN / SWAPPED BACK TO THE RIG / WAITING FOR CEMENT TO SET BEFORE STARTING 2ND STAGE
07/04/2011 04:05		Wait on Orders - End Time							CEMENT IS SET / STARTING 2ND STAGE
07/04/2011 04:20		Pre-Job Safety Meeting							DISCUSSED JOB PROCEDURES, RIG ISSUES, SAFETY ISSUES, HAZARDS WITH PRESSURE, EMERGENCY, AND EVACUATION PROCEDURES
07/04/2011 04:35	25	Pump Spacer	5					180.0	PUMP FRESH WATER @ 8.33 PPG
07/04/2011 04:47	26	Pump Cement	6					400.0	MIXED @ 12.7 PPG, 850 SKS, YLD1.88, WTR 10.05 WITH 0.25 LBM POLY-E-FLAKE ADDITIVES
07/04/2011 05:23	27	Slow Rate							SLOWED RATE TO 1 BBL/MIN, HAD COMPLICATIONS WITH NEW SILO COMPRESSOR, RAN RAG HOSES FROM BULK TRUCK
07/04/2011 05:29	28	Resume							RESUMED RATE BACK TO 5 BBLS/MIN AS SOON AS SILO STARTED GETTING AIR FROM BULK TRUCK
07/04/2011 05:44	30	Drop Top Plug							PLUG DROPPED BY THE WEATHERFORD TOOL HAND
07/04/2011 05:45	31	Pump Displacement	4					385.0	PUMPED MUD @ 9.3 PPG
07/04/2011 06:22	32	Bump Plug	3					1681.0	BUMPED @ 412 PSI AND TOOK PRESSURE 500 PSI OVER AS PER THE COMPANY MAN AND TOOL HAND



# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)		Comments
07/04/2011 06:23		Spacer Returns to Surface							GOT WATER TO SURFACE AFTER 35 BBLS OF DISPLACEMENT GONE
07/04/2011 06:24		Cement Returns to Surface							GOT CEMENT TO SURFACE AFTER 79 BBLS OF DISPLACEMENT GONE, GOT A TOTAL OF 84 BBLS OF CEMENT TO SURFACE
07/04/2011 06:26	33	Check Floats							FLOATS HELD, GOT 1.25 BBLS BACK
07/04/2011 07:45		Post-Job Safety Meeting (Pre Rig-Down)							DISCUSSED JOB OUTCOME AND DISCUSSED RIG DOWN PROCEDURES, RED ZONES, PINCH POINT, LIFTING, HAMMERING, AND SLIPS/TRIPS/FALLS
07/04/2011 07:55		Rig-Down Equipment							RIGGED DOWN SAFELY AND TO BOTH HALLIBURTON AND EXXON
07/04/2011 09:45		Pre-Convoy Safety Meeting							DISCUSSED CONVOY PROCEDURES, ROUTE, STOPS, WILDLIFE, TRAFFIC, ROAD HAZARDS, EMERGENCY, AND BREAKDOWN PROCEDURES
07/04/2011 10:00		Depart Location for Service Center or Other Site							THANKS FOR USING HALLIBURTON!!!

### The Road to Excellence Starts with Safety

<b>Sold To #:</b> 331699	<b>Ship To #:</b> 2862378	<b>Quote #:</b>	<b>Sales Order #:</b> 8282209
<b>Customer:</b> EXXONMOBIL CORPORATION		<b>Customer Rep:</b> McGourty, Alex	
<b>Well Name:</b> PCU		<b>Well #:</b> 296-6B9	<b>API/UWI #:</b>
<b>Field:</b>	<b>City (SAP):</b> MEEKER	<b>County/Parish:</b> Rio Blanco	<b>State:</b> Colorado
<b>Contractor:</b> H&P		<b>Rig/Platform Name/Num:</b> 215 970-942-7060	
<b>Job Purpose:</b> Cement Multiple Stages			
<b>Well Type:</b> Development Well		<b>Job Type:</b> Cement Multiple Stages	
<b>Sales Person:</b> MCNARY, GEORGE		<b>Srvc Supervisor:</b> ANDERSON, BENJAMIN	<b>MBU ID Emp #:</b> 342843

### Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ANDERSON, BENJAMIN L		342843	BONE, JEFFERSON Eldon		491216	FUCHS, ALEXANDER Arndt		479705
LAWTON, CURTIS Keith		492181	MCKEE, RALPH R		259268	SHIFLETT, JESSE Amos		469551

### Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10261036	90 mile	10741125	90 mile	10948690	90 mile	11062230	90 mile
11076824	90 mile	11338213	90 mile	11410664	90 mile		

### Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
<b>TOTAL</b>			Total is the sum of each column separately					

### Job

Formation Name					<b>Job Times</b>			
Formation Depth (MD)	Top	Bottom			Called Out	Date	Time	Time Zone
Form Type	BHST				On Location	04 - Jul - 2011	13:00	MST
Job depth MD	4440. ft		Job Depth TVD	4440. ft	Job Started	03 - Jul - 2011	20:00	MST
Water Depth			Wk Ht Above Floor	4. ft	Job Completed	04 - Jul - 2011	06:30	MST
Perforation Depth (MD)	From	To			Departed Loc	04 - Jul - 2011	10:00	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
Multiple Stage Cementer	Used			.				1687.	1687.		
Surface Open Hole				14.75				.	1687.	.	1674.
Surface Open Hole				14.75				1687.	4413.	1674.	4371.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4413.	.	4371.

### 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	FreshWater Ahead		50.00	bbl	8.33	.0	.0	6.0				
2	First Stage Lead Cement	ECONOCEM (TM) SYSTEM (452992)	820.0	sacks	12.7	1.87	9.93	6.0	9.93			
5 lbm		CAL-SEAL 60, 100 LB BAG (100005051)										
0.8 %		ECONOLITE (100001580)										
0.68 %		HR-7 (100005055)										
0.25 lbm		POLY-E-FLAKE (101216940)										
3 lbm		SILICALITE - COMPACTED, 50 LB SK (100012223)										
9.93 Gal		FRESH WATER										
3	First Stage Tail Cement	HALCEM (TM) SYSTEM (452986)	355.0	sacks	15.8	1.15	4.99	6.0	4.99			
0.25 %		HR-800, 50 LB SACK (101619742)										
0.25 lbm		POLY-E-FLAKE (101216940)										
4.99 Gal		FRESH WATER										
4	Drilling Fluid / Mud		416.00	bbl	8.9	.0	.0	6.0				
Stage/Plug #: 2												
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density uom	Yield uom	Mix Fluid uom	Rate uom	Total Mix Fluid uom			
1	Freshwater Ahead		60.00	bbl	8.33	.0	.0	6.0				
2	Second Stage Lead Cement	ECONOCEM (TM) SYSTEM (452992)	850.0	sacks	12.7	1.87	9.96	6.0	9.96			
0.25 lbm		POLY-E-FLAKE (101216940)										
9.96 Gal		FRESH WATER										
3	Drilling Fluid / Mud		163.00	bbl	8.9	.0	.0	6.0				
4	Top Out	CMT - PREMIUM - CLASS G, 94 LB SK (100003685)		sacks	15.8	1.17	5.02	2.0	5.02			
94 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)										
2 %		CALCIUM CHLORIDE - HI TEST PELLET (100005053)										
5.02 Gal		FRESH WATER										
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	80 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								

# HALLIBURTON

## Lab Data

# HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Lead

### Job Information

Request/Slurry	158150/1	Rig Name	H&P 215	Date	28/JUN/2011
Submitted By	Isaac Whorl	Job Type	Surface Casing	Bulk Plant	Meeker
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-6B9

### Well Information

Casing/Liner Size	10 3/4"	Depth MD	4413 ft	BHST	141 F
Hole Size	14 3/4"	Depth TVD	4371 ft	BHCT	96 F

### Drilling Fluid Information

Mud Company	Type	Density	9.3 PPG	PV/YP
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### Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
		EconoCem				Slurry Density	12.70 PPG
						Slurry Yield	1.88 ft <sup>3</sup> /sk
35	%	> Boral Craig Pozmix	Bulk	Jun 28, 2011		Water Requirement	10.02 GPS
65	%	> Holcim Type V	Bulk	Jun 28, 2011			
100.00	% BWOC	Cement Blend	Bulk	Jun 28, 2011			
5.000	lb/sk	Cal-Seal 60	Bulk	Jun 28, 2011			
3.000	lb/sk	Silicalite - Compacted	Bulk	Jun 28, 2011			
0.800	% BWOC	Econolite (Powder - PB)	Bulk	Jun 28, 2011	2048	Water Source	Field (Fresh) Water
0.680	% BWOC	HR-7	Bulk	Jun 28, 2011	100005055	Water Chloride	N/A ppm
0.250	lb/sk	Pol-E-Flake	Bulk	Jun 28, 2011			
10.02	gal/sack	Field (Fresh) Water	Lab	Apr 12, 2011	4/12/11		

### Operation Test Results Request ID 158150/1

#### Thickening Time, Request Test ID:1586680, Historical Data

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)
96	2,111	60	0	04:35	05:22	05:22	05:22

Shut down at 3:10 for 30 minutes Deflection from 6 BC to 11 BC after 1st shutdown. AT 4:52 shutdown for 30 minute 35 to sheared pin coming out of 2nd shutdown ending test @5:22.

#### API Rheology, Request Test ID:1586682, Historical Data

Temp (°F)	600	300	200	100	60	30	6	3	PV/YP
80	34	23	20	17	16	14	13	17	8.6 / 15.3

## HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Tail

### Job Information

Request/Slurry	158149/3	Rig Name	H&P 215	Date	28/JUN/2011
Submitted By	Isaac Whorl	Job Type	Surface Casing	Bulk Plant	Meeker
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-6B9

### Well Information

Casing/Liner Size	10 3/4"	Depth MD	4413 ft	BHST	141 F
Hole Size	14 3/4"	Depth TVD	4371 ft	BHCT	96 F

### Drilling Fluid Information

Mud Company	Type	Density	9.3 PPG	PV/YP
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### Cement Information - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		HalCem				Slurry Density	15.80	PPG
						Slurry Yield	1.15	ft3/sk
100.00	% BWOC	Mountain G	Bulk	Jun 28, 2011		Water Requirement	5	GPS
0.140	% BWOC	HR-800	Bulk	Jun 28, 2011				
5.00	gal/sack	Field (Fresh) Water	Lab	Apr 12, 2011				
						Water Source	Field (Fresh) Water	
						Water Chloride	N/A	ppm

### Operation Test Results Request ID 158149/3

#### Thickening Time, Request Test ID:1588287, Historical Data

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)
96	2,111	60	30	02:00	02:58	04:15	04:15

#### API Rheology, Request Test ID:1588288, Historical Data

Temp (°F)	600	300	200	100	60	30	6	3	PV/YP
80	90	57	49	39	34	30	19	14	38.9 / 23

#### Job Information

Request/Slurry	158151/1	Rig Name	H&P 215	Date	28/JUN/2011
Submitted By	Isaac Whorl	Job Type	Surface Casing	Bulk Plant	Meeker
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-6B9

#### Well Information

Casing/Liner Size	10 3/4"	Depth MD	1687 ft	BHST	97 F
Hole Size	14 3/4"	Depth TVD	1674 ft	BHCT	87 F

#### Drilling Fluid Information

Mud Company	Type	Density	9.3 PPG	PV/YP
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#### Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		EconoCem				Slurry Density	12.70	PPG
						Slurry Yield	1.88	ft3/sk
35	%	> Boral Craig Pozmix	Bulk	Jun 28, 2011		Water Requirement	10.05	GPS
65	%	> Holcim Type V	Bulk	Jun 28, 2011				
100.00	% BWOC	Cement Blend						
5.000	lb/sk	Cal-Seal 60	Bulk	Jun 28, 2011				
3.000	lb/sk	Silicalite - Compacted	Bulk	Jun 28, 2011				
0.800	% BWOC	Econolite (Powder - PB)	Bulk	Jun 28, 2011		Water Source	Field (Fresh) Water	
10.05	gal/sack	Field (Fresh) Water	Lab	Apr 12, 2011	4/12/11	Water Chloride	N/A	ppm

#### Operation Test Results Request ID 158151/1

##### Thickening Time, Request Test ID:1589248, Historical Data

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)
87	809	42	17	03:29	03:29	03:29	03:29

Before s.d. 16 b.c. after s.d. 115 b.c.

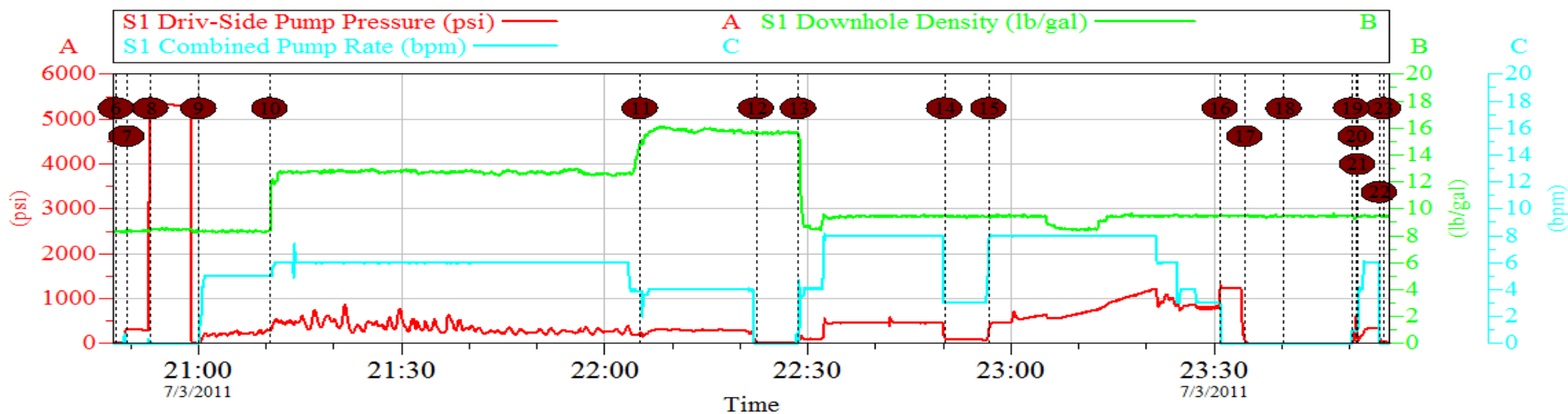
##### API Rheology, Request Test ID:1586687, Historical Data

Temp (°F)	600	300	200	100	60	30	6	3	Cond Time (min)	PV/YP
80	55	43	40	34	32	30	23	16	0	22.2 / 25.2

# HALLIBURTON

## Data Acquisition

EXXON - PCU  
WELL 296-6B9 - 1ST STAGE  
3-JUL-2011



### Global Event Log

Intersection			SDPP	SPPP	Intersection			SDPP	SPPP
6	Start Job	20:47:55	28.00	27.00	7	Low Pressure Test	20:49:28	320.0	317.0
8	High Pressure Test	20:53:00	5367	5327	9	Pump Fresh Water Spacer	21:00:05	8.733	5289
10	Pump Lead Cement @ 12.7 ppg	21:10:35	309.0	5289	11	Pump Tail Cement @ 15.8 ppg	22:05:16	232.6	5289
12	Shutdown / Drop Top Plug	22:22:22	28.71	5289	13	Pump Displacement	22:28:37	67.60	5289
14	Dropped Rate For DV Tool	22:50:12	126.1	5289	15	Resumed Rate Back To Previous Rate	22:56:43	316.8	5289
16	Bump Plug	23:30:53	1303	5289	17	Check Floats	23:34:30	72.57	5289
18	Dropped Opening BOM	23:40:17	-1.000	5289	19	Pressured Up To Open DV Tool	23:50:17	0.202	5289
20	Tool Opened @ 604 PSI	23:50:57	604.9	5289	21	Pumped Mud To Break Circulation	23:51:10	93.28	5289
22	Shutdown / Swapped Back To Rig	23:54:23	135.1	5289	23	End Job For 1st Stage	23:55:00	45.17	5289

Customer: EXXON  
Well Description: PCU  
SVC SPR: RALPH MCKEE

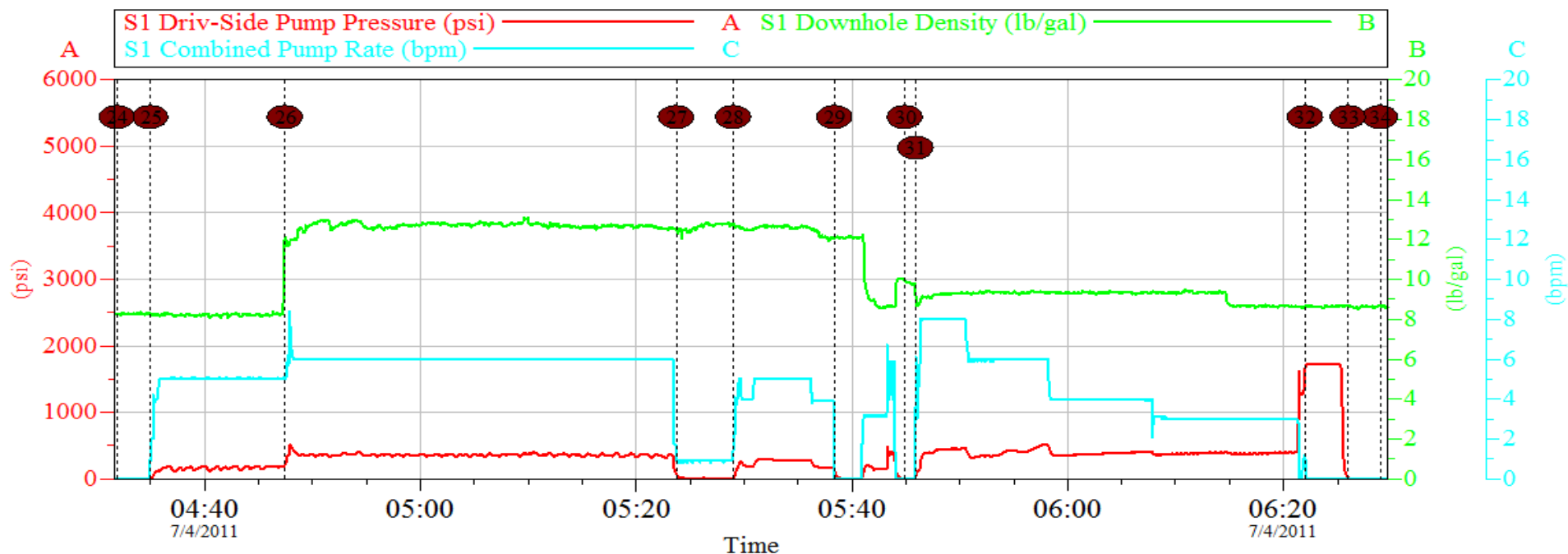
Job Date: 03-Jul-2011  
WELL: 296-6B9  
SVC SPR: STARBUCKS

Sales Order #: 8280191  
PUMP TRK: 11076824  
SVC OPR: JEFF BONE

HALLIBURTON  
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# HALLIBURTON

## EXXON - PCU WELL 296-6B9 - 2ND STAGE 4-JUL-2011



### Global Event Log

Intersection		SDPP	SPPP	Intersection		SDPP	SPPP
24 Start Job	04:31:54	8.000	5289	25 Pump Fresh Water Spacer	04:35:00	16.65	5289
26 Pump Cement @ 12.7 ppg	04:47:28	222.1	5289	27 Slowed Rate / Delivery Issues	05:23:44	63.57	5289
28 Resumed Rate Back To Previous	05:29:02	9.260	5289	29 Shutdown / Clean Pumps And Lines	05:38:25	110.1	5289
30 Drop Top Plug	05:44:56	5.000	5289	31 Pump Displacement	05:45:56	88.96	5289
32 Bump Plug	06:22:02	1681	5289	33 Check FLoats	06:26:00	17.10	5289
34 End Job For 2nd Stage	06:29:00	3.000	5289				

Customer: EXXON  
Well Description: PCU  
SVC SPR: RALPH MCKEE

Job Date: 03-Jul-2011  
WELL: 296-6B9  
SVC SPR: STARBUCKS

Sales Order #: 8280191  
PUMP TRK: 11076824  
SVC OPR: JEFF BONE

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04-Jul-11 08:10