

EXXONMOBIL CORPORATION

HOUSTON, Texas

PCU 296-6A1

H&P 239

## **Post Job Summary**

### **Cement Multiple Stages**

Date Prepared: 11/29/10  
Version: 1

Service Supervisor: SARVER, ZACHARY

Submitted by: Isaac Whorl

**HALLIBURTON**

# HALLIBURTON

## Wellbore Geometry

Job Tubulars					MD		TVD		Excess %	Shoe Joint Length ft
Type	Description	Size in	ID in	Wt lbm/ft	Top ft	Bottom ft	Top ft	Bottom ft		
Open Hole Section	Surface Open Hole		14.750		0	1,598	0	1,571	75	
Open Hole Section	Surface Open Hole		14.750		1,598	4,593	1,571	4,464	25	
Casing	Surface Casing	10.75	9.950	45.50	0	4,593	0	4,464		80.00
Cement Stage Tool	Multiple Stage Cement		.000		0	1,598				0.00

## Pumping Schedule

Stage/Plug #	Fluid #	Fluid Type	Fluid Name	Density lbm/gal	Avg Rate bbl/min	Volume
1	1	Spacer	FreshWater Ahead	8.33	6.00	50.0 bbl
1	2	Cement Slurry	First Stage Lead Cement	12.70	6.00	865.0 sacks
1	3	Cement Slurry	First Stage Tail Cement	15.80	6.00	350.0 sacks
1	4	Spacer	Drilling Fluid / Mud	8.90	6.00	417.0 bbl
2	1	Spacer	Freshwater Ahead	8.33	6.00	50.0 bbl
2	2	Cement Slurry	Second Stage Lead Cement	12.70	6.00	800.0 sacks
2	3	Spacer	Drilling Fluid / Mud	8.90	6.00	155.0 bbl
2	4	Cement Slurry	Top Out	15.80	2.00	

# HALLIBURTON

## Fluids Pumped

<b>Stage/Plug # 1</b> WATER SPACER	<b>Fluid 1:</b> FreshWater Ahead	Fluid Density: 8.33 lbm/gal Fluid Volume: 50.00 bbl
<b>Stage/Plug # 1</b> 0.6 % 0.25 lbm	<b>Fluid 2:</b> First Stage Lead Cement ECONOCEM (TM) SYSTEM HR-7 Poly-E-Flake	Fluid Weight: 12.70 lbm/gal Slurry Yield: 1.87 ft3/sack Total Mixing Fluid: 9.89 Gal Volume: 865.0 sacks Calculated Fill: 2,479.00 ft Calculated Top of Fluid: 1,598.00 ft
<b>Stage/Plug # 1</b> 0.25 % 0.25 lbm	<b>Fluid 3:</b> First Stage Tail Cement HALCEM (TM) SYSTEM HR-800 Poly-E-Flake	Fluid Weight: 15.80 lbm/gal Slurry Yield: 1.15 ft3/sack Total Mixing Fluid: 4.95 Gal Volume: 350.0 sacks Calculated Fill: 516.00 ft Calculated Top of Fluid: 4,077.00 ft
<b>Stage/Plug # 1</b> DRILLING MUD	<b>Fluid 4:</b> Drilling Fluid / Mud	Fluid Density: 8.90 lbm/gal Fluid Volume: 417.00 bbl
<b>Stage/Plug # 2</b> WATER SPACER	<b>Fluid 1:</b> Freshwater Ahead	Fluid Density: 8.33 lbm/gal Fluid Volume: 50.00 bbl
<b>Stage/Plug # 2</b> 0.25 lbm	<b>Fluid 2:</b> Second Stage Lead Cement ECONOCEM (TM) SYSTEM Poly-E-Flake	Fluid Weight: 12.70 lbm/gal Slurry Yield: 1.87 ft3/sack Total Mixing Fluid: 9.92 Gal Volume: 800.0 sacks Calculated Fill: 1,598.00 ft Calculated Top of Fluid: 0.00 ft
<b>Stage/Plug # 2</b> DRILLING MUD	<b>Fluid 3:</b> Drilling Fluid / Mud	Fluid Density: 8.90 lbm/gal Fluid Volume: 155.00 bbl
<b>Stage/Plug # 2</b> Top Out 94 lbm 2 %	<b>Fluid 4:</b> Top Out Premium Cement Calcium Chloride	Fluid Weight: 15.80 lbm/gal Slurry Yield: 1.16 ft3/sack Total Mixing Fluid: 5.01 Gal

# HALLIBURTON

## Job Summary

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### Job Information

Job Start Date	10/26/2010 10:11:00 PM
Job MD	4,593.0 ft
Mud Type	Water Based Mud
Actual Mud Density	9 lbm/gal
Calculated Displacement	153.69 bbl

### Cementing Equipment

Did Plugs Bump?	Yes
Did Stage Cementing Tool Open Properly?	Yes

## Service Supervisor Reports

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### Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Volume	Pressure (psig)	Comments
10/26/2010 02:00		Call Out				CALLED OUT TO LOCATION
10/26/2010 03:30		Pre-Convoy Safety Meeting				SAFETY MEETING WITH CREW ABOUT TRAVEL TO LOCATION
10/26/2010 04:00		Crew Leave Yard				CREW DEPARTS YARD FOR LOCATION
10/26/2010 09:00		Arrive At Loc				CREW ARRIVES ON LOCATION, RIG IS RUNNING CASING
10/26/2010 14:30		Assessment Of Location Safety Meeting				CREW WALKS AROUND LOCATION LOOKING FOR RISKS
10/26/2010 14:45		Pre-Rig Up Safety Meeting				SAFETY MEETING WITH CREW ABOUT RIGGING UP JOB
10/26/2010 15:00		Rig-Up Equipment				START RIGGING UP EQUIPMENT
10/26/2010 21:30		Pre-Job Safety Meeting				PRE JOB SAFETY MEETING WITH RIG CREW ABOUT PUMPING JOB
10/26/2010 22:00		Rig-Up Completed				RIG UP COMPLETE
10/26/2010 22:11	1	Pressure Test			400.0	START LOW PRESSURE TEST
10/26/2010 22:14	2	Pressure Test			378.0	END LOW PRESSURE TES

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Volume	Pressure (psig)	Comments
10/26/2010 22:16	3	Pressure Test			5075.0	START HIGH PRESSURE TEST
10/26/2010 22:19	4	Pressure Test			4985.0	END HIGH PRESSURE TEST
10/26/2010 22:20	5	Pump Spacer	6	50	56.0	START PUMPING FRESH WATER SPACER AHEAD
10/26/2010 22:29	6	Pump 1st Stage Lead Slurry	6	289.6	417.0	START PUMPING 1ST STAGE LEAD CEMENT @ 12.7 LBS/GAL, 1.88 YLD, 9.89 WR (865 SKS) TOTAL VOLUME PUMPED 276 BBLS
10/26/2010 23:18	7	Pump 1st Stage Tail Slurry	4	71.7	307.0	START PUMPING 1ST STAGE TAIL CEMENT @ 15.8 LBS/GAL 1.15 YLD, 4.95 WRR (350 SKS) TOTAL VOLUME PUMPED 62 BBLS
10/26/2010 23:40	8	Shutdown				SHUTDOWN TO DROP PLUG
10/27/2010 00:02	9	Pump Displacement	6	417	118.0	START PUMPING FRESH WATER DISPLACEMENT
10/27/2010 00:06	10	Pump Displacement	6	417	245.0	START PUMPING DRILLING MUD DISPLACEMENT
10/27/2010 00:26	11	Slow Rate	3	417	324.0	SLOW RATE TO 3.0 BPM TO GO THROUGH MSC TOOL
10/27/2010 00:33	12	Resume	6	417	148.0	RESUME PUMPING DISPLACEMENT @ 6.0 BPM
10/27/2010 00:40	14	Pump Displacement	6	417	444.0	START PUMPING MUD DISPLACEMENT
10/27/2010 00:47	13	Pump Displacement	6	417	324.0	START PUMPING FRESH WATER DISPLACEMENT TO PUT WATER ACCROSS TOOL
10/27/2010 01:12	15	Slow Rate	2	417	943.0	SLOW RATE TO 2.0 BP
10/27/2010 01:15	16,17,18	Bump Plug	2	417	922.0	BUMP PLUG, PRESSURE BEFORE BUMPING PLUG 922 PSI, PRESSURE AFTER BUMPING PLUG 1569
10/27/2010 01:21	19	Check Floats				CHECK FLOATS, FLOATS HOLD WITH 1.5 BBLS BACK
10/27/2010 01:44		Drop Opening Device For Multiple Stage Cementer				DROP OPENING DEVICE FOR MSC TOOL
10/27/2010 01:57	20	Pump Well Fluid	2		13.0	START PUMPING MUD TO OPEN MSC TOOL

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Volume	Pressure (psig)	Comments
10/27/2010 01:58	21	Other	2		656.0	MSC TOOL OPENS AT 656 PSI
10/27/2010 01:58	22	Pump Well Fluid	4	20	88.0	START PUMPING 20 BBLS OF DRILLING MUD
10/27/2010 02:05	23	Shutdown	4	20	142.0	END PUMPING DRILLING MUD, TURNED WELL OVER TO RIG
10/27/2010 04:35		Pre-Job Safety Meeting				SAFETY MEETING WITH RIG CREW ABOUT PUMPING 2ND STAGE
10/27/2010 05:04	25	Pump Cement	6	266	190.0	START PUMPING 2ND STAGE CEMENT @ 12.7 LBS/GAL, 1.88 YLD, 10.0 WR (800 SKS) TOTAL VOLUME PUMPED 259 BBLS
10/27/2010 05:59	26	Drop Plug				SHUTDOWN TO DROP CLOSING PLUG
10/27/2010 06:02	27	Clean Lines				START WASHING PUMPING LINES TO PIT
10/27/2010 06:06	28	Clean Lines				END WASHING PUMPING LINES TO PIT
10/27/2010 06:13	29	Pump Displacement	6	155	20.0	START PUMPING FRESH WATER DISPLACEMENT, CEMENT RETURNS TO SURFACE
10/27/2010 06:18	30	Pump Displacement	6	155	301.0	START PUMPING DRILLING MUD DISPLACEMENT
10/27/2010 06:34	31	Slow Rate	4	155	569.0	SLOW RATE TO 4.0 BPM
10/27/2010 06:39	32	Slow Rate	2	155	449.0	SLOW RATE TO 2.0 BPM
10/27/2010 06:45	33,34,35	Bump Plug	2	155	362.0	LAND CLOSING PLUG ON MSC TOOL PRESSURE BEFORE CLOSING TOOL 362 PSI, PRESSURE AFTER CLOSING TOOL 1808
10/27/2010 06:45	36	Other				CHECK MSC TOOL FOR CLOSURE, TOOL CLOSED AS PER WEATHERFORD TOOL HAND, 2.0 BBLS BACK
10/27/2010 07:00		Post-Job Safety Meeting (Pre Rig-Down)				POST JOB MEETING WITH CREW ABOUT RIGGING DOWN JOB
10/27/2010 07:15		Rig-Down Equipment				RIG DOWN EQUIPMENT
10/27/2010 07:54	24	Pump Spacer	4	50	42.0	START PUMPING FRESH WATER SPACER AHEAD

# HALLIBURTON

Date/Time	Chart #	Activity Code	Pump Rate	Volume	Pressure (psig)	Comments
10/27/2010 10:00		Rig-Down Completed				ALL EQUIPMENT RIGGED DOWN
10/27/2010 10:30		Pre-Convoy Safety Meeting				SAFETY MEETING WITH CREW ABOUT TRAVEL BACK TO YARD
10/27/2010 11:00		Crew Leave Location				CREW DEPARTS LOCATION

## The Road to Excellence Starts with Safety

<b>Sold To #:</b> 331699		<b>Ship To #:</b> 2791573		<b>Quote #:</b>		<b>Sales Order #:</b> 7724000	
<b>Customer:</b> EXXONMOBIL CORPORATION				<b>Customer Rep:</b> Dunn, Brian			
<b>Well Name:</b> PCU			<b>Well #:</b> 296-6A1			<b>API/UWI #:</b> 05-103-11475	
<b>Field:</b> PICEANCE CREEK		<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> 239				
<b>Job Purpose:</b> Cement Multiple Stages							
<b>Well Type:</b> Development Well			<b>Job Type:</b> Cement Multiple Stages				
<b>Sales Person:</b> TURNER, JAMIE			<b>Srvc Supervisor:</b> SARVER, ZACHARY			<b>MBU ID Emp #:</b> 219539	

## Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ALLRED, JARED Don	26	471751	HOPKINS, JD	26	482813	SARVER, ZACHARY S	26	219539
TEICHERT, RONDO	26	476071	WELDON, LEW	26	122191			

## Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10804581	45 mile	10867527	45 mile	10872113	45 mile	10948689	45 mile
11019277	45 mile	11138984	45 mile	11263210	45 mile	11304256	45 mile
11307428	45 mile						

## Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
11-26-10	15	.5	11-27-10	11	4			
TOTAL			Total is the sum of each column separately					

## Job

## Job Times

Formation Name					Date	Time	Time Zone
Formation Depth (MD)	Top		Bottom		Called Out	26 - Oct - 2010	02:00 MST
Form Type		BHST			On Location	26 - Oct - 2010	09:00 MST
Job depth MD	4593. ft	Job Depth TVD			Job Started	26 - Oct - 2010	22:11 MST
Water Depth		Wk Ht Above Floor			Job Completed	27 - Oct - 2010	06:49 MST
Perforation Depth (MD)	From		To		Departed Loc	27 - Oct - 2010	11:00 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			.				.	1598.		
Surface Open Hole				14.75				.	1598.	.	1571.
Surface Open Hole				14.75				1598.	4593.	1571.	4464.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4593.	.	4464.

## 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

Summit  
Version:

Monday, November 29, 2010 15:18:00



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 <sup>3</sup> /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	ECONOCER (TM) SYSTEM (452992)	865.0	sacks	12.7	1.87	9.89	6.0	9.89
	0.6 %	HR-7 (100005055)							
	0.25 lbm	POLY-E-FLAKE (101216940)							
	9.889 Gal	FRESH WATER							
3	First Stage Tail Cement	HALCEM (TM) SYSTEM (452986)	350.0	sacks	15.8	1.15	4.95	6.0	4.95
	0.25 %	HR-800, 50 LB SACK (101619742)							
	0.25 lbm	POLY-E-FLAKE (101216940)							
	4.948 Gal	FRESH WATER							
4	Drilling Fluid / Mud		417.00	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		50.00	bbl	8.33	.0	.0	6.0	
2	Second Stage Lead Cement	ECONOCER (TM) SYSTEM (452992)	800.0	sacks	12.7	1.87	9.92	6.0	9.92
	0.25 lbm	POLY-E-FLAKE (101216940)							
	9.915 Gal	FRESH WATER							
3	Drilling Fluid / Mud		155.00	bbl	8.9	.0	.0	6.0	
4	Top Out	CMT - PREMIUM - CLASS G, 94 LB SK (100003685)		sacks	15.8	1.16	5.01	2.0	5.01
	94 lbm	CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							
	2 %	CALCIUM CHLORIDE - HI TEST PELLET (100005053)							
	5.019 Gal	FRESH WATER							

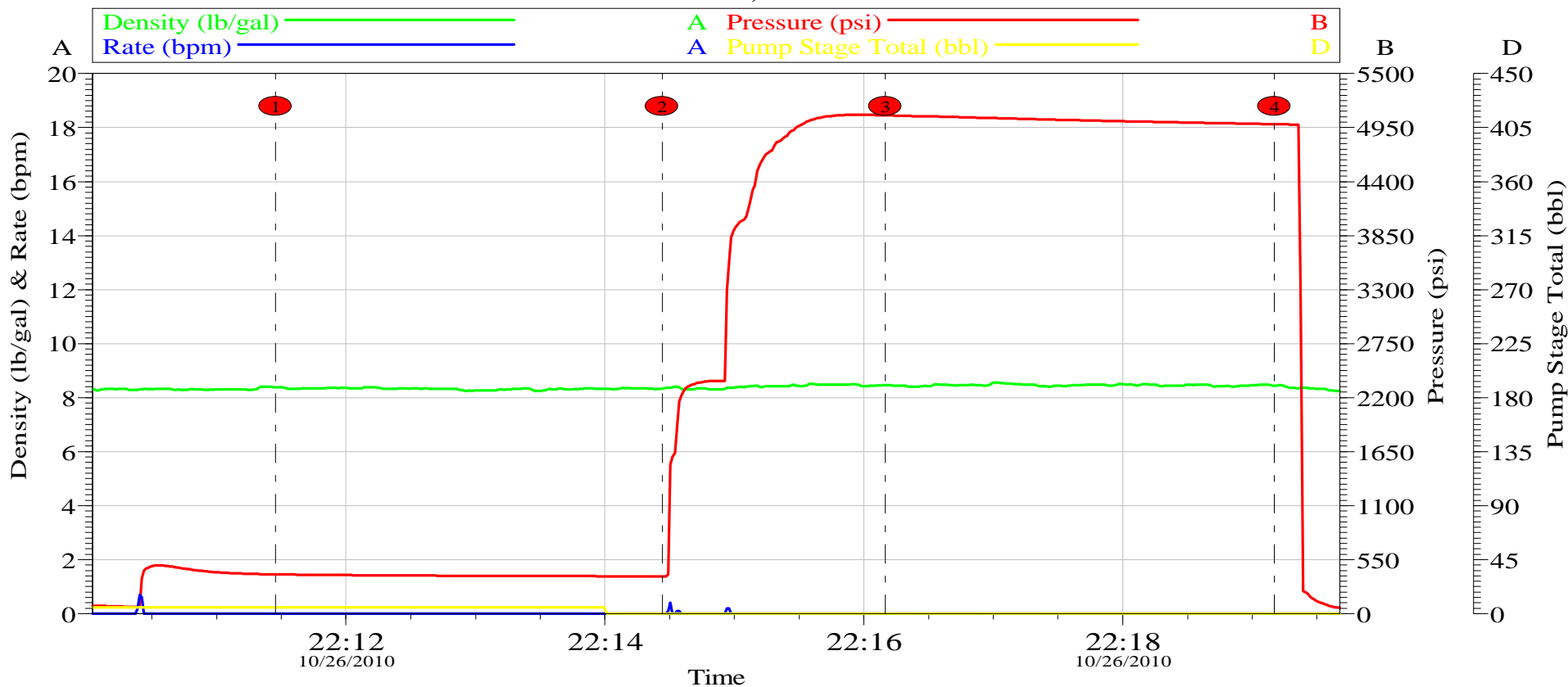
Calculated Values		Pressures		Volumes			
Displacement		Shut In: Instant		Lost Returns		Cement Slurry	
Top Of Cement		5 Min		Cement Returns		Actual Displacement	
Frac Gradient		15 Min		Spacers		Load and Breakdown	

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
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## Data Acquisition

ExxonMobil Corporation  
PCU 296-6A1, 10 3/4" Surface, Pressure Test  
October 26, 2010



Event	Time	psi	Event	Time	psi
1 Start Low Pressure Test	22:11:27	400.0	2 End Low Pressure Test	22:14:27	378.0
3 Start High Pressure Test	22:16:10	5075	4 End High Pressure Test	22:19:10	4985

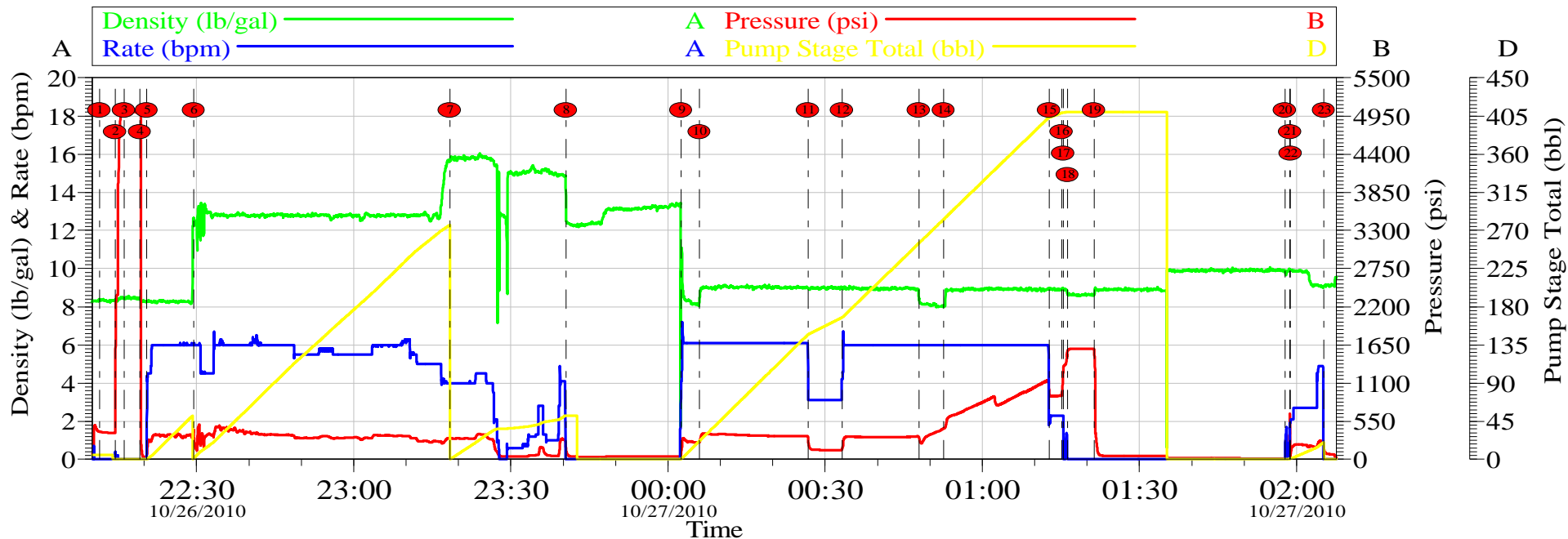
Customer: XOM  
Well Description: PCU 296-6A1

Job Date: 26-Oct-2010  
Job Type: 10 3/4" 2 Stage Surface

Sales Order #: 7724000

OptiCem v6.3.3  
26-Oct-10 22:20

ExxonMobil Corporation  
PCU 296-6A1, 10 3/4" Surface, 1st Stage  
October 26-27, 2010



Event	Time	psi	Event	Time	psi
1 Start Low Pressure Test	10/26/2010 22:11:27	400.0	2 End Low Pressure Test	10/26/2010 22:14:27	378.0
3 Start High Pressure Test	10/26/2010 22:16:10	507.5	4 End High Pressure Test	10/26/2010 22:19:10	498.5
5 Start Fresh Water Spacer	10/26/2010 22:20:29	56.67	6 Start Lead Cement @ 12.7 lbs/gal (865 sks)	10/26/2010 22:29:27	417.9
7 Start Tail Cement @ 15.8 lbs/gal	10/26/2010 23:18:21	307.8	8 Shutdown To Drop Plug	10/26/2010 23:40:32	139.0
9 Start Fresh Water Displacement	10/27/2010 00:02:32	118.0	10 Start Mud Displacement, 20 bbls away	10/27/2010 00:06:00	245.0
11 Slow Rate to 3.0 bpm, 145 bbls away	10/27/2010 00:26:43	324.2	12 Resume Pumping 6.0 bpm	10/27/2010 00:33:13	148.8
13 Start Pumping Fresh Water Displacement	10/27/2010 00:47:53	324.1	14 Start Pumping Mud Displacement	10/27/2010 00:52:38	444.3
15 Slow Rate to 2.0 bpm	10/27/2010 01:12:47	943.7	16 Pressure Before Bumping Plug	10/27/2010 01:15:09	922.6
17 Bump Plug	10/27/2010 01:15:28	1323	18 Pressure After Bumping Plug	10/27/2010 01:16:19	1569
19 Check Floats	10/27/2010 01:21:19	1586	20 Start Open MSC Tool	10/27/2010 01:57:46	13.00
21 MSC Tool Opens	10/27/2010 01:58:45	656.3	22 Start Pumping Mud Through MSC Tool	10/27/2010 01:58:51	88.29
23 Shutdown	10/27/2010 02:05:13	142.2			

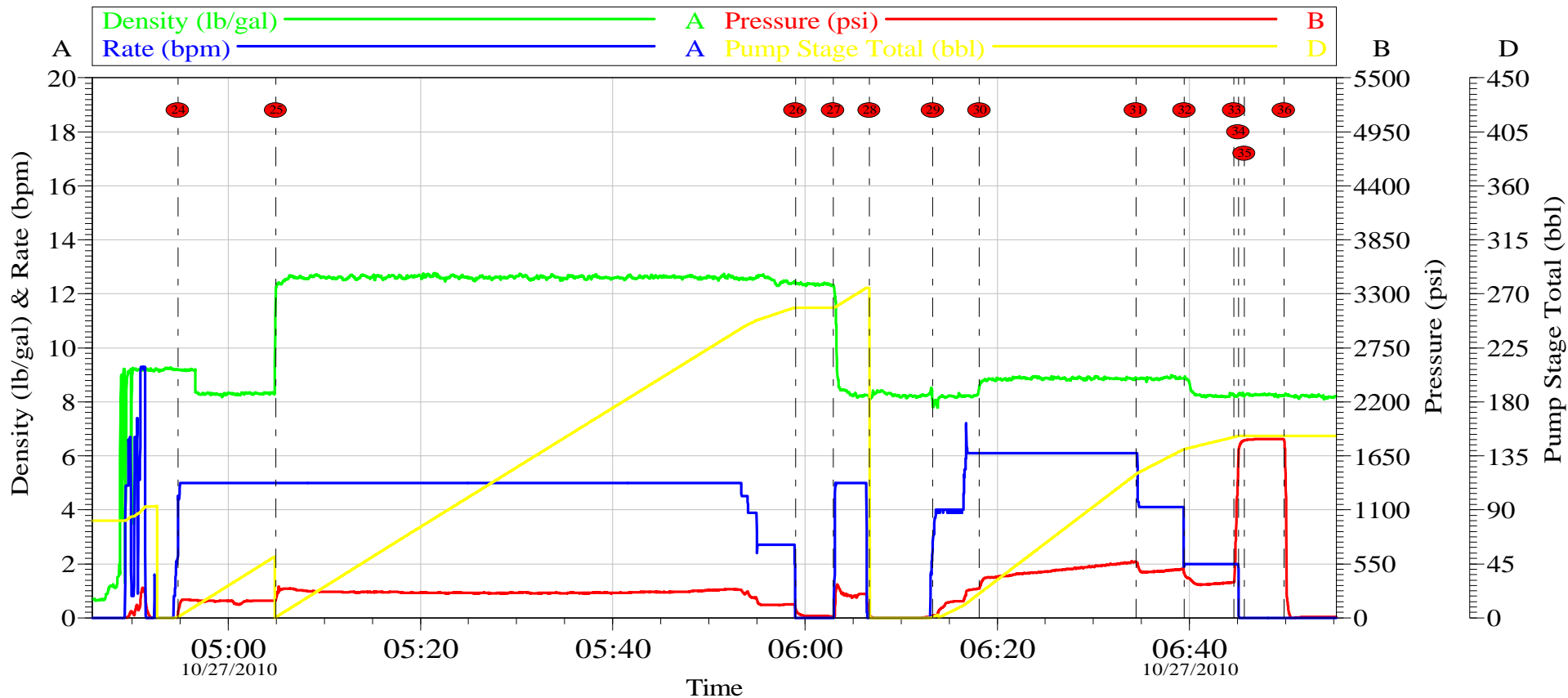
Customer: XOM  
Well Description: PCU 296-6A1

Job Date: 26-Oct-2010  
Job Type: 10 3/4" 2 Stage Surface

Sales Order #: 7724000

OptiCem v6.3.3  
27-Oct-10 03:03

ExxonMobil Corporation  
PCU 296-6A1, 10 3/4" Surface, 2nd Stage  
October 26-27, 2010



Event	Time	psi	Event	Time	psi	Event	Time	psi
24 Start Fresh Water Spacer Ahead	04:54:46	42.96	25 Start Cement @ 12.7 lbs/gal (800 sks)	05:04:57	190.0	26 Shutdown to Drop Closing Tool	05:59:01	91.30
27 Start Wash Pumping Lines	06:02:56	13.00	28 End Wash Pumping Lines	06:06:42	35.00	29 Start Fresh Water Displacement	06:13:17	20.52
30 Start Drilling Mud Displacement	06:18:08	301.0	31 Slow Rate to 4.0 bpm	06:34:26	569.0	32 Slow Rate to 2.0 bpm	06:39:27	449.0
33 Pressure Before Closing MSC Tool	06:44:38	362.1	34 Land Closing Tool	06:45:05	1668	35 Pressure After Closing MSC Tool	06:45:42	1808
36 Check MSC Tool	06:49:50	1814						

Customer: XOM  
Well Description: PCU 296-6A1

Job Date: 26-Oct-2010  
Job Type: 10 3/4" 2 Stage Surface

Sales Order #: 7724000

OptiCem v6.3.3  
27-Oct-10 09:12