

EXXONMOBIL CORPORATION

HOUSTON, Texas

PCU 197-36A6

H&P 326

Post Job Summary

Cement Intermediate Casing

Prepared for: George McNary
Date Prepared: November 16, 2010
Version: 1

Service Supervisor: ANDERSON, BENJAMIN

Submitted by: Joshua Anglin

HALLIBURTON

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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	Surface Casing	10.75	9.950	45.50	0.00	4,181.00	0.00	4,069.00		80.00
Open Hole Section	Intermediate Open Hole		9.875		4,181.00	9,482.00	4,069.00	9,335.00	100.00	
Casing	Intermediate Casing	7.00	6.276	26.00	0.00	9,482.00	0.00	9,335.00		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	TUNED SPACER III	10.00	6.00	80.0 bbl	80.0 bbl
1	2	Cement Slurry	New Vernal Tuned Light	11.00	6.00	1366.0 sacks	1366.0 sacks
1	3	Spacer	Treated Water Displacement	0.00	0.00	360.0 bbl	360.0 bbl

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Fluids Pumped

Stage/Plug # 1 Fluid 1: TUNED SPACER III
TUNED SPACER III - SBM (483826)
59.8 lbm/bbl Barite

Fluid Density: 10.00 lbm/gal
Fluid Volume: 80.00 bbl
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 2: New Vernal Tuned
 Light
 TUNED LIGHT (TM) SYSTEM
0.75 lbm HR-601

Fluid Weight: 11.00 lbm/gal
Slurry Yield: 2.25 ft³/sack
Total Mixing Fluid: 10.04 Gal
Surface Volume: 1366.0 sacks
 Sacks: 1366.0 sacks
Calculated Fill: 5,798.00 ft
Calculated Top of Fluid: 3,684.00 ft
Estimated Top of Fluid:
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 3: Treated Water
 Displacement
DUMMY MUD / FLUSH / SPACER SBC MATERIAL

Fluid Density: 0.00 lbm/gal
Fluid Volume: 360.00 bbl
Pump Rate: 0.00 bbl/min

Job Summary

Job Information

Job Start Date	11/4/2010 8:40:00 AM
Job MD	9,530.0 ft
Job TVD	9,530.0 ft
Height of Plug Container/Swage Above Rig Floor	4.0 ft
Surface Temperature at Time of Job	40 degF
Mud Type	Water Based Mud
Actual Mud Density	9 lbm/gal
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	360.00 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Annular flow Before Job? (Water/Gas)	Unknown
Annular flow After Job? (Water/Gas)	Unknown
Length of Rat Hole	15.00 ft

Cementing Equipment

Did Float Equipment Hold?	Yes
Plug set used?	Yes
Brand of Plug set used?	Weatherford
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	1,272.0 psig
Did Stage Cementing Tool Open Properly?	Unknown

Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
11/03/2010 14:30		Call Out						CREW CALLED OUT, GOT TRUCKS PREPPED FOR CONVOY AND JOB
11/03/2010 16:00		Pre-Convoy Safety Meeting						DISCUSSED CONVOY PROCEDURES, ROUTE, STOPS, TRAFFIC, WILDLIFE, EMREGENCY, AND BREAKDOWN PROCEDURES
11/03/2010 19:10		Arrive at Location from Service Center						RIG IS RUNNING CASING
11/03/2010 19:20		Pre-Rig Up Safety Meeting						DISCUSSED RIG UP PROCEDURES, RED ZONES, HAMMERING, PINCH POINTS, LIFTING, AND SLIPS/TRIPS/FALLS
11/03/2010 19:30		Rig-Up Equipment						RIGGED UP SAFELY AND TO BOTH HALLIBURTON AND EXXON STANDARDS
11/03/2010 23:45		Other						RIG IS ON BOTTOM AND IS CIRCULATING FOR 2 HOURS
11/04/2010 06:30		Other						RIG IS DONE CIRCULATING AND IS RIGGING DOWN THE CRT AND RIGGING UP THE CEMENT HEAD
11/04/2010 08:40		Pre-Job Safety Meeting						DISCUSSED JOB PROCEDURES, RIG ISSUES, SAFETY ISSUES, HAZARDS WITH PRESSURE, EMERGENCY, AND EVACAUTION
11/04/2010 09:02		Test Lines					250.0	LOW PRESSURE TEST IS GOOD
11/04/2010 09:06		Test Lines					5000.0	HIGH PRESSURE TEST IS GOOD
11/04/2010 09:15		Pump Spacer	4				312.0	MIXED @ 10 PPG, 80 BBLS, YLD 5.478, WTR 37.293
11/04/2010 09:37		Drop Bottom Plug						PLUG LEFT THE CEMENT HEAD
11/04/2010 09:40		Pump Cement	6				502.0	MIXED @ 11 PPG, 1366 SKS, YLD 2.21, WTR 9.7

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pump		Pressure (psig)	Comments
11/04/2010 11:20		Drop Top Plug						PLUG LEFT THE CEMENT HEAD
11/04/2010 11:23		Pump Displacement	6				614.0	PUMPED FRESH WATER @ 8.4 PPG WITH ALDACIDE AND BARICORE ADDITIVES
11/04/2010 12:29		Bump Plug	2				1672.0	BUMPED @ 1003 PSI AND TOOK PRESSURE 500 PSI OVER AS PER COMPANY MAN
11/04/2010 12:43		Check Floats						FLOATS HELD, GOT 2 BBLs BACK
11/04/2010 13:00		Post-Job Safety Meeting (Pre Rig-Down)						DISCUSSED JOB OUTCOME AND DISCUSSED RIG DOWN PROCEDURES, RED ZONES, HAMMERING, PINCH POINTS, LIFTING, AND SLIPS/TRIPS/FALLS
11/04/2010 13:15		Rig-Down Equipment						RIGGED DOWN SAFELY AND TO BOTH HALLIBURTON AND EXXON STANDARDS
11/04/2010 15:50		Pre-Convoy Safety Meeting						DISCUSSED CONVOY PROCEDURES, ROUTE, STOPS, TRAFFIC, WILDLIFE, EMERGENCY, AND BREAKDOWN PROCEDURES
11/04/2010 16:00		Depart Location for Service Center or Other Site						THANKS FOR USING HALLIBURTON!!!

The Road to Excellence Starts with Safety

Sold To #: 331699		Ship To #: 2807229		Quote #:		Sales Order #: 7724951	
Customer: EXXONMOBIL CORPORATION				Customer Rep: Kelly, Whitnee			
Well Name: PCU			Well #: 197-36A6			API/UWI #: 05-103-11185-00	
Field: PICEANCE CREEK		City (SAP): MEEKER		County/Parish: Rio Blanco		State: Colorado	
Legal Description: Section 36 Township 1S Range 97W							
Contractor: H&P			Rig/Platform Name/Num: 326				
Job Purpose: Cement Intermediate Casing							
Well Type: Development Well			Job Type: Cement Intermediate Casing				
Sales Person: TURNER, JAMIE			Srvc Supervisor: ANDERSON, BENJAMIN			MBU ID Emp #: 342843	

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ANDERSON, BENJAMIN L	19	342843	JENSEN, RICKY	19	482815	MCCONKIE, TRAVIS Terry	19	471264
REYNOLDS, COREY W	14	212159	SPENCER, WESTON Chad	14	391271	WALSH, JAMES Ronald	19	457722
Zuniga, Ernesto	19	470422						

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10713216	45 mile	10948690	45 mile	10994447	45 mile	11062230	45 mile
11076824	45 mile	11288856	45 mile	11410666	45 mile		

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
4-NOV-2010	19	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	03 - Nov - 2010	14:00 MST
Form Type	BHST		210	On Location	03 - Nov - 2010	19:10	MST
Job depth MD	9530. ft	Job Depth TVD	9530. ft	Job Started	04 - Nov - 2010	08:40	MST
Water Depth		Wk Ht Above Floor	4. ft	Job Completed	04 - Nov - 2010	12:43	MST
Perforation Depth (MD)	From	To		Departed Loc	04 - Nov - 2010	16:00	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
Intermediate Open Hole				9.875				4181.	9482.	4069.	9335.
Intermediate Casing	Unknown		7.	6.276	26.	HYDRIL - SERIES 500 TYPE 513	P-110	.	9482.	.	9335.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4181.	.	4069.

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			

Fluid Data									
Stage/Plug #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft ³ /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	TUNED SPACER III	TUNED SPACER III - SBM (483826)	80.00	bbl	10.	.0	.0	6.0	
	38.32 gal/bbl	FRESH WATER							
	59.8 lbm/bbl	BARITE, 100 LB SK (100003680)							
2	New Vernal Tuned Light	TUNED LIGHT (TM) SYSTEM (452984)	1366.0	sacks	11.	2.21	9.7	6.0	10.04
	0.75 lbm	HR-601, 50 LB BAG (101328348)							
	10.035 Gal	FRESH WATER							
3	Treated Water Displacement		360.00	bbl	.	.0	.0	.0	
Calculated Values		Pressures		Volumes					
Displacement	360	Shut In: Instant		Lost Returns	0	Cement Slurry	538	Pad	
Top Of Cement		5 Min		Cement Returns	0	Actual Displacement	353	Treatment	
Frac Gradient		15 Min		Spacers	80	Load and Breakdown		Total Job	978
Rates									
Circulating	6	Mixing	6	Displacement	6	Avg. Job	6		
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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Lab Data

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Cementing Rockies, Vernal

LAB RESULTS - Primary

Job Information

Request/Slurry	106482/2	Rig Name	H&P 326	Date	October 25, 2010
Submitted By	Joshua Anglin	Job Type	Intermediate Casing	Bulk Plant	Vernal
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 197-36A6

Well Information

Casing/Liner Size	7"	Depth MD	9597 ft	BHST	210 F
Hole Size	9 7/8"	Depth TVD	9450 ft	BHCT	154 F

Cement Information - Primary Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		Tuned Light				Slurry Density	10.999	PPG
						Slurry Yield	2.21	FT3
100.00	% BWOC	Cement Blend	Bulk	Oct 25, 2010		Water Requirement	9.67	GPS
36.88	%	> Boral Craig Pozmix	Bulk	Oct 25, 2010				
11	%	> HGS 6000 dry blended	Bulk	Oct 25, 2010				
53.19	%	> Holcim Type V	Bulk	Oct 25, 2010		Water Source	Fresh Water	
13	%	> Silicalite - Compacted	Bulk	Oct 25, 2010				
0.75	lb/sk	HR-601	Bulk	Oct 25, 2010	22Hr07X0653GW			
0.50	lb/sk	D-Air 3000	Bulk	Oct 25, 2010	2010239AC			
0.20	lb/sk	FWCA	Bulk	Oct 25, 2010	37340			
80.70	L/100kg	Fresh Water	Lab	Jul 07, 2010	07/07/2010			

Operation Test Results Request ID 106482/2

Thickening Time, Request Test ID:1112779, 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)
154	4,482	60	13	04:23	04:30	04:40	04:43

Operation Test Results Request ID 106482/1

Marsh Funnel, Request Test ID:1108201, Historical Data

Volume [ml]	Time [Sec]	Foam Quality
250	33	0

Free Water, Request Test ID:1108200, Historical Data

Test Temp (°F)	% FW 45 Inc
154	0

API Rheology, Request Test ID:1108197, Historical Data

Temp (°F)	600	300	200	100	60	30	6	3	Cond Time (min)	PV/YP
80	201	122	93	60	47	38	30	24	0	96.4 / 28.5

API Fluid Loss, Request Test ID:1108199, Historical Data

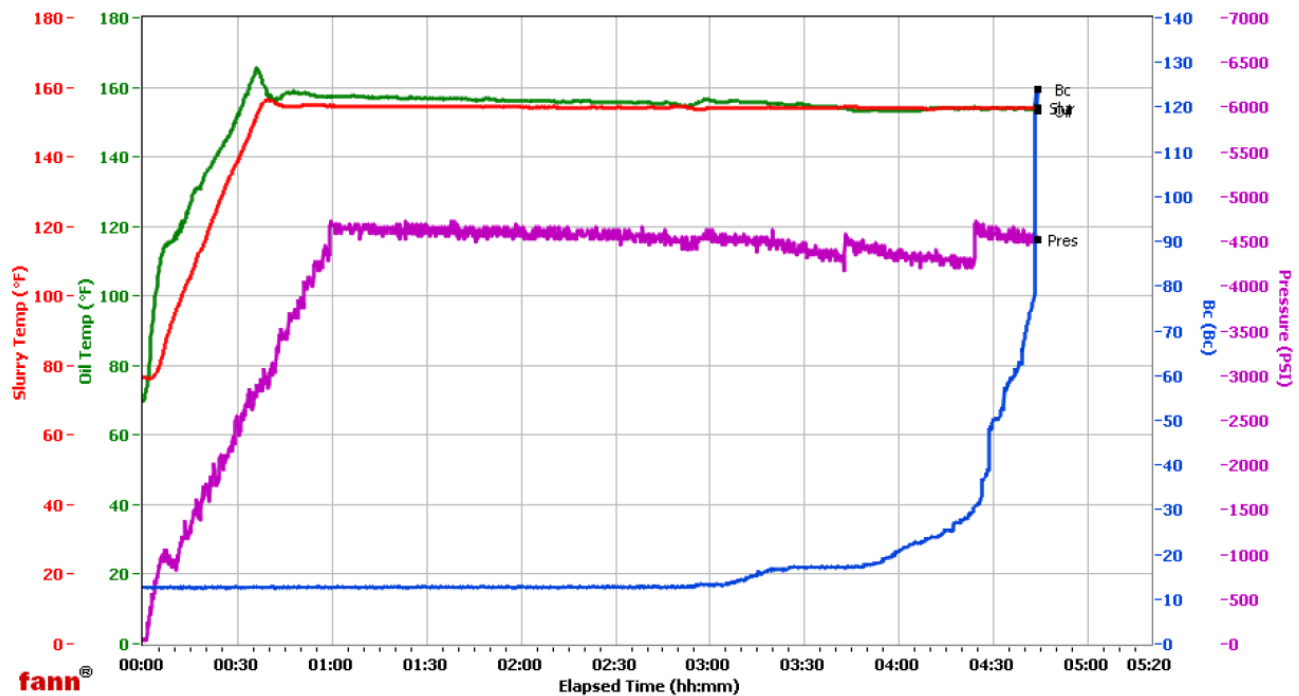
Test Temp (°F)	Test Pressure (psi)	Test Time (min)	Meas. Vol (< 30 min, cc)	Extr. ISO FL (cc/30 min)	Conditioning time (min)
154	1,000	4.83	39	194	30

Vernal

Fields	Values
Project Name	ExxonMobil 106482-2
Test ID	106482-2
Request ID	HPHT#2
Tested by	BSH
Customer	ExxonMobil
Well No	PCU 197-36A6
Rig	H&P 326
Casing/Liner Size	7

Fields	Values
Job Type	Intermediate Primary
Cement Type	VTL
Cement Weight	Light Weight
Test Date	10/25/10
Test Time	04:03 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
30.00 Bc	04h:23m
50.00 Bc	04h:30m
60.00 Bc	04h:36m
70.00 Bc	04h:40m
100.00 Bc	04h:43m
200.00 Bc	NaN
03h:00m	13.09
06h:00m	NaN



Data File O:\HPHT Data Files\Vernal Consistometer #2\ExxonMobil 106482-2.tdms

Comments VTL, 0.75#Hr-601, 11.0 density, 2.21 yield

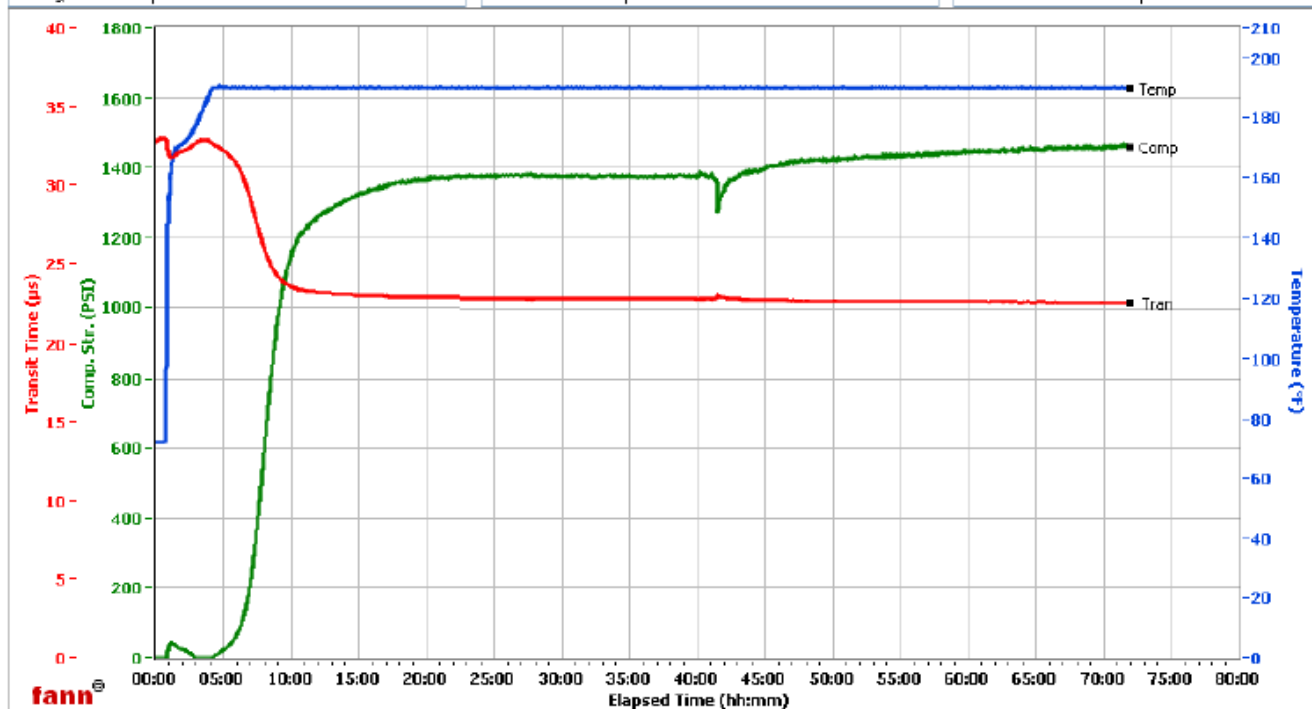
HALLIBURTON

Vernal

Fields	Values
Project Name	ExxonMobil 106482-1
Test ID	106482-1
Request ID	UCA 1
Tested by	ymc
Customer	ExxonMobil
Well No	PCU 197-36A6
Rig	H&P 326
Casing/Liner Size	7

Fields	Values
Job Type	Intermediate Primary
Cement Type	Tuned Light
Cement Weight	Light Weight
Test Date	10/24/2010
Test Time	4:02 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	05h:43m
100.00 PSI	06h:21m
500.00 PSI	07h:47m
1000.00 PSI	09h:09m
12h:00m	1257.57
24h:00m	1375.72
48h:00m	1415.45
72h:00m	1457.32



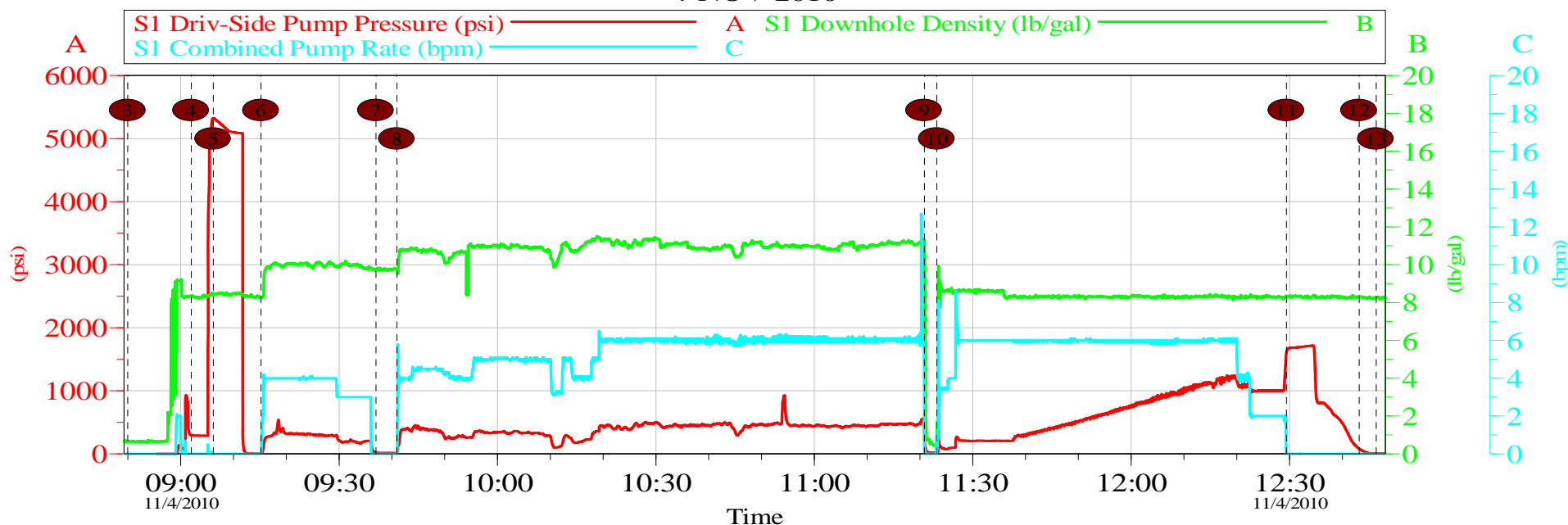
Data File: C:\Data Files\106482-1.tchis

Comments: Tuned Light, 0.75# HR-601, 11 Den, 2.21 Yd

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Data Acquisition

EXXONMOBIL - PCU WELL 197-36A6 - 7" INTERMEDIATE 4-NOV-2010



Global Event Log

Intersection	SDPP	Intersection	SDPP
3 Start Job	08:50:00 -2.000	4 Test Lines (Low Pressure)	09:02:00 295.0
5 Test Lines (High Pressure)	09:06:11 5325	6 Pump Tuned Spacer	09:15:14 4.000
7 Shutdown / Drop Bottom Plug	09:37:01 20.00	8 Pump Cement, 1366 sks, yld 2.21, wtr 9.7	09:40:58 14.00
9 Shutdown / Drop Top Plug	11:20:50 316.0	10 Pump Displacement	11:23:14 22.00
11 Bump Plug	12:29:25 1609	12 Check Floats	12:43:11 81.17
13 End Job	12:46:24 8.000		

Customer: EXXONMOBIL
Well Description: PCU
SVC LDR WESTON SPENCER

Job Date: 04-Nov-2010
WELL 197-36A6
SVC SPR STARBUCKS

Sales Order #: 7724950
PUMP TRK 11076824
SVC OPR TRAVIS MCCONKIE

HALLIBURTON
OptiCem v6.2.3
04-Nov-10 14:22