

EXXONMOBIL CORPORATION

HOUSTON, Texas

PCU 296-5A2

H&P 321

Post Job Summary

Cement Intermediate Casing

Date Prepared: 10/25/10
Version: 1

Service Supervisor: DEARING, KEN

Submitted by: Isaac Whorl

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	4,634	0	4,592		80.00
Open Hole Section	Intermediate Open Hole		9.875		4,634	9,969	4,592	9,925	100.00	
Casing	Intermediate Casing	7.00	6.276	26.00	0	9,955	0	9,911		96.49

Pumping Schedule

Fluid #	Fluid Type	Fluid Name	Density lbm/gal	Avg Rate bbl/min	Volume
1	Spacer	TUNED SPACER III	10.00	4.00	80.0 bbl
2	Cement Slurry	New Vernal Tuned Light	11.00	6.00	1335.0 sacks
3	Spacer	H2O Displacement	8.40	6.00	375.0 bbl

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

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
Volume: 1335.0 sacks

Stage/Plug # 1 Fluid 3: H2O Displacement
DISPLACEMENT FLUID

Fluid Density: 8.4 lbm/gal
Fluid Volume: 375.00 bbl

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Job Summary

Job Information

Job Start Date	10/18/2010 3:30:00 PM
Job MD	9,955.0 ft
Height of Plug Container/Swage Above Rig Floor	5.1 ft
Mud Type	Water Based Mud
Name of Mud Company	BAROID DRILLING FLUIDS
Actual Mud Density	9 lbm/gal
Pipe Movement During Hole Circulation	Reciprocated
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	376.82 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Length of Rat Hole	14.00 ft

Cementing Equipment

Number of Centralizers Used	52
Pipe Centralization	Through Entire Cement Column
Brand of Float Equipment Used	Weatherford
Did Float Equipment Hold?	No
Plug set used?	Yes
Brand of Plug set used?	Weatherford
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	1,070.0 psig

Service Supervisor Reports

Job Log

Date/Time	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
10/17/2010 22:30	Call Out				
10/17/2010 23:30	Pre-Convoy Safety Meeting				DISCUSS SAFETY AND HAZARDS OF TRAVEL.
10/17/2010 23:45	Other				LOAD EQUIPMENT FOR JOB.
10/18/2010 00:50	Depart Yard Safety Meeting				DISCUSS SAFETY AND HAZARDS OF TRAVEL.
10/18/2010 01:00	Crew Leave Yard				
10/18/2010 06:30	Arrive At Loc				
10/18/2010 06:35	Assessment Of Location Safety Meeting				SIGN IN AT SAFETY SHACK, GET WORK PERMIT SIGNED, WALK LOCATION, DISCUSS SPOTTING OF EQUIPMENT AND RIGGING UP, DISCUSS SAFETY AND HAZARDS, CASING @ 6300.0'.
10/18/2010 06:45	Safety Huddle				DISCUSS SAFETY AND HAZARDS.
10/18/2010 06:50	Other				SPOT EQUIPMENT.
10/18/2010 07:00	Safety Meeting - Pre Rig-Up				DISCUSS SAFETY AND HAZARDS.
10/18/2010 07:05	Rig-Up Equipment				RIG UP IRON AND SUCTION HOSE TO RED ZONE.
10/18/2010 07:30	Safety Meeting				MEET WITH CO.REP, GET WELL INFORMATION, DISCUSS WELL CONDITIONS, DISCUSS MAX PRESSURE AND PRESSURE TEST, DISCUSS SAFETY AND HAZARDS, CASING @ 6800.0'.
10/18/2010 08:30	Other				TEST H2O CASING @ 8025.0'.
10/18/2010 09:30	Prime Pumps				CHECK OUT AND GET EQUIPMENT READY FOR JOB, CASING @ 8900.0'.
10/18/2010 10:00	Pressure Test				PRE-JOB PRESSURE TEST, RCM TO 5000psi.
10/18/2010 10:45	Other				PRESSURE TEST WOULD NOT HOLD, CHECK FRAC VALVES IN HT, FOUND BAD VALVE, CHANGED OUT.

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Date/Time	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
10/18/2010 11:12	Pressure Test				PRE-JOB PRESSURE TEST, RCM TO 5000psi, TEST GOOD.
10/18/2010 11:30	Other				WAIT ON RIG TO FINISH RUNNING CASING AND CIRCULATE WELL.
10/18/2010 12:15	Casing on Bottom				
10/18/2010 12:20	Circulate Well				RIG STARTS CIRCULATING WELL.
10/18/2010 13:20	Safety Meeting - Pre Job				MEET WITH CO.REP AND RIG CREW, DISCUSS JOB PROCEDURE AND SAFETY AND HAZARDS OF JOB.
10/18/2010 13:40	Safety Meeting - Pre Rig-Up				DISCUSS SAFETY AND HAZARDS.
10/18/2010 13:45	Rig-Up Equipment				FINISH RIGGING UP ON GROUND.
10/18/2010 14:00	Other				RIG SHUTS DOWN, STARTS TO RIG DOWN CRT AND RIG UP BALES.
10/18/2010 14:40	Safety Meeting - Pre Rig-Up				DISCUSS SAFETY AND HAZARDS.
10/18/2010 14:45	Rig-Up Equipment				RIG UP CEMENT HEAD ON TO CASING.
10/18/2010 15:00	Circulate Well				RIG STARTS TO PUMP TO CIRCULATE THROUGH CEMENT HEAD.
10/18/2010 15:00	Safety Meeting - Pre Rig-Up				DISCUSS SAFETY AND HAZARDS.
10/18/2010 15:01	Rig-Up Equipment				FINISH RIGGING UP ON RIG FLOOR.
10/18/2010 15:10	Safety Meeting - Pre Job				SAFETY MEETING WITH RIG CREW AND CO.REP, DISCUSS SAFETY AND HAZARDS.
10/18/2010 15:14	Other				RIG SHUTS DOWN, SWAP TO HES IRON ON CEMENT HEAD.
10/18/2010 15:16	Pump Water	3.5		70.0	START PUMPING H2O TO FILL LINES.
10/18/2010 15:20	Pressure Test			700.0	LOW PRESSURE TEST.
10/18/2010 15:27	Pressure Test			5000.0	HIGH PRESSURE TEST.
10/18/2010 15:38	Pump Spacer	4	80	300.0	START PUMPING 10# TUNED SPACER.
10/18/2010 15:55	Slow Rate	1		70.0	SLOW RATE TO DROP PLUG ON THE FLY AS PER CO.REP.
10/18/2010 15:58	Drop Plug	1		110.0	DROP BOTTOM PLUG ON THE FLY AS PER CO.REP.

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Date/Time	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
10/18/2010 15:59	Pump Cement	4	535	465.0	START PUMPING 11.0# TUNED LIGHT CEMENT, 535bbbls, 1335sk, 2.25cf/ft, 10.04gal/sk.
10/18/2010 16:01	Other	5		475.0	INCREASE RATE AS PER CO.REP.
10/18/2010 16:08	Other	6		530.0	INCREASE RATE AS PER CO.REP.
10/18/2010 17:50	Slow Rate	3		250.0	SLOW RATE TO DROP PLUG ON THE FLY AS PER CO.REP.
10/18/2010 17:51	Drop Top Plug	3		150.0	DROP TOP PLUG ON THE FLY AS PER CO.REP.
10/18/2010 17:52	Pump Displacement	6		245.0	START H2O DISPLACEMENT WASHING ON TOP OF PLUG AS PER CO.REP, WITH ALDACIDE G .3ppb, AND BARACR 700 .5ppb, ADDED ON THE SIDE.
10/18/2010 17:55	Other	7		295.0	INCREASE RATE AS PER CO.REP.
10/18/2010 18:02	Displ Reached Cmnt	7		455.0	SEE CEMENT LIFT PRESSURE.
10/18/2010 18:29	Slow Rate	6		1040.0	SLOW RATE AS PER CO.REP.
10/18/2010 18:31	Slow Rate	5		1025.0	SLOWED RETURNS-SLOW RATE AS PER CO.REP.
10/18/2010 18:39	Slow Rate	4		1130.0	SLOW RATE AS PER CO.REP.
10/18/2010 18:43	Slow Rate	2		1040.0	SLOW RATE AS PER CO.REP.
10/18/2010 18:51	Bump Plug	2		1050.0	BUMP PLUG AT 1050psi.
10/18/2010 18:51	Shutdown			1750.0	PRESSURE OVER 700psi TO 1750psi-SHUT DOWN.
10/18/2010 18:56	Check Floats				CHECK FLOATS-FLOATS NOT HOLD AS PER CO.REP, 2.5bbbls BACK.
10/18/2010 19:01	Other	2	2.5	1800.0	PRESSURE BACK UP TO 1800psi AS PER CO.REP.
10/18/2010 19:08	Check Floats				CHECK FLOATS-FLOATS NOT HOLD AS PER CO.REP, 2.5bbbls BACK.
10/18/2010 19:10	Other	2	2.5	1780.0	PRESSURE BACK UP TO 1780psi AS PER CO.REP.
10/18/2010 19:13	Check Floats				CHECK FLOATS-FLOATS NOT HOLD AS PER CO.REP, 2.5bbbls BACK.
10/18/2010 19:22	Other	3	2.5	1825.0	PRESSURE BACK UP TO 1825psi AS PER CO.REP.
10/18/2010 19:24	Check Floats				CHECK FLOATS-FLOATS NOT HOLD AS PER CO.REP, 2.5bbbls BACK.

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Date/Time	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
10/18/2010 19:29	Other	1.5	2	1000.0	PRESSURE BACK UP TO 1000psi AS PER CO.REP, HOLD PRESSURE ON CASING.
10/18/2010 20:10	Other			1265.0	SHUT WELL IN AT CEMENT HEAD WITH 1265psi ON CASING.
10/18/2010 20:15	Post-Job Safety Meeting (Pre Rig-Down)				DISCUSS JOB, DISCUSS BBP AND HOC OBSERVATIONS, DISCUSS SAFETY AND HAZARDS.
10/18/2010 20:25	Rig-Down Equipment				RIG IRON OFF OF RIG FLOOR, LEAVING CEMENT HEAD SHUT IN ON CASING AS PER CO.REP.
10/18/2010 20:25	Other				WASH UP RCMTO PIT.
10/18/2010 20:30	Safety Huddle				DISCUSS SAFETY AND HAZARDS.
10/18/2010 21:15	Safety Meeting - Pre Rig-Down				DISCUSS SAFETY AND HAZARDS.
10/18/2010 21:20	Rig-Down Equipment				RIG DOWN AND RACK UP IRON AND SUCTION HOSE.
10/18/2010 22:40	Safety Meeting				DISCUSS SAFETY AND HAZARDS.
10/18/2010 22:45	Other				BLOW SILOS DOWN INTO BULK TRUCK, FINISH RACKING UP BULK EQUIPMENT.
10/19/2010 00:15	Pre-Convoy Safety Meeting				DISCUSS SAFETY AND HAZARDS OF TRAVEL.
10/19/2010 00:30	Crew Leave Location				
10/19/2010 00:30	Other				THANK YOU, KEN, KEN, ISAAC, AND CREW.

The Road to Excellence Starts with Safety

Sold To #: 331699	Ship To #: 2750717	Quote #:	Sales Order #: 7699606
Customer: EXXONMOBIL CORPORATION		Customer Rep: CURTIS, CANDACE	
Well Name: PCU	Well #: 296-5A2	API/UWI #:	
Field: PICEANCE CREEK	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Legal Description: Section 5 Township 2S Range 96W			
Job Purpose: Cement Intermediate Casing			
Well Type: Development Well		Job Type: Cement Intermediate Casing	
Sales Person: TURNER, JAMIE		Srvc Supervisor: DEARING, KEN	MBU ID Emp #: 239372

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
BURKE, RYAN	18.0	486688	DEAN, MARK Christophe	18.0	454214	DEARING, KEN A	18.0	239372
ESTEP, KENNETH	18.0	121420	OKONKWO, JUDE	18.0	480660	WHITE, KAMEREON	18.0	475856
WHORL, ISAAC Jacob	18.0	464968						

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10572545	140 mile	10867523	140 mile	10872435	140 mile	10897817	140 mile
10948686	140 mile	11062234	140 mile	11071474	140 mile	11263211	140 mile
11410664	140 mile						

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
10-18-2010	17.5	4.5	10-19-2010	.5	0			

TOTAL	Total is the sum of each column separately							
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Job

Formation Name	Formation Depth (MD)	Top	Bottom	Form Type	Job depth MD	Water Depth	Perforation Depth (MD)	From	To
				BHST	9902. ft				

Job Times

Date	Time	Time Zone
17 - Oct - 2010	22:30	MST
18 - Oct - 2010	06:30	MST
18 - Oct - 2010	15:30	MST
18 - Oct - 2010	20:00	MST
19 - Oct - 2010	00:30	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				4634.	9969.	4592.	9925.
Intermediate Casing	New		7.	6.276	26.	HYDRIL - SERIES 500 TYPE 513	P-110	.	9955.	.	9911.
Surface Casing	Unknown		10.75	9.95	45.5	BTC	J-55	.	4634.	.	4592.

Tools and Accessories

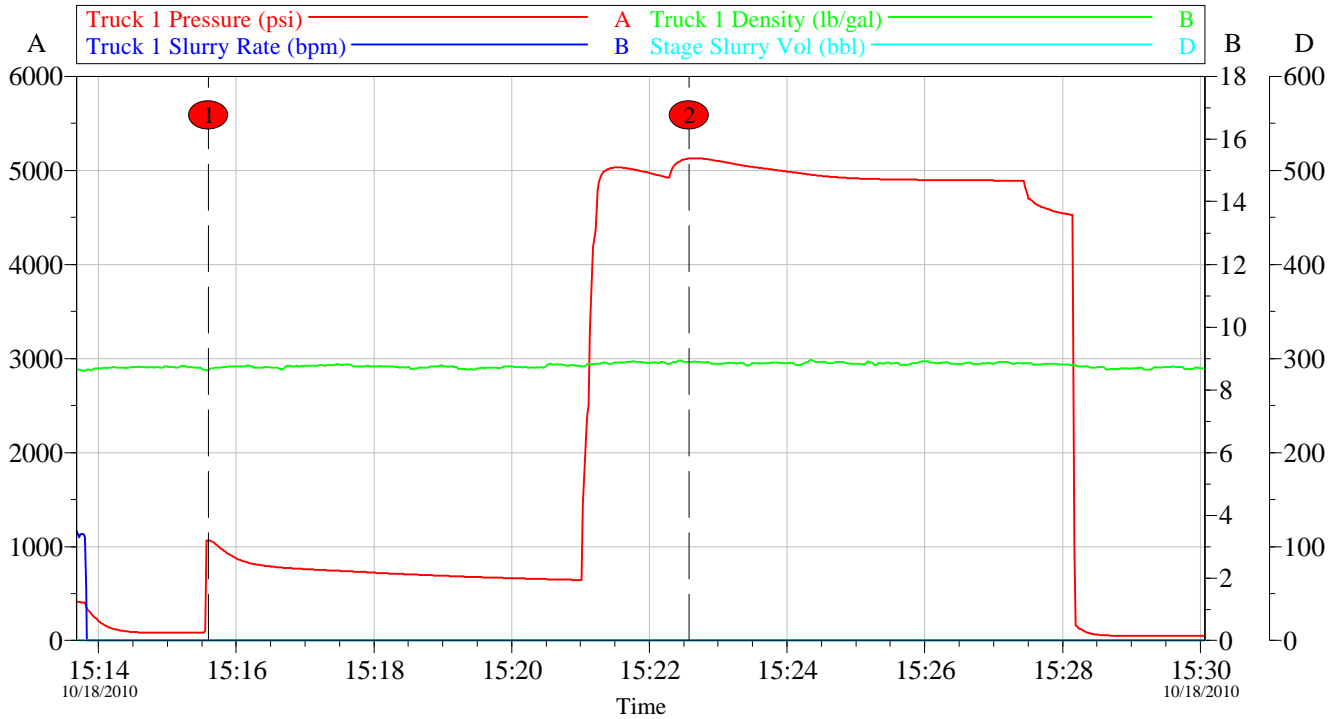
Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
EZ Case Bit	8.5	1		9951.4	Packer					Top Plug	7	1	Weather
Float Shoe					Bridge Plug					Bottom Plug	7	1	Weather
Float Collar	7	2	Weath	9949.7	Retainer					SSR plug set			
				9858.5						Plug Container	7	1	HES
Stage Tool										Centralizers	7	52	Weather

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 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	4.0		
	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)			1335.0	sacks	11.	2.25	10.04	6.0	10.04	
	0.75 lbm	HR-601, 50 LB BAG (101328348)										
	10.035 Gal	FRESH WATER										
3	Treated Water	Aldacide G and Baracor 700 added on the side.			375.25	bbl	.	.0	.0	6.0		
Calculated Values			Pressures			Volumes						
Displacement	376.8	Shut In: Instant	1750	Lost Returns		Cement Slurry	535	Pad				
Top Of Cement	3957	5 Min	1790	Cement Returns	0	Actual Displacement	375.25	Treatment				
Frac Gradient		15 Min		Spacers		Load and Breakdown		Total Job				
Rates												
Circulating	4	Mixing	6	Displacement	6	Avg. Job	5.5					
Cement Left In Pipe	Amount	96.49 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

PCU 296-5A2 Intermediate Pressure Test



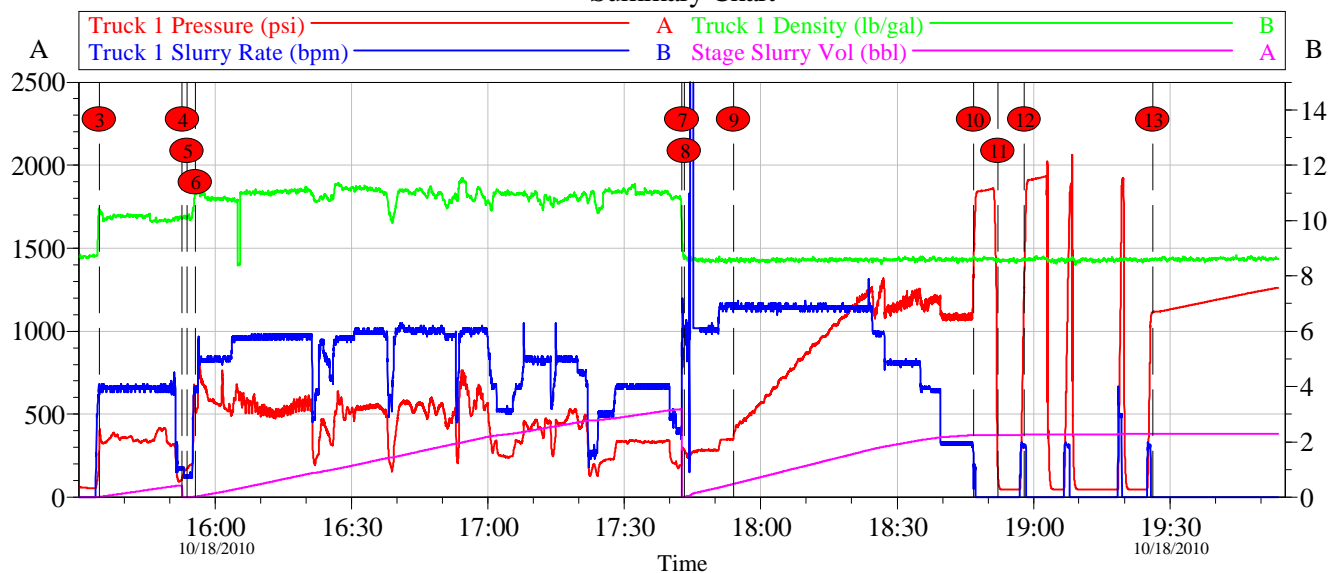
Local Event Log					
Intersection		Pressure	Volume	Intersection	
1	Low Pressure Test	15:15:36	1066	0.605	2
				High Pressure Test	15:22:35
					5125
					0.605

Customer: EXXONMOBIL	Job Date: 18-Oct-2010	Sales Order #: 7699606
Well Description: PCU 296-5A2	UWI: 05-103-11247	Svc Leader
Svc Supervisor	Svc. Operator	Technical Professional Isaac Whorl

OptiCem v6.4.9
18-Oct-10 19:54

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PCU 296-5A2 Intermediate Summary Chart

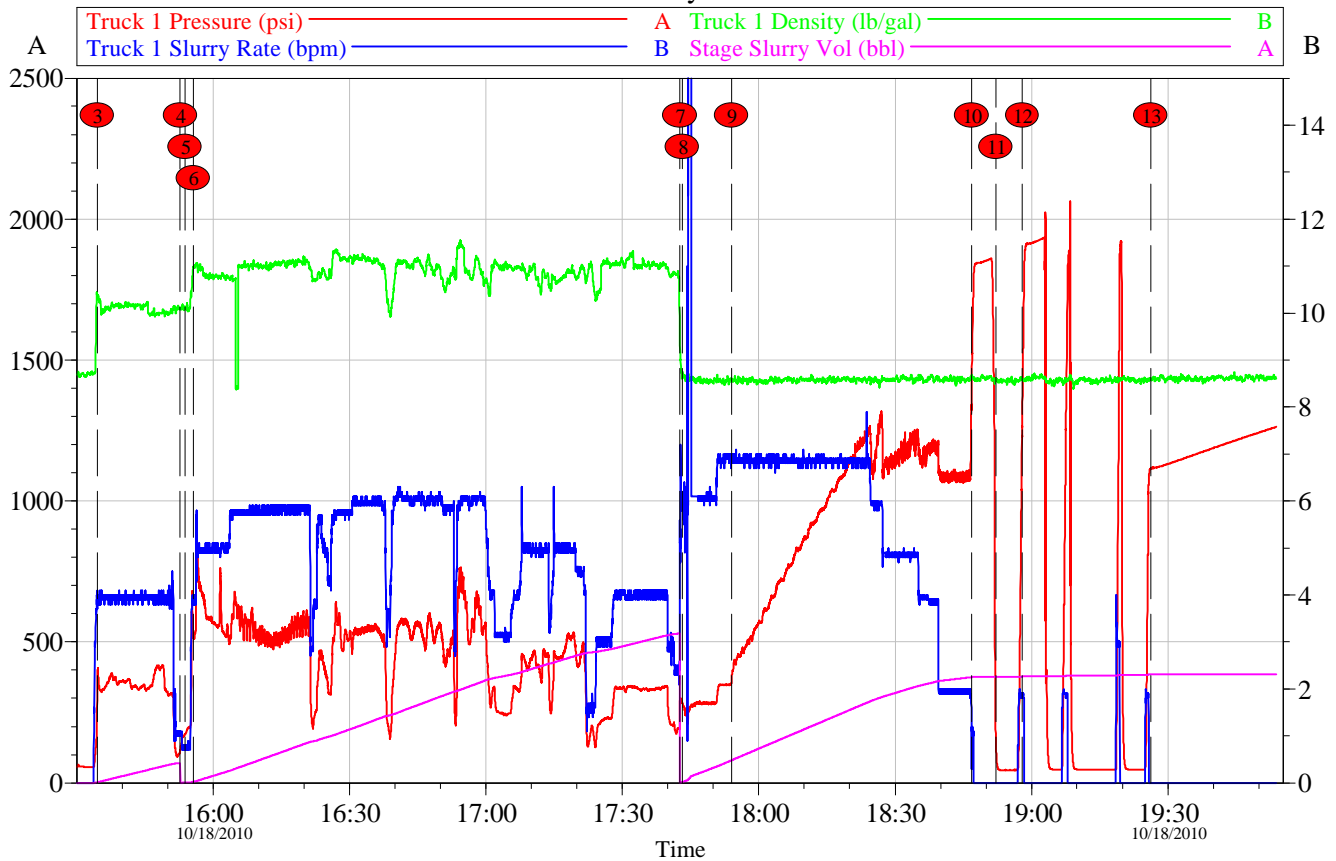


Customer: EXXONMOBIL	Job Date: 18-Oct-2010	Sales Order #: 7699606
Well Description: PCU 296-5A2	UWI: 05-103-11247	Svc Leader: Ken Estep Sr.
Svc Supervisor: Ken Dearing	Svc. Operator: Mark Dean	Technical Professional: Isaac Whorl

OptiCem v6.4.9
18-Oct-10 20:05

PCU 296-5A2 Intermediate

Summary Chart



Customer: EXXONMOBIL	Job Date: 18-Oct-2010	Sales Order #: 7699606
Well Description: PCU 296-5A2	UWI: 05-103-11247	Svc Leader: Ken Estep Sr.
Svc Supervisor: Ken Dearing	Svc. Operator: Mark Dean	Technical Professional: Isaac Whorl

OptiCem v6.4.9
18-Oct-10 20:06

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Lab Data

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Cementing Rockies, Vernal

LAB RESULTS - Primary

Job Information

Request/Slurry	105676/1	Rig Name	H&P 321	Date	October 18th 2010
Submitted By	Dave Imlay	Job Type	Intermediate Casing	Bulk Plant	Vernal
Customer	Halliburton	Location		Well	PCU 296-5A2

Well Information

Casing/Liner Size	7"	Depth MD	9969 ft	BHST	210 F
Hole Size	9 7/8"	Depth TVD	9925 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
						Water Requirement	9.67	GPS
						Water Source	Fresh Water	
100.00	% BWOC	Cement Blend						
36.88	%	> Boral Craig Pozmix	Bulk	Oct 18, 2010				
11	%	> HGS 6000 dry blended	Bulk	Oct 18, 2010				
53.19	%	> Holcim Type V	Bulk	Oct 18, 2010				
13	%	> Silicalite - Compacted	Bulk	Oct 18, 2010				
0.75	lb/sk	HR-601	Bulk	Oct 18, 2010	21HR05x-17S2JB			
0.50	lb/sk	D-Air 3000	Bulk	Oct 18, 2010	2010263AC			
0.20	lb/sk	FWCA	Bulk	Oct 18, 2010	37234			
80.70	L/100kg	Fresh Water	Lab	Jul 07, 2010	07/07/2010			

Project Test Results Request ID 105676/1

UCA Comp. Strength, Request Test ID:1101493

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	8 hr CS (psi)	12 hr CS (psi)	16 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)	End CS (psi)	End Time (hrs)
190	3,000	05:55	09:36	181	1,241	1,423	1,494	1,548	1,554	72

Thickening Time, Request Test ID:1101492

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	6,201	49	11	03:33	04:43	04:57	05:29

Free Water, Request Test ID:1101495

Test Temp (°F)	% FW 45 Inc
154	0

API Rheology, Request Test ID:1101494

Temp (°F)	600	300	200	100	60	30	6	3	Cond Time (min)	PV/YP
80	234	150	114	72	54	44	30	27	20	123 / 30.8

API Fluid Loss, Request Test ID:1101496

Test Temp (°F)	Test Pressure (psi)	Test Time (min)	Meas. Vol (< 30 min, cc)	Extr. ISO FL (cc/30 min)
154	1,000	4.13	37	199

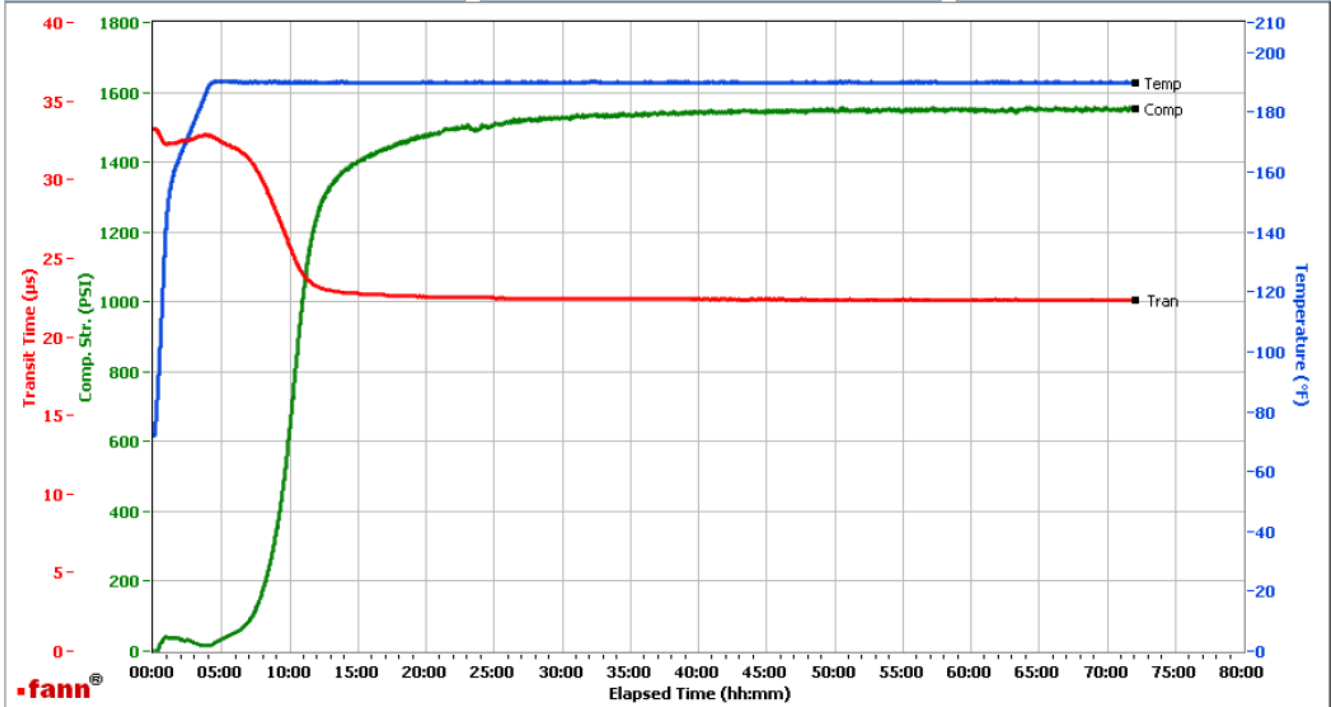
HALLIBURTON

Vernal

Fields	Values
Project Name	Halliburton 105676-1
Test ID	105676-1
Request ID	UCA #5
Tested by	CD
Customer	Halliburton
Well No	PCU 296 5A2
Rig	H&P 321
Casing/Liner Size	7

Fields	Values
Job Type	Intermediate
Cement Type	V
Cement Weight	Light Weight
Test Date	10/18/2010
Test Time	9:55 AM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	05h:55m
100.00 PSI	07h:14m
500.00 PSI	09h:36m
1000.00 PSI	10h:55m
12h:00m	1244.03
24h:00m	1494
48h:00m	1548
72h:00m	1554



Data File C:\Data Files\105676-1.tdms

Comments Type V, 0.750 HR601, Dens 11 #/gal, Yd 2.21

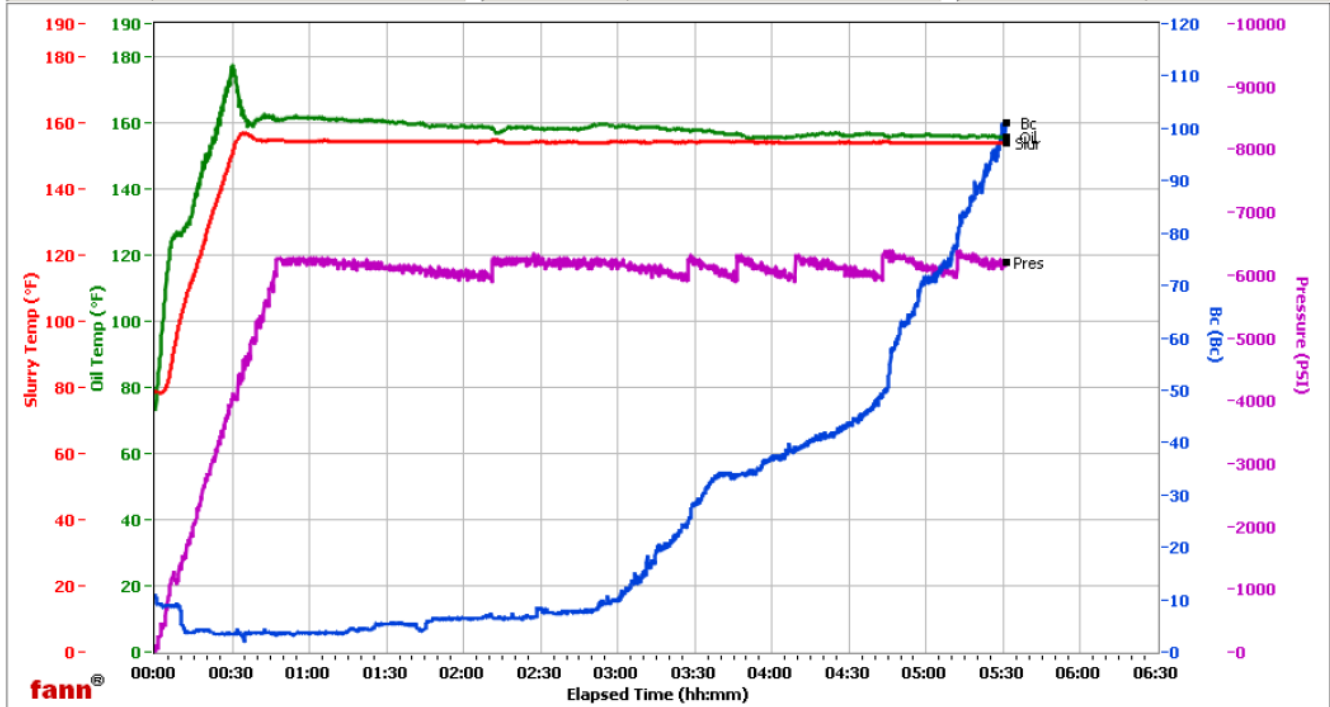
HALLIBURTON

Vernal

Fields	Values
Project Name	Halliburton 105676-1
Test ID	105676-1
Request ID	HPHT#4
Tested by	CD
Customer	Halliburton
Well No	PCU 296-5A2
Rig	H&P 321
Casing/Liner Size	7

Fields	Values
Job Type	Intermediate
Cement Type	Type V
Cement Weight	Light Weight
Test Date	10/18/10
Test Time	04:25 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
30.00 Bc	03h:33m
50.00 Bc	04h:43m
60.00 Bc	04h:49m
70.00 Bc	04h:57m
100.00 Bc	05h:29m
200.00 Bc	NaN
03h:00m	10.04
06h:00m	NaN



Data File O:\HPHT Data Files\Vernal Consistometer #4\Halliburton 105676-1 .tdms

Comments 53.19% Type , 0.750% HR601, Dens 11#/gal Yd 2.21