

EXXONMOBIL CORPORATION
HOUSTON, Texas

PCU 296-5A1

H&P 321

Post Job Summary

Cement Production Casing

Date Prepared: October 11, 2010
Version: 1

Service Supervisor: Andrew Ashby
Submitted by: Simukayi Mutasa

HALLIBURTON

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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		
Casing	Intermediate Casing	7.00	6.276	26.00	0.00	9,859.00	0.00	9,909.00		80.00
Open Hole Section	Production Open Hole		6.125		10,105.00	14,288.00	10,005.00	14,188.00	350.00	
Casing	Production Casing	4.50	3.826	15.10	0.00	14,268.00	0.00	14,168.00		85.00

Pumping Schedule

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume
1	Spacer	TUNED SPACER III	10.00	6.00	40.0 bbl
2	Cement Slurry	Lightweight Lead Cement	10.50	6.00	215.0 sacks
3	Cement Slurry	Lightweight Tail Cement	12.00	6.00	770.0 sacks
4	Spacer	NaCl Displacement	8.44	6.00	201.0 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: 40.00 bbl
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 2: Lightweight Lead
Cement
TUNED LIGHT (TM) SYSTEM
0.75 lbm HR-601

Fluid Weight: 10.50 lbm/gal
Slurry Yield: 2.42 ft³/sack
Total Mixing Fluid: 10.55 Gal
Surface Volume: 215.0 sacks
Sacks: 215.0 sacks
Calculated Fill: 3,036.38 ft
Calculated Top of Fluid: 7,425.68 ft
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 3: Lightweight Tail
Cement
VARICEM (TM) CEMENT
0.28 % Fe-2

Fluid Weight: 12.00 lbm/gal
Slurry Yield: 2.18 ft³/sack
Total Mixing Fluid: 12.12 Gal
Surface Volume: 770.0 sacks
Sacks: 770.0 sacks
Calculated Fill: 3,927.94 ft
Calculated Top of Fluid: 10,462.06 ft
Pump Rate: 6.00 bbl/min

Stage/Plug # 1 Fluid 4: NaCl Displacement
DUMMY MUD / FLUSH / SPACER SBC MATERIAL
7.15 lbm/bbl Salt

Fluid Density: 8.44 lbm/gal
Fluid Volume: 201.00 bbl
Pump Rate: 6.00 bbl/min

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Job Summary

Job Information

Job Start Date	10/7/2010 8:00:00 AM
Job MD	14,288.0 ft
Job TVD	14,188.0 ft
Height of Plug Container/Swage Above Rig Floor	5.0 ft
Mud Type	Water Based Mud
Name of Mud Company	BAROID
Actual Mud Density	10.5 lbm/gal
Mud PV	15.0 cp
Mud YP	15.0 lbf/100ft ²
Time Circulated before job	2.00 hour(s)
Rate at Which Well was Circulated	50.000 strokes/min
Units of Gas Detected While Circulating	3362 API Gas Units
Pipe Movement During Cementing	Reciprocated
Calculated Displacement	203.49 bbl
Job Displaced by (rig/halco)	Cement Unit HP Pumps
Length of Rat Hole	20.00 ft

Cementing Equipment

Pipe Centralization	Through Entire Cement Column
Did Float Equipment Hold?	Yes
Plug set used?	Yes
Did Plugs Bump?	Yes
Calculated Pressure to Bump Plugs	2,250.0 psig

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Service Supervisor Reports

Job Log

Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
10/06/2010 14:00		Call Out				Crew Called out for Job. Plug Container# D1492 (4.5" Double Plug Container)
10/06/2010 16:00		Pre-Convoy Safety Meeting				Met w/crew to discuss safety and hazards of travel to location
10/06/2010 16:30		Depart from Service Center or Other Site				Entered into Journey Management.
10/06/2010 21:00		Arrive At Loc				Ended Journey Management. [WHAT WAS GOING ON WHEN WE ARRIVED]
10/06/2010 21:10		Assessment Of Location Safety Meeting				Met w/crew to discuss hazards of site, location of materials and safety precautions.
10/06/2010 21:15		Other				Spot Equipment
10/06/2010 21:30		Pre-Rig Up Safety Meeting				Met w/crew to discuss the best way to rig up, safety and hazards involved.
10/06/2010 21:35		Rig-Up Equipment				Rig up product line, water line & iron on the ground to the red zone.
10/07/2010 02:00		Rig-Up Equipment				Finish rigging up the ground to the standpipe.
10/07/2010 05:45		Rig-Up Equipment				Rig-up the rig floor.
10/07/2010 06:15		Circulate Well				Rig to pump bottoms up (approx 3100 strokes @ 45 spm)
10/07/2010 07:15		Pre-Job Safety Meeting				Met w/Rig Crew, Co. Rep, and our crew to discuss job procedures, contingencies, and safety measures.
10/07/2010 08:04		Other	1.5	3	640.0	Fill Lines
10/07/2010 08:12		Test Lines			287.0	Low Pressure Test (250 psi)
10/07/2010 08:17		Test Lines			5172.0	High Pressure Test (5000 psi)
10/07/2010 08:41		Pump Spacer	2	40	45.0	41 sks Tuned Spacer @ 10.0 ppg, 5.43 cuft/sk, 37.29 gps
10/07/2010 08:43		Other	5		483.0	Increase Rate
10/07/2010 08:48		Slow Rate	1		219.0	Slow Rate to drop the plug on the fly
10/07/2010 08:50		Drop Bottom Plug				Shutdown & drop Bottom Plug.
10/07/2010 08:53		Pump Lead Cement	5	90	807.0	215 sks Tuned Light Lead @ 10.5 ppg, 2.37 cuft/sk, 10.10 gps
10/07/2010 09:12		Pump Tail Cement	5	297.6	965.0	770 sks VariCem Tail @ 12.0 ppg, 2.17 cuft/sk, 11.91 gps
10/07/2010 09:59		Shutdown				Shutdown / Drop Top Plug
10/07/2010 10:02		Clean Lines				Wash Pump & Lines to the pit
10/07/2010 10:08		Pump Displacement	8	201.4		Fresh Water Displacement w/7.15 lb/bbl salt
10/07/2010 10:12		Slow Rate	7		1256.0	Slow rate to keep pressure down.
10/07/2010 10:23		Slow Rate	6		1765.0	Slow rate to keep pressure down.
10/07/2010 10:28		Slow Rate	5		1921.0	Slow rate to keep pressure down.
10/07/2010 10:36		Slow Rate	3		2138.0	Slow rate to keep pressure down.
10/07/2010 10:38		Slow Rate	2		2203.0	Slow rate to keep pressure down.
10/07/2010 10:43		Slow Rate	1.5		2145.0	Slow rate to keep pressure down.

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Date/Time	Chart #	Activity Code	Pump Rate	Cum Vol	Pressure (psig)	Comments
10/07/2010 10:45		Slow Rate	1		2187.0	Slow rate to bump plug.
10/07/2010 10:52		Bump Plug	1		2850.0	500 psi over final circulating pressure (2250 psi)
10/07/2010 10:57		Check Floats				held for 5 min, check floats, 2.25 bbls back - Floats held.
10/07/2010 11:00		End Job				Job Complete
10/07/2010 11:05		Post-Job Safety Meeting (Pre Rig-Down)				Met w/crew to discuss rigging down safely.
10/07/2010 11:15		Rig-Down Equipment				Rig everything down.
10/07/2010 14:00		Pre-Convoy Safety Meeting				Met w/crew to discuss fit-for-duty, safety and hazards of travel back.
10/07/2010 14:30		Depart Location for Service Center or Other Site				Entered into Journey Management.
10/07/2010 14:30		Other				Thanks for using Halliburton!!!

The Road to Excellence Starts with Safety

Sold To #: 331699	Ship To #: 2749984	Quote #:	Sales Order #: 7650629
Customer: EXXONMOBIL CORPORATION	Customer Rep: McClain, Eric		
Well Name: PCU	Well #: 296-5A1	API/UWI #: 05103112480000	
Field:	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Legal Description: Section 5 Township 2S Range 96W			
Job Purpose: Cement Production Casing			
Well Type: Development Well		Job Type: Cement Production Casing	
Sales Person: TURNER, JAMIE	Srvc Supervisor: ASHBY, ANDREW	MBU ID Emp #: 450544	

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ASHBY, ANDREW A		450544	BEREECE, TERRY Lee		222819	ELDREDGE, VANCE E.		477303
FUCHS, BENJAMIN Reinhard		470584	HUNTER, SAMUEL David		479669	PARTRIDGE, BRENT W		471227
SMITH, KC Hyrum		462378						

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10948685	140 mile	10994445	140 mile	11127525	140 mile	11139326	140 mile
11189139	140 mile	11211506	140 mile	11263213	140 mile	11410662	140 mile
6325	140 mile	6573	140 mile	D1492	140 mile		

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					

Job

Job				Job Times			
Formation Name					Date	Time	Time Zone
Formation Depth (MD)	Top		Bottom	Called Out	06 - Oct - 2010	14:00	MST
Form Type	BHST			On Location	06 - Oct - 2010	21:00	MST
Job depth MD	14288. ft			Job Started	07 - Oct - 2010	08:00	MST
Water Depth	Wk Ht Above Floor			Job Completed	07 - Oct - 2010	11:00	MST
Perforation Depth (MD)	From		To	Departed Loc	07 - Oct - 2010	14:30	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
Production Open Hole				6.125				10105.	14288.	10005.	14188.
Intermediate Casing	Unknown		7.	6.276	26.	HYDRIL - SERIES 500 TYPE 513	P-110	.	9859.	.	9909.
Production Casing	Unknown		4.5	3.826	15.1	LTC	P-110	.	14268.	.	14168.

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, October 11, 2010 14:46:00

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 ³ /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk			
1	TUNED SPACER III	TUNED SPACER III - SBM (483826)	40.00	bbl	10.	.0	.0	6.0				
		38.32 gal/bbl	FRESH WATER									
		59.8 lbm/bbl	BARITE, 100 LB SK (100003680)									
2	Lightweight Lead Cement	TUNED LIGHT (TM) SYSTEM (452984)	215.0	sacks	10.5	2.42	10.55	6.0	10.55			
		0.75 lbm	HR-601, 50 LB BAG (101328348)									
		10.553 Gal	FRESH WATER									
3	Lightweight Tail Cement	VARICEM (TM) CEMENT (452009)	770.0	sacks	12.	2.18	12.12	6.0	12.12			
		12.124 Gal	FRESH WATER									
		0.28 %	FE-2 (100001615)									
4	NaCl Displacement		201.00	bbl	8.44	.0	.0	6.0				
		7.15 lbm/bbl	SALT, 100 LB BAG (100003652)									

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	85 ft	Reason		Shoe Joint							
Frac Ring # 1 @		ID		Frac ring # 2 @		ID		Frac Ring # 3 @		ID		Frac Ring # 4 @	

The Information Stated Herein Is Correct				Customer Representative Signature								
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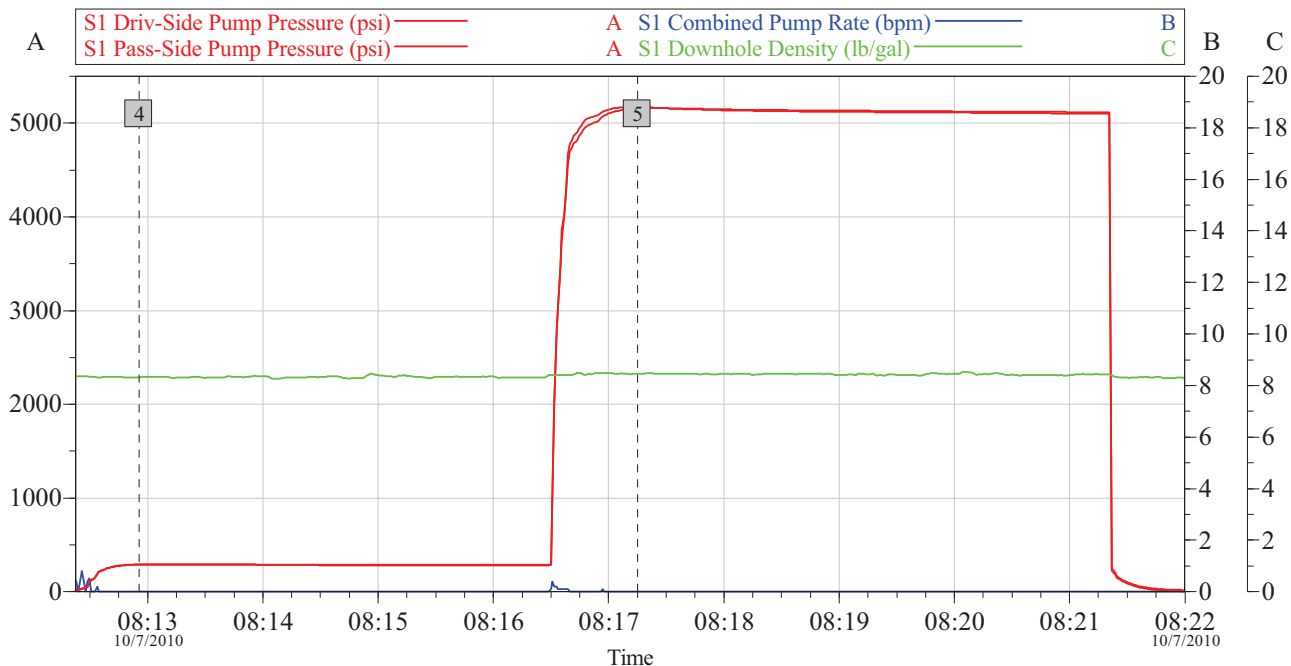
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Data Acquisition

ExxonMobil - PCU# 296-5A1

4.5" Production

Pressure Test



Global Event Log					
Intersection		PSI	RATE	Intersection	
4	Low Pressure Test 08:12:56	287.0	0.000	5	High Pressure Test 08:17:15
		5172	0.000		

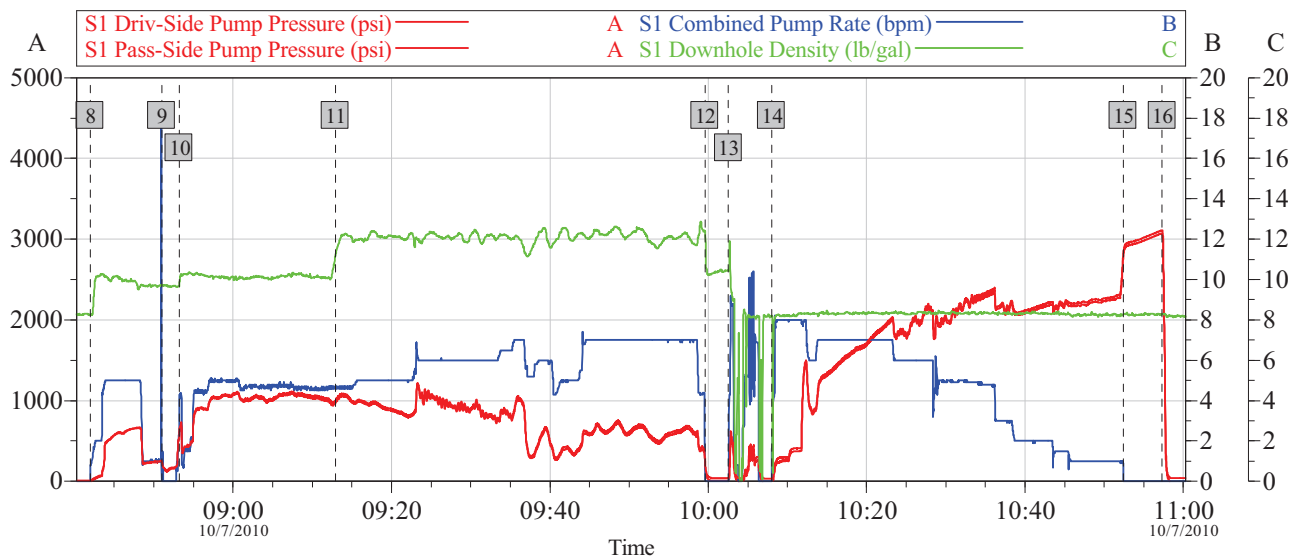
Customer: EXXONMOBIL CORPORATION	Job Date: 07-Oct-2010	Sales Order #: 7650626
Well Description: PCU 296-5A1	UWI: 05-103-11248	

OptiCem v6.4.9
07-Oct-10 11:27

HALLIBURTON

ExxonMobil - PCU# 296-5A1

4.5" Production



Global Event Log									
Intersection			PSI	RATE	Intersection			PSI	RATE
8	Pump Tuned Spacer	08:41:58	-2.000	0.790	9	Drop Bottom Plug	08:50:59	238.2	1.084
10	Pump Lead Cement	08:53:12	590.6	3.740	11	Pump Tail Cement	09:12:54	965.1	4.601
12	Shutdown / Drop Top Plug	09:59:35	216.0	0.084	13	Clean Pump & Lines	10:02:33	8.000	0.000
14	Pump Displacement	10:08:01	-5.000	0.371	15	Bump Plug	10:52:24	2771	0.801
16	Check Floats	10:57:19	3073	0.000					

Customer: EXXONMOBIL CORPORATION
Well Description: PCU 296-5A1

Job Date: 07-Oct-2010
UWI: 05-103-11248

Sales Order #: 7650626

OptiCem v6.4.9
07-Oct-10 11:38

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Cementing Rockies, Meeker

LAB RESULTS - Lead

Job Information

Request/Slurry	98652	Rig Name	H&P 321	Date	September 8th 2010
Submitted By	Isaac Whorl	Job Type	Production Casing	Bulk Plant	Meeker
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-5A1

Well Information

Casing/Liner Size	4 1/2"	Depth MD	14288 ft	BHST	293 F
Hole Size	6 1/8"	Depth TVD	14188 ft	BHCT	233 F

Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		Tuned Light				Slurry Density	10.50	PPG
100.00	% BWO	Cement Blend				Slurry Yield	2.37	FT3
						Water Requirement	10.11	GPS
19.5	%	> HGS 10000 dry blended	Bulk	Sep 20, 2010				
13	%	> Silicalite - Compacted	Bulk	Sep 20, 2010				
90	%	> TXI Lightweight	Bulk	Sep 20, 2010				
0.10	lb/sk	CFR-3	Bulk	Sep 20, 2010	92723-3			
0.60	lb/sk	D-Air 3000	Bulk	Sep 20, 2010	2010217 AC	Water Source	Field (Fresh) Water	
0.70	lb/sk	HALAD-344 (PB)	Bulk	Sep 20, 2010	B0-207	Water Chloride	N/A	ppm
0.75	lb/sk	HR-601	Bulk	Sep 20, 2010	HR01X2 2S3JP			
84.37	L/100kg	Field (Fresh) Water	Lab	Aug 29, 2010	8/29/10			

Operation Test Results Request ID 98652

UCA Comp. Strength

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)	End CS (psi)	End Time (hrs)
261	3,000	04:42	05:02	809	891	934	940	72

Thickening Time

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
233	7,548	42	2	04:37	04:38	04:38	04:39	04:49

Mixability (0 - 5) - 0 is not mixable

Mixability rating (0 - 5)

5

Marsh Funnel

Volume [ml]	Time [Sec]	Foam Quality
250	31	0

Free Water

Test Temp (°F)	% FW 45 Inc
180	0

TraceFW, light channeling, slight settling. See attachment for picture of channeling.

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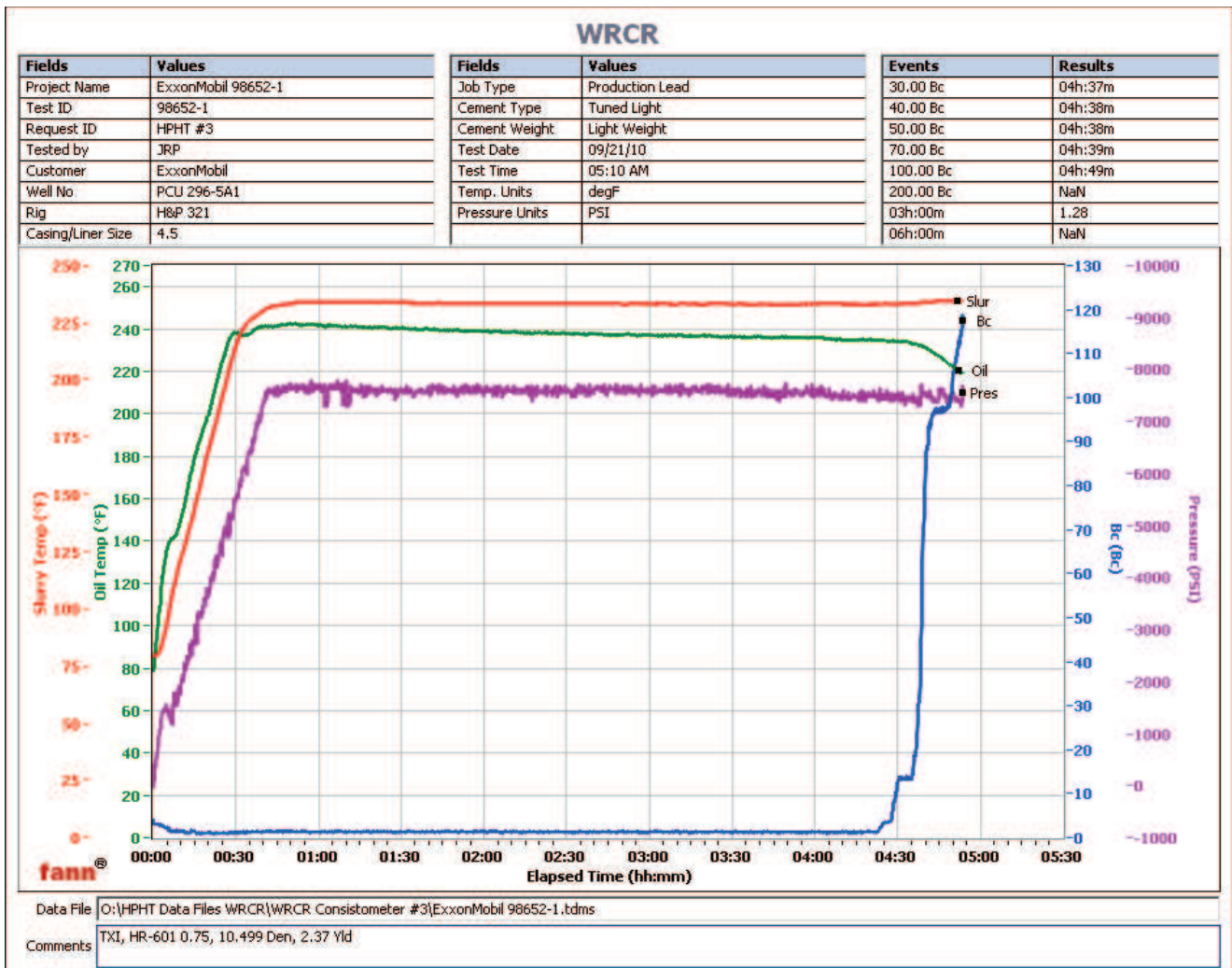
API Rheology

Temp (°F)	600	300	200	100	60	30	6	3	Cond Time (min)	PV/YP
80	135	71	50	28	19	12	4	3	20	68 / 4.3

API Fluid Loss

Test Temp (°F)	Test Pressure (psi)	Test Time (min)	Meas. Vol (< 30 min, cc)	Extr. ISO FL (cc/30 min)
180	1,000	25.5	40	87

40 mL's FW in 25:30 mins.



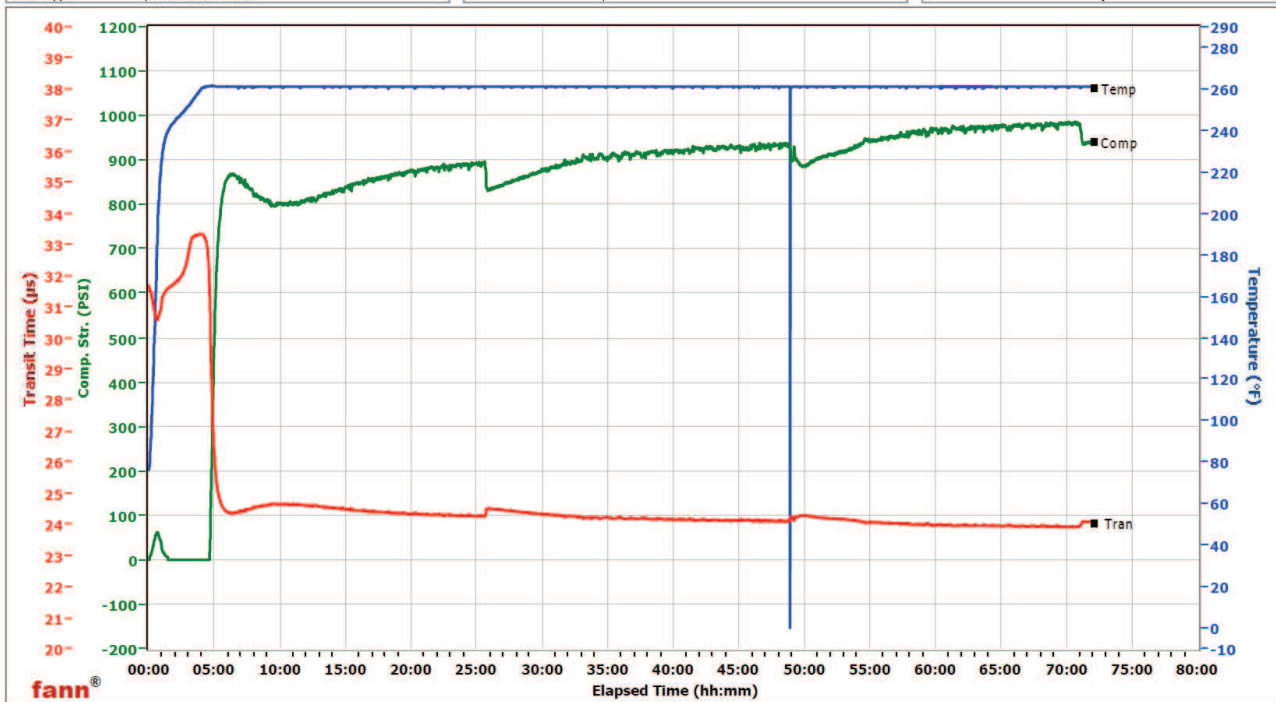
HALLIBURTON

White River City Ranch

Fields	Values
Project Name	Exxonmobil 98652-1
Test ID	98652-1
Request ID	UCA #4
Tested by	D.P.
Customer	ExxonMobil
Well No	PCU 296-5A1
Rlg	H&P 321
Casing/Liner Size	4.5
Job Type	Production Lead

Fields	Values
Cement Type	III
Cement Weight	Light Weight
Comments	90% TXI, .75 HR-601, 10.499 DEN, 2.37 YD.
Test Date	9/23/2010
Test Time	10:52 AM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	04h:42m
100.00 PSI	04h:45m
500.00 PSI	05h:02m
1000.00 PSI	NaN
12h:00m	809.06
24h:00m	891.36
48h:00m	934.48
72h:00m	939.53



Data File C:\UCA Data\98652-1A.tdms

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Cementing Rockies, Meeker

LAB RESULTS - Tail

Job Information

Request/Slurry	98653	Rig Name	H&P 321	Date	September 8th 2010
Submitted By	Isaac Whorl	Job Type	Production Casing	Bulk Plant	Meeker
Customer	ExxonMobil	Location	Rio Blanco	Well	PCU 296-5A1

Well Information

Casing/Liner Size	4 1/2"	Depth MD	14288 ft	BHST	293 F
Hole Size	6 1/8"	Depth TVD	14188 ft	BHCT	233 F

Cement Information - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						Slurry Density	12.001	PPG
						Slurry Yield	2.17	FT3
						Water Requirement	11.95	GPS
100.00	% BWOC	TXI Lightweight	Bulk	Sep 20, 2010	0G17051 7-2			
25.00	% BWOC	Silicalite - Compacted	Bulk	Sep 20, 2010				
0.60	% BWOC	HALAD-344 (PB)	Bulk	Sep 20, 2010	B0-207			
0.60	% BWOC	D-Air 3000	Bulk	Sep 20, 2010	2010217 AC			
0.10	% BWOC	Econolite (Powder - PB)	Bulk	Sep 20, 2010	U020610			
0.28	% BWOC	Fe-2 (citric acid)	Bulk	Sep 20, 2010	CA0303 2B4	Water Source	Field (Fresh)	Water
132.94	L/100kg	Field (Fresh) Water	Lab	Aug 29, 2010	8/29/10	Water Chloride	N/A	ppm

Operation Test Results Request ID 98653

UCA Comp. Strength

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)	End CS (psi)	End Time (hrs)
261	3,000	03:47	04:05	1,068	1,172	970	677	72

Thickening Time

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
233	7,548	42	2	03:26	03:54	03:57	03:58	03:58

Mixability (0 - 5) - 0 is not mixable

Mixability rating (0 - 5)

5

Free Water

Test Temp (°F)	% FW 45 Inc
180	0

Trace FW, 0 channeling, 0 settling.

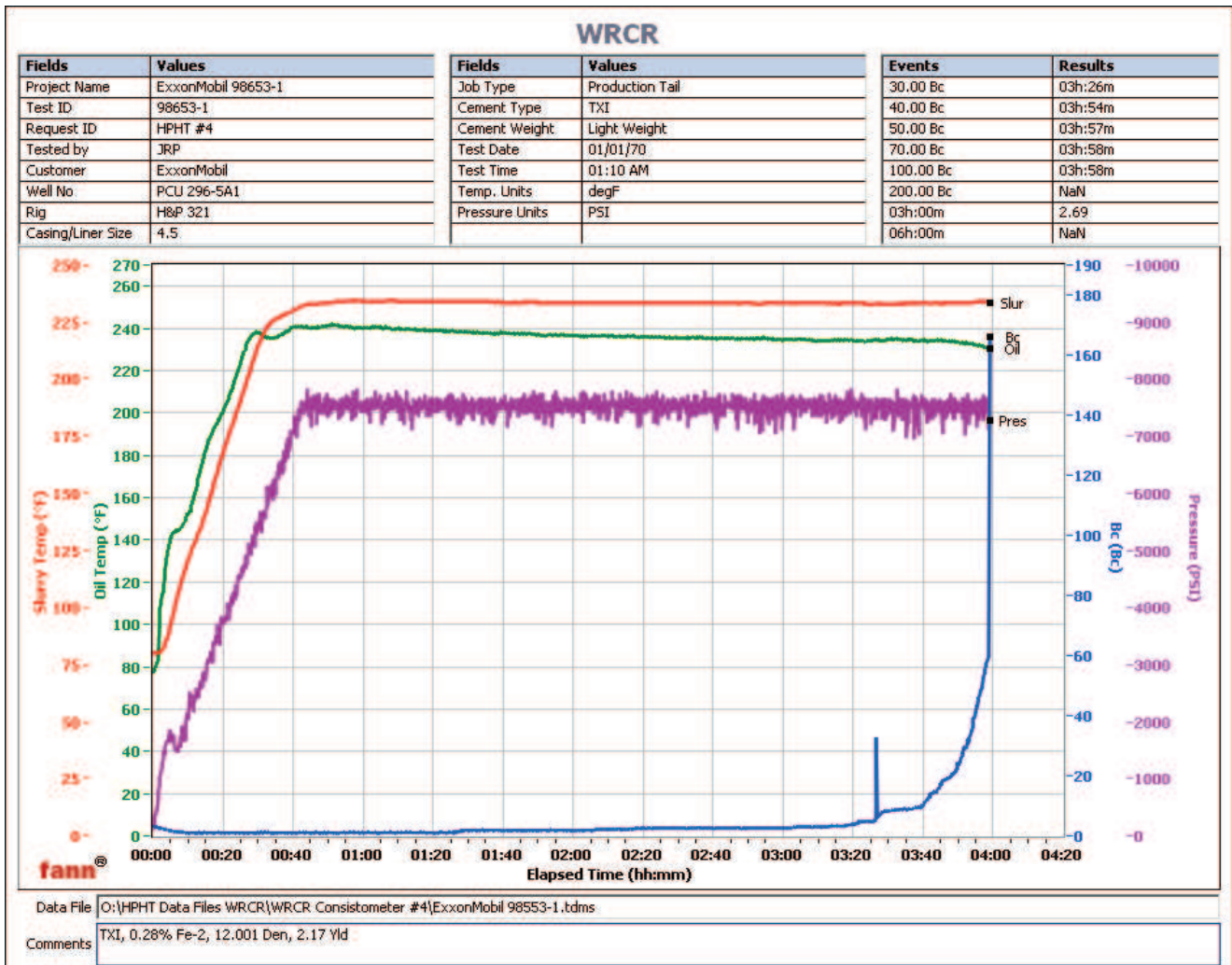
API Rheology

Temp (°F)	600	300	200	100	60	30	6	3	Cond Time (min)	PV/YP
800	48	27	20	14	10	8	6	5	20	22 / 5.8

HALLIBURTON

API Fluid Loss

Test Temp (°F)	Test Pressure (psi)	Test Time (min)	Meas. Vol (< 30 min, cc)	Extr. ISO FL (cc/30 min)
180	1,000	15.52	44	122
44 mL's in 15:31 mins				



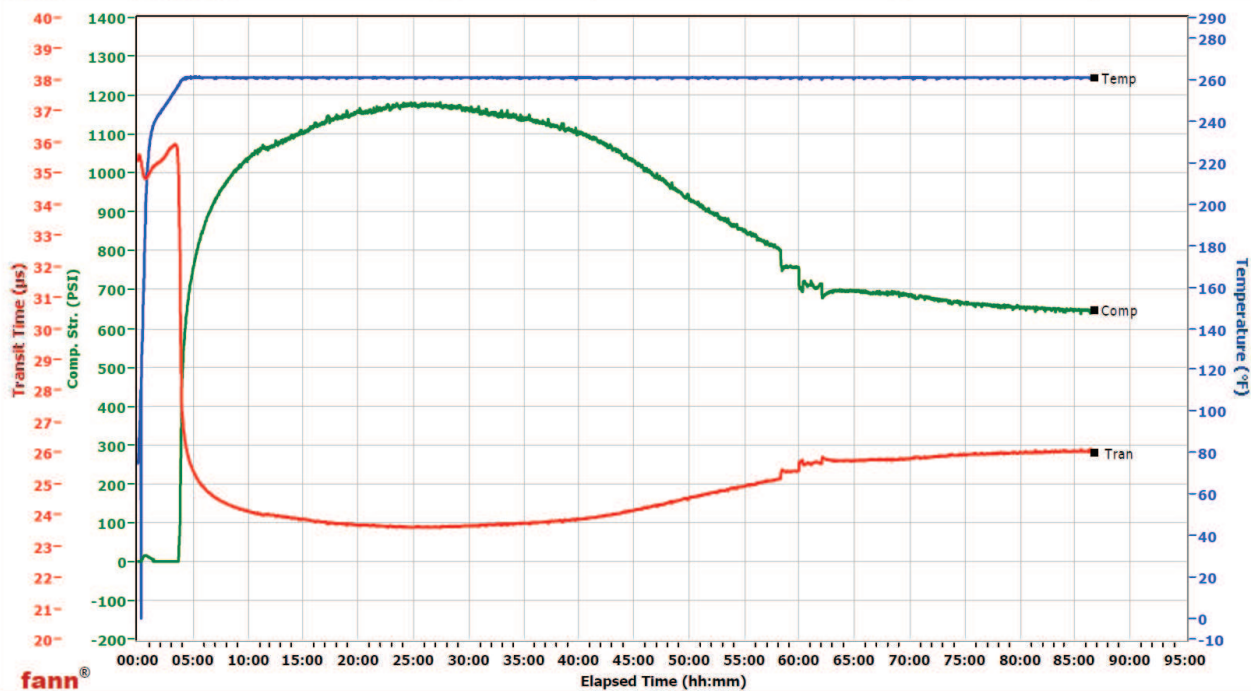
HALLIBURTON

White River City Ranch

Fields	Values
Project Name	ExxonMobil 98653-1
Test ID	98653-1
Request ID	UCA #1
Tested by	JRP
Customer	ExxonMobil
Well No	PCU 296 5A1
Rig	H&P 321
Casing/Liner Size	4.5
Job Type	Production Tail

Fields	Values
Cement Type	TXI
Cement Weight	Light Weight
Comments	TXI, 0.28% Fe-2, 12.001 Den, 2.17 Yld
Test Date	9/20/2010
Test Time	9:48 PM
Temp. Units	degF
Pressure Units	PSI

Events	Results
50.00 PSI	03h:47m
100.00 PSI	03h:51m
500.00 PSI	04h:05m
1000.00 PSI	46h:34m
12h:00m	1067.79
24h:00m	1171.56
48h:00m	969.97
72h:00m	677.33



Data File C:\UCA Data\98653-1.tdms