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**State of Colorado
Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax: (303) 894-2109



FOR OGCC USE ONLY

LOSS OF WELL CONTROL REPORT

As required by Rule 327.

Report taken by:

1. OGCC Operator Number: 96850

2. Name of Operator: Williams Production RMT Company

3. Address: 1058 County Road 215

City: Parachute State: CO Zip: 81635

4. Contact Name & Phone

Steven Soychak

Ph: 970-285-9377

Fax: 97-285-9573

WELL LOCATION INFORMATION

5. API Number: 05-045-09476-00

6. County: Garfield County

7. Well Name: PA 324-33

8. Well Number: PA 324-33

9. Unit Name (if appl.): NA

10. Unit No: NA

11. QtrQtr: SE SW Sec: 33

Twp: 6S

Rng: 95W

Meridian: 6th PM

12. Footage From Exterior Section Lines: 1272' FSL 1936' FWL

13. Field Name: Parachute

14. Field Number: 67350

CASING INFORMATION

15. Surface Casing Size: 9 5/8" / Weight per Foot: 32.3 Grade: H-40 True Vertical Setting Depth: 1463'

16. Intermed. Casing Size: Prod 4 1/2" / Weight per Foot: 11.6 Grade: N-80 True Vertical Setting Depth: 6745'

KICK INFORMATION

17. True Vertical Depth at Kick: Unknown

18. Formation at Kick: Williams Fork

19. Formation Code: WMFK

20. Shut-in Drill Pipe Pressure (SIDPP): 0

psi.

21. Shut-in Casing Pressure (SICP): 0

psi.

22. Mud Weight at Time of Kick: 13.1 ppg mud and 14.2 ppg cement

ppg.

23. Pit Gain: 0 bbls.

24. Time and Date Shut In: 19:54 hours on 2/21/2004

25. Mud Weight Required to Control Well: 13.1 ppg mud and 14.2 ppg cement

ppg

26. Type of Kick: ☒ Gas ☐ Oil ☐ Water

27. Comments (describe actions to control in detail): Kick occurred sometime after 4 1/2 inch casing was cemented. Rig crews then nipped down BOPs and set casing slips w/40,000 # on slips at 22:00. Well was dead during this operation with fluid level at the surface. Prior to setting the slips, the 2 inch ball valve on the casing head was utilized to drain mud from the BOP Stack. Rig workers then proceeded to rig down the rig. Between 3:00 and 3:30 on 2/22/04, rig workers noticed that gas was flowing from the 2 inch ball valve on the side of the casing head. The driller notified the Drilling Consultant and the Tool Pusher at 3:30. Several attempts were made to close the valve, but the cellar was full of mud and the well was blowing too hard to close the valve.

Also SEE ORDER 1V-274



New Tech Engineering
Operations and Well Control Incident Evaluation
Williams Production RMT Company
March 22, 2004

On March 5th 2004, New Tech Engineering was engaged by legal counsel for Williams Production RMT Company to serve as expert witness. New Tech personnel performed an evaluation of the company drilling operations in the Piceance Basin, and reviewed all events that led up to and included a well control incident that occurred on February 22nd, 2004. A report of this evaluation and a review of the post well control procedures are detailed as follows.

Operational Review

Evaluation of Williams Production RMT Company field drilling operations was performed both in the Denver office and the field office located in Parachute, Colorado. In order to perform this evaluation all drilling procedures, safety programs and company drilling personnel and field supervisors were reviewed for sound judgment and the quality of the drilling personnel's performance. The drilling of the wells in the area has been ongoing for some 20 years. The Williams' field supervisors and wellsite personnel all have a substantial amount of experience in this basin. All supervisory and wellsite personnel involved in the drilling of the PA-324-33 were interviewed and found to have good knowledge of safe drilling practices and professed that they were familiar with the regulatory requirements for the field. Drilling procedures are in place and are routinely carried out in this multi-well drilling program. Surface casing is typically set in this part of the Parachute field from 1300-1500 feet and cemented to surface. The BOP's and choke manifold are nipped up in addition to a rotating head and tested to 3000 psi. The rotating head is specifically mentioned because it facilitates the diversion of any gas cut mud or gas through a gas buster without having to shut the well in with few exceptions. A rotating head would not routinely be nipped up on these types of wells. The additional measure of safety that the rotating head affords and the flexibility to control kicks is proof of the commitment of Williams' personnel to provide the equipment to do the drilling in a safe manner.

Almost all of the wells currently being drilled are directionally drilled from one single wellsite pad. The drilling contractors utilized in this program have safety programs in place and safety directors as a part of their management team. Williams Production has

an onsite safety director with an integrated safety program for all personnel and ongoing education program for all subcontractors as to their safety requirements.

PA-324-33 Drilling Analysis

The actual drilling of the PA-324-33 well was reviewed from many different angles. The well reports were verified with other service company reports. Support personnel were interviewed such as the mud engineer, directional drillers and cementing supervisor. The amount of time spent on circulating, logging and running casing were particularly concentrated on to look for errors in calculations or variance in established procedures. This particular well had an openhole log and a caliper volume for this well was available. That is not the case for all wells in this area. If a caliper is not available, then the closest well with a caliper is referred to in order to determine cement volumes. Once the cement volumes are determined and reviewed by the field supervisor, Halliburton is called and the cement is delivered to location. The cement blend has been a constantly evolving process to improve to good bonds logs on all wells drilled. In this particular well Super CBL and VersaSet were additives used to enhance the quality of the cement and improve over previous wells. However, the cement bonds currently achieved are indeed the target that other operators in the area are wanting to achieve in their wells as witnessed by their correspondence back and forth with Halliburton.

The actual cementing procedure was reviewed and was found to comply with good industry standards. Again all supervisory personnel were independently interviewed for verification of data and procedure. The circulating time, prior to logging, running casing and cementing casing, to be sure that the wellbore was essentially free of gas is a good example of taking the time to be sure instead of abiding by normal operating procedure. The cement mixing and displacement were performed with only one small incident occurring about half way into the cement mixing when the bulk hopper temporarily stopped up and the rate had to be slowed. This is seen by Halliburton's digital job report. (see exhibit 1) . The amount mixed at a weight of 13 ppg. was estimated to be 4 bbls. It is believed that this small amount of light cement did mix with the other cement pumped and had minimal affect in the total hydrostatic head of the cement. Halliburton modeled this event and the entire job on their Opti-Cem program (see exhibit 1). The displacement pressures experienced closely represented what the model predicted. This is strong evidence that the mud column above the cement was maintained throughout. The cement job experienced full returns throughout. This was supported visually by the cement engineer on location making visual checks every 10 minutes or so and the displacement pressure which recorded constantly rising pressures throughout the displacement.

The actual samples of the dry cement blend were checked for the integrity of both Halliburton and a third party lab Cementing Solutions Inc. The Halliburton results are presented as exhibit # 1 and Cementing Solutions, results are presented in exhibit # 2. The quality of the cement and the additives were verified by both parties as being correct as to the additives, the cement types, the pump times, the compressive strengths at different temperatures, the gel strength and the transition from liquid to solid over time. All of these cement properties were found to be of sufficient quality to perform the

function of prevention of gas migration if the barrier had been maintained at the top of the well by closing the Bradenhead valve. Some gas would have migrated into the wellbore, and in fact it is impossible to prevent some gas entry into the well. But with gas entry, additional wellbore pressure is exhibited in the annulus. With a closed system, i.e., the valve is closed on top, this gas entry actually increases the pressures in the annulus. If the barrier is not in place then the well would start flowing slowly out the valve after almost two hours have passed. This is why the rig crew did not see the well flowing while the slips were being set and the rig was being rigged down. Additionally, the static gel strength test shows that after approximately 162 minutes had passed, the gel strength established would have prevented further flow if the annulus had maintained a barrier (see Cement Solutions report). After the plug was bumped and the pressure was bled off, there was a slight flow experienced through the float equipment and the well was just shut in by closing the valve on the cementing head. The flowlines were rigged down and the Halliburton trucks were rigged down and returned to the yard. The rig hands then opened the valve to drain the BOP's of the mud. This is further evidence that there was no lost circulation experienced during the job or there would not have been any mud up in the BOP's. The wellsite supervisor then ordered the slips to be set by picking up the BOP'S and setting the slips into the Bradenhead. The wellsite supervisor visually verified that the slips were set correctly before retiring to get some sleep. This is again additional verification that the well was not flowing at this time because it would have been very evident while trying to set the slips into the bowl. It was confirmed that no direct order was given at this time to verify that the Bradenhead valve was closed. However, no order was given to open the valve.

With an unprotected path to the surface, as transition occurred in the cement, gas began to migrate into the annulus and rise to the surface. Since the valve was not closed, the unabated gas migration was followed by more and more gas until there was enough flow to force out the mud and cement across Upper Mesa Verde intervals which had not set up yet due to the lower wellbore temperatures. The Bradenhead valve pressure rating exceeds the Maximum Anticipated Surface Pressure. The valve had not been a problem in any well drilled by the operator in prior years. The valve is meant to close off the annulus and to be an access point into the surface casing/production casing annulus. Indeed, having a valve in place, allowed an opening for fluid to be pumped up the annulus to kill the well during the kill procedure.

Well Control Evaluation

The actual well control and fire control was done in a professional manner without accident and with a very timely response. Emergency procedures were developed in place and notifications were performed. The area fire departments have worked closely with the Williams personnel and were well prepared for the fire control. The area was quickly contained and no surface pollution occurred. The offset wells are currently being monitored for any sign of gas in the surface casing annulus. An early concern was the possibility of an underground blowout breaching to the surface. A temperature/noise log was run to verify that there was no major underground event going on downhole that required immediate attention. After evaluation of the temperature/noise log by both Baker

and myself, I am convinced that the wellbore is secure. Two bond logs have been run on the well since the well was killed and confirm that the surface casing is isolated. Additional squeezes could be necessary for completion and total isolation between the upper Mesaverde and the primary completion zone, the lower Mesaverde.

Conclusions

A simple conclusion can be drawn in this well control incident. The incident would not have occurred had the Bradenhead valve been closed. All of the cementing and wellbore information point to this as the only possible conclusion. Evaluation of all other system failure possibilities show conclusive evidence that there were no failures in the mud system, or the cement system. Human error caused the event.

Recommendations

In order to address the human error, the company has already put into effect that the Bradenhead valve will have a lock installed when the wellhead is nipped up and the valve will remain locked in the closed position unless an emergency occurs to unlock the valve. Removal of this lock 24 hours after the primary cement job occurs will be permitted to allow monitoring and testing of the annulus. I am convinced that this simple solution would have prevented the well control incident and will eliminate at least this type of error from occurring again.

**Williams Production
Post Job Evaluation and Testing
Well No: 324-33
4½" Longstring
CSI Project No: B00514**

Objective:

The objective of this project is to determine the potential of gas migration on the 4 ½" Long String job for Williams Production. Laboratory tests were conducted as well as computer simulations. The laboratory results are shown in the main body of this report and the results of the simulations are shown in Appendix 1.

Information and material received for review:

The following materials and information was evaluated for this project.

1. 1 Bag Field Blend Cement 4800grams labeled Williams, Lease: PA, Well No: 324-33, Longstring. CSI label applied C919A sample 1 received on 3-8-04.
2. 1 Bag Field Blend Cement 4200 grams labeled Williams, Lease: PA, Well No: 324-33, Longstring. CSI label applied C919A sample 2 received on 3-8-04.
3. 1 Bag Field Blend Cement 4200 grams labeled Williams, Lease: PA, Well No: 324-33, Longstring. CSI label applied C919A sample 3 received on 3-8-04.
4. 12-Sixteen ounce Bottles of Field Water unlabeled. CSI label applied C919B1-12 received on 3-8-04.
5. 3-Sixteen ounce Bottles of Field Mud unlabeled. CSI label applied C919C1-3 received on 3-8-04.
6. 1 8.5lb Bag of Premium Cement. CSI label applied C923A received on 3-12-04.
7. 1 7.5lb Bag of Poz/JB Flyash. CSI label applied C923B received on 3-12-04.
8. 1 jar 109 grams Gel. CSI label applied C923C received on 3-12-04.
9. 1 jars 83 grams CFR-3. CSI label applied C923D received on 3-12-04.
10. 1 jars 61 grams LAP-1. CSI label applied C923E received on 3-12-04.
11. 1 jars 62 grams HR-5. CSI label applied C923F received on 3-12-04.
12. 1 jar 137 grams Super CBL. CSI label applied C923G received on 3-12-04.
13. 1 jars 111 grams VersaSet. CSI label applied C923H received on 3-12-04.

Conclusions and Recommendations:

In order to evaluate the ability of a cement slurry to control gas migration in a well several things must be considered. First the well condition determines how severe the problem will be. The well in question had a minor gas flow potential and requires only minor control of cement slurry properties. Second, the slurry must have good fluid loss control and some gas migration admixture to insure proper transition and set of the

cement in the annulus. The slurry in question had a gas generating material in it and good fluid loss, which are both acceptable methods for controlling gas migration.

If the well in question had been cemented and the casing valve closed then at the worst the gas flow problem would have been only a minor nuisance. The major problem with this well was the open casing valve. This allowed the gas to move through the cement unrestricted, and a channel forms in the cement, thus promoting a very severe gas flow problem.

The cement slurry in question will produce adequate properties to seal gas and provide long term zone isolation at all levels in the wellbore annulus.

Slurry Design:

The base slurry design was as follows:

50:50 Premium SD300: JB Flyash + 2%BWOC Gel + 0.60% BWOC LAP-1 + 0.30% BWOC CFR-3 + 0.30% BWOC VersaSet + 0.20% BWOC Super CBL + 0.20% BWOC HR-5 mixed at 14.2ppg with 5.41 gal/sk Freshwater, 1.23 cuft/sk yield.

Discussion of Results:

On March 8, 2004 CSI received samples of the field blend (CSI log# C-919). Because cement slurries containing Super CBL cannot be batched mixed it is necessary to test all three blends of cement. This included three separate samples of blend used on the job and samples of field water and mud used. In addition to the blend sample of materials isolated additives and cement (pilot materials, CSI log# C-923) were received on March 12, 2004. Isolated additive and cement are used to test the properties of the cement slurry with and without the Super CBL. The generation of the hydrogen gas can create some discrepancies in the tests.

The following tests were conducted:

1. Density
2. Thickening time Tests on each Blend sample
3. Static Gel Strength Tests
4. UCA compressive strength
5. Fluid Loss
6. Gas Reaction Rate

Each of these will be discussed in detail.

1. Density:

Density measurements of the three blend samples were taken using a pressurized mud balance to determine if the blend density matched the design density.

Table 1: Pressurized Balance Density Measurement

<u>Material</u>	<u>Measured Density (ppg)</u>
Sample 1.	14.2 lb/gal
Sample 2	14.2 lb/gal
Sample 3	14.2 lb/gal

2. Thickening Time Test:

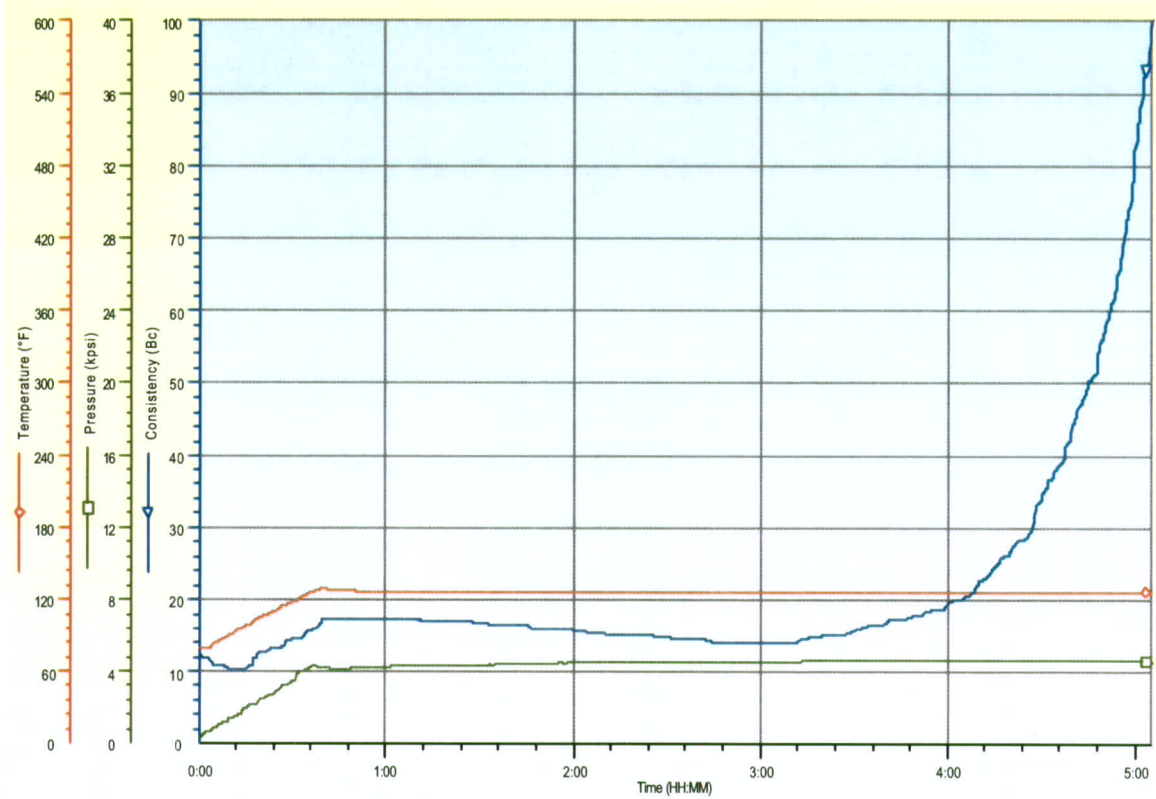
Thickening Time test was run on the three blend samples using Chandler Engineering HPHT consistometers.

Table 2: Thickening Time Test Conditions

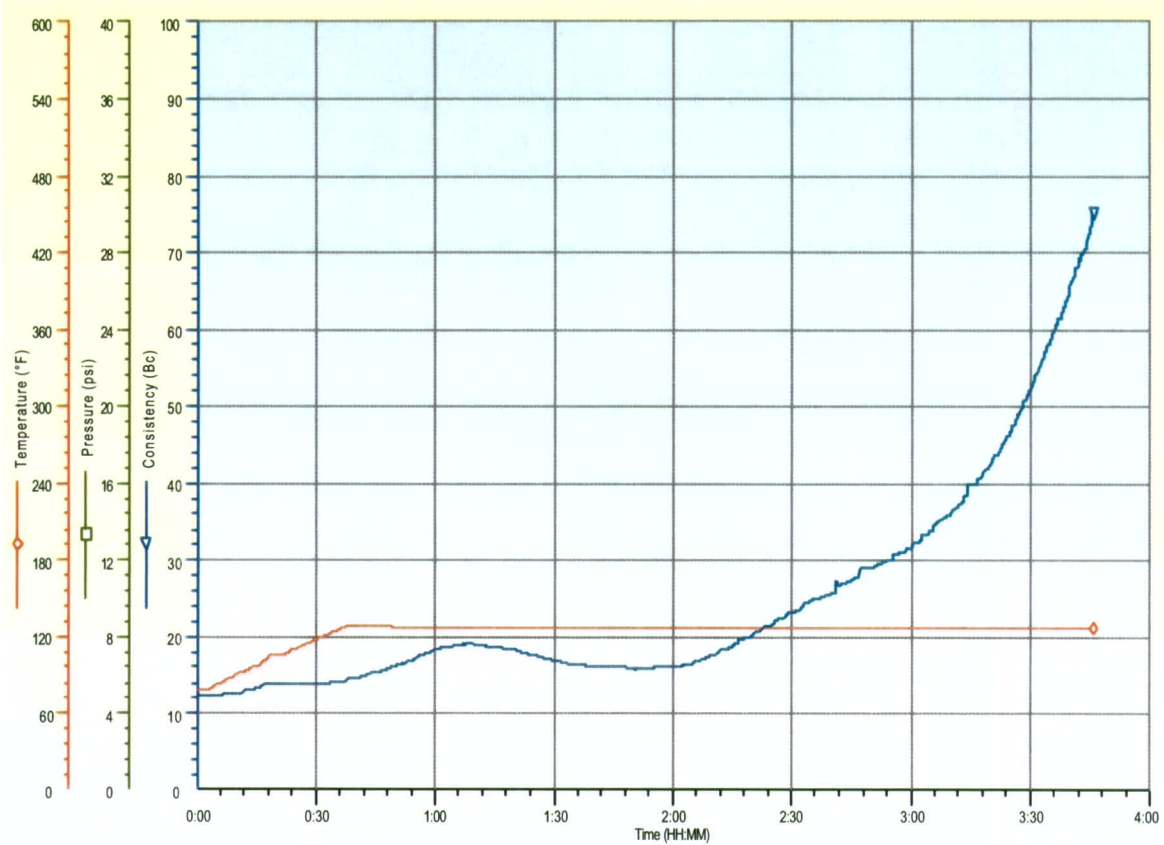
	Time	Pressure	Temperature
<u>Conditions</u>	<u>(Minutes)</u>	<u>(psi)</u>	<u>(°F)</u>
Initial	0	450	80°F
Final	36	4100	126°F

Table 3: Sample 1 Thickening Time Results

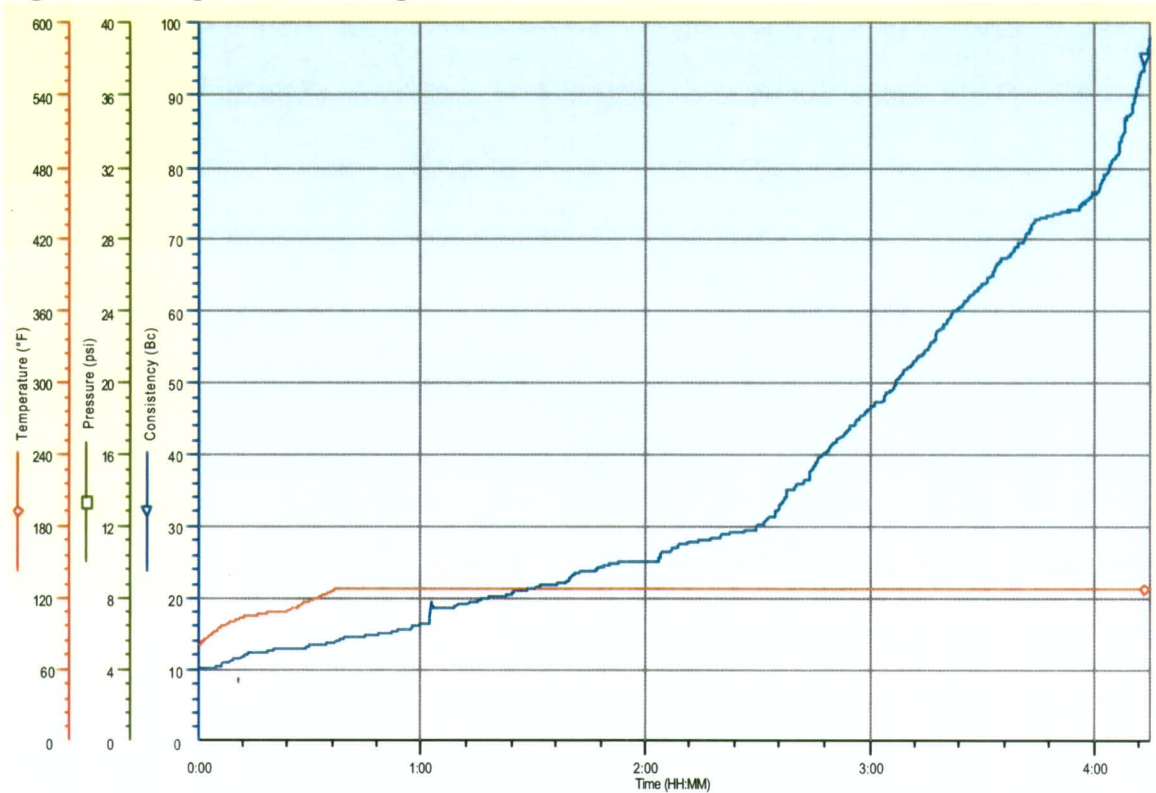
<u>BHCT</u>	<u>Hours: Minutes</u>			
	Point of Departure	30 Bc	70 Bc	100 Bc
126°F	3:15	4:27	4:56	5:05

Figure 1: Sample 1 Thickening Time Chart**Table 4: Sample 2 Thickening Time Results**

BHCT	Hours: Minutes			
	Point of Departure	30 Bc	70 Bc	100 Bc
126°F	2:03	2:52	3:43	3:54

Figure 2: Sample 2 Thickening Time Chart**Table 5: Sample 3 Thickening Time Results**

BHCT	Hours: Minutes			
	Point of Departure	30 Bc	70 Bc	100 Bc
126°F	0:17	2:30	3:42	4:16

Figure 3: Sample 3 Thickening Time Chart**3. Static Gel Strength Test:**

Static gel strength testing was performed on the three blend samples. The test procedures used are as follows. For Samples 1 and 2 the cement slurry was conditioned at 126° F on an atmospheric consistometer and then placed in a cell preheated to 175° F before initiating the Static Gel Strength Test. For Sample 3 the cement slurry was conditioned at 110° F on an atmospheric consistometer and then placed in a cell preheated to 155° F before initiating the Static Gel Strength Test.

Table 6: SGSA results**Sample 1**

Time (hr:min)	Static Gel Strength(lb/100ft ²)
2:12	75
2:30	300
2:42	500
2:48	700
2:55	1200

Sample 2

Time (hr:min)	Static Gel Strength(lb/100ft ²)
3:15	75
3:50	300
5:02	500
5:08	700
5:14	1200

Sample 3

Time (hr:min)	Static Gel Strength(lb/100ft ²)
2:15	75
2:49	300
3:02	500
3:08	700
3:25	1200

4. Ultrasonic Cement Analyzer:

UCA testing was performed on the three blend samples to determine compressive strength. For Samples 1 and 2 the cement slurry was conditioned at 126° F on an atmospheric consistometer and then placed in a cell preheated to 175° F before initiating the Static Gel Strength Test. For Sample 3 the cement slurry was conditioned at 110° F on an atmospheric consistometer and then placed in a cell preheated to 155° F before initiating the Static Gel Strength Test. The results and graphs can be seen below.

Table 7: Sample 1 UCA Results

Material	BHST	Hours: Minutes	Strength (psi)	Test #120-0035
Sample 1.	175°F	5:47	50	See Figure 4
		8:18	500	
		12:00	1345	
		24:00	2028	

Figure 4: Sample 1 UCA Chart

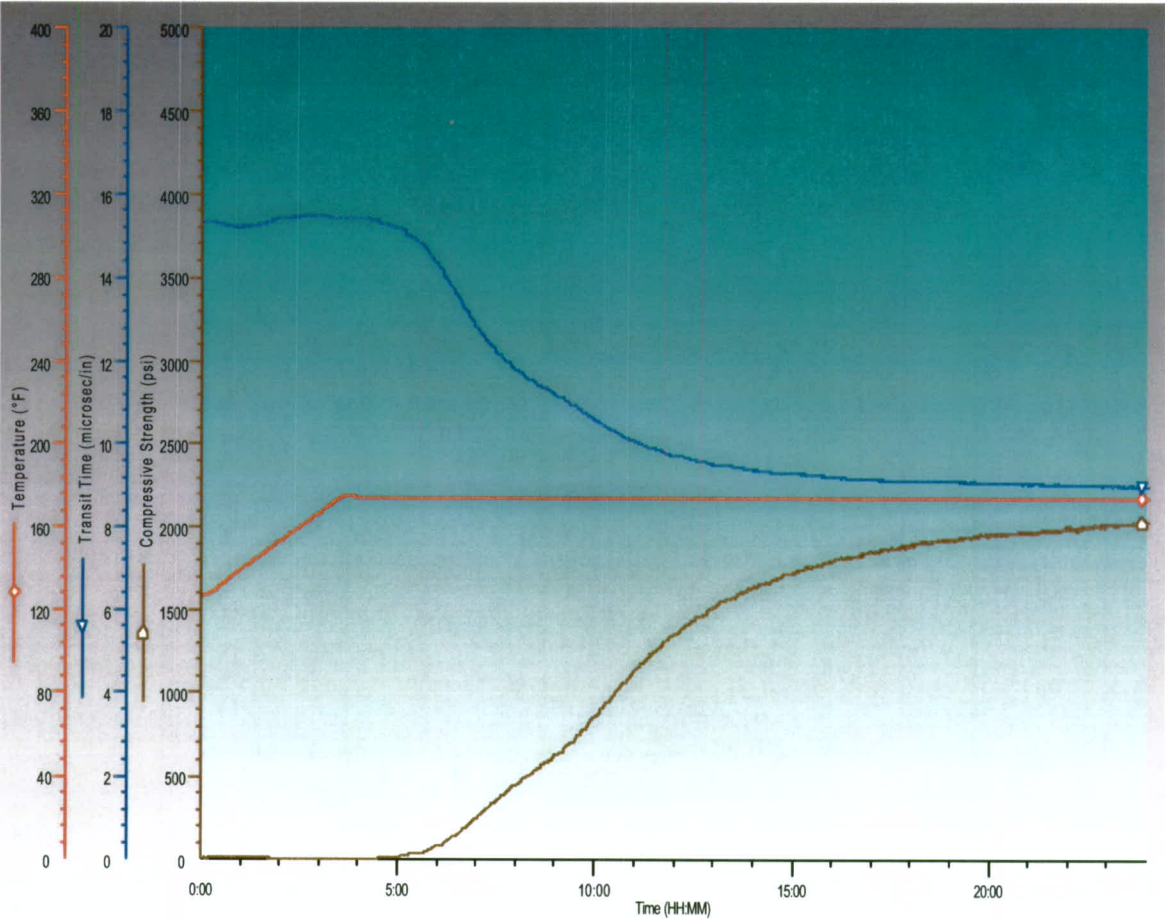
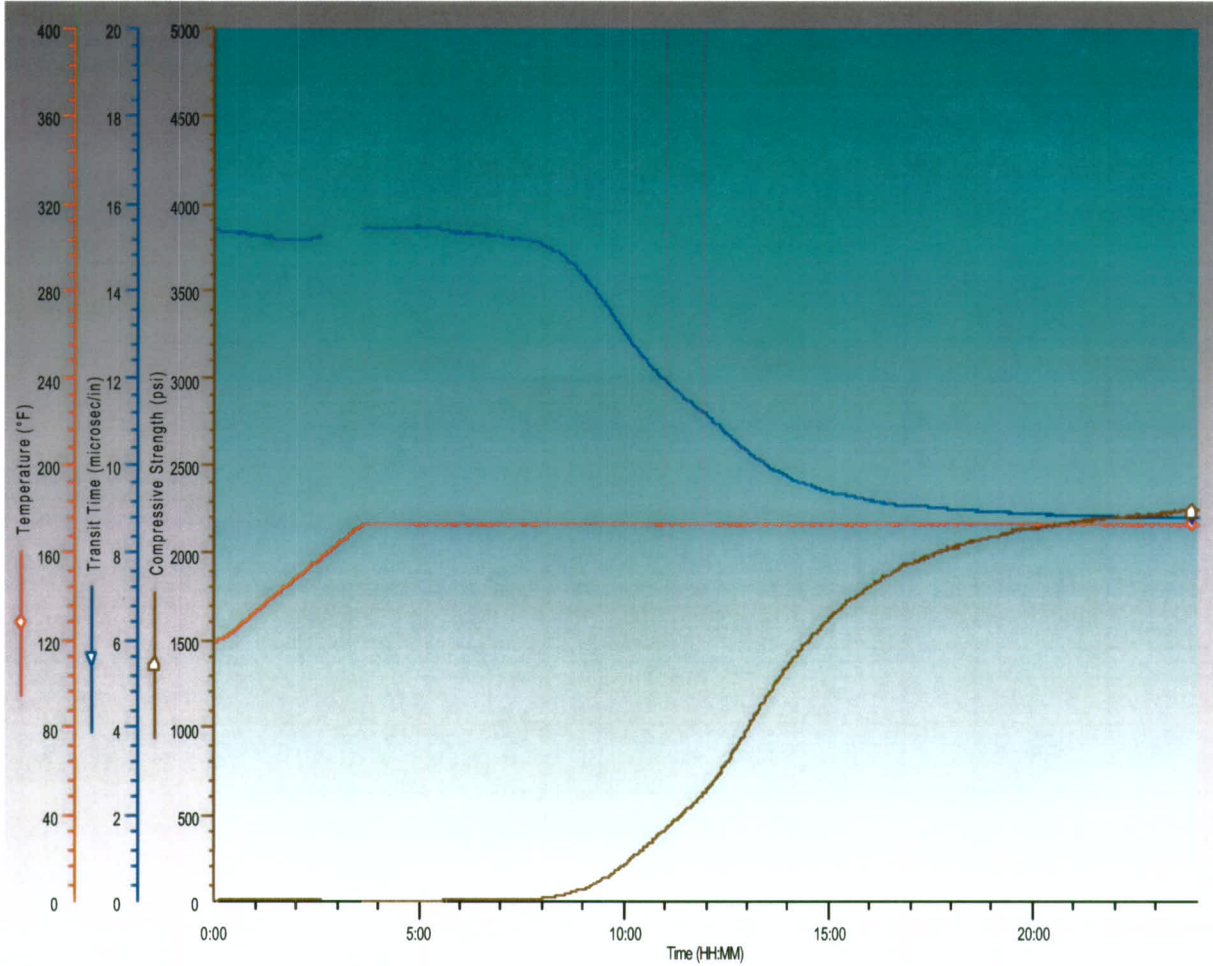
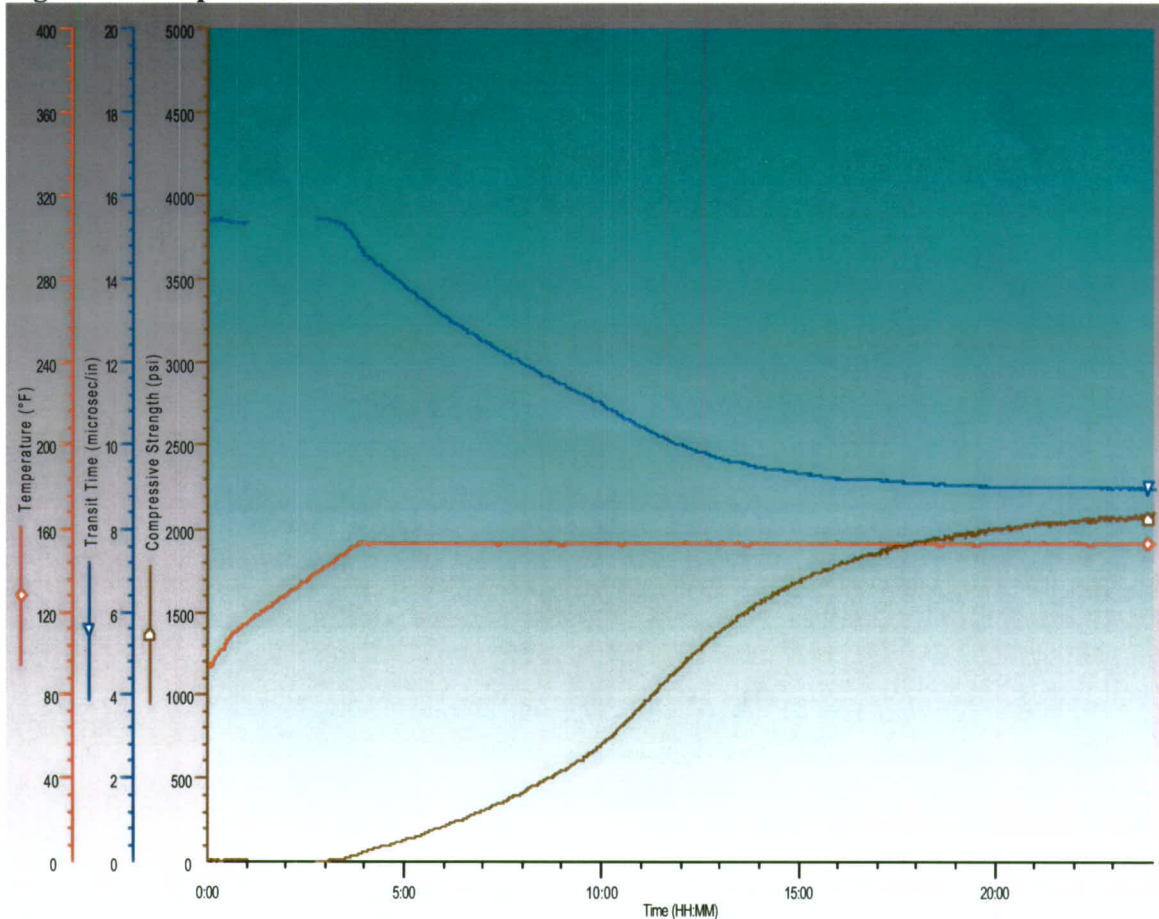


Table 8: Sample 2 UCA Results

Material	BHST	Hours: Minutes	Strength (psi)	Test #119-0036 See Figure 5
Sample 2.	175°F	8:46	50	
		11:26	500	
		12:00	626	
		24:00	2242	

Figure 5: Sample 2 UCA Chart**Table 9: Sample 3 UCA Results**

<u>Material</u>	<u>BHST</u>	<u>Hours: Minutes</u>	<u>Strength (psi)</u>	Test#119-0037 See Figure 6
Sample 3.	155°F	3:57	50	
		8:43	500	
		12:00	1163	
		24:00	2070	

Figure 6: Sample 1 UCA Chart

5. Fluid Loss test.

Fluid Loss tests were conducted on the three blend samples and also using isolated additives. The results are in the table below.

Table 10: Static Fluid Loss Results

<u>Material</u>	<u>Pressure</u>	<u>BHCT</u>	<u>Calculated</u>
Sample 1.	1000 psi	110°F	34 ml
Sample 2	1000 psi	110°F	44 ml
Sample 3	1000 psi	110°F	120 ml
Iso ad's without Super CBL	1000 psi	110°F	602 ml
Iso ad's with Super CBL	1000 psi	110°F	613 ml

7. Gas Reaction Rate and Expansion Test:

Table 11: Visual / Measured Expansion Results

Sample	Measured Expansion (%)	Visual Expansion (%)
1	~	45
2	~	37
3	~	49
Isolated additives	270	~
3	240	~

Note: The table above does not include the 20-minute conditioning time

Graduated Cylinder Expansion Procedure (visual):

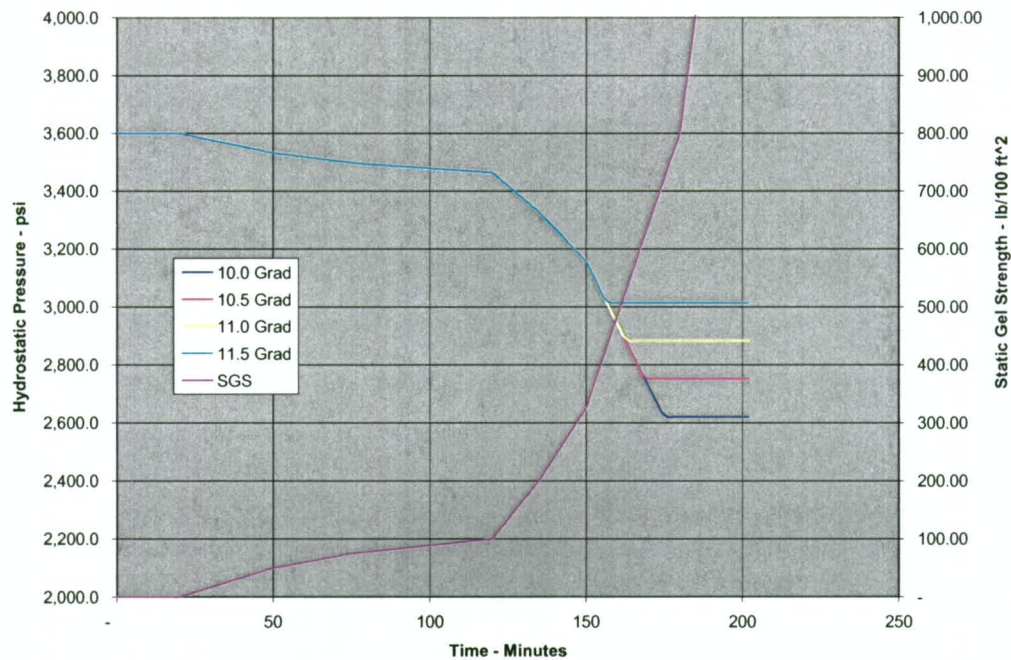
The presence of the additive Super CBL enabled testing of the reaction and expansion rates of each sample. Each slurry was mixed and conditioned in an atmospheric consistometer at 126° F (BHCT) for 20 minutes. 100 mls of each slurry was then poured into separate 250 ml graduated cylinders and placed into a water bath at 175° F (BHST). The slurries were monitored to determine initial reaction and also to determine the slurry/gas expansion volume. The results of the test are listed in the tables below.

Gas Displacement Procedure (measured):

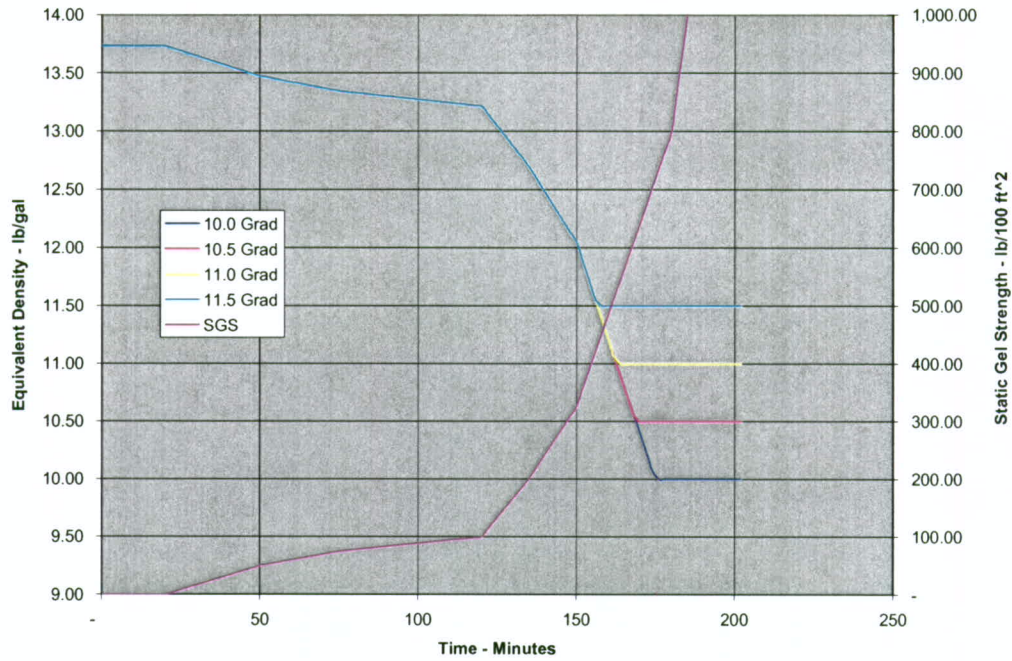
Additional testing using a gas displacement apparatus was performed on the cement slurry using isolated additives with Super CBL. The apparatus enables direct measurements of gas produced by the slurry with a system of Erlenmeyer flasks and hoses. The slurry is placed in a 500mL Erlenmeyer flask which is capped with a rubber stopper containing a rubber hose line. This hose line is attached to a 2000mL Erlenmeyer flask filled with water and capped with a rubber stopper containing an additional drain hose line. As gas is produced in the 500mL flask the water in the 2000mL flask will be displaced. The slurry was mixed and conditioned in an atmospheric consistometer at 126° F (BHCT) for 20 minutes. 350 mL of slurry was then poured into the 500 mL Erlenmeyer flask and placed into a water bath at 175° F (BHST). The amount of displaced water can then be measured as in the table below.

The following chart is the pressure change and equivalent density for the job in question for various gas reservoir pressure along with the static gel strength of the cement. Remember that when the static gel strength gets above 500 lb/100sqft then the gas flow potential is very small. The only case that is even minor is the when the gas pressure is an 11.5 ppg equivalent.

Hydrostatic Pressure vs Time
14.2 lb/gal Non-Foam Cement, Variable Gradient

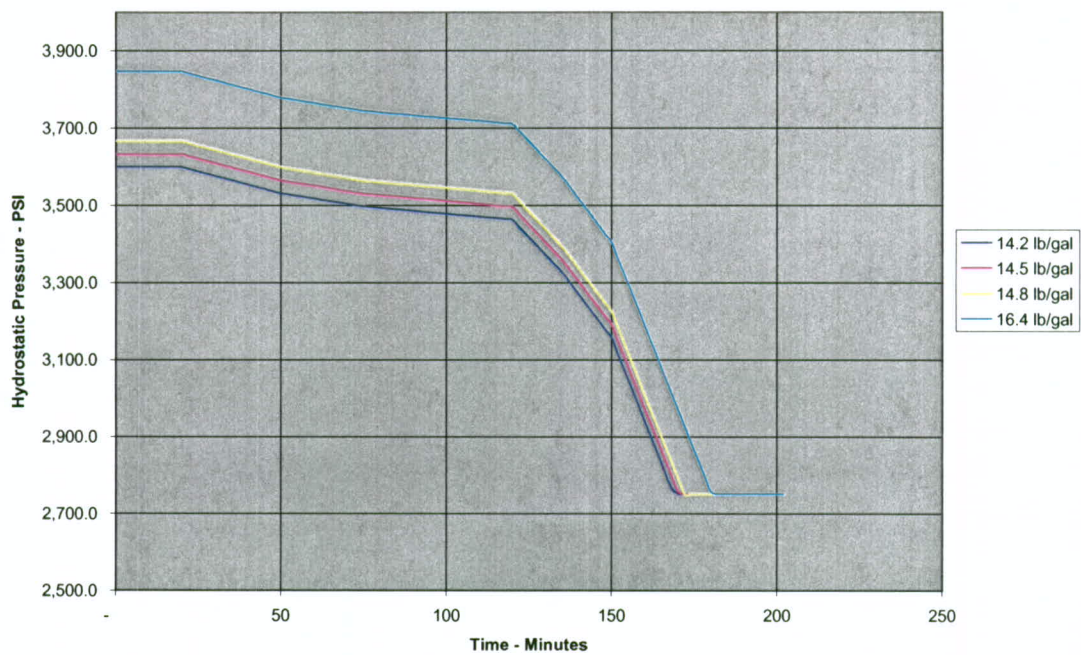


Equivalent Density vs Time
14.2 lb/gal Non-Foam Cement, Variable Gradient

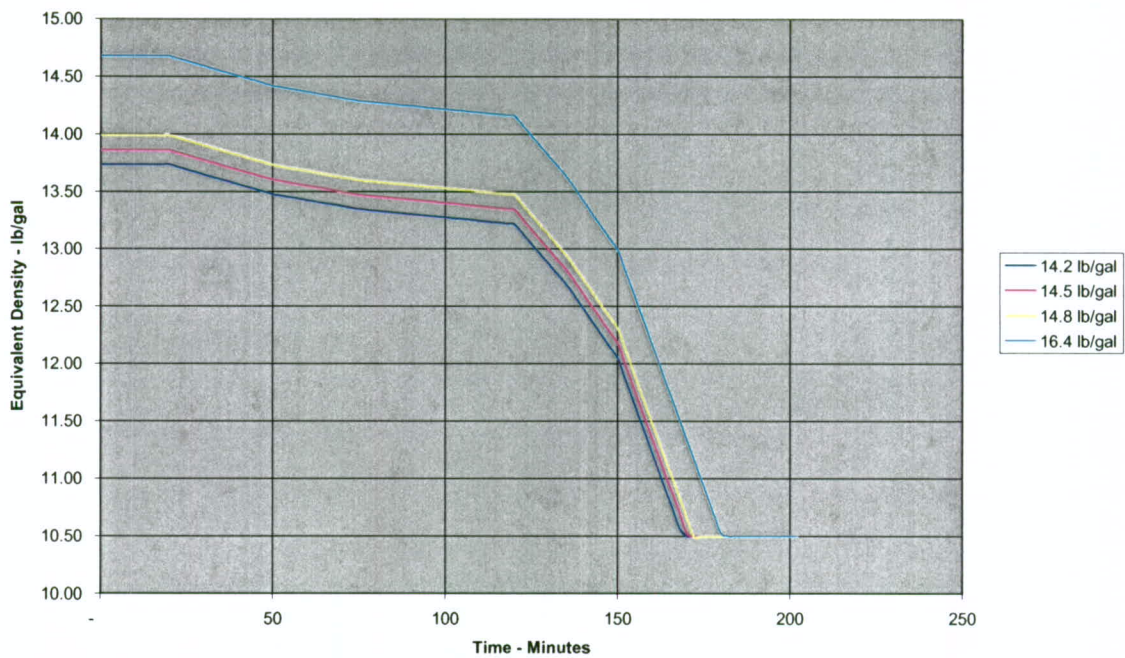


The following chart show the pressure change with time when the cement density is a variable. The gas pressure is constant at 10.5 ppg equivalent while the cement density is varied from 14.2 ppg to 16.4 ppg. Again in all cases the change with density is minimal the overall gas potential is minor.

Hydrostatic Pressure vs Time
Variable Density Non Foam Cement, 10.5 Gradient



Equivalent Density vs Time
Variable Density Non Foam Cement, 10.5 Gradient



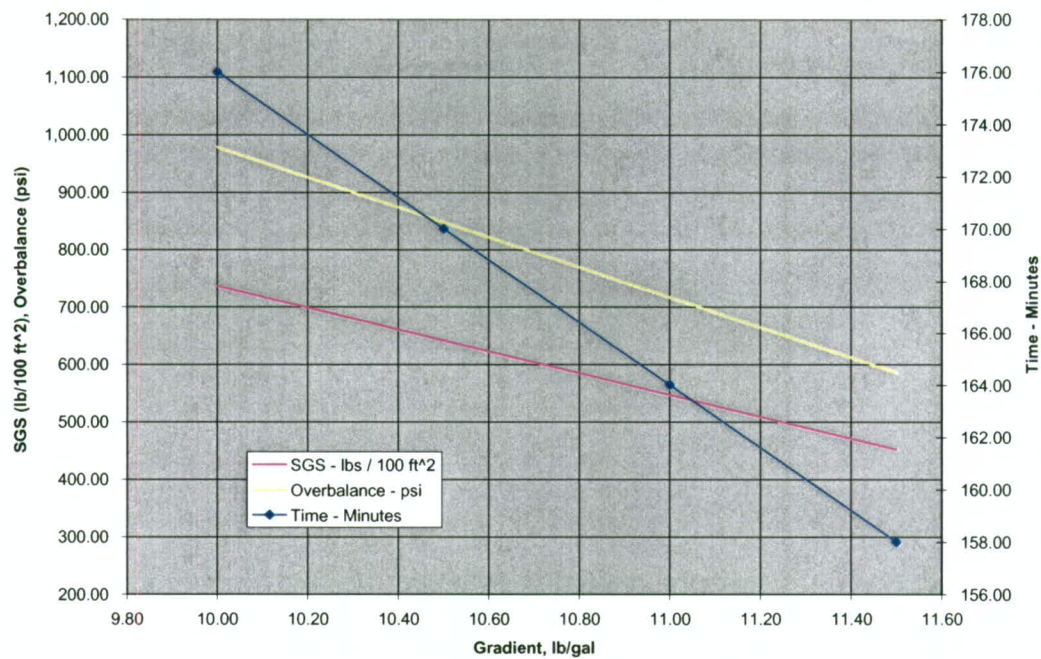
This table show in Table form the critical well parameters from the first graph.

Parameters at Gas Flow Initiation

Foamed
Cmt No
Density 14.2
Gradient Variable

Gradient	Time	SGS	At Flow Start Overbalance Pressure	GFP	Set Perm
10.00	176.00	736.67	978.78	Minor	2
10.50	170.00	641.67	847.78	Minor	3
11.00	164.00	546.67	716.78	Minor	3
11.50	158.00	451.67	585.78	Minor	4

Parameters at Flow Initiation vs Gradient
14.2 lb/gal Non-Foam Cement, Variable Gradient

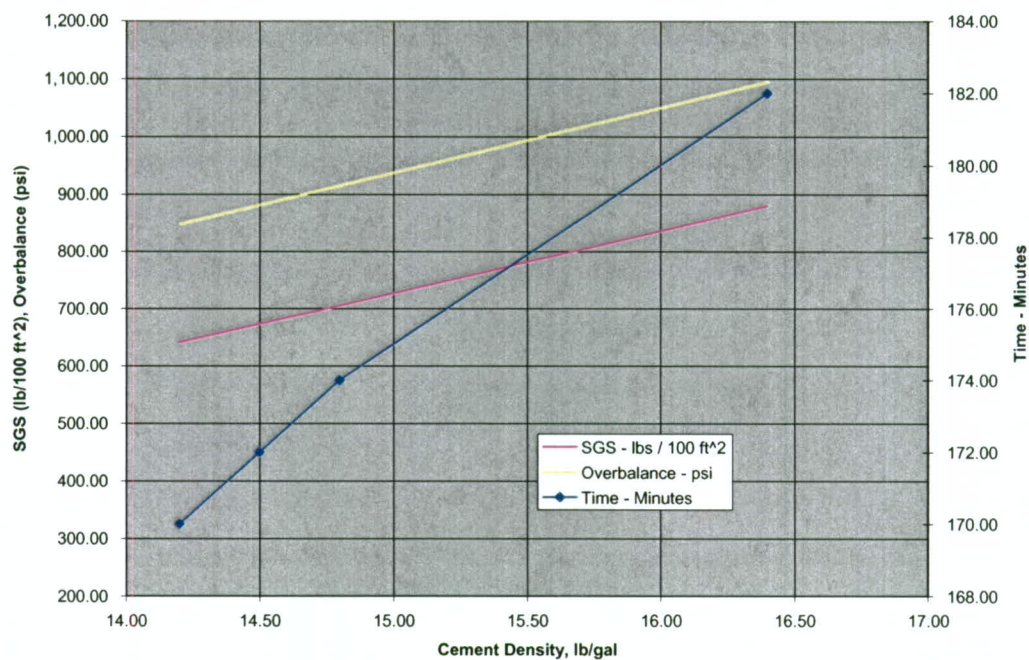


Parameters at Gas Flow Initiation

Foamed
Cmt No
Density Variable
Gradient 10.5

Density	Time	SGS	At Flow Start Overbalance Pressure	GFP	Set Perm
14.20	170.00	641.67	847.78	Minor	3
14.50	172.00	673.33	881.50	Minor	3
14.80	174.00	705.00	915.21	Minor	3
16.40	182.00	880.00	1,095.02	Minor	2

Parameters at Flow Initiation vs Density
Vbl Density Non-Foam Cement, 10.5 Gradient



HALLIBURTON

CEMENTING SERVICE AND SALES

S.O.# 2882096



COMPANY WILLIAMS PRODUCTION				FACILITY GRAND JUNCTION, CO		AFE/WORK ORDER N/A		DATE 2/20/04		
CONTRACTOR CYCLONE #16				TOWN AND ZIP CODE PARACHUTE 81635		LEGAL DESCRIPTION SEC 33, T 6 S, R 95 W				
LEASE PA				WELL # 324-33		COUNTY GARFIELD		MILEAGE-RT 60		
DIRECTIONS I-70 EAST TO PARACHUTE EXIT TL GO 0.2 MILES TR ON EAST FRONTAGE RD AND GO 2.4 MILES TL GO 0.1 MILES TR GO 0.2 MILES TO "Y" STAY RIGHT 0.3 MILES TO LOC										
Pumping Services	() Surface		() Intermediate		(XXX) Longstring		() Plug back		() Liner	
	() Squeeze		() Acid		() PTA		() Other		() Conductor	
	Casing Size/Weight	Thread	Tbng/DP Size	Thread	Plug. Cont.	Swage	Top Plug	Bottom Plug	% Excess	
	4 1/2"	11.60#			YES	YES	100003140			
	Number and Type Units 1 RCM AND BULK EQP.						BHST	BHCT	Hole Size	
	Remarks AUG 15 2003, 47%						Depth-TMD 6833	Depth-TVD	Mud Weight/Type 13.0#	
Tail	# of Sacks	Type		Additives						
	1360	G 50/50 POZ		2% Gel, 0.6% Lap-1, 0.3% CFR-3, 0.2% HR-5, 0.3% Versaset, 0.2% Super CBL						
	Weight PPG	Yield Ft3/Sk	Water Gal/Sk							
	14.20	1.23	5.40							
	# of Sacks	Type		Additives						
	Weight PPG	Yield Ft3/Sk	Water Gal/Sk							
	# of Sacks	Type		Additives						
	Weight PPG	Yield Ft3/Sk	Water Gal/Sk							
Spacer or Flush	Quantity	Type		Additives						
Spacer or Flush	Quantity	Type		Additives						
Other	Quantity	Type		Additives						
Remarks/HSE	START JOB/ TEST LINES TO 5000 PSI, 10 BBL WATER SPACER, 298BBLs CEMENT, SHUT DOWN DROP PLUG, WASH LINES, START DISPLACEMENT TOTAL 105.1, SLOW RATE 80 BBLs TO 10 BPM, SLOW RATE AT 95 BBLs TO 2 BPM, BUMP PLUG @ 1974 PSI, GO 1000 PSI OVER, END JOB. \$ 35,330.20									
Sales Items	HOOK UP WATER "T" ON RIG TANK AND LAY TWO SUCTION HOSES TO PUMP TRUCK. LAY THIRD SUCTION HOSE TO WATER TRANSPORT. WASH PUMPS & LINES THOROUGHLY. DISPLACE ON BOOST USING THE 6X5 TO BOOST OUT OF DISPLACEMENT TANKS TO HT-400 PUMPS. DISPLACE FIRST 80 BBL @ 14 BPM, SLOW RATE TO 10 BPM FOR NEXT 20 BARRELS, THEN SLOW RATE TO 4 BPM TO LAND PLUG. DO NOT USE TRANSPORT WATER UNTIL PUMPING DISPLACEMENT. PULL WATER FROM BOTH THE RIG TANK AND TRANSPORT AT THE SAME TIME. THIS WILL ALLOW YOU TO PICK UP WATER FAST ENOUGH TO COMPETION F.E.									
CUSTOMER REP / PHONE # KENNY BASCOM 970-250-1958				Satellite Phone			Time of Call 2/24/04 13:56			
KENNY BASCOM 250-1958 DAVID CHEATHEAM 216-0240							Time Ready 2/21/04 W/C			
Operator or Driver Called							Time			

KB # ZOH

JOB SUMMARY

TICKET DATE

2/21/04

NWA / COUNTRY
ROCKY MOUNTAIN

BDA / STATE
COLORADO

COUNTY
GARFIELD

H.E.S. EMPLOYEE NAME
JON TROUT

PSL DEPARTMENT
CEMENTING SERVICES

COMPANY:
WILLIAMS PRODUCTION

CUSTOMER REP / PHONE
KENNY BASCOM 250-1958

WELL TYPE	02 GAS
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API/UWI #
N/A

DEPARTMENT
ZONAL ISOLATION 10003

SAP BOMB NUMBER
7523

Description	4 1/2" LONG STRING
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Well No.
324-33

SEC 33, T 6 S, R 95 W

Form. Name _____ Type: _____
 Form. Thickness _____ From _____ To _____
 Packer Type _____ Set At _____
 Bottom Hole Temp. _____ Pressure _____
 Retainer Depth _____ Total Depth 6830

Tools and Accessories

Well Data

Materials

Hours On Location

Operating Hours

Description of Job

Date	Hours
2/21/04	1.00
Total	1.00

SEE JOB LOG

Ordered: N/A		Hydraulic Horsepower Available: N/A	Used: N/A
Treating: N/A		Average Rates in BPM Displacing: N/A	Overall: N/A
Feet: 35		Cement Left in Pipe	Reason: CUSTOMER REQUEST

Cement Data							
Stage	Sacks	Cement	Bulk/Sks	Additives	W/Rq.	Yield	Lbs/Gal
	1360	G 50/50 POZ		2% Gel, 0.6% Lap-1, 0.3% CFR-3, 0.2% HR-5, 0.3% Versaset, 0.2% Super CBL	5.40	1.23	14.2

Summary

Circulating Breakdown	Displacement Maximum	Total Preflush BBL:	10	Type:	WATER
Lost Returns: NO	Lost Returns: NO	Load & Bkdn Gal - BBI	BBL	Pad: Bbl -Gal	105.1
Cmt Rtrn#Bbl	Actual TOC	Excess /ReturnGal BBI	114	Calc. TOC:	105.1
Average	Frac. Gradier	Cement Slurry:	298	Disp: Bbl	BBL
Shut In: Instant	5 Min. 15 Min.	Cement Mix H20:	175	BBLs	
		Total H2O Volume	290	BBLs	

Frac Ring #1		Frac Ring # 2		Frac Ring # 3		Frac Ring # 4	
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THE INFORMATION STATED HEREIN IS CORRECT
CUSTOMER REPRESENTATIVE 

SIGNATURE



JOB LOG

TICKET DATE
2/21/2004

COUNTY
GARFIELD

PSL DEPARTMENT
CEMENTING SERVICES

CUSTOMER REP / PHONE
KENNY BASCOM 250-1958

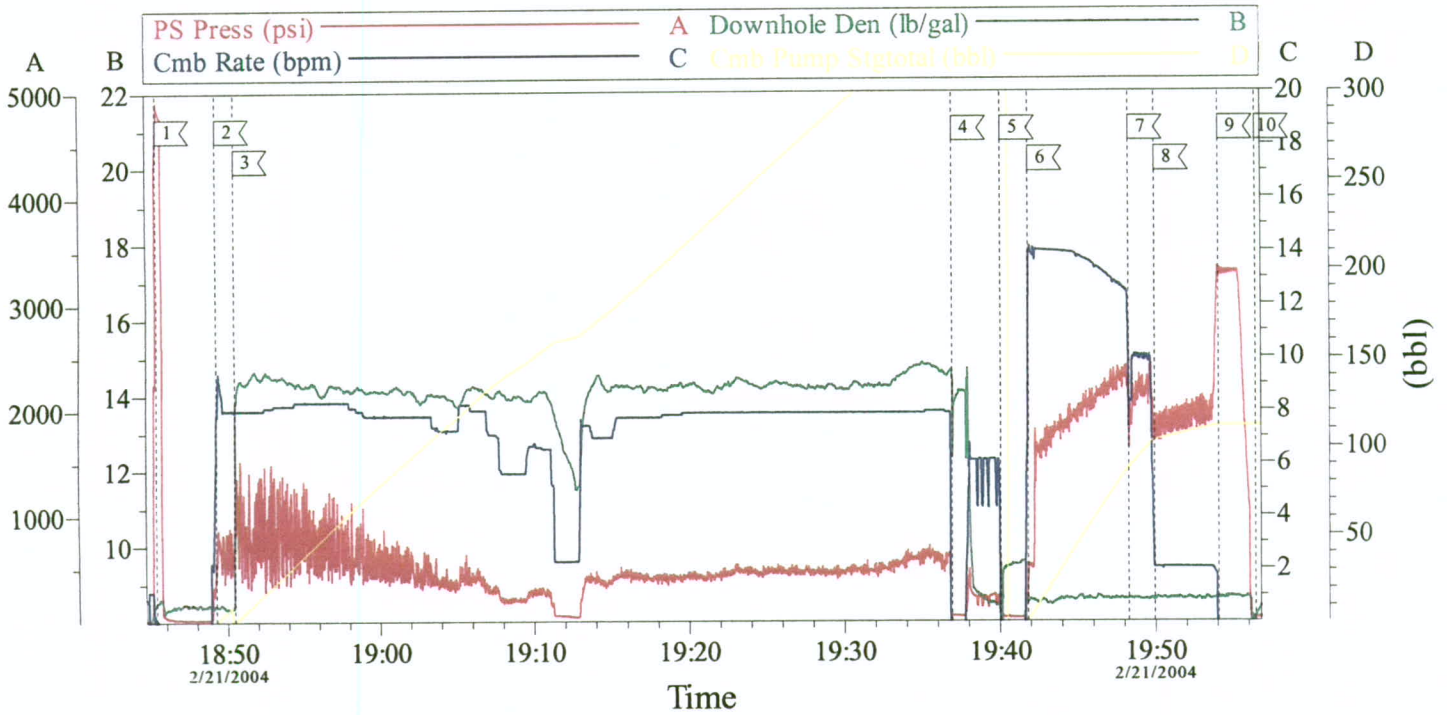
API/UWI #
N/A

Description	4 1/2" LONG STRING
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SEC 33, T 6 S, R 95 W

[illegible]

4 1/2 LONG STRING



Event Log

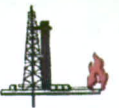
1 START JOB/ TEST LINES	18:45:21	2 H2O SPACER	18:49:17	3 START CEMENT	18:50:29
4 SHUT DOWN, WASH LINES	19:36:54	5 DROP PLUG	19:40:02	6 START DISPLACEMENT	19:41:48
7 SLOW RATE	19:48:17	8 SLOW RATE	19:49:57	9 BUMP PLUG	19:54:04
10 END JOB	19:56:25				

CUSTOMER: WILLIAMS
CEMENTER: JON TROUT
CO. MAN: KENNY BASCOM

JOB DATE: 2-21-04
ADC yes/no: YES
LEASE: PA

TICKET #: 2882096
REAL TIME yes/no: YES
WELL #: 324-33

HALLIBURTON
CemWin v1.3.0
21-Feb-04 20:24



CEMENTING SERVICE AND SALES

S.O.# 2935995

COMPANY WILLIAMS PRODUCTION		FACILITY GRAND JUNCTION, CO		AFE/WORK ORDER N/A	DATE 2/22/04
CONTRACTOR CYCLONE #16		TOWN AND ZIP CODE PARACHUTE 81635		LEGAL DESCRIPTION SEC 33, T 6 S, R 95 W	
LEASE PA		WELL # 324-33	COUNTY GARFIELD	MILEAGE-RT 60	

DIRECTIONS
I-70 EAST TO PARACHUTE EXIT TL GO 0.2 MILES TR ON EAST FRONTAGE RD AND GO 2.4 MILES TL GO 0.1 MILES TR GO 0.2 MILES TO "Y" STAY RIGHT 0.3 MILES TO LOC

Pumping Services	<input type="checkbox"/> Surface		<input type="checkbox"/> Intermediate		<input type="checkbox"/> Longstring		<input type="checkbox"/> Plug back		<input type="checkbox"/> Liner	
	<input type="checkbox"/> Squeeze		<input type="checkbox"/> Acid		<input type="checkbox"/> PTA		<input checked="" type="checkbox"/> Well Control		<input type="checkbox"/> Conductor	
	Casing Size/Weight	Thread	Tbng/DP Size	Thread	Plug. Cont.	Swage	Top Plug	Bottom Plug	% Excess	
	4 1/2"	11.60#				YES				
	Number and Type Units 1 RCM AND BULK EQP.						BHST	BHCT	Hole Size	
	Remarks AUG 15 2003, 47%						Depth-TMD 6833	Depth-TVD	Mud Weight/Type 13.0#	

Lead	# of Sacks	Type		Additives
	600	PREMIUM G		NEAT
	Weight PPG 15.80	Yield Ft3/Sk 1.15	Water Gal/Sk 5.00	
TAIL	# of Sacks	Type		Additives
	200	PREMIUM G		2#/SK CAL-SEAL
	Weight PPG 15.80	Yield Ft3/Sk 1.17	Water Gal/Sk 5.07	
	# of Sacks	Type		Additives
	Weight PPG	Yield Ft3/Sk	Water Gal/Sk	
	# of Sacks	Type		Additives
	Weight PPG	Yield Ft3/Sk	Water Gal/Sk	
Spacer or Flush	Quantity	Type		Additives
	Quantity	Type		
Other	Quantity	Type		Additives
	Quantity	Type		

Remarks/HSE	
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Sales Items	
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Remarks	COMPETION F.E.
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CUSTOMER REP / PHONE # KENNY BASCOM 970-250-1958		Satellite Phone	Time of Call 2/24/04 13:58
Call Taken By DAVID CHEATHEAM 216-0240		Time Ready 2/22/04 ASAP	
Operator or Driver Called		Time	

KB # ZOH

HALLIBURTON

JOB SUMMARY

SALES ORDER NUMBER 2935995	TICKET DATE 2/22/04
BDA / STATE COLORADO	COUNTY GARFIELD
PSL DEPARTMENT CEMENTING SERVICES	
CUSTOMER REP / PHONE KENNY BASCOM	
API/UWI # N/A	
SAP BOMB NUMBER 7544	Description MISCELLANEOUS PUMP

REGION NORTH AMERICA	NWA / COUNTRY ROCKY MOUNTAIN
EMPLOYEE # 204910	H.E.S. EMPLOYEE NAME JON TROUT
LOCATION GRAND JUNCTION, CO	COMPANY WILLIAMS PRODUCTION
TICKET AMOUNT	WELL TYPE 02 GAS
WELL LOCATION PARACHUTE 81635	DEPARTMENT ZONAL ISOLATION 10003
LEASE NAME PA	SEC / TWP / RNG SEC 33, T 6 S, R 95 W

H.E.S. EMP NAME / EMP # / (EXPOSURE HOURS)	HRS	H.E.S. EMP NAME / EMP # / (EXPOSURE HOURS)	HRS	H.E.S. EMP NAME / EMP # / (EXPOSURE HOURS)	HRS
Jon Trout 204910	11.0	Derich Simmons 295282	11.0	Brandon Reeves 287883	
Zane Cox 104369	11.0	Lex Cook 122074	11.0	LARRY KENT	
Trino Garcia 104643	11.0	WAYNE MARCOTT			
Carl Rademacher 245462	11.0	Wayne Henry 284279			
H.E.S. UNIT #S / (R / T MILES)	R / T MILES	H.E.S. UNIT #S / (R / T MILES)	R / T MILES	H.E.S. UNIT #S / (R / T MILES)	R / T MILES
10547377	60	10378016	60		
10026606	10567589	10286386	60		
10026550	10025034	1056422 BP			
10026530	10025041	10026594	10297346		

Form. Name _____ Type: _____
 Form. Thickness _____ From _____ To _____
 Packer Type _____ Set At _____
 Bottom Hole Temp. _____ Pressure _____
 Retainer Depth _____ Total Depth **3500**

Tools and Accessories

Type and Size	Qty	Make
Float Collar 4 1/2"		HES
Float Shoe 4 1/2"		HES
Centralizers 4 1/2"		HES
Top Plug 4 1/2"		HES
Limit Clamp 4 1/2"		HES
DV Tool 4 1/2"		HES
Insert Float 4 1/2"		HES
Guide Shoe 4 1/2"		HES
Weld-A		HES

Materials

Mud Type	WBM	Density	Lb/Gal
Disp. Fluid	H2O	Density	8.33
Prop. Type	Size	Lb	
Prop. Type	Size	Lb	
Acid Type	Gal.	%	
Acid Type	Gal.	%	
Surfactant	Gal.	In	
NE Agent	Gal.	In	
Fluid Loss	Gal/Lb	In	
Gelling Agent	Gal/Lb	In	
Fric. Red.	Gal/Lb	In	
Breaker	Gal/Lb	In	
Blocking Agent	Gal/Lb		
Perfpac Balls	Qty.		
Other			
Other			
Other			
Other			

Date	Called Out	On Location	Job Started	Job Completed
	2/22/04	2/22/04	2/22/04	2/22/04
Time	0900	1300	2030	2304

Well Data

	New/Used	Weight	Size	Grade	From	To	Max. Allow
Casing	NEW	11.60#	4 1/2"	N80	0	6,820	4,000
Liner							
Liner							
Tubing							
Drill Pipe							
Open Hole					6820	6,833	Shots/Ft
Perforations					3500	3,501	4
Perforations							
DV Tool							

Hours On Location

Date	Hours
2/22/04	11.00
Total	11.00

Operating Hours

Date	Hours
2/22/04	1.00
Total	1.00

Description of Job

SEE JOB LOG

Ordered: N/A	Available: N/A	Used: N/A
Treating: N/A	Average Rates in BPM	Overall: N/A
	Displacing: N/A	
Feet: none	Cement Left in Pipe	
	Reason: CUSTOMER REQUEST	

Cement Data

Stage	Sacks	Cement	Bulk/Sks	Additives	W/Rq.	Yield	Lbs/Gal
LEAD	600	Premium "G"	BULK	NEAT	5.00	1.15	15.8
TAIL	200	Premium "G"	BULK	2 LB/SK CAL-SEAL	5.07	1.17	15.8

Summary

Circulating	Displacement	Total Preflush BBL:	25	Type:	WATER
Breakdown	Maximum	Load & Bkdn Gal - BBI		Pad:Bbl -Gal	
Lost Returns: NO	Lost Returns: NO	Excess /ReturnGal BBI		Calc.Disp.	46.6
Cmt Rtn#Bbl: none	Actual TOC	Calc. TOC:		Actual Disp.	47.5
Average	Frac. Gradier	Cement Slurry:	165	Disp:Bbl	BBL
Shut In: Instant	5 Min.	Cement Mix H2O:	96	BBLs	
		Total H2O Volume	167	BBLs	
Frac Ring #1	Frac Ring #2	Frac Ring #3	Frac Ring #4		

THE INFORMATION STATED HEREIN IS CORRECT
 CUSTOMER REPRESENTATIVE



SIGNATURE



JOB LOG

TICKET DATE
2/22/2004

COUNTY
GARFIELD

PSL DEPARTMENT
CEMENTING SERVICES

CUSTOMER REP / PHONE
KENNY BASCOM

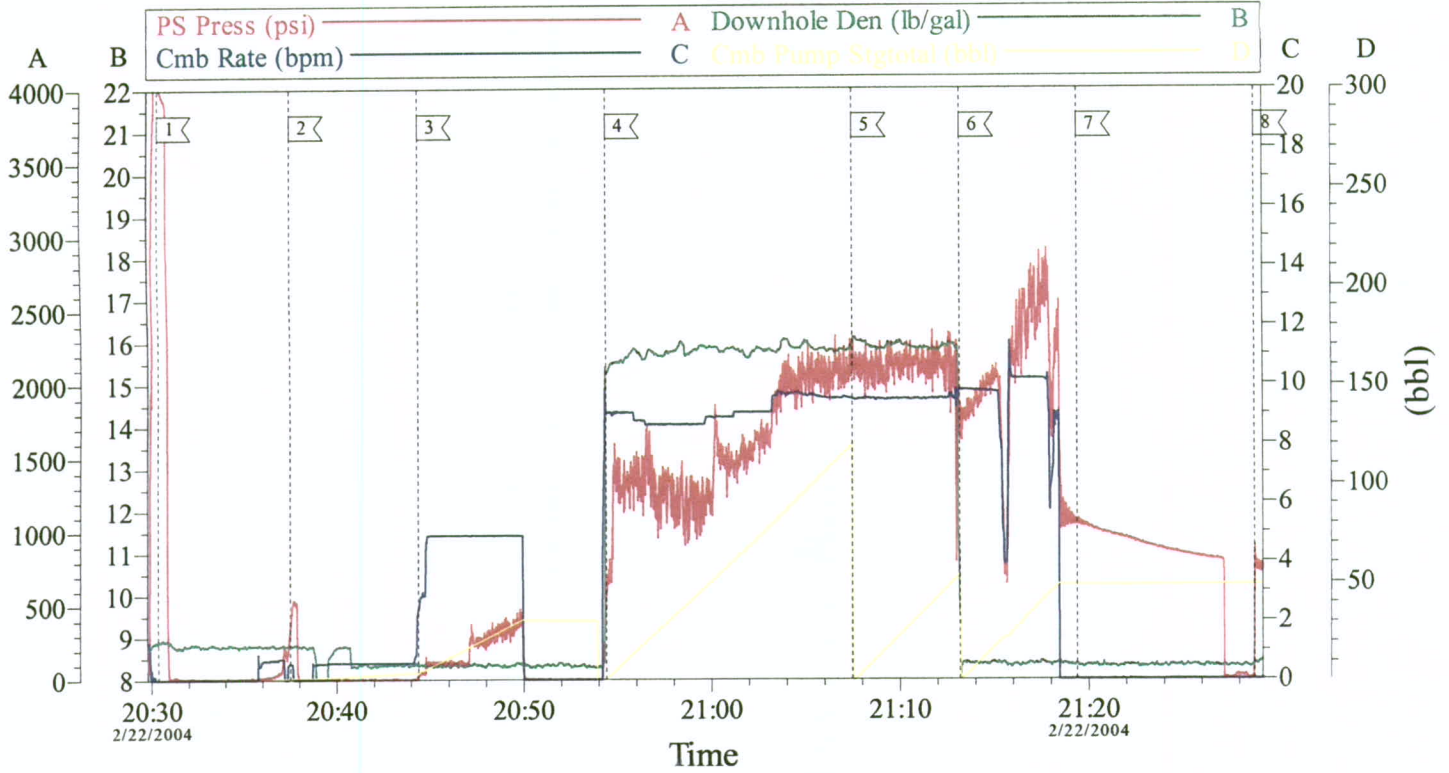
API/UWI #
N/A

Description	MISCELLANEOUS PUMP
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SEC / TWP / RNG
SEC 33, T 6 S, R 95 W

[illegible]

MISCELLANEOUS PUMP/ CHART # 1



Event Log

1 START JOB/ TEST LINES	20:30:23	2 PRESSURE UP CASING	20:37:31	3 INJECTION TEST	20:44:24
4 START LEAD CEMENT	20:54:25	5 START TAIL CEMENT	21:07:29	6 START DISPLACEMENT	21:13:11
7 SHUT DOWN	21:19:23	8 SHUTN IN WELL	21:28:48		

CUSTOMER: WILLIAMS
CEMENTER: JERED BRADY
CO. MAN: KENNY BASCOM

JOB DATE: 2-22-04
ADC yes/no: YES
LEASE: PA

TICKET #: 2935995
REAL TIME yes/no: YES
WELL #: 324-33

HALLIBURTON
CemWin v1.3.0
22-Feb-04 23:08

JOB SUMMARY

2882096

2/21/04

NWA / COUNTRY
ROCKY MOUNTAIN

BDA / STATE
COLORADO

COUNTY
GARFIELD

H.E.S. EMPLOYEE NAME
JON TROUT

PSL DEPARTMENT CEMENTING SERVICES

COMPANY:
WILLIAMS PRODUCTION

CUSTOMER REP / PHONE
KENNY BASCOM 250-1958

WELL TYPE
02 GAS

API/UWI #
N/A

DEPARTMENT
ZONAL ISOLATION 10003

SAP BOMB NUMBER
7523

Description	4 1/2" LONG STRING
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LEASE NAME
PA

Well No.
324-33

SEC / TWP / RNG
SEC 33, T 6 S, R 95 W

Form. Name	Type:	
Form. Thickness	From	To
Packer Type	Set At	
Bottom Hole Temp.	Pressure	
Retainer Depth	Total Depth	6830

Tools and Accessories			
Type and Size		Qty	Make
Float Collar	4 1/2"		HES
Float Shoe	4 1/2"		HES
Centralizers	4 1/2"		HES
Top Plug	4 1/2"	1	HES
Limit Clamp	4 1/2"		HES
DV Tool	4 1/2"		HES
Insert Float	4 1/2"		HES
Guide Shoe	4 1/2"		HES
Weld-A			HES

Materials				
Mud Type	WBM	Density	13	Lb/Gal
Disp. Fluid	H2O	Density	8.33	Lb/Gal
Prop. Type	Size		Lb	
Prop. Type	Size		Lb	
Acid Type	Gal.		%	
Acid Type	Gal.		%	
Surfactant	Gal.		In	
NE Agent	Gal.		In	
Fluid Loss	Gal/Lb		In	
Gelling Agent	Gal/Lb		In	
Fric. Red.	Gal/Lb		In	
Breaker	Gal/Lb		In	
Blocking Agent		Gal/Lb		
Perfpac Balls		Qty.		
Other				
Other				
Other				
Other				
Other				

		Hydraulic Horsepower			
Ordered:	N/A	Available:	N/A	Used:	N/A
		Average Rates in BPM			
Treating:	N/A	Displacing:	N/A	Overall:	N/A
		Cement Left in Pipe			
Feet:	35	Reason:	CUSTOMER REQUEST		

Summary									
Circulating	Displacement	Total Preflush BBL:	10	Type:	WATER				
Breakdown	Maximum	Load & Bkdn Gal - BBI		Pad:Bbl -Gal					
Lost Returns: NO	Max Returns: NO	Excess /ReturnGal BBI	BBL	Calc. Disp.	105.1				
Cmt Rtrn#Bbl	Actual TOC	Calc. TOC:	114	Actual Disp.	105.1				
Average	Frac. Gradier	Cement Slurry:	298	Disp:Bbl	BBL				
Shut In: Instant	5 Min.	15 Min.	Cement Mix H20:	175	BBLS				
			Total H2O Volume	290	BBLS				
Frac Ring #1	Frac Ring #2	Frac Ring #3	Frac Ring #4						

THE INFORMATION STATED HEREIN IS CORRECT
CUSTOMER REPRESENTATIVE 

SIGNATURE

