

**HALLIBURTON**

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# **WPX ENERGY ROCKY MOUNTAIN LLC-EBUS**

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**FEDERAL RG 611-14-298**

**Rio Blanco County , Colorado**

## **Cement Multiple Stages**

**21-Feb-2014**

### **Post Job Summary**

*The Road to Excellence Starts with Safety*

Sold To #: 300721	Ship To #: 3124399	Quote #:	Sales Order #: 901132344
Customer: WPX ENERGY ROCKY MOUNTAIN LLC-EBUS	Customer Rep: Ragsdale, Ted		
Well Name: FEDERAL RG	Well #: 611-14-298	API/UWI #:	
Field:	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Contractor: CYCLONE 29	Rig/Platform Name/Num: 29		
Job Purpose: Cement Multiple Stages			
Well Type: Development Well	Job Type: Cement Multiple Stages		
Sales Person: MAYO, MARK	Srv Supervisor: ARNOLD, EDWARD	MBU ID Emp #: 439784	

**Job Personnel**

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
ARNOLD, EDWARD John	10	439784	BROWN, TRAVIS A	10	396848	LOBATO, MAX Abraham	10	555409

**Equipment**

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10567589C	60 mile	10713212	60 mile	10876398	60 mile	10998512	60 mile
11259882	60 mile	11808829	60 mile				

**Job Hours**

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
2-20-2014	1.5	0	2-21-2014	8.5	7			

**TOTAL** Total is the sum of each column separately

**Job**

Formation Name	Formation Depth (MD)	Top	Bottom	Job Type	Job depth MD	Job Depth TVD	Water Depth	Perforation Depth (MD)	From	To
				BHST	3024. ft	3024. ft				
							Wk Ht Above Floor			3. ft

**Job Times**

Date	Time	Time Zone
20 - Feb - 2014	05:30	MST
20 - Feb - 2014	22:30	MST
21 - Feb - 2014	03:26	MST
21 - Feb - 2014	06:53	MST
21 - Feb - 2014	08:30	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
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**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	9 5/8"	1	HES
Stage Tool										Centralizers			

**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 ft3/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
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Stage/Plug #: 1	Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density uom	Yield uom	Mix Fluid uom	Rate uom	Total Mix Fluid uom
	1	Fresh Water Spacer		40.00	bbl	8.33	.0	.0	4	

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
2	1st Stage HLC Lead Cement	ECONOCEM (TM) SYSTEM (452992)	780.0	sacks	12.8	1.77	9.34	7	9.34
	0.25 lbm	POLY-E-FLAKE (101216940)							
	0.35 %	HR-5, 50 LB SK (100005050)							
	9.34 Gal	FRESH WATER							
3	1st Stage Varicem Tail Cement	VARICEM (TM) CEMENT (452009)	325.0	sacks	12.8	1.96	10.95	7	10.95
	0.25 lbm	POLY-E-FLAKE (101216940)							
	10.95 Gal	FRESH WATER							
4	Displacement		231.00	bbl	8.33	.0	.0	8	
5	Fresh Water Spacer		30.00	bbl	8.33	.0	.0	4	
6	2nd Stage VariCem Cement	VARICEM (TM) CEMENT (452009)	765.0	sacks	12.8	1.96	10.95	7	10.95
	0.25 lbm	POLY-E-FLAKE (101216940)							
	10.95 Gal	FRESH WATER							
7	Displacement		93.00	bbl	8.33	.0	.0	8	
Calculated Values		Pressures		Volumes					
Displacement	326.9	Shut In: Instant		Lost Returns		Cement Slurry	626.2	Pad	
Top Of Cement	SURFACE	5 Min		Cement Returns	145	Actual Displacement	326.9	Treatment	
Frac Gradient		15 Min		Spacers	70	Load and Breakdown		Total Job	1023.1
Rates									
Circulating	RIG	Mixing	7	Displacement	8	Avg. Job	7		
Cement Left In Pipe	Amount	26.9 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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Well Name: FEDERAL RG	Well #: 611-14-298	API/UWI #:	
Field:	City (SAP): MEEKER	County/Parish: Rio Blanco	State: Colorado
Legal Description:			
Lat:		Long:	
Contractor: CYCLONE 29	Rig/Platform Name/Num: 29		
Job Purpose: Cement Multiple Stages		Ticket Amount:	
Well Type: Development Well	Job Type: Cement Multiple Stages		
Sales Person: MAYO, MARK	Srvc Supervisor: ARNOLD, EDWARD	MBU ID Emp #: 439784	

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Assessment Of Location Safety Meeting	02/20/2014 01:00							Water; PH 7; KCL 200; So4 <200; Fe 3; Calcium 120; Chlorides 0; Temp 50.
Pre-Rig Up Safety Meeting	02/20/2014 01:15							Including entire cement crew.
Rig-Up Equipment	02/20/2014 01:30							1 Elite # 3; 1 660 bulk truck; 2 field storage silo's; 1 hard line to floor; 1 line to upright; 1 line to rig tank. 9.625" compact head. Multi stage job, using customer supplied plug set.
Rig-Up Completed	02/20/2014 02:45							
Pre-Job Safety Meeting	02/20/2014 03:00							Including everyone on location.
Start Job	02/20/2014 03:26							TD 3024; TP 3024 Tool 1234; SJ 26.95; OH 14 1/2" to 1200 13 1/2" to TD; Casing 9.625" 36# J-55; Mud 9 ppg.
Pump Water	02/20/2014 03:27		2	2			121.0	Fill lines with fresh water.
Test Lines	02/20/2014 03:29					4600.0		Good pressure test, no leaks.
Pump Spacer 1	02/20/2014 03:39		4	40			184.0	40 BBL fresh water spacer.
Pump 1st Stage Lead Slurry	02/20/2014 03:51		8	245.8			517.0	780 sks Stage 1 Lead Cement, 12.8 ppg, 1.77 cf3, 9.34 gal/sk.
Pump 1st Stage Tail Slurry	02/20/2014 04:25		8	113.4			375.0	325 sks Stage 1 Tail Cement, 12.8 ppg, 1.96 cf3, 10.34 gal/sk.

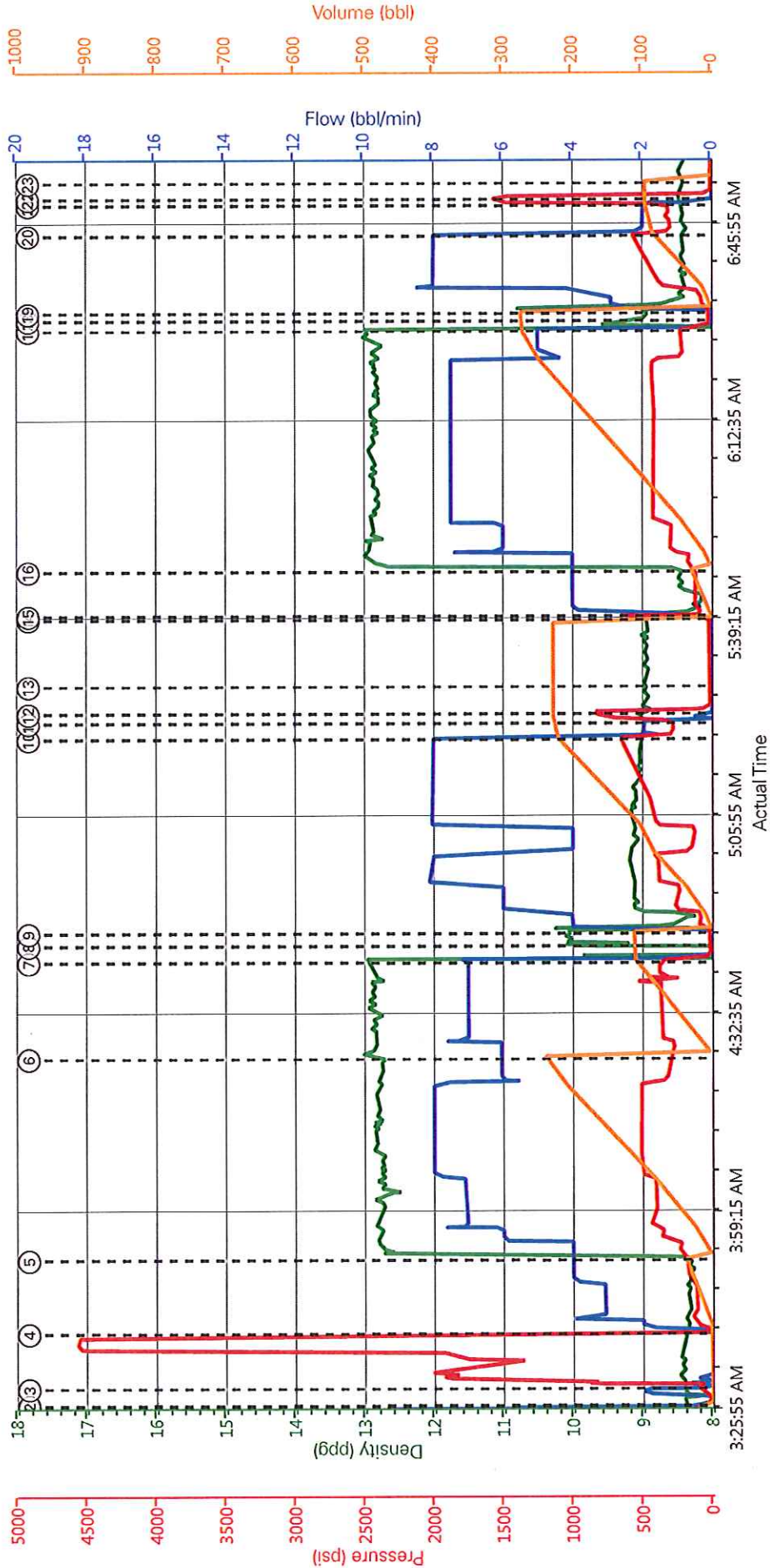
Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Shutdown	02/20/2014 04:41							
Drop Plug	02/20/2014 04:44							Plug left container.
Pump Displacement	02/20/2014 04:46		10	221.6			680.0	Mud displacement. Slow rate at 85 BBL's gone to 4 BBL/MIN for 20 BBL's to allow wiper plug to pass through tool.
Slow Rate	02/20/2014 05:19		2	10			282.0	Slow rate last 10 BBL's of displacement prior to bumping the plug.
Bump Plug	02/20/2014 05:22				231.6		835.0	Bumped plug, took 1000 PSI over.
Check Floats	02/20/2014 05:23							Floats held, 1 BBL back
Drop Opening Device For Multiple Stage Cementer	02/20/2014 05:28						650.0	Allow 10 min for device to reach tool. Opening pressure at 600 psi.
Next Stage	02/20/2014 05:29							
Pump Spacer 1	02/20/2014 05:40		4	30			121.0	30 BBL fresh water spacer.
Pump 2nd Stage Tail Slurry	02/20/2014 05:47		8	267			430.0	765 sks Stage Tail Cement, 12.8 ppg, 1.96 cf3, 10.34 gal/sk.
Shutdown	02/20/2014 06:28							
Drop Plug	02/20/2014 06:30							Drop closing device for multi stage cementer.
Pump Displacement	02/20/2014 06:31		10	85.3			580.0	Fresh Water displacement.
Slow Rate	02/20/2014 06:44		2	10			316.0	Slow rate last 10 bbl.'s of displacement prior to bumping plug.
Bump Plug	02/20/2014 06:49				95.3		1573.0	Bump plug. Take 1200 over circulating pressure to close tool.
Check Floats	02/20/2014 06:50							Floats held, 1 BBL back. Got 45 bbl.'s good cement back from first stage, and 100 bbl.'s of good cement back from second stage.
End Job	02/20/2014 06:53							
Pre-Rig Down Safety Meeting	02/20/2014 06:55							

## Cementing Job Log

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Rig-Down Equipment	02/20/2014 07:00							
Rig-Down Completed	02/20/2014 08:15							
Pre-Convoy Safety Meeting	02/20/2014 08:20							
Crew Leave Location	02/20/2014 08:30							
Other	02/20/2014 08:30							
Arrive At Loc	02/20/2014 10:30							Rig pulling drill pipe. meat with Co. Rep.
Call Out	02/20/2014 17:00							
Crew Leave Yard	02/20/2014 19:30							
Pre-Convoy Safety Meeting	02/20/2014 19:45							Including entire cement crew.
Open Multiple Stage Cementer	02/21/2014 05:39						650.0	Tool opened at 650 psi.

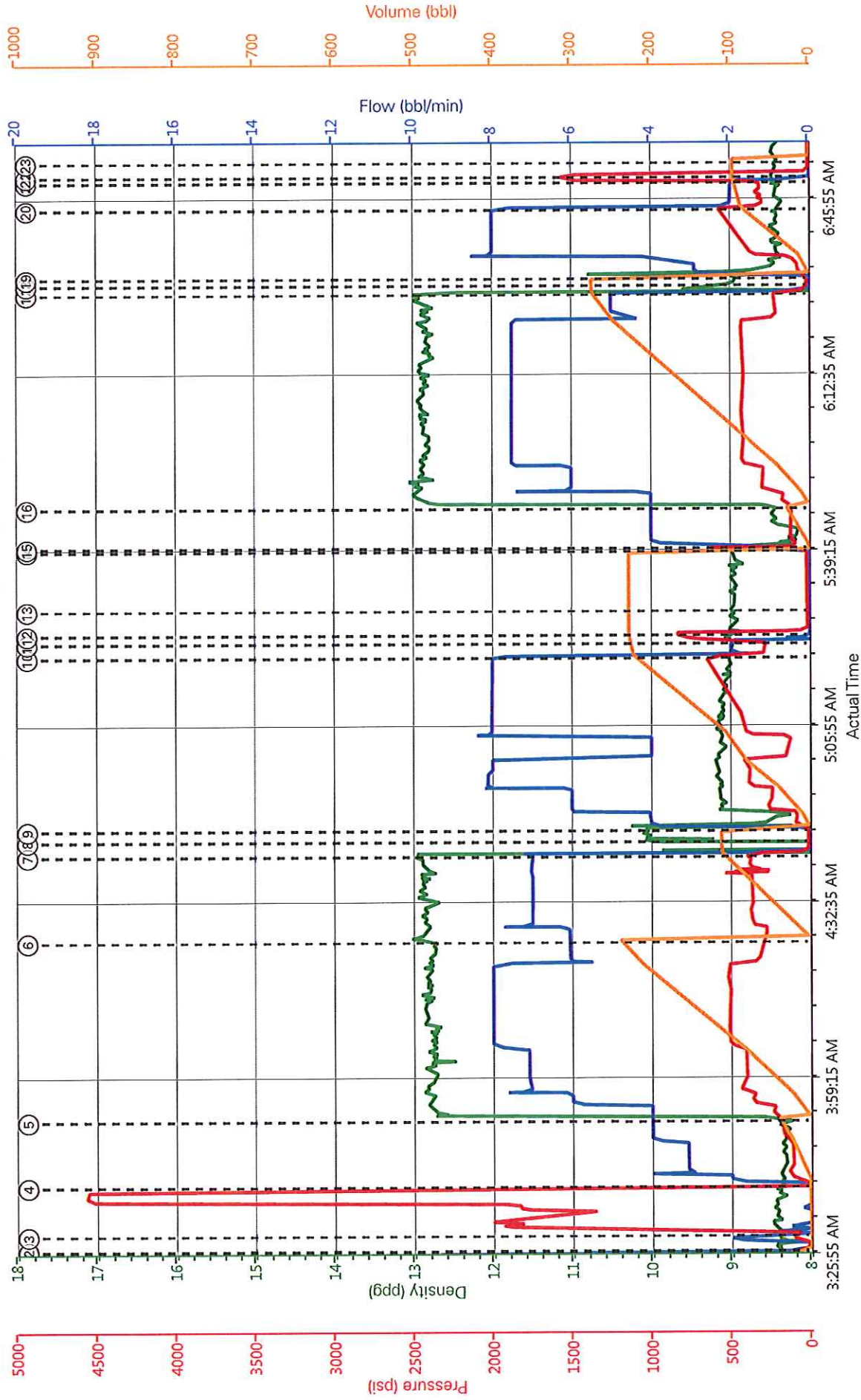


WPX - RG 611-14-298 - TWO STAGE 9 5/8 SURFACE



- DH Density (ppg) 8.45    Comb Pump Rate (bbl/min) 16.8    PS Pump Press (psi) 22    Pump Stg Tot (bbl) 41.4
- ① Start Job 8.36;0;38;0
  - ② Prime Pumps 8.41;0;19;0
  - ③ Test Lines 8.38;0;67;2
  - ④ Pump Spacer 18.4;0;12;0
  - ⑤ Pump Lead Cement 8.37;4;186;0.1
  - ⑥ Pump Tail Cement 12.83;6;285;240
  - ⑦ Shutdown 12.99;7.2;311;111.8
  - ⑧ Drop Plug 10.08;0;14;112.3
  - ⑨ Pump Displacement 0.77;2.4;17;0.1
  - ⑩ Slow Rate 9.2;5;370;222.6
  - ⑪ Bump Plug 9.03;1.9;550;228
  - ⑫ Check Floats 8.86;0;302;228.1
  - ⑬ Drop Opening Device For Multiple Stage Cement 8.97;0;17;228.1
  - ⑭ Open Multiple Stage Cement 8.92;0;8;575;0.4
  - ⑮ Pump Spacer 18.46;2;72;1.2
  - ⑯ Pump Tail Cement 8.44;4;121;0.03
  - ⑰ Shutdown 4.34;0;106;274.8
  - ⑱ Drop Plug 8.97;0;18;274.8
  - ⑲ Pump Displacement 8.89;1.8;19;0.1
  - ⑳ Slow Rate 8.37;2.3;394;86.5
  - ㉑ Bump Plug 8.43;0;1527;96.6
  - ㉒ Check Floats 8.49;0;1006;96.6
  - ㉓ End Job 8.42;0;8;96.6

WPX - RG 611-14-298 - TWO STAGE 9 5/8 SURFACE





# HALLIBURTON

## Water Analysis Report

Company: WPX  
Submitted by: ED ARNOLD  
Attention: \_\_\_\_\_  
Lease: RG  
Well #: 611-14-298

Date: 2/21/2014  
Date Rec.: 2/21/2014  
S.O.#: 901132344  
Job Type: SURFACE

Specific Gravity	MAX	1
pH	8	7
Potassium (K)	5000	200 Mg / L
Calcium (Ca)	500	120 Mg / L
Iron (FE2)	300	0 Mg / L
Chlorides (Cl)	3000	0 Mg / L
Sulfates (SO <sub>4</sub> )	1500	<200 Mg / L
Chlorine (Cl <sub>2</sub> )		0 Mg / L
Temp	40-80	50 Deg
Total Dissolved Solids		Mg / L

Respectfully: ED ARNOLD  
Title: CEMENTING SUPERVISOR  
Location: Grand Junction, CO

NOTICE: This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its use.

<b>Sales Order #:</b> 901132344	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 2/21/2014
<b>Customer:</b> WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		<b>Job Type (BOM):</b> CMT MULTIPLE STAGES BOM
<b>Customer Representative:</b> TED RAGSDALE		<b>API / UWI: (leave blank if unknown)</b> AFEYSASRUMKEQBRKAAA
<b>Well Name:</b> FEDERAL RG		<b>Well Number:</b> 611-14-298
<b>Well Type:</b> Development Well	<b>Well Country:</b> United States of America	
<b>H2S Present:</b>	<b>Well State:</b> Colorado	<b>Well County:</b> Rio Blanco

Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

### CUSTOMER SATISFACTION SURVEY

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	2/21/2014
Survey Interviewer	The survey interviewer is the person who initiated the survey.	EDWARD ARNOLD (HX46731)
Customer Participation	Did the customer participate in this survey? (Y/N)	Yes
Customer Representative	Enter the Customer representative name	TED RAGSDALE
HSE	Was our HSE performance satisfactory? Circle Y or N	Yes
Equipment	Were you satisfied with our Equipment? Circle Y or N	Yes
Personnel	Were you satisfied with our people? Circle Y or N	Yes
Customer Comment	Customer's Comment	GREAT JOB GUYS THANKS

CUSTOMER SIGNATURE



<b>Sales Order #:</b> 901132344	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 2/21/2014
<b>Customer:</b> WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		<b>Job Type (BOM):</b> CMT MULTIPLE STAGES BOM
<b>Customer Representative:</b> TED RAGSDALE		<b>API / UWI: (leave blank if unknown)</b> AFEYSASRUMKEQBRKAAA
<b>Well Name:</b> FEDERAL RG		<b>Well Number:</b> 611-14-298
<b>Well Type:</b> Development Well	<b>Well Country:</b> United States of America	
<b>H2S Present:</b>	<b>Well State:</b> Colorado	<b>Well County:</b> Rio Blanco

### KEY PERFORMANCE INDICATORS

General	
<b>Survey Conducted Date</b> The date the survey was conducted	2/21/2014

Cementing KPI Survey	
<b>Type of Job</b> Select the type of job. (Cementing or Non-Cementing)	0
<b>Select the Maximum Deviation range for this Job</b> What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	Vertical
<b>Total Operating Time (hours)</b> Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	7
<b>HSE Incident, Accident, Injury</b> HSE Incident, Accident, Injury. This should be recordable incidents only.	No
<b>Was the job purpose achieved?</b> Was the job delivered correctly as per customer agreed design?	Yes
<b>Operating Hours (Pumping Hours)</b> Total number of hours pumping fluid on this job. Enter in decimal format.	4.5
<b>Customer Non-Productive Rig Time (hrs)</b> Lost time due to Halliburton in the start, execution, or completion of an ordered service or product, or delays in a follow-on service. Enter in decimal format. 0 if none.	0
<b>Type of Rig Classification Job Was Performed</b> Type Of Rig (classification) Job Was Performed On	Drilling Rig (Portable)
<b>Number Of JSAs Performed</b> Number Of Jsas Performed	5
<b>Number of Unplanned Shutdowns</b> Unplanned shutdown is when injection stops for any period of time.	0
<b>Was this a Primary Cement Job (Yes / No)</b>	Yes

<b>Sales Order #:</b> 901132344	<b>Line Item:</b> 10	<b>Survey Conducted Date:</b> 2/21/2014
<b>Customer:</b> WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		<b>Job Type (BOM):</b> CMT MULTIPLE STAGES BOM
<b>Customer Representative:</b> TED RAGSDALE		<b>API / UWI: (leave blank if unknown)</b> AFEYSASRUMKEQBRKAAA
<b>Well Name:</b> FEDERAL RG		<b>Well Number:</b> 611-14-298
<b>Well Type:</b> Development Well	<b>Well Country:</b> United States of America	
<b>H2S Present:</b>	<b>Well State:</b> Colorado	<b>Well County:</b> Rio Blanco

Primary Cement Job= Casing job, Liner job, or Tie-back job.	
<b>Did We Run Wiper Plugs?</b> Did We Run Top And Bottom Casing Wiper Plugs?	Top
<b>Mixing Density of Job Stayed in Designed Density Range (0-100%)</b> Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	99
<b>Was Automated Density Control Used?</b> Was Automated Density Control (ADC) Used ?	Yes
<b>Pump Rate (percent) of Job Stayed At Designed Pump Rate</b> Pump Rate range defined as +/- 1bbl/min. Calculation: Total BBLs of fluid pumped at the designed rate divided by Total BBLs of fluid pumped, multiplied by 100	99
<b>Nbr of Remedial Sqz Jobs Rqd - Competition</b> Number Of Remedial Squeeze Jobs Required After Primary Job Performed By Competition	0
<b>Nbr of Remedial Plug Jobs Rqd - HES</b> Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
<b>Nbr of Remedial Sqz Jobs Rqd - HES</b> Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0