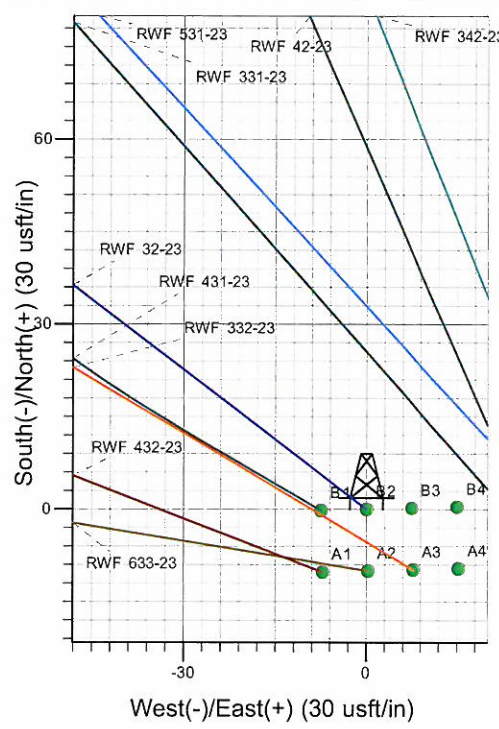
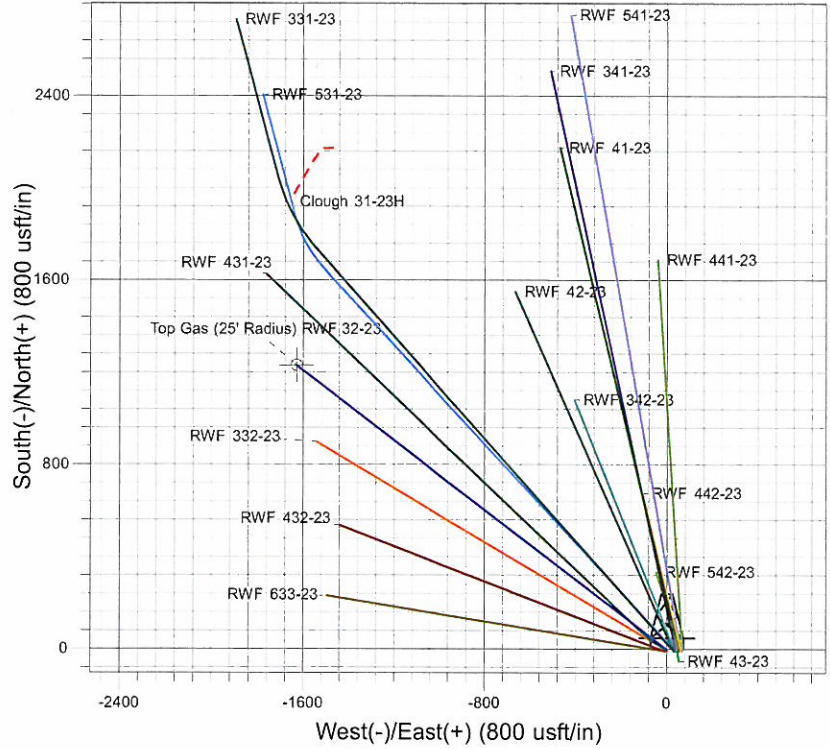
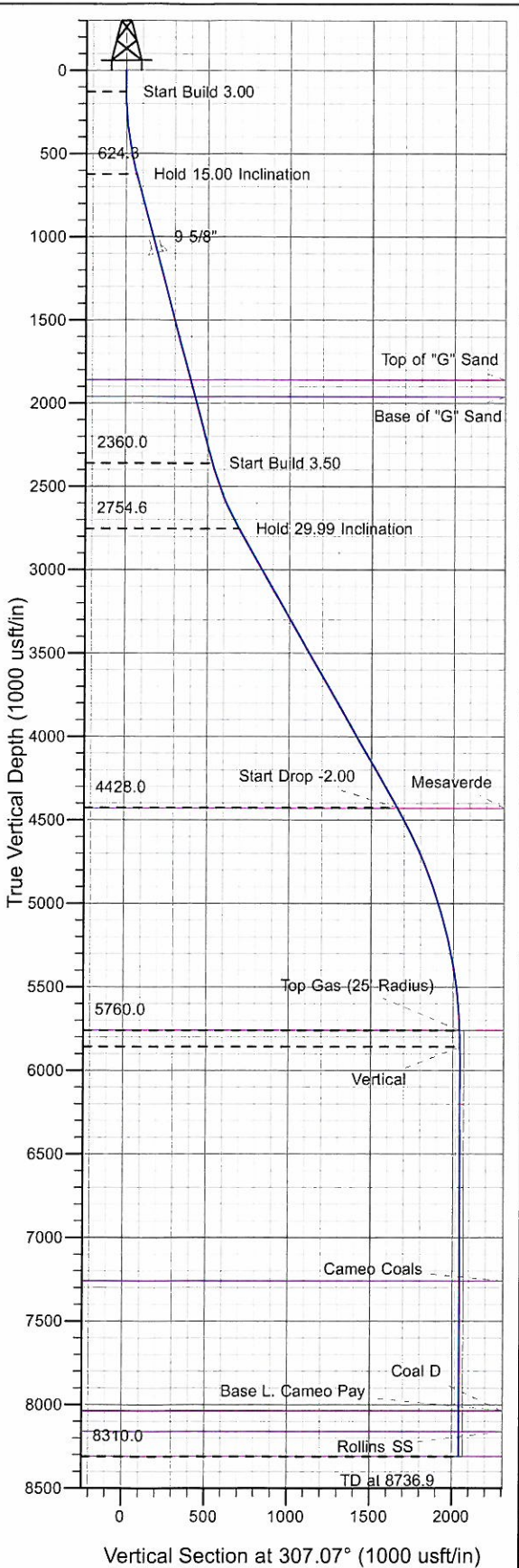




Well Name: RWF 32-23  
 Surface Location: RWF 43-23 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5599.0  
 +N/-S 0.0 +E/-W 0.0 Northing 1619214.50 Easting 2337851.50 Latitude 39° 30' 36.140 N Longitude 107° 50' 49.580 W Slot B2  
 KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)



Project: RU 23-06S-094W  
 Site: RWF 43-23 Pad  
 Well: RWF 32-23  
 Plan #3 24Aug10 kjs

**T M**  
 Azimuths to True North  
 Magnetic North: 10.43°  
 Magnetic Field  
 Strength: 52395.0snT  
 Dip Angle: 65.81°  
 Date: 4/27/2010  
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
130.0	130.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.00
624.3	630.0	15.00	307.07	39.2	-51.9	65.1	65.1	Hold 15.00 Inclination
2360.0	2426.9	15.00	307.07	319.6	-423.0	530.2	530.2	Start Build 3.50
2754.6	2855.2	29.99	307.07	418.1	-553.4	693.6	693.6	Hold 29.99 Inclination
4428.0	4787.3	29.99	307.07	1000.3	-1323.9	1659.3	1659.3	Start Drop -2.00
5760.0	6186.9	2.00	307.07	1230.5	-1628.6	2041.2	2041.2	Top Gas
5860.0	6286.9	0.00	0.00	1231.5	-1630.0	2042.9	2042.9	Vertical
8310.0	8736.9	0.00	0.00	1231.5	-1630.0	2042.9	2042.9	TD at 8736.9

# **PICEANCE VLY NAD 83**

**RU 23-06S-094W**

**RWF 43-23 Pad**

**RWF 32-23 - Slot B2**

**Wellbore #1**

**Plan: Plan #3 24Aug10 kjs**

## **Standard Planning Report - Geographic**

**26 August, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 32-23 - Slot B2
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 32-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 24Aug10 kjs		

<b>Project</b>	RU 23-06S-094W, Garfield County, CO, 23-06S-094W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

<b>Site</b>	RWF 43-23 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,619,204.50 usft	<b>Latitude:</b>	39° 30' 36.053 N
<b>From:</b>	Map	<b>Easting:</b>	2,337,897.00 usft	<b>Longitude:</b>	107° 50' 48.996 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	-1.480 °

<b>Well</b>	RWF 32-23 - Slot B2					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	1,619,214.50 usft	<b>Latitude:</b>	39° 30' 36.140 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	2,337,851.50 usft	<b>Longitude:</b>	107° 50' 49.580 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,599.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/27/2010	10.434	65.810	52,395

<b>Design</b>	Plan #3 24Aug10 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	307.07

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
130.0	0.00	0.00	130.0	0.0	0.0	0.00	0.00	0.00	0.000	
630.0	15.00	307.07	624.3	39.2	-51.9	3.00	3.00	0.00	307.070	
2,426.9	15.00	307.07	2,360.0	319.6	-423.0	0.00	0.00	0.00	0.000	
2,855.2	29.99	307.07	2,754.6	418.1	-553.4	3.50	3.50	0.00	0.000	
4,787.3	29.99	307.07	4,428.0	1,000.3	-1,323.9	0.00	0.00	0.00	0.000	
6,186.9	2.00	307.07	5,760.0	1,230.5	-1,628.6	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
6,286.9	0.00	0.00	5,860.0	1,231.5	-1,630.0	2.00	-2.00	0.00	180.000	
8,736.9	0.00	0.00	8,310.0	1,231.5	-1,630.0	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 32-23 - Slot B2
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 32-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 24Aug10 kjs		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,619,214.50	2,337,851.50	39° 30' 36.140 N	107° 50' 49.580 W	
130.0	0.00	0.00	130.0	0.0	0.0	1,619,214.50	2,337,851.50	39° 30' 36.140 N	107° 50' 49.580 W	
<b>Start Build 3.00</b>										
630.0	15.00	307.07	624.3	39.2	-51.9	1,619,255.05	2,337,800.61	39° 30' 36.528 N	107° 50' 50.242 W	
<b>Hold 15.00 Inclination</b>										
1,122.5	15.00	307.07	1,100.0	116.1	-153.6	1,619,334.48	2,337,700.93	39° 30' 37.287 N	107° 50' 51.540 W	
<b>9 5/8"</b>										
1,909.3	15.00	307.07	1,860.0	238.8	-316.1	1,619,461.39	2,337,541.68	39° 30' 38.500 N	107° 50' 53.613 W	
<b>Top of "G" Sand</b>										
2,012.8	15.00	307.07	1,960.0	255.0	-337.5	1,619,478.08	2,337,520.72	39° 30' 38.660 N	107° 50' 53.886 W	
<b>Base of "G" Sand</b>										
2,426.9	15.00	307.07	2,360.0	319.6	-423.0	1,619,544.88	2,337,436.91	39° 30' 39.298 N	107° 50' 54.977 W	
<b>Start Build 3.50</b>										
2,855.2	29.99	307.07	2,754.6	418.1	-553.4	1,619,646.72	2,337,309.12	39° 30' 40.272 N	107° 50' 56.641 W	
<b>Hold 29.99 Inclination</b>										
4,787.3	29.99	307.07	4,428.0	1,000.3	-1,323.9	1,620,248.62	2,336,553.90	39° 30' 46.026 N	107° 51' 6.473 W	
<b>Start Drop -2.00</b>										
4,789.6	29.94	307.07	4,430.0	1,001.0	-1,324.9	1,620,249.35	2,336,552.98	39° 30' 46.033 N	107° 51' 6.484 W	
<b>Mesaverde</b>										
6,186.9	2.00	307.07	5,760.0	1,230.5	-1,628.6	1,620,486.60	2,336,255.30	39° 30' 48.301 N	107° 51' 10.360 W	
<b>Top Gas - Approx. Top Gas</b>										
6,286.9	0.00	0.00	5,860.0	1,231.5	-1,630.0	1,620,487.68	2,336,253.94	39° 30' 48.311 N	107° 51' 10.378 W	
<b>Vertical</b>										
7,686.9	0.00	0.00	7,260.0	1,231.5	-1,630.0	1,620,487.68	2,336,253.94	39° 30' 48.311 N	107° 51' 10.378 W	
<b>Cameo Coals</b>										
8,461.9	0.00	0.00	8,035.0	1,231.5	-1,630.0	1,620,487.68	2,336,253.94	39° 30' 48.311 N	107° 51' 10.378 W	
<b>Base L. Cameo Pay</b>										
8,466.9	0.00	0.00	8,040.0	1,231.5	-1,630.0	1,620,487.68	2,336,253.94	39° 30' 48.311 N	107° 51' 10.378 W	
<b>Coal D</b>										
8,586.9	0.00	0.00	8,160.0	1,231.5	-1,630.0	1,620,487.68	2,336,253.94	39° 30' 48.311 N	107° 51' 10.378 W	
<b>Rollins SS</b>										
8,736.9	0.00	0.00	8,310.0	1,231.5	-1,630.0	1,620,487.68	2,336,253.94	39° 30' 48.311 N	107° 51' 10.378 W	
<b>TD at 8736.9 - TD</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Top Gas (25' Radius) R1 - hit/miss target - Shape - Circle (radius 25.0)	0.00	0.00	5,760.0	1,230.5	-1,628.6	1,620,486.60	2,336,255.30	39° 30' 48.301 N	107° 51' 10.360 W	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,122.5	1,100.0	9 5/8"	9.625	12.250	

## Williams

### Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 32-23 - Slot B2
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5623.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 32-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 24Aug10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,909.3	1,860.0	Top of "G" Sand				
2,012.8	1,960.0	Base of "G" Sand				
4,789.6	4,430.0	Mesaverde				
6,186.9	5,760.0	Approx. Top Gas				
7,686.9	7,260.0	Cameo Coals				
8,461.9	8,035.0	Base L. Cameo Pay				
8,466.9	8,040.0	Coal D				
8,586.9	8,160.0	Rollins SS				
8,736.9	8,310.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
130.0	130.0	0.0	0.0	Start Build 3.00	
630.0	624.3	39.2	-51.9	Hold 15.00 Inclination	
2,426.9	2,360.0	319.6	-423.0	Start Build 3.50	
2,855.2	2,754.6	418.1	-553.4	Hold 29.99 Inclination	
4,787.3	4,428.0	1,000.3	-1,323.9	Start Drop -2.00	
6,186.9	5,760.0	1,230.5	-1,628.6	Top Gas	
6,286.9	5,860.0	1,231.5	-1,630.0	Vertical	
8,736.9	8,310.0	1,231.5	-1,630.0	TD at 8736.9	