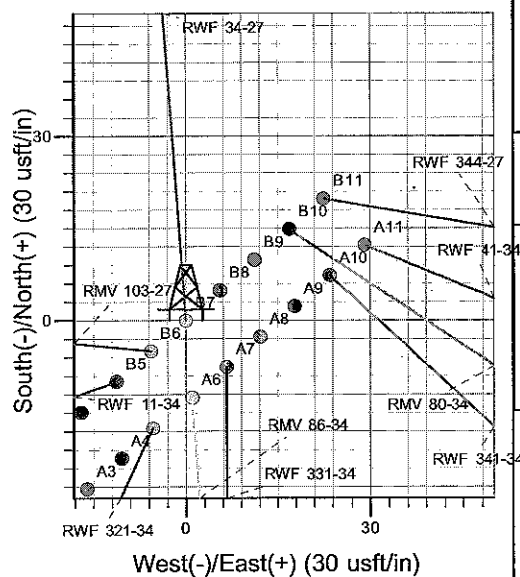
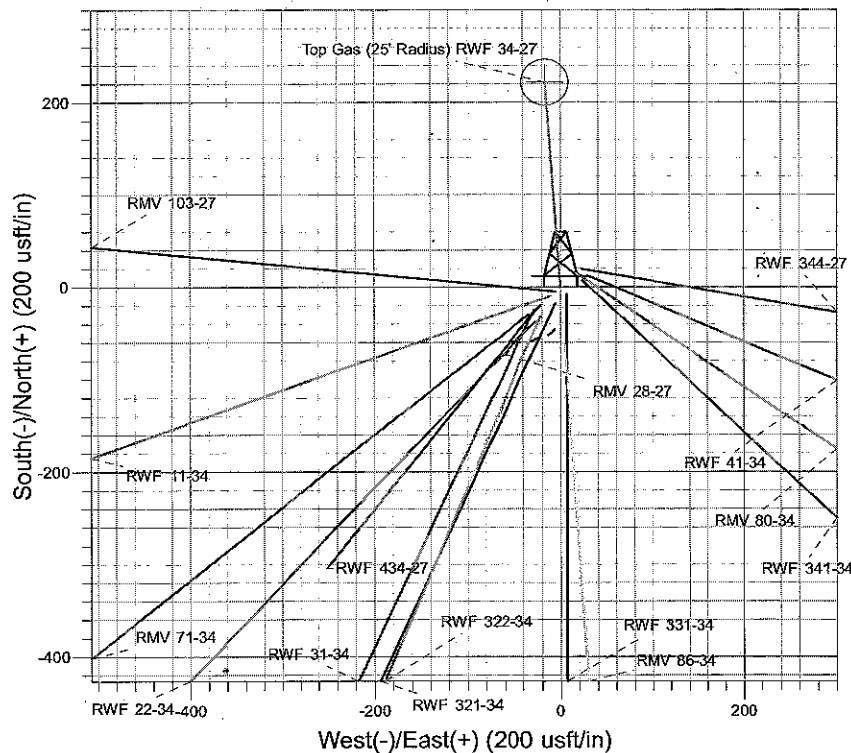
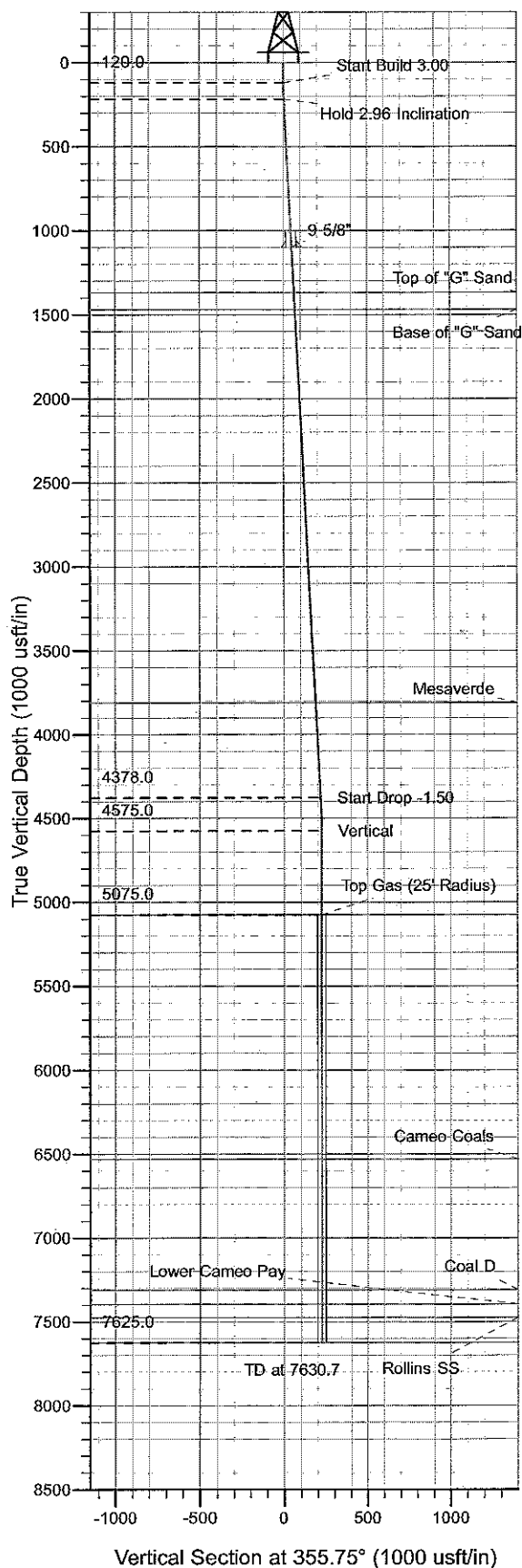




Well Name: RWF 34-27  
 Surface Location: RMV 28-27 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5297.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1612188.70 2330512.80 39° 29' 24.840 N 107° 52' 20.845 W B7  
 KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)



Project: RU 27-06S-094W  
 Site: RMV 28-27 Pad  
 Well: RWF 34-27  
 Plan #2 20Apr10 kjs

Azimuths to True North  
 Magnetic North: 10.70°  
 Magnetic Field  
 Strength: 52621.0nT  
 Dip Angle: 65.85°  
 Date: 3/7/2008  
 Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.00
218.5	218.6	2.96	355.75	2.5	-0.2	2.5	2.5	Hold 2.96 Inclination
4378.0	4383.6	2.96	355.75	216.8	-16.1	217.4	217.4	Start Drop -1.50
4575.0	4580.7	0.00	0.00	221.9	-16.5	222.5	222.5	Vertical
5075.0	5080.7	0.00	0.00	221.9	-16.5	222.5	222.5	Top gas
7625.0	7630.7	0.00	0.00	221.9	-16.5	222.5	222.5	TD at 7630.7

# **PICEANCE VLY NAD 83**

**RU 27-06S-094W**

**RMV 28-27 Pad**

**RWF 34-27 - Slot B7**

**Wellbore #1**

**Plan: Plan #2 20Apr10 kjs**

## **Standard Planning Report - Geographic**

**06 July, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 34-27 - Slot B7
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 27-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RMV 28-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 34-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 20Apr10 kjs		

<b>Project</b>	RU 27-06S-094W, Garfield County, CO, 27-06S-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>	RMV 28-27 Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,612,143.20 usft
<b>From:</b>	Map	<b>Easting:</b>	2,330,505.00 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39° 29' 24.388 N
		<b>Longitude:</b>	107° 52' 20.929 W
		<b>Grid Convergence:</b>	-1.50 °

<b>Well</b>	RWF 34-27 - Slot B7		
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b> 1,612,188.70 usft
	+E/-W	0.0 usft	<b>Easting:</b> 2,330,512.80 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 29' 24.840 N
			<b>Longitude:</b> 107° 52' 20.845 W
			<b>Ground Level:</b> 5,297.0 usft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>
	IGRF2005-10	3/7/2008	(°)
			<b>Dip Angle</b>
			(°)
			<b>Field Strength</b>
			(nT)
			52,621

<b>Design</b>	Plan #2 20Apr10 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)</b>	<b>+N/-S</b>	<b>+E/-W</b>
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			<b>Direction</b>
			(°)
			355.75

Plan Sections										
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	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.00	
218.6	2.96	355.75	218.5	2.5	-0.2	3.00	3.00	0.00	355.75	
4,383.6	2.96	355.75	4,378.0	216.8	-16.1	0.00	0.00	0.00	0.00	
4,580.7	0.00	0.00	4,575.0	221.9	-16.5	1.50	-1.50	0.00	180.00	
5,080.7	0.00	0.00	5,075.0	221.9	-16.5	0.00	0.00	0.00	0.00	Top Gas (25' Radius)
7,630.7	0.00	0.00	7,625.0	221.9	-16.5	0.00	0.00	0.00	0.00	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 34-27 - Siof B7
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5321.0usft (H&P (24" RKB) kjs)
Project:	RU 27-06S-094W	MD Reference:	KELLY BUSHING @ 5321.0usft (H&P (24" RKB) kjs)
Site:	RMV 28-27 Pad	North Reference:	True
Well:	RWF 34-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 20Apr10 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	1,612,188.70	2,330,512.80	39° 29' 24.840 N	107° 52' 20.845 W	
120.0	0.00	0.00	120.0	0.0	0.0	1,612,188.70	2,330,512.80	39° 29' 24.840 N	107° 52' 20.845 W	
Start Build 3.00										
218.6	2.96	355.75	218.5	2.5	-0.2	1,612,191.24	2,330,512.68	39° 29' 24.865 N	107° 52' 20.847 W	
Hold 2.96 Inclination										
1,101.2	2.96	355.75	1,100.0	47.9	-3.6	1,612,236.71	2,330,510.49	39° 29' 25.313 N	107° 52' 20.890 W	
9 5/8"										
1,371.6	2.96	355.75	1,370.0	61.8	-4.6	1,612,250.64	2,330,509.82	39° 29' 25.451 N	107° 52' 20.903 W	
Top of "G" Sand										
1,471.7	2.96	355.75	1,470.0	67.0	-5.0	1,612,255.80	2,330,509.57	39° 29' 25.502 N	107° 52' 20.908 W	
Base of "G" Sand										
3,814.8	2.96	355.75	3,810.0	187.5	-13.9	1,612,376.52	2,330,503.76	39° 29' 26.693 N	107° 52' 21.023 W	
Mesaverde										
4,383.6	2.96	355.75	4,378.0	216.8	-16.1	1,612,405.82	2,330,502.35	39° 29' 26.982 N	107° 52' 21.050 W	
Start Drop -1.50										
4,580.7	0.00	0.00	4,575.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
Vertical										
5,080.7	0.00	0.00	5,075.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
Top gas - Approx. Top Gas										
6,535.7	0.00	0.00	6,530.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
Cameo Coals										
7,315.7	0.00	0.00	7,310.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
Coal D										
7,400.7	0.00	0.00	7,395.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
Lower Cameo Pay										
7,480.7	0.00	0.00	7,475.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
Rollins SS										
7,630.7	0.00	0.00	7,625.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
TD at 7630.7 - TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Top Gas (25' Radius) R1	0.00	0.00	5,075.0	221.9	-16.5	1,612,410.90	2,330,502.10	39° 29' 27.032 N	107° 52' 21.055 W	
- plan hits target center										
- Circle (radius 25.0)										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,101.2	1,100.0	9 5/8"		9-5/8	12-1/4

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 34-27 - Slot B7
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 27-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5321.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	RMV 28-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 34-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 20Apr10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,371.6	1,370.0	Top of "G" Sand				
1,471.7	1,470.0	Base of "G" Sand				
3,814.8	3,810.0	Mesaverde				
5,080.7	5,075.0	Approx. Top Gas				
6,535.7	6,530.0	Cameo Coals				
7,315.7	7,310.0	Coal D				
7,400.7	7,395.0	Lower Cameo Pay				
7,480.7	7,475.0	Rollins SS				
7,630.7	7,625.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.0	120.0	0.0	0.0	Start Build 3.00	
218.6	218.5	2.5	-0.2	Hold 2.96 Inclination	
4,383.6	4,378.0	216.8	-16.1	Start Drop -1.50	
4,580.7	4,575.0	221.9	-16.5	Vertical	
5,080.7	5,075.0	221.9	-16.5	Top gas	
7,630.7	7,625.0	221.9	-16.5	TD at 7630.7	