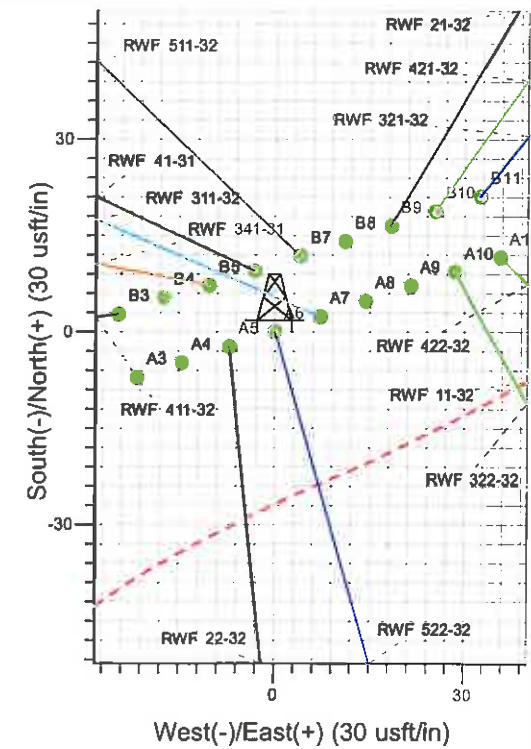
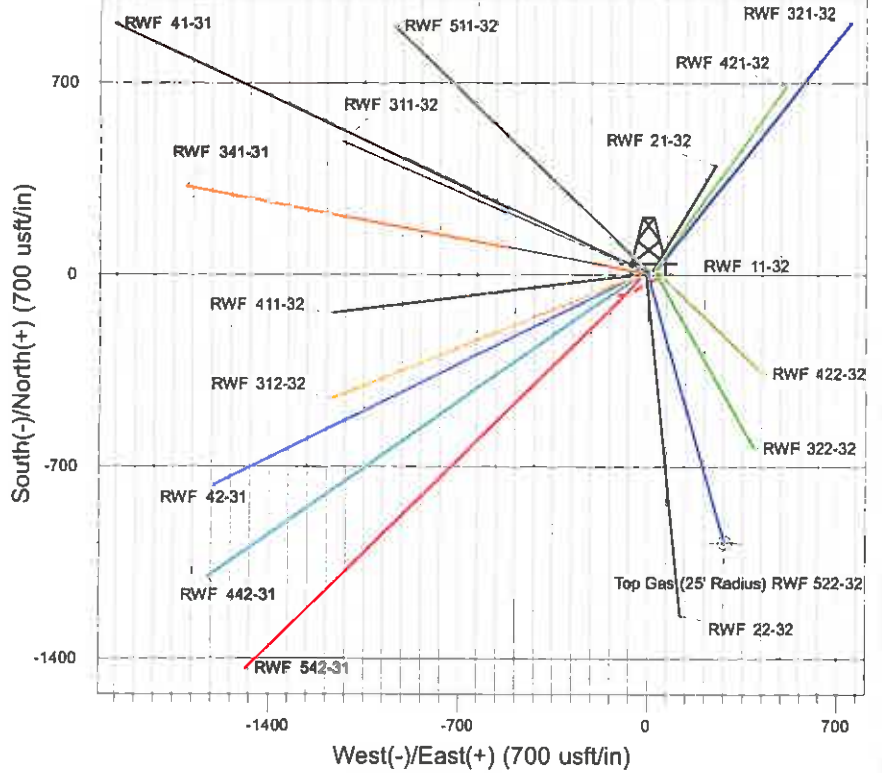
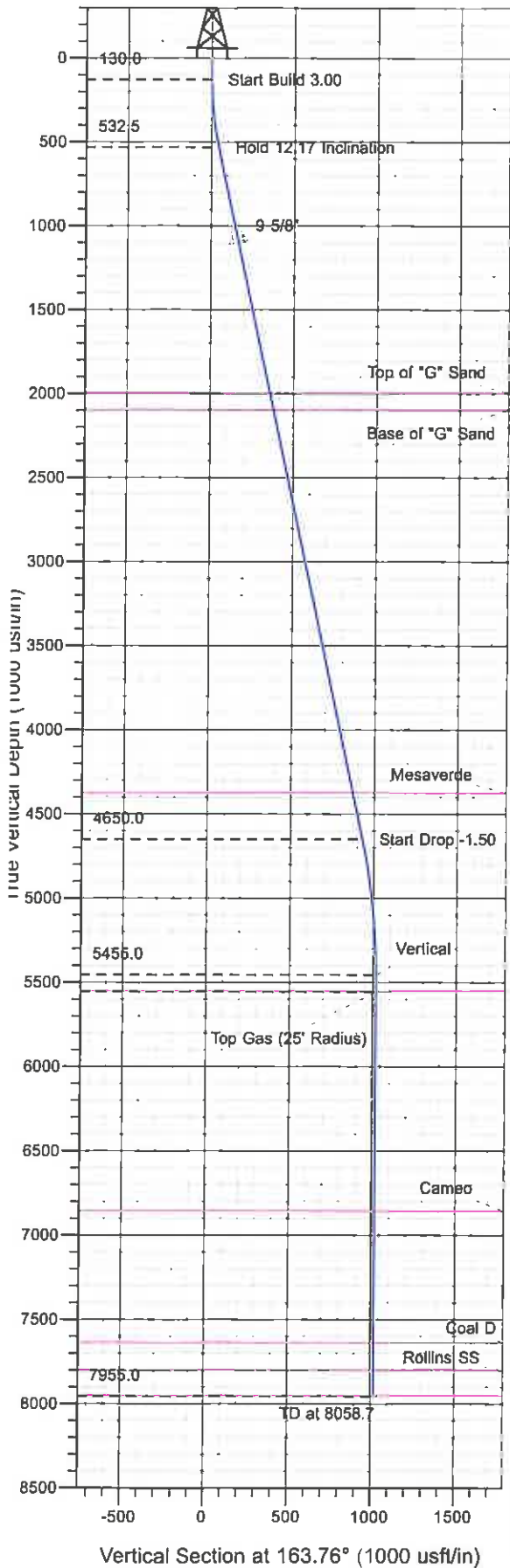




Surface Location: RWF 11-32 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5539.0

+N/-S    +E/-W    Northing    Easting    Latitude    Longitude    Slot  
 0.0      0.0      1610858.80    2318236.40    39° 29' 8.503 N    107° 54' 56.934 W    A6  
 KELLY BUSHING @ 5565.0usfl (SSD 573 (26' RKB) kjs)



Project: RU 32-06S-094W  
 Site: RWF 11-32 Pad  
 Well: RWF 522-32  
 Design #1 08Jun11 kjs

**M**  
 Azimuths to True North  
 Magnetic North: 10.32°  
 Magnetic Field  
 Strength: 52261.0snT  
 Dip Angle: 65.75°  
 Date: 6/6/2011  
 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
532.5	535.5	12.17	163.76	-41.2	12.0	42.9	42.9	Hold 12.17 Inclination
4650.0	4747.7	12.17	163.76	-893.5	260.2	930.6	930.6	Start Drop -1.50
5455.0	5558.7	0.00	0.00	-975.8	284.2	1016.4	1016.4	Vertical
5555.0	5658.7	0.00	0.00	-975.8	284.2	1016.4	1016.4	Top Gas
7955.0	8058.7	0.00	0.00	-975.8	284.2	1016.4	1016.4	TD at 8058.7

# **PICEANCE VLY NAD 83**

**RU 32-06S-094W**

**RWF 11-32 Pad**

**RWF 522-32 - Slot A6**

**Wellbore #1**

**Plan: Design #1 08Jun11 kjs**

## **Standard Planning Report - Geographic**

**27 July, 2011**

**Williams**  
 Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 522-32 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
<b>Project:</b>	RU 32-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
<b>Site:</b>	RWF 11-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 522-32	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Jun11 kjs		

<b>Project</b>	RU 32-06S-094W, Garfield County, CO		
<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 11-32 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,610,858.10 usft	<b>Latitude:</b>	39° 29' 8.495 N
<b>From:</b>	Map	<b>Easting:</b>	2,318,234.00 usft	<b>Longitude:</b>	107° 54' 56.965 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	-1.524 °

<b>Well</b>	RWF 522-32 - Slot A6					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	1,610,858.80 usft	<b>Latitude:</b>	39° 29' 8.503 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	2,318,236.40 usft	<b>Longitude:</b>	107° 54' 56.934 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,539.0 usft

<b>Wellbore</b>	Wellbore #1
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<b>Magnetics:</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/6/2011	10.319	65.746	52,261

<b>Design</b>	Design #1 08Jun11 kjs
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<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	163.76

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
535.5	12.17	163.76	532.5	-41.2	12.0	3.00	3.00	0.00	163.765	
4,747.7	12.17	163.76	4,650.0	-893.5	260.2	0.00	0.00	0.00	0.000	
5,558.7	0.00	0.00	5,455.0	-975.8	284.2	1.50	-1.50	0.00	180.000	
5,658.7	0.00	0.00	5,555.0	-975.8	284.2	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
8,058.7	0.00	0.00	7,955.0	-975.8	284.2	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 522-32 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
<b>Project:</b>	RU 32-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
<b>Site:</b>	RWF 11-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 522-32	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Jun11 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	1,610,858.80	2,318,236.40	39° 29' 8.503 N	107° 54' 56.934 W
130.0	0.00	0.00	130.0	0.0	0.0	1,610,858.80	2,318,236.40	39° 29' 8.503 N	107° 54' 56.934 W
<b>Start Build 3.00</b>									
535.5	12.17	163.76	532.5	-41.2	12.0	1,610,817.31	2,318,247.29	39° 29' 8.096 N	107° 54' 56.781 W
<b>Hold 12.17 Inclination 9 5/8"</b>									
1,116.1	12.17	163.76	1,100.0	-158.7	46.2	1,610,698.98	2,318,278.36	39° 29' 6.935 N	107° 54' 56.345 W
2,031.6	12.17	163.76	1,995.0	-343.9	100.1	1,610,512.36	2,318,327.36	39° 29' 5.104 N	107° 54' 55.657 W
<b>Top of "G" Sand</b>									
2,133.9	12.17	163.76	2,095.0	-364.6	106.2	1,610,491.51	2,318,332.84	39° 29' 4.899 N	107° 54' 55.580 W
<b>Base of "G" Sand</b>									
4,466.3	12.17	163.76	4,375.0	-836.5	243.6	1,610,016.11	2,318,457.66	39° 29' 0.235 N	107° 54' 53.827 W
<b>Mesaverde</b>									
4,747.7	12.17	163.76	4,650.0	-893.5	260.2	1,609,958.77	2,318,472.72	39° 28' 59.672 N	107° 54' 53.616 W
<b>Start Drop -1.50</b>									
5,558.7	0.00	0.00	5,455.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W
<b>Vertical</b>									
5,658.7	0.00	0.00	5,555.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W
<b>Top Gas - Approx. Top Gas - Top Gas (25' Radius) RWF 522-32</b>									
6,963.7	0.00	0.00	6,860.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W
<b>Cameo</b>									
7,743.7	0.00	0.00	7,640.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W
<b>Coal D</b>									
7,908.7	0.00	0.00	7,805.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W
<b>Rollins SS</b>									
8,058.7	0.00	0.00	7,955.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W
<b>TD at 8058.7 - 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 - plan hills target center - Circle (radius 25.0)	0.00	0.00	5,555.0	-975.8	284.2	1,609,875.80	2,318,494.50	39° 28' 58.858 N	107° 54' 53.310 W

**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,116.1	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 522-32 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
<b>Project:</b>	RU 32-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
<b>Site:</b>	RWF 11-32 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 522-32	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 08Jun11 kjs		

Formations:						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,031.6	1,995.0	Top of "G" Sand				
2,133.9	2,095.0	Base of "G" Sand				
4,466.3	4,375.0	Mesaverde				
5,658.7	5,555.0	Approx. Top Gas				
6,963.7	6,860.0	Cameo				
7,743.7	7,640.0	Coal D				
7,908.7	7,805.0	Rollins SS				
8,058.7	7,955.0	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	
535.5	532.5	-41.2	12.0	Hold 12.17 Inclination	
4,747.7	4,650.0	-893.5	260.2	Start Drop -1.50	
5,558.7	5,455.0	-975.8	284.2	Vertical	
5,658.7	5,555.0	-975.8	284.2	Top Gas	
8,058.7	7,955.0	-975.8	284.2	TD at 8058.7	