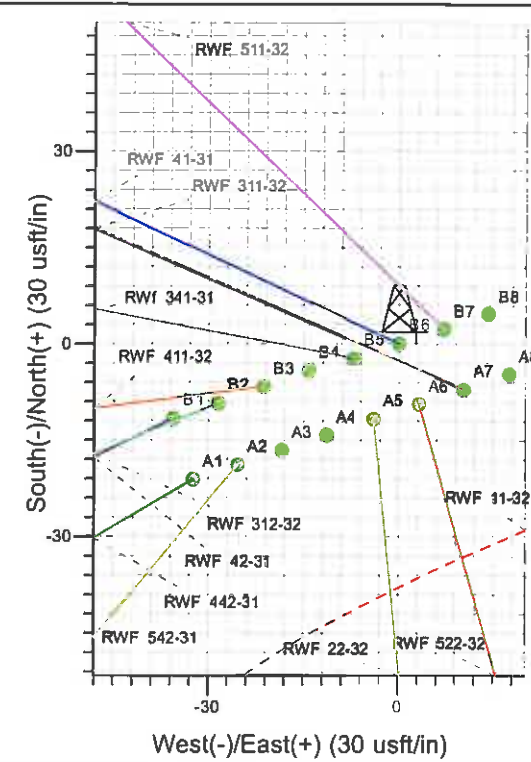
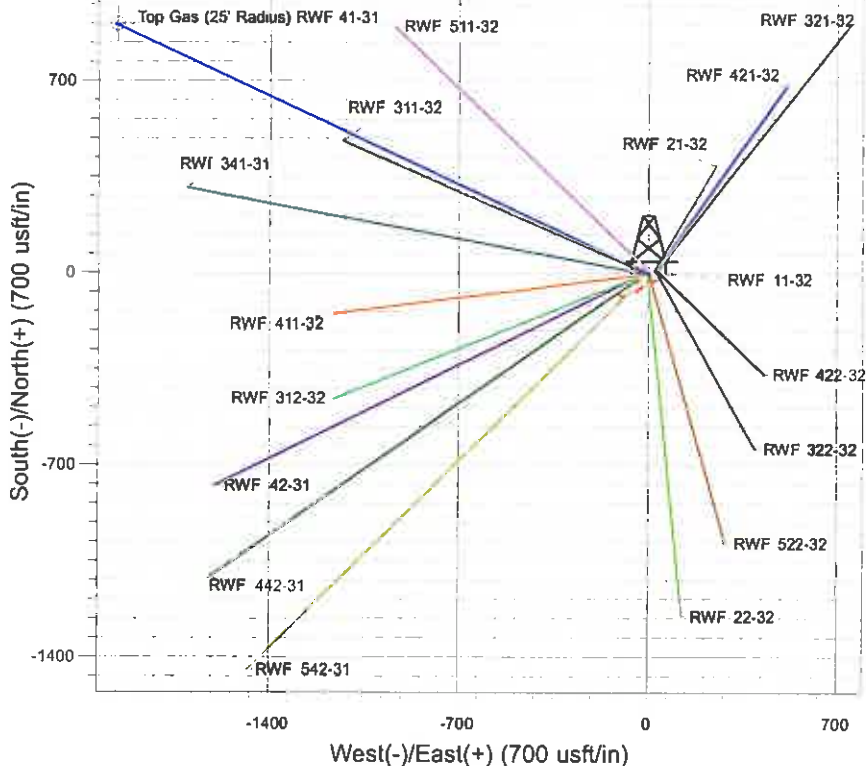
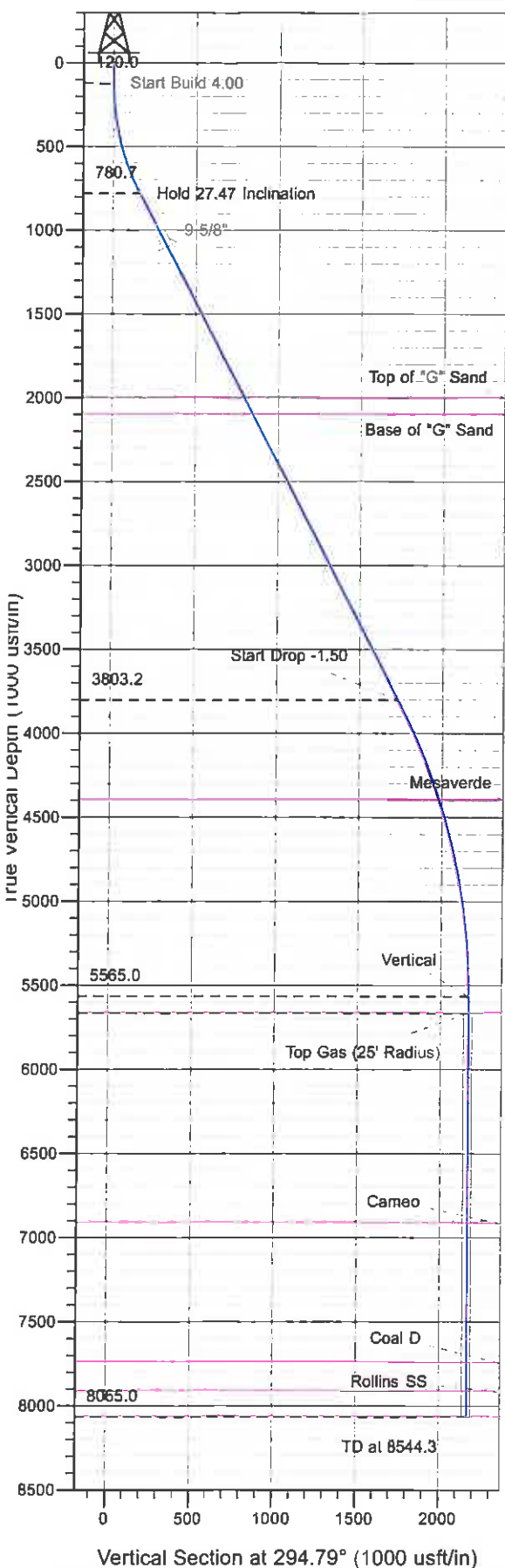




Surface Location: RWF 11-32 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5539.0  
 Northing 1610868.40 Easting 2318233.50 Latitude 39° 29' 8.597 N Longitude 107° 54' 56.974 W Slot B6  
 KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)



Project: RU 32-06S-094W  
 Site: RWF 11-32 Pad  
 Well: RWF 41-31  
 Design #1 08Jun11 kjs

Azimuths to True North  
 Magnetic North: 10.32°

Magnetic Field  
 Strength: 52261.0nT  
 Dip Angle: 65.75°  
 Date: 6/6/2011  
 Model: IGRF2010

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	4.00
780.7	806.7	27.47	294.79	67.7	-146.6	161.5	161.5	Hold	27.47 Inclination
3803.2	4213.2	27.47	294.79	726.6	-1573.0	1732.7	1732.7	Start Drop	-1.50
5565.0	6044.3	0.00	0.00	907.1	-1963.9	2163.3	2163.3	Vertical	
5565.0	6144.3	0.00	0.00	907.1	-1963.9	2163.3	2163.3	Top Gas	
8065.0	8544.3	0.00	0.00	907.1	-1963.9	2163.3	2163.3	TD at	8544.3

# **PICEANCE VLY NAD 83**

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

**RWF 11-32 Pad**

**RWF 41-31 - Slot B6**

**Wellbore #1**

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

## **Standard Planning Report - Geographic**

**26 July, 2011**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well RWF 41-31 - Slot B6
<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 41-31	<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		
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<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 41-31 - Slot B6		
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<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	1,610,868.40 usft	<b>Latitude:</b>	39° 29' 8.597 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	2,318,233.50 usft	<b>Longitude:</b>	107° 54' 56.974 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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**Audit Notes:**

<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
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<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	294.79

<b>Plan Sections</b>										
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<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	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
806.7	27.47	294.79	780.7	67.7	-146.6	4.00	4.00	0.00	294.793	
4,213.2	27.47	294.79	3,803.2	726.6	-1,573.0	0.00	0.00	0.00	0.000	
6,044.3	0.00	0.00	5,565.0	907.1	-1,963.9	1.50	-1.50	0.00	180.000	
6,144.3	0.00	0.00	5,665.0	907.1	-1,963.9	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
8,544.3	0.00	0.00	8,065.0	907.1	-1,963.9	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 41-31 - Slot B6
<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 41-31	<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	1,610,868.40	2,318,233.50	39° 29' 8.597 N	107° 54' 56.974 W
120.0	0.00	0.00	120.0	0.0	0.0	1,610,868.40	2,318,233.50	39° 29' 8.597 N	107° 54' 56.974 W
<b>Start Build 4.00</b>									
806.7	27.47	294.79	780.7	67.7	-146.6	1,610,939.98	2,318,088.77	39° 29' 9.266 N	107° 54' 58.844 W
<b>Hold 27.47 Inclination</b>									
1,166.6	27.47	294.79	1,100.0	137.3	-297.3	1,611,013.56	2,317,939.99	39° 29' 9.954 N	107° 55' 0.766 W
<b>9 5/8"</b>									
2,175.3	27.47	294.79	1,995.0	332.4	-719.7	1,611,219.82	2,317,522.96	39° 29' 11.882 N	107° 55' 6.153 W
<b>Top of "G" Sand</b>									
2,288.0	27.47	294.79	2,095.0	354.2	-766.9	1,611,242.86	2,317,476.37	39° 29' 12.097 N	107° 55' 6.755 W
<b>Base of "G" Sand</b>									
4,213.2	27.47	294.79	3,803.2	726.6	-1,573.0	1,611,636.51	2,316,680.45	39° 29' 15.777 N	107° 55' 17.038 W
<b>Start Drop -1.50</b>									
4,855.2	17.84	294.79	4,395.0	830.2	-1,797.2	1,611,746.00	2,316,459.07	39° 29' 16.801 N	107° 55' 19.898 W
<b>Mesaverde</b>									
6,044.3	0.00	0.00	5,565.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
<b>Vertical</b>									
6,144.3	0.00	0.00	5,665.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
<b>Top Gas - Approx. Top Gas - Top Gas (25' Radius) RWF 41-31</b>									
7,394.3	0.00	0.00	6,915.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
<b>Cameo</b>									
8,224.3	0.00	0.00	7,745.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
<b>Coal D</b>									
8,394.3	0.00	0.00	7,915.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
<b>Rollins SS</b>									
8,544.3	0.00	0.00	8,065.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
<b>TD at 8544.3 - TD</b>									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (25' Radius) R\	0.00	0.00	5,665.0	907.1	-1,963.9	1,611,827.40	2,316,294.50	39° 29' 17.561 N	107° 55' 22.024 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,166.6	1,100.0	9 5/8"	9.625	12.250	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 41-31 - Slot B6
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
Project:	RU 32-06S-094W	MD Reference:	KELLY BUSHING @ 5565.0usft (SSD 573 (26' RKB) kjs)
Site:	RWF 11-32 Pad	North Reference:	True
Well:	RWF 41-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Jun11 kjs		

Formations:

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")
2,175.3	1,995.0	Top of "G" Sand			
2,288.0	2,095.0	Base of "G" Sand			
4,855.2	4,395.0	Mesaverde			
6,144.3	5,665.0	Approx. Top Gas			
7,394.3	6,915.0	Cameo			
8,224.3	7,745.0	Coal D			
8,394.3	7,915.0	Rollins SS			
8,544.3	8,065.0	TD			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.0	120.0	0.0	0.0	Start Build 4.00
806.7	780.7	67.7	-146.6	Hold 27.47 Inclination
4,213.2	3,803.2	726.6	-1,573.0	Start Drop -1.50
6,044.3	5,565.0	907.1	-1,963.9	Vertical
6,144.3	5,665.0	907.1	-1,963.9	Top Gas
8,544.3	8,065.0	907.1	-1,963.9	TD at 8544.3