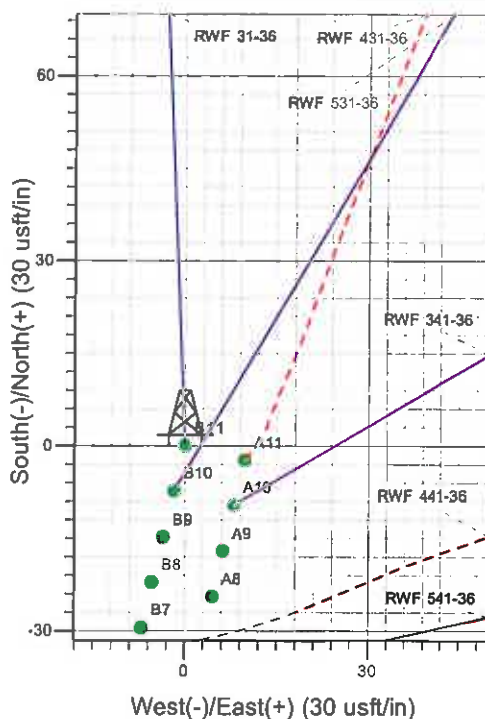
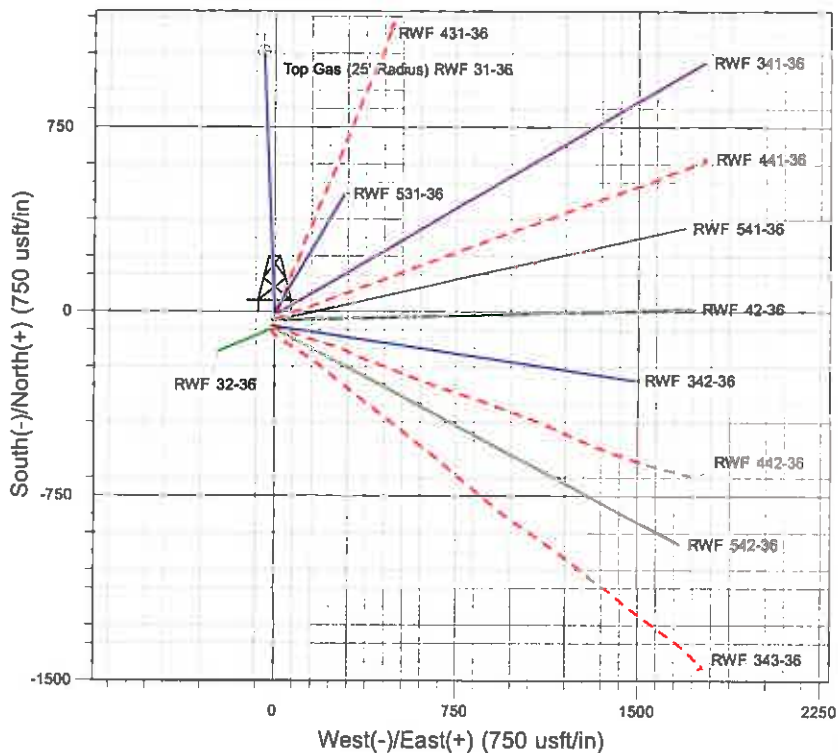
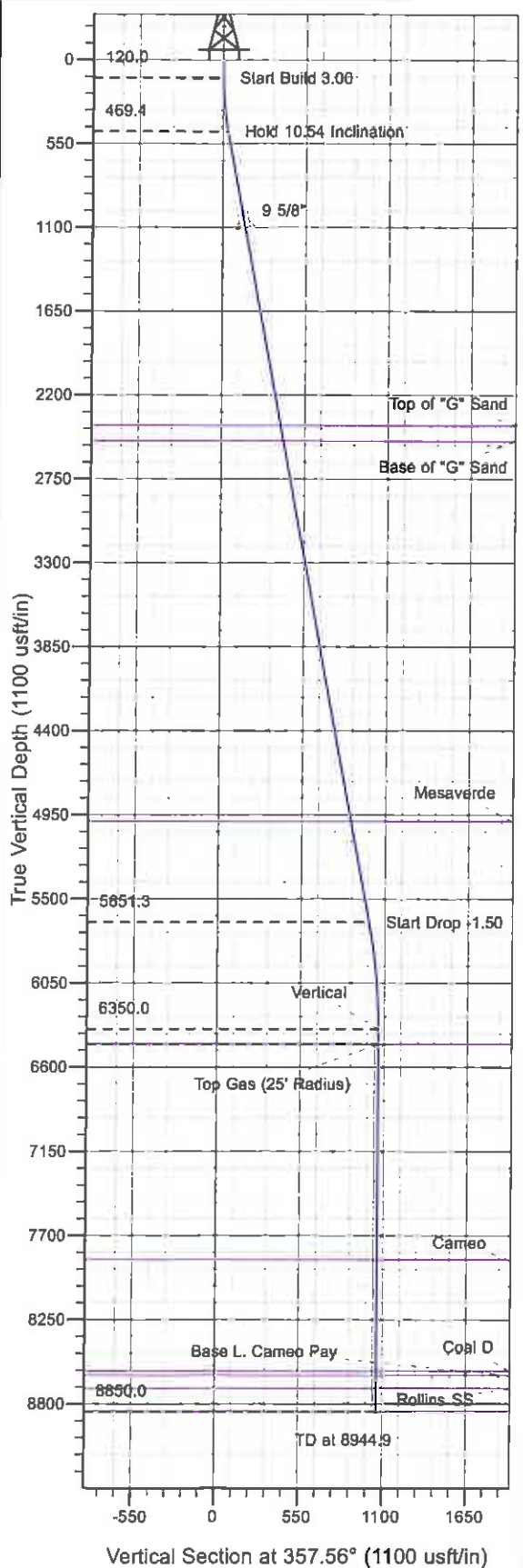




Well Name: RWF 31-36  
 Surface Location: RWF 32-36 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 6424.0  
 +N/-S 0.0 +E/-W 0.0 Northing 1610225.15 Easting 2340900.92 Latitude 39° 29' 8.099 N Longitude 107° 50' 7.736 W Slot B 11  
 KELLY BUSHING @ 6448.0usft (H&P 271 (24' RKB) kjs)



Project: RU 36-06S-094W  
 Site: RWF 32-36 Pad  
 Well: RWF 31-36  
 Plan #3 26Mar10 kjs

M Azimuths to True North  
 Magnetic North: 10.62°  
 Magnetic Field  
 Strength: 52566.4nT  
 Dip Angle: 65.85°  
 Date: 9/2/2008  
 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
469.4	471.3	10.54	357.56	32.2	-1.4	32.2	32.2	Hold 10.54 Inclin
5651.3	5742.2	10.54	357.56	995.5	-42.3	996.4	996.4	Start Drop -1.50
6350.0	6444.9	0.00	0.00	1059.9	-45.1	1060.8	1060.8	Vertical
6450.0	6544.9	0.00	0.00	1059.9	-45.1	1060.8	1060.8	Top Gas
8850.0	8944.9	0.00	0.00	1059.9	-45.1	1060.8	1060.8	TD at 8944.9

# **PICEANCE VLY NAD 83**

**RU 36-06S-094W**

**RWF 32-36 Pad**

**RWF 31-36 - Slot B11**

**Wellbore #1**

**Plan: Plan #3 26Mar10 kjs**

## **Standard Planning Report - Geographic**

**27 April, 2011**

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 31-36 - Slot B11
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6448.0usft (H&P 271 (24' RKB) kjs)
Project:	RU 36-06S-094W	MD Reference:	KELLY BUSHING @ 6448.0usft (H&P 271 (24' RKB) kjs)
Site:	RWF 32-36 Pad	North Reference:	True
Well:	RWF 31-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 26Mar10 kjs		

Project	RU 36-06S-094W, Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site		RWF 32-36 Pad			
Site Position:		Northing:	1,610,174.30 usft	Latitude:	39° 29' 7.596 N
From:	Map	Easting:	2,340,897.80 usft	Longitude:	107° 50' 7.759 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.473 °

Well	RWF 31-36 - Slot B11					
Well Position	+N/-S	0.0 usft	Northing:	1,610,225.15 usft	Latitude:	39° 29' 8.099 N
	+E/-W	0.0 usft	Easting:	2,340,900.92 usft	Longitude:	107° 50' 7.736 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,424.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (")	Dip Angle (")	Field Strength (nT)
	IGRF2005-10	9/2/2008	10.618	65.846	52,566

Design	Plan #3 26Mar10 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (")
	0.0	0.0	0.0	357.56

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	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
471.3	10.54	357.56	469.4	32.2	-1.4	3.00	3.00	0.00	357.565	
5,742.2	10.54	357.56	5,651.3	995.5	-42.3	0.00	0.00	0.00	0.000	
6,444.9	0.00	0.00	6,350.0	1,059.9	-45.1	1.50	-1.50	0.00	180.000	
6,544.9	0.00	0.00	6,450.0	1,059.9	-45.1	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
8,944.9	0.00	0.00	8,850.0	1,059.9	-45.1	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 31-36 - Slot B11
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6448.0usft (H&P 271 (24' RKB) kjs)
<b>Project:</b>	RU 36-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 6448.0usft (H&P 271 (24' RKB) kjs)
<b>Site:</b>	RWF 32-36 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 31-36	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 26Mar10 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	1,610,225.15	2,340,900.92	39° 29' 8.099 N	107° 50' 7.736 W
120.0	0.00	0.00	120.0	0.0	0.0	1,610,225.15	2,340,900.92	39° 29' 8.099 N	107° 50' 7.736 W
<b>Start Build 3.00</b>									
471.3	10.54	357.56	469.4	32.2	-1.4	1,610,257.37	2,340,900.38	39° 29' 8.417 N	107° 50' 7.753 W
<b>Hold 10.54 Inclination</b>									
1,112.8	10.54	357.56	1,100.0	149.4	-6.4	1,610,374.68	2,340,898.41	39° 29' 9.576 N	107° 50' 7.817 W
<b>9 5/8"</b>									
2,435.1	10.54	357.56	2,400.0	391.1	-16.6	1,610,616.52	2,340,894.34	39° 29' 11.964 N	107° 50' 7.948 W
<b>Top of "G" Sand</b>									
2,536.8	10.54	357.56	2,500.0	409.7	-17.4	1,610,635.13	2,340,894.03	39° 29' 12.148 N	107° 50' 7.958 W
<b>Base of "G" Sand</b>									
5,074.7	10.54	357.56	4,995.0	873.5	-37.1	1,611,099.27	2,340,886.24	39° 29' 16.732 N	107° 50' 8.209 W
<b>Mesaverde</b>									
5,742.2	10.54	357.56	5,651.3	995.5	-42.3	1,611,221.36	2,340,884.18	39° 29' 17.938 N	107° 50' 8.276 W
<b>Start Drop -1.50</b>									
6,444.9	0.00	0.00	6,350.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>Vertical</b>									
6,544.9	0.00	0.00	6,450.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>Top Gas - Approx. Top Gas</b>									
7,954.9	0.00	0.00	7,860.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>Cameo</b>									
8,684.9	0.00	0.00	8,590.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>Coal D</b>									
8,709.9	0.00	0.00	8,615.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>Base L. Cameo Pay</b>									
8,794.9	0.00	0.00	8,700.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>Rollins SS</b>									
8,844.9	0.00	0.00	8,850.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W
<b>TD at 8944.9</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) R1 - plan hits target center - Circle (radius 25.0)	0.00	0.00	6,450.0	1,059.9	-45.1	1,611,285.80	2,340,883.10	39° 29' 18.574 N	107° 50' 8.310 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,112.8	1,100.0	9 5/8"	9.625	12.250	

**Williams**  
Planning Report - Geographic

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Project:	RU 36-06S-094W	MD Reference:	KELLY BUSHING @ 6448.0usft (H&P 271 (24' RKB) kjs)
Site:	RWF 32-36 Pad	North Reference:	True
Well:	RWF 31-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 26Mar10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")	
2,435.1	2,400.0	Top of "G" Sand				
2,536.8	2,500.0	Base of "G" Sand				
5,074.7	4,995.0	Mesaverde				
6,544.9	6,450.0	Approx. Top Gas				
7,954.9	7,860.0	Cameo				
8,684.9	8,590.0	Coal D				
8,709.9	8,615.0	Base L. Cameo Pay				
8,794.9	8,700.0	Rollins SS				
8,944.9	8,850.0	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 3.00
471.3	469.4	32.2	-1.4	Hold 10.54 Inclination
5,742.2	5,651.3	995.5	-42.3	Start Drop -1.50
6,444.9	6,350.0	1,059.9	-45.1	Vertical
6,544.9	6,450.0	1,059.9	-45.1	Top Gas
8,944.9	8,850.0	1,059.9	-45.1	TD at 8944.9