

# **PICEANCE VLY NAD 83**

**RU 09-07S-094W**

**SR 33-9 Pad**

**SR 44-9 - Slot A6**

**Wellbore #1**

**Plan: Plan #3 09Jun10 kjs**

## **Standard Planning Report - Geographic**

**12 July, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well SR 44-9 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 7027.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	RU 09-07S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 7027.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	SR 33-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SR 44-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 09Jun10 kjs		

<b>Project</b>	RU 09-07S-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

Site		SR 33-9 Pad			
Site Position:		Northing:	1,597,935.60 usft	Latitude:	39° 27' 2.817 N
From:	Map	Easting:	2,325,884.60 usft	Longitude:	107° 53' 15.083 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.506 °

Well	SR 44-9 - Slot A6					
Well Position	+N/-S	0.0 usft	Northing:	1,597,917.90 usft	Latitude:	39° 27' 2.633 N
	+E/-W	0.0 usft	Easting:	2,325,850.70 usft	Longitude:	107° 53' 15.509 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	7,003.0 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>
	IGRF2005-10	2/9/2009	10.579	65.796	52,493

<b>Design</b>	Plan #3 09Jun10 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	128.58

<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	
575.1	8.90	128.58	573.3	-21.5	27.0	2.00	2.00	0.00	128.581	
5,960.6	8.90	128.58	5,893.9	-541.3	678.5	0.00	0.00	0.00	0.000	
6,554.1	0.00	0.00	6,485.0	-569.9	714.5	1.50	-1.50	0.00	180.000	
6,654.1	0.00	0.00	6,585.0	-569.9	714.5	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
9,174.1	0.00	0.00	9,105.0	-569.9	714.5	0.00	0.00	0.00	0.000	

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<b>Site:</b>	SR 33-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SR 44-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 09Jun10 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	1,597,917.90	2,325,850.70	39° 27' 2.633 N	107° 53' 15.509 W	
130.0	0.00	0.00	130.0	0.0	0.0	1,597,917.90	2,325,850.70	39° 27' 2.633 N	107° 53' 15.509 W	
Start Build 2.00										
575.1	8.90	128.58	573.3	-21.5	27.0	1,597,895.67	2,325,877.10	39° 27' 2.420 N	107° 53' 15.166 W	
Hold 8.90 Inclination										
1,108.2	8.90	128.58	1,100.0	-73.0	91.5	1,597,842.55	2,325,940.22	39° 27' 1.912 N	107° 53' 14.343 W	
9 5/8"										
3,254.1	8.90	128.58	3,220.0	-280.1	351.1	1,597,628.72	2,326,194.27	39° 26' 59.865 N	107° 53' 11.034 W	
Top of "G" Sand										
3,355.3	8.90	128.58	3,320.0	-289.8	363.3	1,597,618.64	2,326,206.25	39° 26' 59.768 N	107° 53' 10.878 W	
Base of "G" Sand										
5,708.6	8.90	128.58	5,645.0	-516.9	648.0	1,597,384.13	2,326,484.87	39° 26' 57.524 N	107° 53' 7.249 W	
Mesaverde										
5,960.6	8.90	128.58	5,893.9	-541.3	678.5	1,597,359.03	2,326,514.70	39° 26' 57.284 N	107° 53' 6.860 W	
Start Drop -1.50										
6,554.1	0.00	0.00	6,485.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
Vertical										
6,654.1	0.00	0.00	6,585.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
Top Gas - Approx. Top Gas										
8,139.1	0.00	0.00	8,070.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
Cameo Coals										
8,839.1	0.00	0.00	8,770.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
Coal D										
8,929.1	0.00	0.00	8,860.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
Base L. Cameo Pay										
9,054.1	0.00	0.00	8,985.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
Rollins SS										
9,174.1	0.00	0.00	9,105.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	
TD at 9174.1										

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) SF - hit/miss target - Shape	0.00	0.00	6,585.0	-569.9	714.5	1,597,329.40	2,326,549.90	39° 26' 57.000 N	107° 53' 6.402 W	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,108.2	1,100.0	9 5/8"	9.625	12.250	

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<b>Well:</b>	SR 44-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 09Jun10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,254.1	3,220.0	Top of "G" Sand				
3,355.3	3,320.0	Base of "G" Sand				
5,708.6	5,645.0	Mesaverde				
6,654.1	6,585.0	Approx. Top Gas				
8,139.1	8,070.0	Cameo Coals				
8,839.1	8,770.0	Coal D				
8,929.1	8,860.0	Base L. Cameo Pay				
9,054.1	8,985.0	Rollins SS				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
130.0	130.0	0.0	0.0	Start Build 2.00	
575.1	573.3	-21.5	27.0	Hold 8.90 Inclination	
5,960.6	5,893.9	-541.3	678.5	Start Drop -1.50	
6,554.1	6,485.0	-569.9	714.5	Vertical	
6,654.1	6,585.0	-569.9	714.5	Top Gas	
9,174.1	9,105.0	-569.9	714.5	TD at 9174.1	