

# **PICEANCE VLY NAD 83**

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

**SR 43-7 Pad**

**SR 632-7 - Slot B10**

**Wellbore #1**

**Plan: Plan #1 30Apr09 kjs**

## **Standard Planning Report - Geographic**

**05 October, 2009**

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well SR 632-7 - Slot B10
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 6918.0ft (Original Well Elev)
<b>Project:</b>	RU 07-07S-094W	<b>MD Reference:</b>	WELL @ 6918.0ft (Original Well Elev)
<b>Site:</b>	SR 43-7 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SR 632-7	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 30Apr09 kjs		

<b>Project</b>	RU 07-07S-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 43-7 Pad			
Site Position:		Northing:	1,597,791.79 ft	Latitude:	39° 26' 58.778 N
From:	Map	Easting:	2,315,880.49 ft	Longitude:	107° 55' 22.529 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.53 °

Well	SR 632-7 - Slot B10					
Well Position	+N/-S	0.0 ft	Northing:	1,597,836.80 ft	Latitude:	39° 26' 59.233 N
	+E/-W	0.0 ft	Easting:	2,315,917.70 ft	Longitude:	107° 55' 22.070 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,893.0 ft

<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</b>
			(°)	(°)	(nT)
	IGRF2005-10	4/30/2009	10.57	65.78	52,523

<b>Design</b>	Plan #1 30Apr09 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>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	307.63

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
405.7	10.00	307.63	404.3	15.2	-19.7	3.50	3.50	0.00	307.63	
3,594.9	10.00	307.63	3,545.0	353.3	-458.3	0.00	0.00	0.00	0.00	
3,868.1	19.56	307.63	3,808.9	395.8	-513.4	3.50	3.50	0.00	0.00	
6,016.5	19.56	307.63	5,833.2	835.1	-1,083.1	0.00	0.00	0.00	0.00	
6,494.6	10.00	307.63	6,295.0	909.5	-1,179.6	2.00	-2.00	0.00	180.00	Top Gas (25' Radius)
6,994.6	0.00	0.00	6,792.5	936.0	-1,214.1	2.00	-2.00	0.00	180.00	
9,047.1	0.00	0.00	8,845.0	936.0	-1,214.1	0.00	0.00	0.00	0.00	

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<b>Project:</b>	RU 07-07S-094W	<b>MD Reference:</b>	WELL @ 6918.0ft (Original Well Elev)
<b>Site:</b>	SR 43-7 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SR 632-7	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 30Apr09 kjs		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,597,836.80	2,315,917.70	39° 26' 59.233 N	107° 55' 22.070 W
120.0	0.00	0.00	120.0	0.0	0.0	1,597,836.80	2,315,917.70	39° 26' 59.233 N	107° 55' 22.070 W
405.7	10.00	307.63	404.3	15.2	-19.7	1,597,852.50	2,315,898.42	39° 26' 59.383 N	107° 55' 22.321 W
1,112.2	10.00	307.63	1,100.0	90.1	-116.9	1,597,929.97	2,315,803.30	39° 27' 0.123 N	107° 55' 23.559 W
<b>9 5/8"</b>									
3,087.2	10.00	307.63	3,045.0	299.5	-388.5	1,598,146.52	2,315,537.38	39° 27' 2.193 N	107° 55' 27.022 W
<b>Top of "G" Sand</b>									
3,188.7	10.00	307.63	3,145.0	310.2	-402.4	1,598,157.65	2,315,523.71	39° 27' 2.299 N	107° 55' 27.200 W
<b>Base of "G" Sand</b>									
3,594.9	10.00	307.63	3,545.0	353.3	-458.3	1,598,202.19	2,315,469.02	39° 27' 2.725 N	107° 55' 27.912 W
3,868.1	19.56	307.63	3,808.9	395.8	-513.4	1,598,246.15	2,315,415.04	39° 27' 3.145 N	107° 55' 28.615 W
5,455.9	19.56	307.63	5,305.0	720.4	-934.4	1,598,581.87	2,315,002.84	39° 27' 6.353 N	107° 55' 33.982 W
<b>Mesaverde</b>									
6,016.5	19.56	307.63	5,833.2	835.1	-1,083.1	1,598,700.41	2,314,857.30	39° 27' 7.486 N	107° 55' 35.877 W
6,494.6	10.00	307.63	6,295.0	909.5	-1,179.6	1,598,777.34	2,314,762.84	39° 27' 8.221 N	107° 55' 37.107 W
<b>Approx. Top Gas</b>									
6,994.6	0.00	0.00	6,792.5	936.0	-1,214.1	1,598,804.83	2,314,729.09	39° 27' 8.483 N	107° 55' 37.547 W
7,957.1	0.00	0.00	7,755.0	936.0	-1,214.1	1,598,804.83	2,314,729.09	39° 27' 8.483 N	107° 55' 37.547 W
<b>Cameo Coals</b>									
8,667.1	0.00	0.00	8,465.0	936.0	-1,214.1	1,598,804.83	2,314,729.09	39° 27' 8.483 N	107° 55' 37.547 W
<b>Coal D</b>									
8,897.1	0.00	0.00	8,695.0	936.0	-1,214.1	1,598,804.83	2,314,729.09	39° 27' 8.483 N	107° 55' 37.547 W
<b>Rollins</b>									
9,047.1	0.00	0.00	8,845.0	936.0	-1,214.1	1,598,804.83	2,314,729.09	39° 27' 8.483 N	107° 55' 37.547 W
<b>TD</b>									

### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Top Gas (25' Radius) SF - plan misses by 21.6ft at 6496.5ft MD (6296.9 TVD, 909.7 N, -1179.8 E) - Circle (radius 25.0)	0.00	0.00	6,295.0	922.8	-1,196.9	1,598,791.10	2,314,745.90	39° 27' 8.352 N	107° 55' 37.328 W

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,112.2	1,100.0	9 5/8"	9-5/8	12-1/4

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<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 30Apr09 kjs		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,087.2	3,045.00	Top of "G" Sand				
3,188.7	3,145.00	Base of "G" Sand				
5,455.9	5,305.00	Mesaverde				
6,494.6	6,295.00	Approx. Top Gas				
7,957.1	7,755.00	Cameo Coals				
8,667.1	8,465.00	Coal D				
8,897.1	8,695.00	Rollins				
9,047.1	8,845.00	TD				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
120.0	120.0	0.0	0.0	Start Build 3.50	
405.7	404.3	15.2	-19.7	Hold 10.00 Inclination	
3,594.9	3,545.0	353.3	-458.3	Start Build 3.50	
3,868.1	3,808.9	395.8	-513.4	Hold 19.56 Inclination	
6,016.5	5,833.2	835.1	-1,083.1	Start Drop -2.00	
6,494.6	6,295.0	909.5	-1,179.6	Top Gas	
6,994.6	6,792.5	936.0	-1,214.1	Vertical	
9,047.1	8,845.0	936.0	-1,214.1	TD at 9047.1	