

# **PICEANCE VLY NAD 83**

**PA 29-06S-095W**

**DOE 3-W-29 Pad**

**PA 314-29 - Slot B2**

**Wellbore #1**

**Plan: Plan #1 05Feb09 kjs**

## **Standard Planning Report - Geographic**

**07 August, 2009**

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well PA 314-29 - Slot B2
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5702.0ft (Nabors 577 (26') kjs)
<b>Project:</b>	PA 29-06S-095W	<b>MD Reference:</b>	WELL @ 5702.0ft (Nabors 577 (26') kjs)
<b>Site:</b>	DOE 3-W-29 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 314-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 05Feb09 kjs		

<b>Project</b>	PA 29-06S-095W, 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>	DOE 3-W-29 Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,613,247.00 ft
<b>From:</b>	Map	<b>Easting:</b>	2,287,962.20 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	in
		<b>Latitude:</b>	39° 29' 23.965 N
		<b>Longitude:</b>	108° 1' 23.779 W
		<b>Grid Convergence:</b>	-1.59 °

<b>Well</b>	PA 314-29 - Slot B2		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	39° 29' 23.537 N
		<b>Longitude:</b>	108° 1' 23.121 W
		<b>Ground Level:</b>	5,676.0 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)
	IGRF2000	12/31/2004	11.47	65.98	53,090

<b>Design</b>	Plan #1 05Feb09 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	255.29

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	(°)	(°)	<b>Depth</b>	(ft)	(ft)	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
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	
1,067.9	28.44	255.29	1,029.5	-58.5	-222.9	3.00	3.00	0.00	255.29	
3,704.6	28.44	255.29	3,348.0	-377.4	-1,437.4	0.00	0.00	0.00	0.00	
5,600.5	0.00	0.00	5,167.0	-494.4	-1,883.2	1.50	-1.50	0.00	180.00	Top Gas (25' Radius)
7,750.5	0.00	0.00	7,317.0	-494.4	-1,883.2	0.00	0.00	0.00	0.00	

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well PA 314-29 - Slot B2
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5702.0ft (Nabors 577 (26') kjs)
<b>Project:</b>	PA 29-06S-095W	<b>MD Reference:</b>	WELL @ 5702.0ft (Nabors 577 (26') kjs)
<b>Site:</b>	DOE 3-W-29 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 314-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 05Feb09 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	1,613,202.30	2,288,012.60	39° 29' 23.537 N	108° 1' 23.121 W
120.0	0.00	0.00	120.0	0.0	0.0	1,613,202.30	2,288,012.60	39° 29' 23.537 N	108° 1' 23.121 W
1,067.9	28.44	255.29	1,029.5	-58.5	-222.9	1,613,149.99	2,287,788.16	39° 29' 22.959 N	108° 1' 25.964 W
2,139.8	28.44	255.29	1,972.0	-188.1	-716.6	1,613,034.15	2,287,291.08	39° 29' 21.678 N	108° 1' 32.261 W
Top of "G" Sand									
2,253.5	28.44	255.29	2,072.0	-201.9	-769.0	1,613,021.85	2,287,238.34	39° 29' 21.542 N	108° 1' 32.929 W
Base of "G" Sand									
2,367.2	28.44	255.29	2,172.0	-215.6	-821.4	1,613,009.56	2,287,185.60	39° 29' 21.406 N	108° 1' 33.597 W
9 5/8"									
3,704.6	28.44	255.29	3,348.0	-377.4	-1,437.4	1,612,865.01	2,286,565.37	39° 29' 19.807 N	108° 1' 41.455 W
4,358.7	18.63	255.29	3,947.0	-443.6	-1,689.7	1,612,805.81	2,286,311.34	39° 29' 19.153 N	108° 1' 44.673 W
Mesaverde									
5,600.5	0.00	0.00	5,167.0	-494.4	-1,883.2	1,612,760.40	2,286,116.50	39° 29' 18.650 N	108° 1' 47.141 W
Approx. Top Gas									
7,055.5	0.00	0.00	6,622.0	-494.4	-1,883.2	1,612,760.40	2,286,116.50	39° 29' 18.650 N	108° 1' 47.141 W
Cameo Coals									
7,600.5	0.00	0.00	7,167.0	-494.4	-1,883.2	1,612,760.40	2,286,116.50	39° 29' 18.650 N	108° 1' 47.141 W
Rollins SS									
7,750.5	0.00	0.00	7,317.0	-494.4	-1,883.2	1,612,760.40	2,286,116.50	39° 29' 18.650 N	108° 1' 47.141 W
TD									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Top Gas (25' Radius) P/	0.00	0.00	5,167.0	-494.4	-1,883.2	1,612,760.40	2,286,116.50	39° 29' 18.650 N	108° 1' 47.141 W
- plan hits target									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,367.2	2,172.0	9 5/8"	9.625	12.250	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,139.8	1,972.00	Top of "G" Sand				
2,253.5	2,072.00	Base of "G" Sand				
4,358.7	3,947.00	Mesaverde				
5,600.5	5,167.00	Approx. Top Gas				
7,055.5	6,622.00	Cameo Coals				
7,600.5	7,167.00	Rollins SS				
7,750.5	7,317.00	TD				

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well PA 314-29 - Slot B2
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5702.0ft (Nabors 577 (26') kjs)
<b>Project:</b>	PA 29-06S-095W	<b>MD Reference:</b>	WELL @ 5702.0ft (Nabors 577 (26') kjs)
<b>Site:</b>	DOE 3-W-29 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 314-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 05Feb09 kjs		

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
120.0	120.0	0.0	0.0	Start Build 3.00
1,067.9	1,029.5	-58.5	-222.9	Hold 28.44 Inclination
3,704.6	3,348.0	-377.4	-1,437.4	Start Drop -1.50
5,600.5	5,167.0	-494.4	-1,883.2	Top Gas
7,750.5	7,317.0	-494.4	-1,883.2	TD at 7750.5