

# **PICEANCE VLY NAD 83**

**PA 14-07S-095W**

**SP 32-14 Pad**

**SP 342-14 - Slot B10**

**Wellbore #1**

**Plan: Design #1 25Jan10 kjs**

## **Standard Planning Report - Geographic**

**06 May, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well SP 342-14 - Slot B10
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 7662.0usft (Cyclone 30 (23' KB) JMS)
<b>Project:</b>	PA 14-07S-095W	<b>MD Reference:</b>	WELL @ 7662.0usft (Cyclone 30 (23' KB) JMS)
<b>Site:</b>	SP 32-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SP 342-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 25Jan10 kjs		

<b>Project</b>	PA 14-07S-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>	SP 32-14 Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,593,867.70 usft
<b>From:</b>	Map	<b>Easting:</b>	2,303,941.70 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	39° 26' 16.834 N
		<b>Longitude:</b>	107° 57' 53.317 W
		<b>Grid Convergence:</b>	-1.555 °

Well	SP 342-14 - Slot B10					
Well Position	+N/-S	0.0 usft	Northing:	1,593,887.30 usft	Latitude:	39° 26' 17.020 N
	+E/-W	0.0 usft	Easting:	2,303,915.70 usft	Longitude:	107° 57' 53.655 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	7,639.0 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	1/25/2010	10.486	65.746	52,377

<b>Design</b>	Design #1 25Jan10 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	65.66	

<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	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
840.7	18.74	65.66	828.0	48.1	106.4	2.60	2.60	0.00	65.664	
6,381.1	18.74	65.66	6,074.7	781.6	1,728.2	0.00	0.00	0.00	0.000	
7,318.1	0.00	0.00	6,995.0	844.2	1,866.6	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
9,468.1	0.00	0.00	9,145.0	844.2	1,866.6	0.00	0.00	0.00	0.000	

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<b>Project:</b>	PA 14-07S-095W	<b>MD Reference:</b>	WELL @ 7662.0usft (Cyclone 30 (23' KB) JMS)
<b>Site:</b>	SP 32-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SP 342-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 25Jan10 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	1,593,887.30	2,303,915.70	39° 26' 17.020 N	107° 57' 53.655 W	
120.0	0.00	0.00	120.0	0.0	0.0	1,593,887.30	2,303,915.70	39° 26' 17.020 N	107° 57' 53.655 W	
Start Build 2.60										
840.7	18.74	65.66	828.0	48.1	106.4	1,593,932.53	2,304,023.40	39° 26' 17.496 N	107° 57' 52.298 W	
Hold 18.74 Inclination										
947.0	18.74	65.66	928.6	62.2	137.5	1,593,945.74	2,304,054.87	39° 26' 17.635 N	107° 57' 51.902 W	
9 5/8"										
3,783.8	18.74	65.66	3,615.0	437.8	967.9	1,594,298.61	2,304,895.09	39° 26' 21.347 N	107° 57' 41.318 W	
Top of "G" Sand										
3,889.4	18.74	65.66	3,715.0	451.7	998.8	1,594,311.75	2,304,926.37	39° 26' 21.485 N	107° 57' 40.924 W	
Base of "G" Sand										
5,964.4	18.74	65.66	5,680.0	726.4	1,606.2	1,594,569.86	2,305,540.96	39° 26' 24.199 N	107° 57' 33.182 W	
Mesaverde										
6,381.1	18.74	65.66	6,074.7	781.6	1,728.2	1,594,621.70	2,305,664.39	39° 26' 24.745 N	107° 57' 31.627 W	
Start Drop -2.00										
7,318.1	0.00	0.00	6,995.0	844.2	1,866.6	1,594,680.50	2,305,804.40	39° 26' 25.363 N	107° 57' 29.863 W	
Top gas - Approx. Top Gas										
8,318.1	0.00	0.00	7,995.0	844.2	1,866.6	1,594,680.50	2,305,804.40	39° 26' 25.363 N	107° 57' 29.863 W	
Cameo Coals										
9,318.1	0.00	0.00	8,995.0	844.2	1,866.6	1,594,680.50	2,305,804.40	39° 26' 25.363 N	107° 57' 29.863 W	
Rollins SS										
9,468.1	0.00	0.00	9,145.0	844.2	1,866.6	1,594,680.50	2,305,804.40	39° 26' 25.363 N	107° 57' 29.863 W	
TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Top Gas (25' Radius) SF	0.00	0.00	6,995.0	844.2	1,866.6	1,594,680.50	2,305,804.40	39° 26' 25.363 N	107° 57' 29.863 W	
- plan hits target center										
- Circle (radius 25.0)										

Casing Points							Casing Diameter (in)	Hole Diameter (in)
Measured Depth (usft)	Vertical Depth (usft)	Name						
947.0	928.6	9 5/8"					9.625	12.250

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<b>Well:</b>	SP 342-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 25Jan10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,783.8	3,615.0	Top of "G" Sand				
3,889.4	3,715.0	Base of "G" Sand				
5,964.4	5,680.0	Mesaverde				
7,318.1	6,995.0	Approx. Top Gas				
8,318.1	7,995.0	Cameo Coals				
9,318.1	8,995.0	Rollins SS				
9,468.1	9,145.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.0	120.0	0.0	0.0	Start Build 2.60	
840.7	828.0	48.1	106.4	Hold 18.74 Inclination	
6,381.1	6,074.7	781.6	1,728.2	Start Drop -2.00	
7,318.1	6,995.0	844.2	1,866.6	Top gas	
9,468.1	9,145.0	844.2	1,866.6	TD at 9468.1	