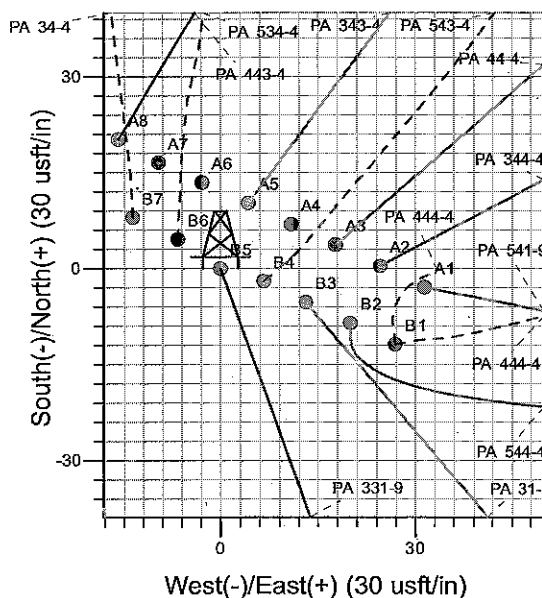
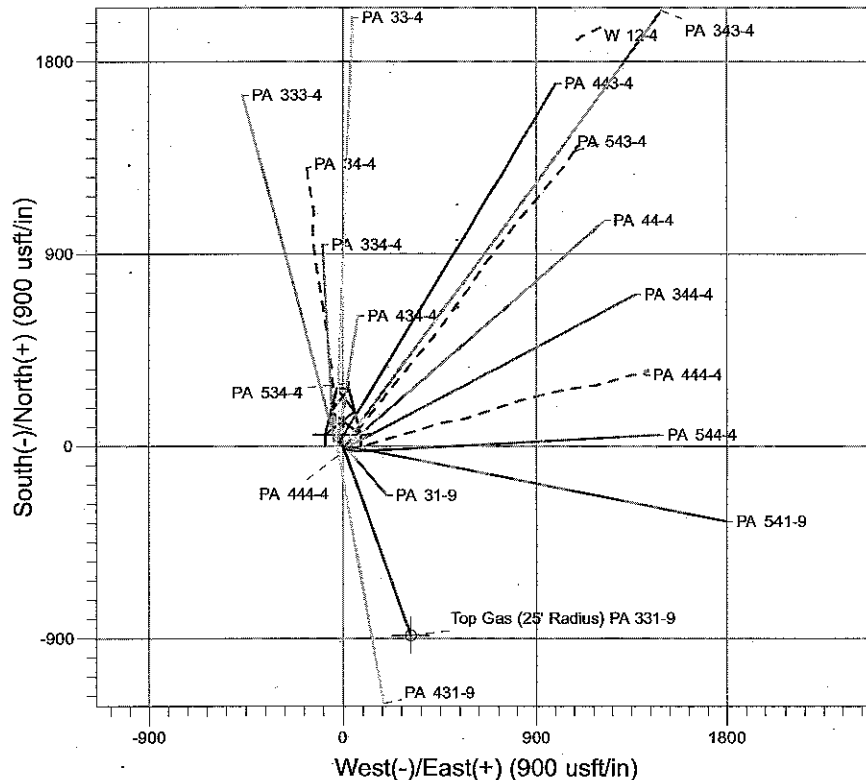
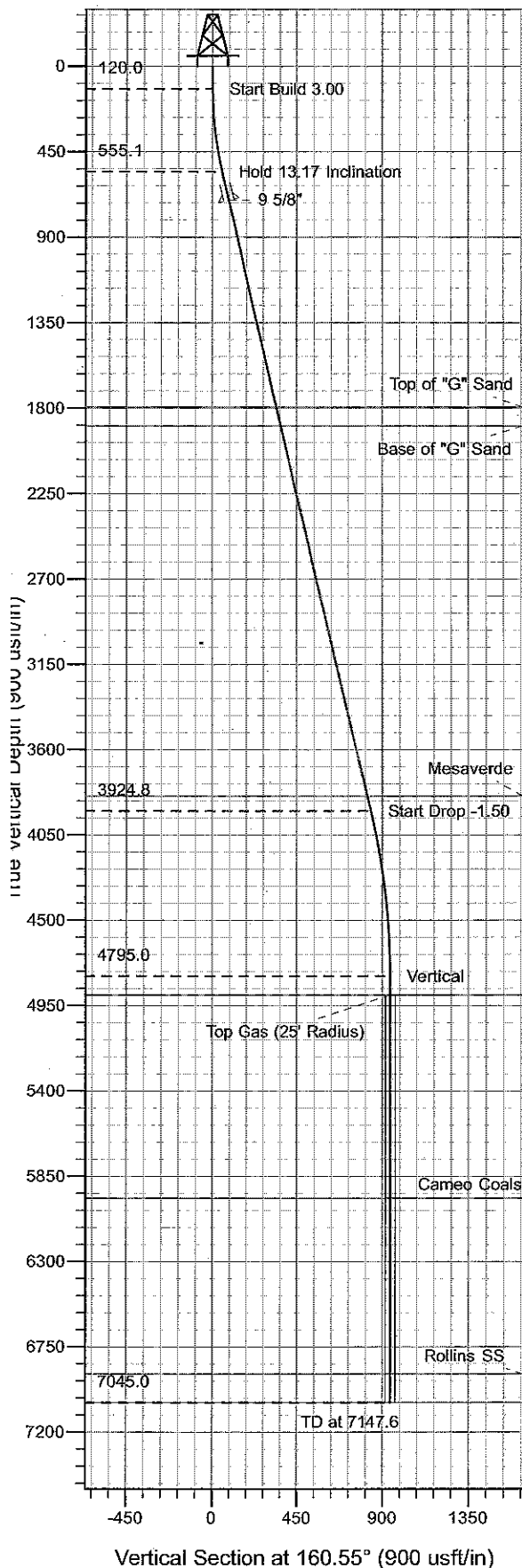




Surface Location: PA 34-4 Pad  
 North American Datum 1983, US State Plane 1983, Colorado Central Zone  
 Ground Elevation: 5757.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1602014.58 2294048.26 39° 27' 34.653 N 108° 0' 2.233 W B5  
 KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)



Project: PA 04-07S-095W  
 Site: PA 34-4 Pad  
 Well: PA 331-9  
 PA 331-9 plan #1 22Mar10 sam

M Azimuths to True North  
 Magnetic North: 10.49°  
 Magnetic Field  
 Strength: 52384.7snT  
 Dip Angle: 65.75°  
 Date: 3/22/2010  
 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
555.1	559.0	13.17	160.55	-47.4	16.7	50.2	50.2	Hold 13.17 Inclination
3924.8	4019.6	13.17	160.55	-790.8	279.2	838.7	838.7	Start Drop -1.50
4795.0	4897.6	0.00	0.00	-885.5	312.6	939.1	939.1	Vertical
4895.0	4997.6	0.00	0.00	-885.5	312.6	939.1	939.1	Top Gas
7045.0	7147.6	0.00	0.00	-885.5	312.6	939.1	939.1	TD at 7147.6

# **PICEANCE VLY NAD 83**

**PA 04-07S-095W**

**PA 34-4 Pad**

**PA 331-9 - Slot B5**

**Wellbore #1**

**Plan: PA 331-9 plan #1 22Mar10 sam**

## **Standard Planning Report - Geographic**

**25 May, 2010**

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well PA 331-9 - Slot B5
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Project:</b>	PA 04-07S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Site:</b>	PA 34-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 331-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PA 331-9 plan #1 22Mar10 sam		

<b>Project</b>	PA 04-07S-095W, Garfield County, CO, 04-07S-095W		
<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>	PA 34-4 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,602,022.90 usft	<b>Latitude:</b> 39° 27' 34.732 N
<b>From:</b>	Map	<b>Easting:</b>	2,294,034.80 usft	<b>Longitude:</b> 108° 0' 2.407 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.577 °

<b>Well</b>	PA 331-9 - Slot B5			
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b> 1,602,014.57 usft	<b>Latitude:</b> 39° 27' 34.653 N
	+E/-W	0.0 usft	<b>Easting:</b> 2,294,048.26 usft	<b>Longitude:</b> 108° 0' 2.233 W
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 5,757.0 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	3/22/2010	10.486	65.753	52,385

<b>Design</b>	PA 331-9 plan #1 22Mar10 sam			
<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	160.55

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	
559.0	13.17	160.55	555.1	-47.4	16.7	3.00	3.00	0.00	160.555	
4,019.6	13.17	160.55	3,924.8	-790.8	279.2	0.00	0.00	0.00	0.000	
4,897.6	0.00	0.00	4,795.0	-885.5	312.6	1.50	-1.50	0.00	180.000	
4,997.6	0.00	0.00	4,895.0	-885.5	312.6	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
7,147.6	0.00	0.00	7,045.0	-885.5	312.6	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 PA 331-9 - Slot B5
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Project:</b>	PA 04-07S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Site:</b>	PA 34-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 331-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PA 331-9 plan #1 22Mar10 sam		

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	1,602,014.57	2,294,048.26	39° 27' 34.653 N	108° 0' 2.233 W
120.0	0.00	0.00	120.0	0.0	0.0	1,602,014.57	2,294,048.26	39° 27' 34.653 N	108° 0' 2.233 W
Start Build 3.00									
559.0	13.17	160.55	555.1	-47.4	16.7	1,601,966.77	2,294,063.68	39° 27' 34.185 N	108° 0' 2.020 W
Hold 13.17 Inclination									
715.0	13.17	160.55	707.0	-80.9	28.6	1,601,932.94	2,294,074.58	39° 27' 33.854 N	108° 0' 1.869 W
9 5/8"									
1,832.3	13.17	160.55	1,795.0	-320.9	113.3	1,601,690.67	2,294,152.69	39° 27' 31.481 N	108° 0' 0.788 W
Top of "G" Sand									
1,935.0	13.17	160.55	1,895.0	-343.0	121.1	1,601,668.40	2,294,159.86	39° 27' 31.263 N	108° 0' 0.689 W
Base of "G" Sand									
3,937.7	13.17	160.55	3,845.0	-773.2	273.0	1,601,234.16	2,294,299.85	39° 27' 27.011 N	107° 59' 58.752 W
Mesaverde									
4,019.6	13.17	160.55	3,924.8	-790.8	279.2	1,601,216.40	2,294,305.58	39° 27' 26.837 N	107° 59' 58.673 W
Start Drop -1.50									
4,897.6	0.00	0.00	4,795.0	-885.5	312.6	1,601,120.80	2,294,336.40	39° 27' 25.901 N	107° 59' 58.247 W
Vertical									
4,997.6	0.00	0.00	4,895.0	-885.5	312.6	1,601,120.80	2,294,336.40	39° 27' 25.901 N	107° 59' 58.247 W
Top Gas - Approx. Top Gas									
6,067.6	0.00	0.00	5,965.0	-885.5	312.6	1,601,120.80	2,294,336.40	39° 27' 25.901 N	107° 59' 58.247 W
Cameo Coals									
6,997.6	0.00	0.00	6,895.0	-885.5	312.6	1,601,120.80	2,294,336.40	39° 27' 25.901 N	107° 59' 58.247 W
Rollins SS									
7,147.6	0.00	0.00	7,045.0	-885.5	312.6	1,601,120.80	2,294,336.40	39° 27' 25.901 N	107° 59' 58.247 W
TD at 7147.6 - 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) P/	0.00	0.00	4,895.0	-885.5	312.6	1,601,120.80	2,294,336.40	39° 27' 25.901 N	107° 59' 58.247 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points						Casing Diameter (in)	Hole Diameter (in)
Measured Depth (usft)	Vertical Depth (usft)	Name					
715.0	707.0	9 5/8"				9.625	12.250

# Williams

## Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well PA 331-9 - Slot B5
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Project:</b>	PA 04-07S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 5779.0usft (Cyclone 17 (22' KB) kjs)
<b>Site:</b>	PA 34-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 331-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PA 331-9 plan #1 22Mar10 sam		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,832.3	1,795.0	Top of "G" Sand		0.000		
1,935.0	1,895.0	Base of "G" Sand		0.000		
3,937.7	3,845.0	Mesaverde		0.000		
4,997.6	4,895.0	Approx. Top Gas		0.000		
6,067.6	5,965.0	Cameo Coals		0.000		
6,997.6	6,895.0	Rollins SS		0.000		
7,147.6	7,045.0	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 3.00	
559.0	555.1	-47.4	16.7	Hold 13.17 Inclination	
4,019.6	3,924.8	-790.8	279.2	Start Drop -1.50	
4,897.6	4,795.0	-885.5	312.6	Vertical	
4,997.6	4,895.0	-885.5	312.6	Top Gas	
7,147.6	7,045.0	-885.5	312.6	TD at 7147.6	