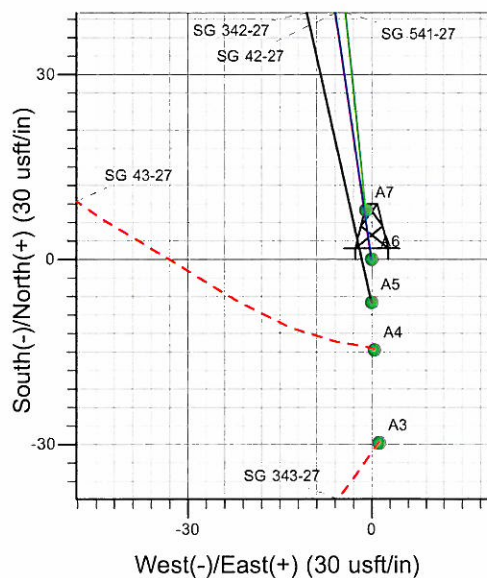
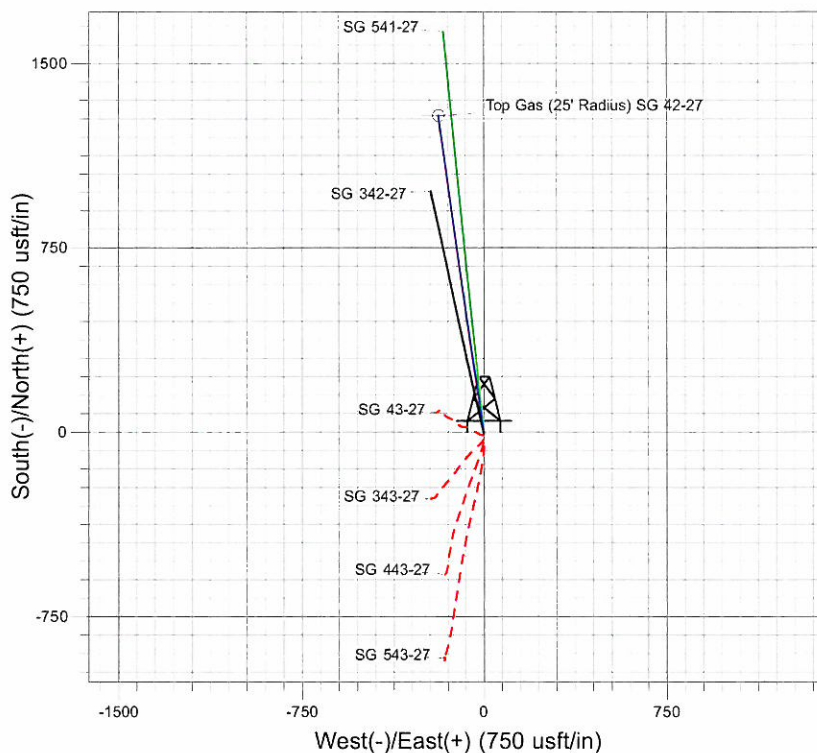
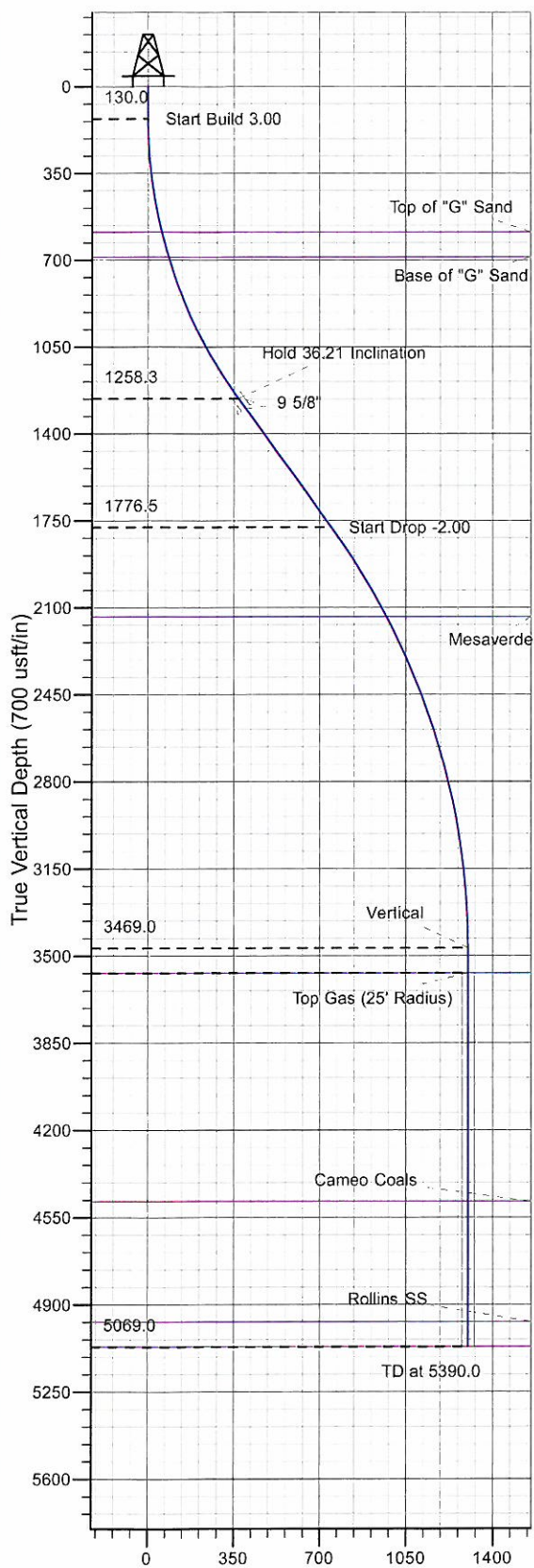




Well Name: SG 42-27  
 Surface Location: SG 43-27 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5018.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1583900.70 2268793.40 39° 24' 28.700 N 108° 5' 17.530 W A6  
 WELL @ 5042.0usft (Original Well Elev)



Project: SG 27-07S-096W  
 Site: SG 43-27 Pad  
 Well: SG 42-27  
 Design #1 14Jun10 kjs

M Azimuths to True North  
 Magnetic North: 10.51°  
 Magnetic Field  
 Strength: 52298.6snT  
 Dip Angle: 65.68°  
 Date: 6/14/2010  
 Model: IGRF2010

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
130.0	130.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.00
1258.3	1337.1	36.21	351.66	365.0	-53.5	368.9	368.9	Hold 36.21 Inclination
1776.5	1979.3	36.21	351.66	740.4	-108.6	748.4	748.4	Start Drop -2.00
3469.0	3790.0	0.00	0.00	1288.0	-188.9	1301.8	1301.8	Vertical
3569.0	3890.0	0.00	0.00	1288.0	-188.9	1301.8	1301.8	Top Gas
5069.0	5390.0	0.00	0.00	1288.0	-188.9	1301.8	1301.8	TD at 5390.0

# **PICEANCE VLY NAD 83**

**SG 27-07S-096W**

**SG 43-27 Pad**

**SG 42-27 - Slot A6**

**Wellbore #1**

**Plan: Design #1 14Jun10 kjs**

## **Standard Planning Report - Geographic**

**03 August, 2010**



**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well SG 42-27 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5042.0usft (Original Well Elev)
<b>Project:</b>	SG 27-07S-096W	<b>MD Reference:</b>	WELL @ 5042.0usft (Original Well Elev)
<b>Site:</b>	SG 43-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 42-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 14Jun10 kjs		

<b>Project</b>	SG 27-07S-096W, Garfield County, CO, 27-07S-096W		
<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>	SG 43-27 Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,583,886.00 usft
<b>From:</b>	Map	<b>Easting:</b>	2,268,793.40 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	39° 24' 28.554 N
		<b>Longitude:</b>	108° 5' 17.525 W
		<b>Grid Convergence:</b>	-1.632 °

<b>Well</b>	SG 42-27 - Slot A6		
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b> 1,583,900.70 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b> 2,268,793.40 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 24' 28.700 N
			<b>Longitude:</b> 108° 5' 17.530 W
			<b>Ground Level:</b> 5,018.0 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>
	IGRF2010	6/14/2010	10.511	65.676	52,299

<b>Design</b>	Design #1 14Jun10 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	351.66

<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	
130.0	0.00	0.00	130.0	0.0	0.0	0.00	0.00	0.00	0.000	
1,337.1	36.21	351.66	1,258.3	365.0	-53.5	3.00	3.00	0.00	351.658	
1,979.3	36.21	351.66	1,776.5	740.4	-108.6	0.00	0.00	0.00	0.000	
3,790.0	0.00	0.00	3,469.0	1,288.0	-188.9	2.00	-2.00	0.00	180.000	
3,890.0	0.00	0.00	3,569.0	1,288.0	-188.9	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
5,390.0	0.00	0.00	5,069.0	1,288.0	-188.9	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 SG 42-27 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5042.0usft (Original Well Elev)
<b>Project:</b>	SG 27-07S-096W	<b>MD Reference:</b>	WELL @ 5042.0usft (Original Well Elev)
<b>Site:</b>	SG 43-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 42-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 14Jun10 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	1,583,900.70	2,268,793.40	39° 24' 28.700 N	108° 5' 17.530 W	
130.0	0.00	0.00	130.0	0.0	0.0	1,583,900.70	2,268,793.40	39° 24' 28.700 N	108° 5' 17.530 W	
<b>Start Build 3.00</b>										
591.5	13.84	351.66	587.0	54.9	-8.0	1,583,955.80	2,268,786.92	39° 24' 29.242 N	108° 5' 17.633 W	
<b>Top of "G" Sand</b>										
695.2	16.96	351.66	687.0	82.1	-12.0	1,583,983.15	2,268,783.70	39° 24' 29.511 N	108° 5' 17.684 W	
<b>Base of "G" Sand</b>										
1,337.1	36.21	351.66	1,258.3	365.0	-53.5	1,584,267.09	2,268,750.29	39° 24' 32.307 N	108° 5' 18.212 W	
<b>Hold 36.21 Inclination</b>										
1,387.0	36.21	351.66	1,298.6	394.2	-57.8	1,584,296.36	2,268,746.85	39° 24' 32.596 N	108° 5' 18.267 W	
<b>9 5/8"</b>										
1,979.3	36.21	351.66	1,776.5	740.4	-108.6	1,584,643.90	2,268,705.96	39° 24' 36.018 N	108° 5' 18.914 W	
<b>Start Drop -2.00</b>										
2,404.6	27.71	351.66	2,137.0	963.0	-141.2	1,584,867.27	2,268,679.68	39° 24' 38.217 N	108° 5' 19.329 W	
<b>Mesaverde</b>										
3,790.0	0.00	0.00	3,469.0	1,288.0	-188.9	1,585,193.50	2,268,641.30	39° 24' 41.429 N	108° 5' 19.937 W	
<b>Vertical</b>										
3,890.0	0.00	0.00	3,569.0	1,288.0	-188.9	1,585,193.50	2,268,641.30	39° 24' 41.429 N	108° 5' 19.937 W	
<b>Top Gas - Approx. Top Gas</b>										
4,808.0	0.00	0.00	4,487.0	1,288.0	-188.9	1,585,193.50	2,268,641.30	39° 24' 41.429 N	108° 5' 19.937 W	
<b>Cameo Coals</b>										
5,290.0	0.00	0.00	4,969.0	1,288.0	-188.9	1,585,193.50	2,268,641.30	39° 24' 41.429 N	108° 5' 19.937 W	
<b>Rollins SS</b>										
5,390.0	0.00	0.00	5,069.0	1,288.0	-188.9	1,585,193.50	2,268,641.30	39° 24' 41.429 N	108° 5' 19.937 W	
<b>TD at 5390.0 - TD</b>										

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) SC	0.00	0.00	3,569.0	1,288.0	-188.9	1,585,193.50	2,268,641.30	39° 24' 41.429 N	108° 5' 19.937 W	
- plan hits target center										
- Circle (radius 25.0)										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,387.0	1,298.6	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 SG 42-27 - Slot A6
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5042.0usft (Original Well Elev)
<b>Project:</b>	SG 27-07S-096W	<b>MD Reference:</b>	WELL @ 5042.0usft (Original Well Elev)
<b>Site:</b>	SG 43-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 42-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 14Jun10 kjs		

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
591.5	587.0	Top of "G" Sand			
695.2	687.0	Base of "G" Sand			
2,404.6	2,137.0	Mesaverde			
3,890.0	3,569.0	Approx. Top Gas			
4,808.0	4,487.0	Cameo Coals			
5,290.0	4,969.0	Rollins SS			
5,390.0	5,069.0	TD			

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
130.0	130.0	0.0	0.0	Start Build 3.00
1,337.1	1,258.3	365.0	-53.5	Hold 36.21 Inclination
1,979.3	1,776.5	740.4	-108.6	Start Drop -2.00
3,790.0	3,469.0	1,288.0	-188.9	Vertical
3,890.0	3,569.0	1,288.0	-188.9	Top Gas
5,390.0	5,069.0	1,288.0	-188.9	TD at 5390.0