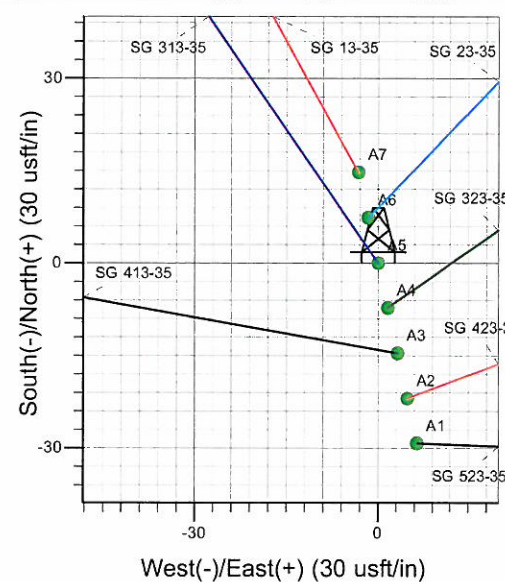
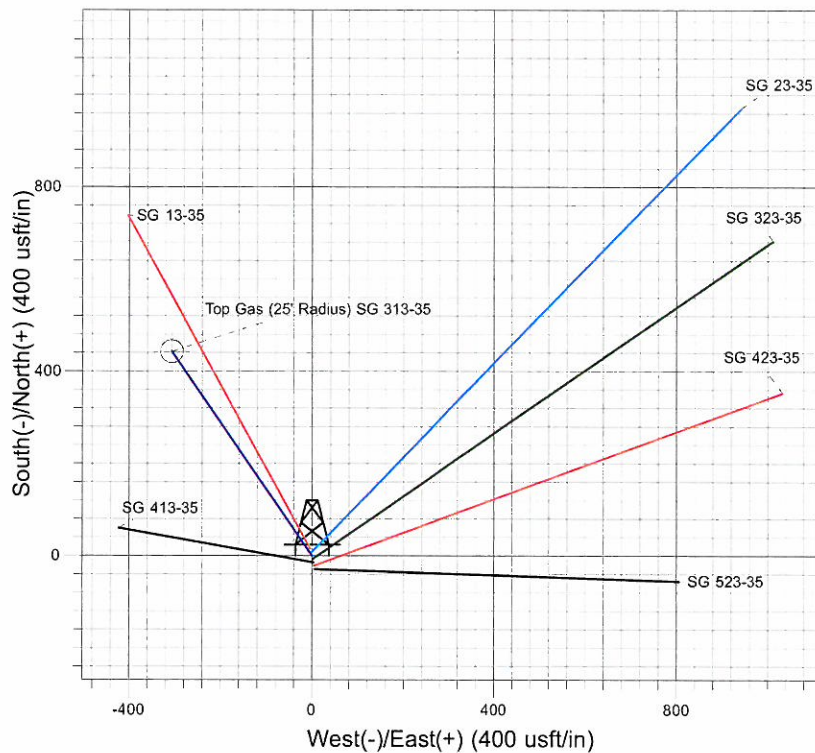
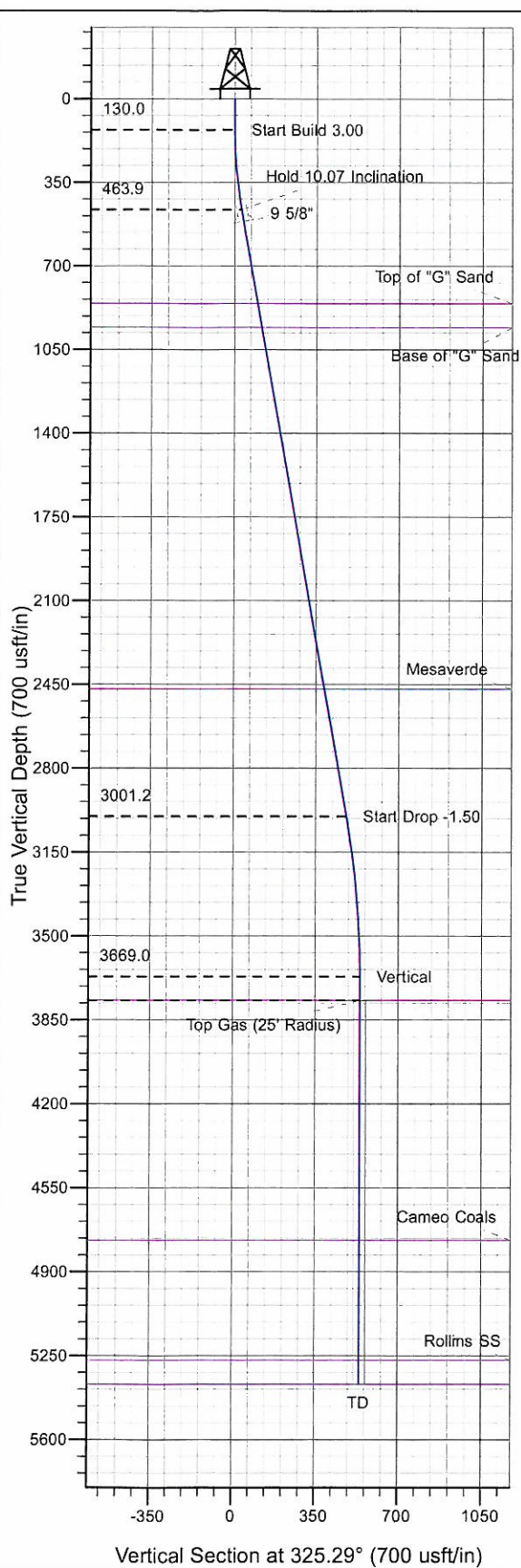




Well Name: SG 313-35  
 Surface Location: SG 13-35 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5379.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1577651.30 2270001.60 39° 23' 27.296 N 108° 4' 59.879 W A5  
 KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)



Project: SG 35-07S-096W  
 Site: SG 13-35 Pad  
 Well: SG 313-35  
 Design #1 16Jun10 kjs



Azimuths to True North  
 Magnetic North: 10.51°  
 Magnetic Field  
 Strength: 52286.5nT  
 Dip Angle: 65.66°  
 Date: 6/16/2010  
 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
463.9	465.6	10.07	325.29	24.2	-16.8	29.4	29.4	Hold 10.07 Inclination
3001.2	3042.6	10.07	325.29	394.5	-273.3	480.0	480.0	Start Drop -1.50
3669.0	3713.9	0.00	0.00	442.9	-306.8	538.8	538.8	Vertical
3769.0	3813.9	0.00	0.00	442.9	-306.8	538.8	538.8	Top Gas
5369.0	5413.9	0.00	0.00	442.9	-306.8	538.8	538.8	TD at 5413.9

# **PICEANCE VLY NAD 83**

**SG 35-07S-096W**

**SG 13-35 Pad**

**SG 313-35 - Slot A5**

**Wellbore #1**

**Plan: Design #1 16Jun10 kjs**

## **Standard Planning Report - Geographic**

**05 August, 2010**



**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well SG 313-35 - Slot A5
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	SG 35-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	SG 13-35 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 313-35	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 16Jun10 kjs		

<b>Project</b>	SG 35-07S-096W, Garfield County, CO, 35-07S-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

Site		SG 13-35 Pad			
Site Position:		Northing:	1,577,604.70 usft	Latitude:	39° 23' 26.838 N
From:	Map	Easting:	2,270,010.50 usft	Longitude:	108° 4' 59.749 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.629 °

Well	SG 313-35 - Slot A5					
Well Position	+N/-S	0.0 usft	Northing:	1,577,651.30 usft	Latitude:	39° 23' 27.296 N
	+E/-W	0.0 usft	Easting:	2,270,001.60 usft	Longitude:	108° 4' 59.879 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,379.0 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	6/16/2010	10.506	65.663	52,286

<b>Design</b>	Design #1 16Jun10 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	325.29

<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	
465.6	10.07	325.29	463.9	24.2	-16.8	3.00	3.00	0.00	325.285	
3,042.6	10.07	325.29	3,001.2	394.5	-273.3	0.00	0.00	0.00	0.000	
3,713.9	0.00	0.00	3,669.0	442.9	-306.8	1.50	-1.50	0.00	180.000	
3,813.9	0.00	0.00	3,769.0	442.9	-306.8	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
5,413.9	0.00	0.00	5,369.0	442.9	-306.8	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 313-35 - Slot A5
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	SG 35-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	SG 13-35 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 313-35	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 16Jun10 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	1,577,651.30	2,270,001.60	39° 23' 27.296 N	108° 4' 59.879 W
130.0	0.00	0.00	130.0	0.0	0.0	1,577,651.30	2,270,001.60	39° 23' 27.296 N	108° 4' 59.879 W
<b>Start Build 3.00</b>									
465.6	10.07	325.29	463.9	24.2	-16.8	1,577,675.94	2,269,985.54	39° 23' 27.535 N	108° 5' 0.092 W
<b>Hold 10.07 Inclination</b>									
516.0	10.07	325.29	513.5	31.4	-21.8	1,577,683.32	2,269,980.74	39° 23' 27.607 N	108° 5' 0.156 W
<b>9 5/8"</b>									
864.9	10.07	325.29	857.0	81.6	-56.5	1,577,734.42	2,269,947.44	39° 23' 28.102 N	108° 5' 0.599 W
<b>Top of "G" Sand</b>									
966.4	10.07	325.29	957.0	96.2	-66.6	1,577,749.30	2,269,937.75	39° 23' 28.246 N	108° 5' 0.727 W
<b>Base of "G" Sand</b>									
2,502.1	10.07	325.29	2,469.0	316.8	-219.5	1,577,974.23	2,269,791.20	39° 23' 30.428 N	108° 5' 2.675 W
<b>Mesaverde</b>									
3,042.6	10.07	325.29	3,001.2	394.5	-273.3	1,578,053.41	2,269,739.61	39° 23' 31.195 N	108° 5' 3.360 W
<b>Start Drop -1.50</b>									
3,713.9	0.00	0.00	3,669.0	442.9	-306.8	1,578,102.70	2,269,707.50	39° 23' 31.673 N	108° 5' 3.787 W
<b>Vertical</b>									
3,813.9	0.00	0.00	3,769.0	442.9	-306.8	1,578,102.70	2,269,707.50	39° 23' 31.673 N	108° 5' 3.787 W
<b>Top Gas - Approx. Top Gas</b>									
4,813.9	0.00	0.00	4,769.0	442.9	-306.8	1,578,102.70	2,269,707.50	39° 23' 31.673 N	108° 5' 3.787 W
<b>Cameo Coals</b>									
5,313.9	0.00	0.00	5,269.0	442.9	-306.8	1,578,102.70	2,269,707.50	39° 23' 31.673 N	108° 5' 3.787 W
<b>Rollins SS</b>									
5,413.9	0.00	0.00	5,369.0	442.9	-306.8	1,578,102.70	2,269,707.50	39° 23' 31.673 N	108° 5' 3.787 W
<b>TD at 5413.9 - 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	3,769.0	442.9	-306.8	1,578,102.70	2,269,707.50	39° 23' 31.673 N	108° 5' 3.787 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
516.0	513.5	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 313-35 - Slot A5
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)
<b>Project:</b>	SG 35-07S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5403.0usft (H&P (24' RKB) kjs)
<b>Site:</b>	SG 13-35 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 313-35	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 16Jun10 kjs		

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
864.9	857.0	Top of "G" Sand			
966.4	957.0	Base of "G" Sand			
2,502.1	2,469.0	Mesaverde			
3,813.9	3,769.0	Approx. Top Gas			
4,813.9	4,769.0	Cameo Coals			
5,313.9	5,269.0	Rollins SS			
5,413.9	5,369.0	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
465.6	463.9	24.2	-16.8	Hold 10.07 Inclination
3,042.6	3,001.2	394.5	-273.3	Start Drop -1.50
3,713.9	3,669.0	442.9	-306.8	Vertical
3,813.9	3,769.0	442.9	-306.8	Top Gas
5,413.9	5,369.0	442.9	-306.8	TD at 5413.9