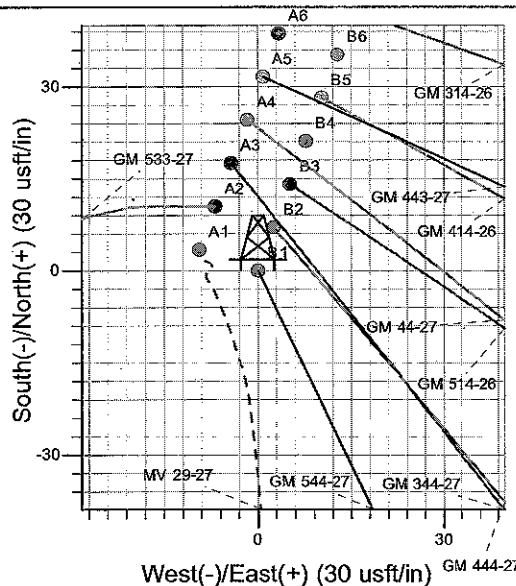
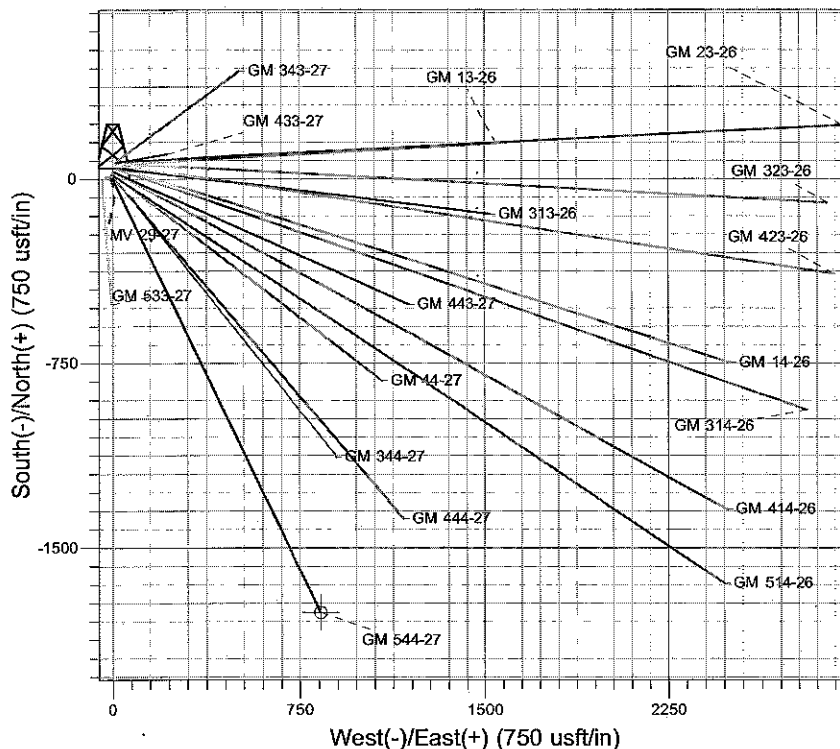
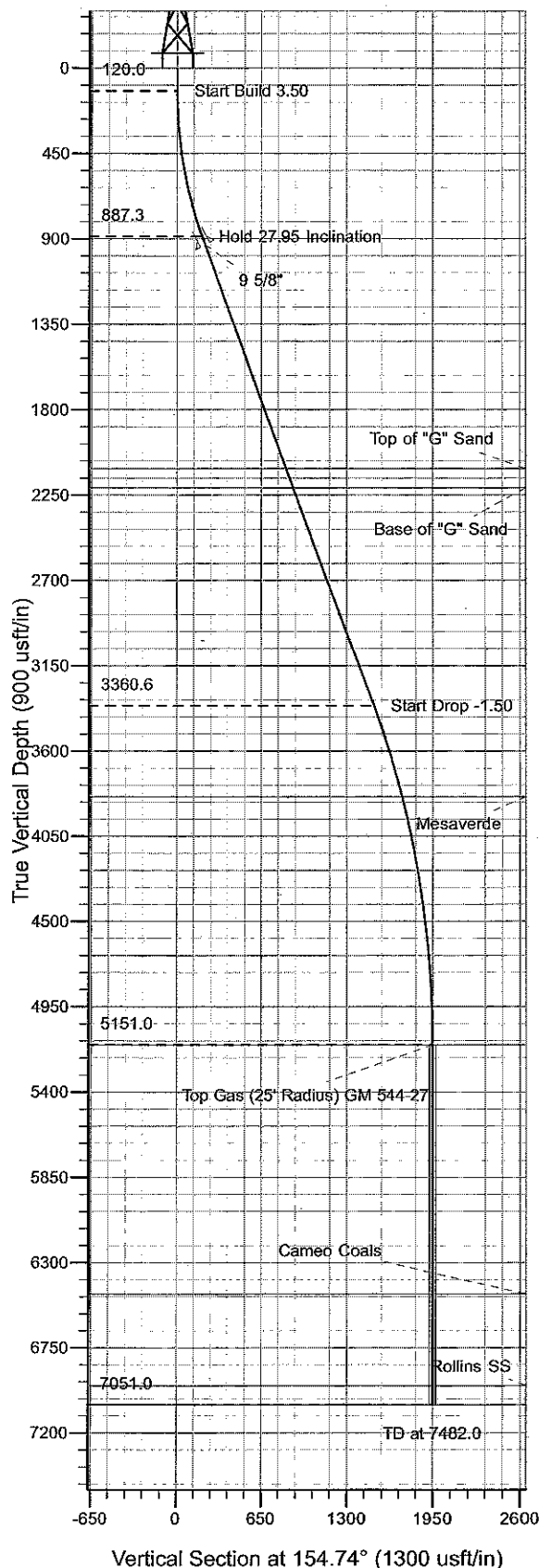
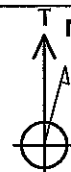




Well Name: GM 544-27  
 Surface Location: MV 29-27 Pad  
 North American Datum 1983 , US State Plane 1983, Colorado Central Zone  
 Ground Elevation: 5659.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1614929.32 2269194.80 39° 29' 35.367 N 108° 5' 23.687 W B1  
 KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)



Project: RU 27-06S-096W  
 Site: MV 29-27 Pad  
 Well: GM 544-27  
 Plan #1 29Jan09 kjs



Azimuths to True North  
 Magnetic North: 10.68°  
 Magnetic Field  
 Strength: 52503.2snT  
 Dip Angle: 65.79°  
 Date: 1/29/2009  
 Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.50
887.3	918.6	27.95	154.74	-172.7	81.5	191.0	191.0	Hold 27.95 Inclination
3360.6	3718.5	27.95	154.74	-1359.6	641.5	1503.4	1503.4	Start Drop -1.50
5151.0	5582.0	0.00	0.00	-1762.6	831.7	1949.0	1949.0	Top Gas
7051.0	7482.0	0.00	0.00	-1762.6	831.7	1949.0	1949.0	TD at 7482.0

# **PICEANCE VLY NAD 83**

**RU 27-06S-096W**

**MV 29-27 Pad**

**GM 544-27 - Slot B1**

**Wellbore #1**

**Plan: Plan #1 29Jan09 kjs**

## **Standard Planning Report - Geographic**

**05 May, 2010**

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 544-27 - Slot B1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)
Project:	RU 27-06S-096W	MD Reference:	KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)
Site:	MV 29-27 Pad	North Reference:	True
Well:	GM 544-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 29Jan09 kjs		

Project	RU 27-06S-096W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	MV 29-27 Pad		
Site Position:		Northing:	1,614,933.00 usft
From:	Map	Easting:	2,269,185.50 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	39° 29' 35.400 N
		Longitude:	108° 5' 23.807 W
		Grid Convergence:	-1.633 °

Well	GM 544-27 - Slot B1		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			5,659.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2005-10	1/29/2009	10.680
			Dip Angle
			65.793
			Field Strength
			52,503

Design	Plan #1 29Jan09 kjs		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			154.74

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	
918.6	27.95	154.74	887.3	-172.7	81.5	3.50	3.50	0.00	154.740	
3,718.5	27.95	154.74	3,360.6	-1,359.6	641.5	0.00	0.00	0.00	0.000	
5,582.0	0.00	0.00	5,151.0	-1,762.6	831.7	1.50	-1.50	0.00	180.000	Top Gas (25' Radius)
7,482.0	0.00	0.00	7,051.0	-1,762.6	831.7	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 544-27 - Slot B1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)
Project:	RU 27-06S-096W	MD Reference:	KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)
Site:	MV 29-27 Pad	North Reference:	True
Well:	GM 544-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 29Jan09 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	1,614,929.32	2,269,194.80	39° 29' 35.367 N	108° 5' 23.687 W
120.0	0.00	0.00	120.0	0.0	0.0	1,614,929.32	2,269,194.80	39° 29' 35.367 N	108° 5' 23.687 W
Start Build 3.50									
918.6	27.95	154.74	887.3	-172.7	81.5	1,614,754.35	2,269,271.34	39° 29' 33.659 N	108° 5' 22.647 W
Hold 27.95 Inclination									
969.0	27.95	154.74	931.8	-194.1	91.6	1,614,732.72	2,269,280.80	39° 29' 33.448 N	108° 5' 22.519 W
9 5/8"									
2,303.9	27.95	154.74	2,111.0	-760.0	358.6	1,614,159.45	2,269,531.57	39° 29' 27.855 N	108° 5' 19.113 W
Top of "G" Sand									
2,417.1	27.95	154.74	2,211.0	-807.9	381.2	1,614,110.83	2,269,552.84	39° 29' 27.381 N	108° 5' 18.824 W
Base of "G" Sand									
3,718.5	27.95	154.74	3,360.6	-1,359.6	641.5	1,613,551.96	2,269,797.31	39° 29' 21.928 N	108° 5' 15.504 W
Start Drop -1.50									
4,244.8	20.06	154.74	3,841.0	-1,553.1	732.8	1,613,355.94	2,269,883.06	39° 29' 20.016 N	108° 5' 14.339 W
Mesaverde									
5,582.0	0.00	0.00	5,151.0	-1,762.6	831.7	1,613,143.70	2,269,975.90	39° 29' 17.945 N	108° 5' 13.079 W
Top Gas - Approx. Top Gas									
6,897.0	0.00	0.00	6,466.0	-1,762.6	831.7	1,613,143.70	2,269,975.90	39° 29' 17.945 N	108° 5' 13.079 W
Cameo Coals									
7,382.0	0.00	0.00	6,951.0	-1,762.6	831.7	1,613,143.70	2,269,975.90	39° 29' 17.945 N	108° 5' 13.079 W
Rollins SS									
7,482.0	0.00	0.00	7,051.0	-1,762.6	831.7	1,613,143.70	2,269,975.90	39° 29' 17.945 N	108° 5' 13.079 W
TD at 7482.0 - 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) GI	0.00	0.00	5,151.0	-1,762.6	831.7	1,613,143.70	2,269,975.90	39° 29' 17.945 N	108° 5' 13.079 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
969.0	931.8	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 GM 544-27 - Slot B1
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)
<b>Project:</b>	RU 27-06S-096W	<b>MD Reference:</b>	KELLY BUSHING @ 5683.0usft (H&P 271 (24'KB) JMS)
<b>Site:</b>	MV 29-27 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 544-27	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 29Jan09 kjs		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,303.9	2,111.0	Top of "G" Sand			
2,417.1	2,211.0	Base of "G" Sand			
4,244.8	3,841.0	Mesaverde			
5,582.0	5,151.0	Approx. Top Gas			
6,897.0	6,466.0	Cameo Coals			
7,382.0	6,951.0	Rollins SS			
7,482.0	7,051.0	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 3.50	
918.6	887.3	-172.7	81.5	Hold 27.95 Inclination	
3,718.5	3,360.6	-1,359.6	641.5	Start Drop -1.50	
5,582.0	5,151.0	-1,762.6	831.7	Top Gas	
7,482.0	7,051.0	-1,762.6	831.7	TD at 7482.0	