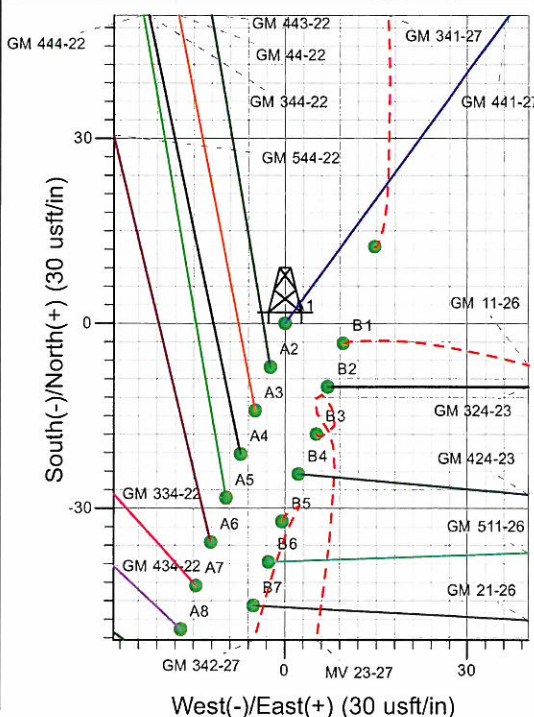
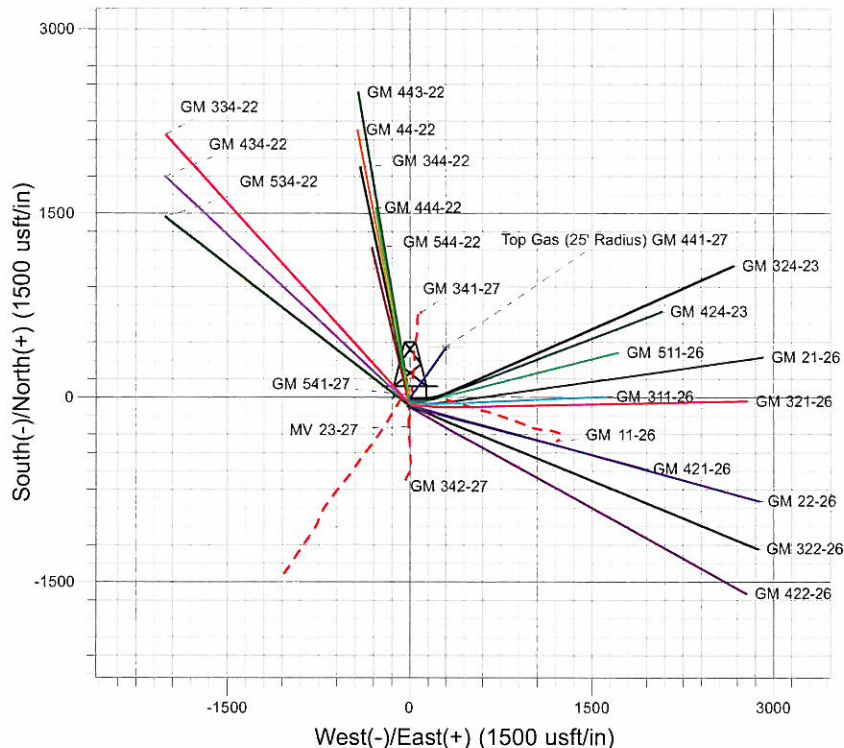
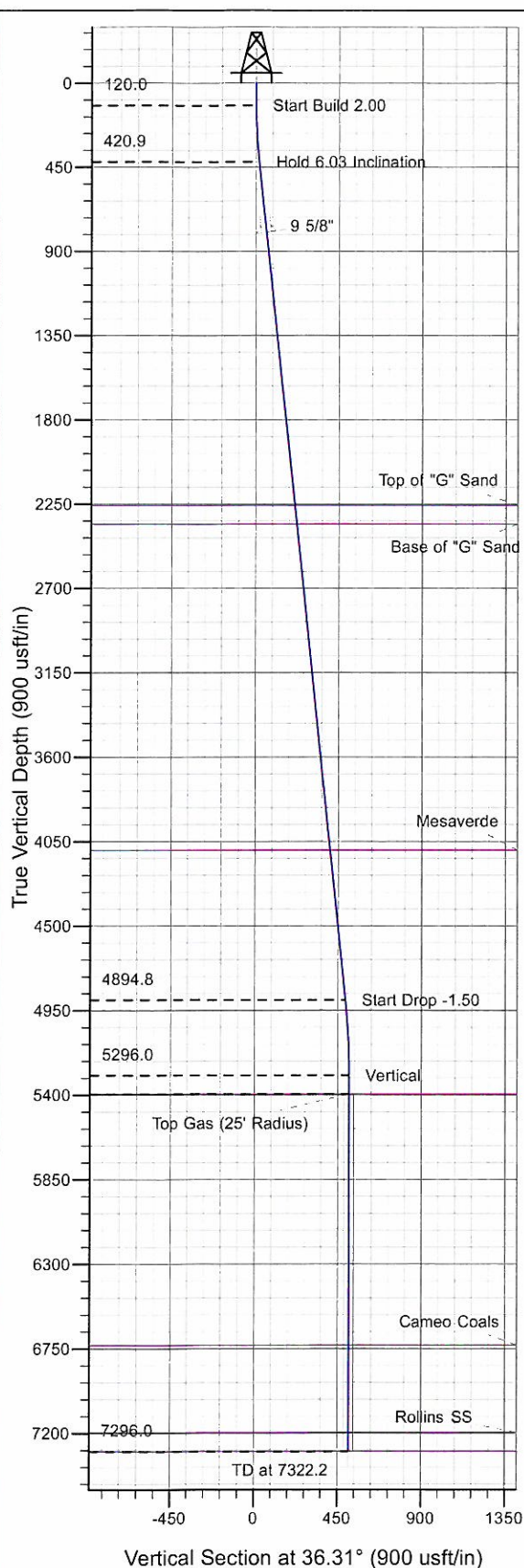
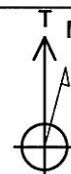




Well Name: GM 441-27
 Surface Location: MV 23-27 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 5770.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1617348.60 2269894.30 39° 29' 59.465 N 108° 5' 15.646 W A1
 KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)



Project: GV 27-06S-096W
 Site: MV 23-27 Pad
 Well: GM 441-27
 Plan #2 27Sep10 kjs



Azimuths to True North
 Magnetic North: 10.54°
 Magnetic Field
 Strength: 52357.8nT
 Dip Angle: 65.76°
 Date: 4/21/2010
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSD	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00
420.9	421.5	6.03	36.31	12.8	9.4	15.8	15.8	Hold 6.03 Inclination
4894.8	4920.2	6.03	36.31	393.5	289.2	488.4	488.4	Start Drop -1.50
5296.0	5322.2	0.00	0.00	410.6	301.7	509.5	509.5	Vertical
5396.0	5422.2	0.00	0.00	410.6	301.7	509.5	509.5	Top Gas
7296.0	7322.2	0.00	0.00	410.6	301.7	509.5	509.5	TD at 7322.2

PICEANCE VLY NAD 83

GV 27-06S-096W

MV 23-27 Pad

GM 441-27 - Slot A1

Wellbore #1

Plan: Plan #2 27Sep10 kjs

Standard Planning Report - Geographic

27 October, 2010

Williams

Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 441-27 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)
Project:	GV 27-06S-096W	MD Reference:	KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)
Site:	MV 23-27 Pad	North Reference:	True
Well:	GM 441-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 27Sep10 kjs		

Project	GV 27-06S-096W, Garfield County, CO, 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		Using geodetic scale factor

Site		MV 23-27 Pad			
Site Position:		Northing:	1,617,330.50 usft	Latitude:	39° 29' 59.287 N
From:	Map	Easting:	2,269,898.90 usft	Longitude:	108° 5' 15.581 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.632 °

Well	GM 441-27 - Slot A1					
Well Position	+N/-S	0.0 usft	Northing:	1,617,348.60 usft	Latitude:	39° 29' 59.465 N
	+E/-W	0.0 usft	Easting:	2,269,894.30 usft	Longitude:	108° 5' 15.646 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,770.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/21/2010	10.542	65.756	52,358

Design	Plan #2 27Sep10 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	36.31

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	
421.5	6.03	36.31	420.9	12.8	9.4	2.00	2.00	0.00	36.313	
4,920.2	6.03	36.31	4,894.8	393.5	289.2	0.00	0.00	0.00	0.000	
5,322.2	0.00	0.00	5,296.0	410.6	301.7	1.50	-1.50	0.00	180.000	
5,422.2	0.00	0.00	5,396.0	410.6	301.7	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
7,322.2	0.00	0.00	7,296.0	410.6	301.7	0.00	0.00	0.00	0.000	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 441-27 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)
Project:	GV 27-06S-096W	MD Reference:	KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)
Site:	MV 23-27 Pad	North Reference:	True
Well:	GM 441-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 27Sep10 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	1,617,348.60	2,269,894.30	39° 29' 59.465 N	108° 5' 15.646 W	
120.0	0.00	0.00	120.0	0.0	0.0	1,617,348.60	2,269,894.30	39° 29' 59.465 N	108° 5' 15.646 W	
Start Build 2.00										
421.5	6.03	36.31	420.9	12.8	9.4	1,617,361.09	2,269,904.05	39° 29' 59.591 N	108° 5' 15.527 W	
Hold 6.03 Inclination										
800.0	6.03	36.31	797.3	44.8	32.9	1,617,392.45	2,269,928.49	39° 29' 59.908 N	108° 5' 15.226 W	
9 5/8"										
2,266.8	6.03	36.31	2,256.0	169.0	124.2	1,617,513.94	2,270,023.23	39° 30' 1.135 N	108° 5' 14.062 W	
Top of "G" Sand										
2,367.3	6.03	36.31	2,356.0	177.5	130.4	1,617,522.27	2,270,029.72	39° 30' 1.219 N	108° 5' 13.983 W	
Base of "G" Sand										
4,117.0	6.03	36.31	4,096.0	325.6	239.3	1,617,667.20	2,270,142.73	39° 30' 2.683 N	108° 5' 12.594 W	
Mesaverde										
4,920.2	6.03	36.31	4,894.8	393.5	289.2	1,617,733.73	2,270,194.61	39° 30' 3.355 N	108° 5' 11.957 W	
Start Drop -1.50										
5,322.2	0.00	0.00	5,296.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
Vertical										
5,422.2	0.00	0.00	5,396.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
Top Gas - Approx. Top Gas										
6,757.2	0.00	0.00	6,731.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
Cameo Coals										
7,222.2	0.00	0.00	7,196.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
Rollins SS										
7,322.2	0.00	0.00	7,296.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
TD at 7322.2 - 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	5,396.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
- plan hits target center										
- Circle (radius 25.0)										
TD / PBHL GM 441-27	0.00	0.00	7,296.0	410.6	301.7	1,617,750.40	2,270,207.60	39° 30' 3.523 N	108° 5' 11.797 W	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)	
800.0	797.3	9 5/8"		9.625	12.250	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 441-27 - Slot A1
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)
Project:	GV 27-06S-096W	MD Reference:	KELLY BUSHING @ 5794.0usft (H&P 280 (24' RKB) kjs)
Site:	MV 23-27 Pad	North Reference:	True
Well:	GM 441-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 27Sep10 kjs		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,266.8	2,256.0	Top of "G" Sand			
2,367.3	2,356.0	Base of "G" Sand			
4,117.0	4,096.0	Mesaverde			
5,422.2	5,396.0	Approx. Top Gas			
6,757.2	6,731.0	Cameo Coals			
7,222.2	7,196.0	Rollins SS			
7,322.2	7,296.0	TD			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.0	120.0	0.0	0.0	Start Build 2.00
421.5	420.9	12.8	9.4	Hold 6.03 Inclination
4,920.2	4,894.8	393.5	289.2	Start Drop -1.50
5,322.2	5,296.0	410.6	301.7	Vertical
5,422.2	5,396.0	410.6	301.7	Top Gas
7,322.2	7,296.0	410.6	301.7	TD at 7322.2