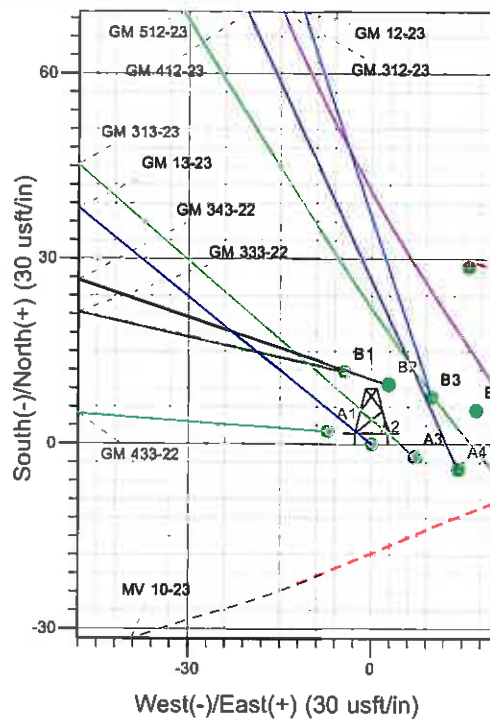
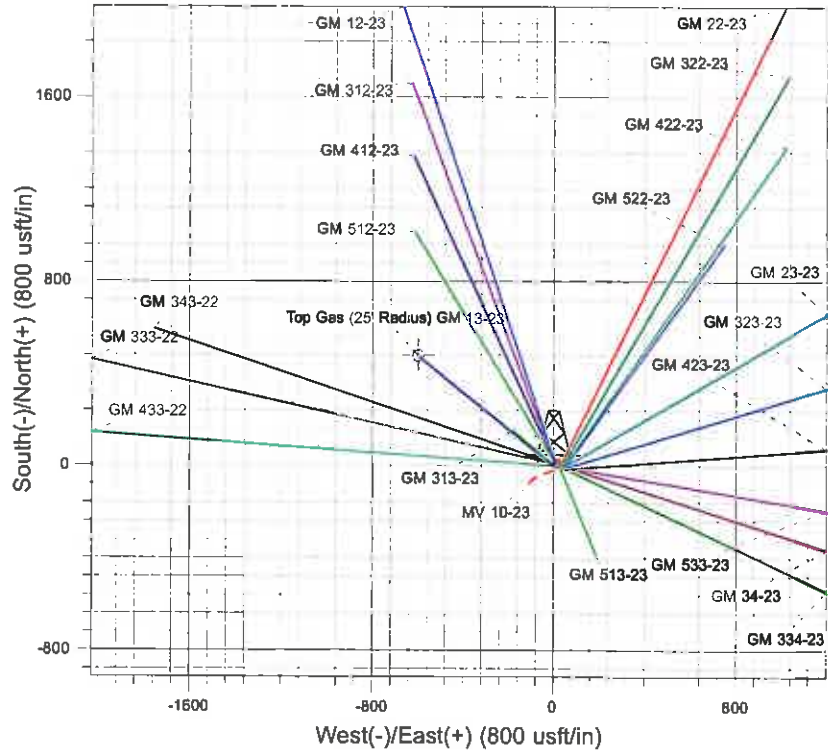
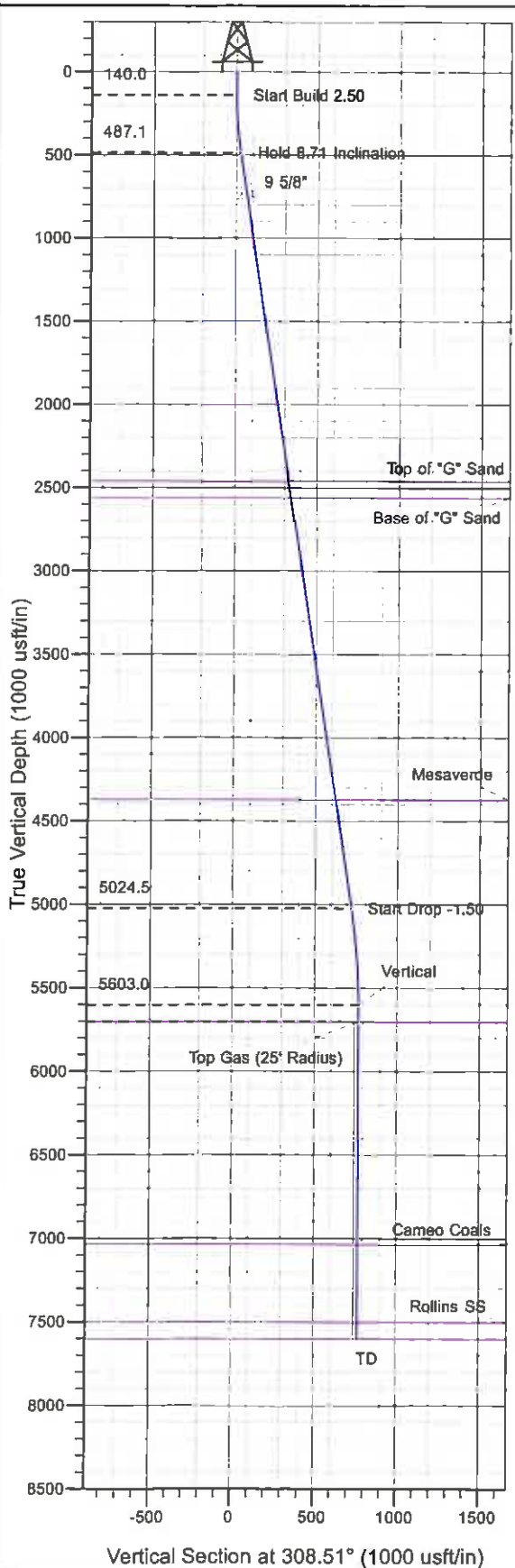




Well Name: GM 13-23
 Surface Location: MV 10-23 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 5976.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1619652.09 2271205.65 39° 30' 22.591 N 108° 4' 59.759 W A2
 KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)



Project: GV 23-06S-096W
 Site: MV 10-23 Pad
 Well: GM 13-23
 Design #1 04Oct10 kjs



Azimuths to True North
 Magnetic North: 10.48°
 Magnetic Field
 Strength: 52314.3nT
 Dip Angle: 65.75°
 Date: 10/4/2010
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
140.0	140.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.50
487.1	488.4	8.71	308.51	16.5	-20.7	26.4	26.4	Hold 8.71 Inclination
5024.5	5078.8	8.71	308.51	449.4	-564.7	721.7	721.7	Start Drop -1.50
5603.0	5659.5	0.00	0.00	476.8	-599.2	765.7	765.7	Vertical
5703.0	5759.5	0.00	0.00	476.8	-599.2	765.7	765.7	Top Gas
7603.0	7659.5	0.00	0.00	476.8	-599.2	765.7	765.7	TD at 7659.5

PICEANCE VLY NAD 83

GV 23-06S-096W

MV 10-23 Pad

GM 13-23 - Slot A2

Wellbore #1

Plan: Design #1 04Oct10 kjs

Standard Planning Report - Geographic

08 February, 2011

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 13-23 - Slot A2
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)
Project:	GV 23-06S-096W	MD Reference:	KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)
Site:	MV 10-23 Pad	North Reference:	True
Well:	GM 13-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 04Oct10 kjs		

Project	GV 23-06S-096W, Garfield County, CO, 23-06S-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 10-23 Pad			
Site Position:		Northing:	1,619,663.89 usft	Latitude:	39° 30' 22.707 N
From:	Map	Easting:	2,271,201.54 usft	Longitude:	108° 4' 59.816 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.629 °

Well	GM 13-23 - Slot A2					
Well Position	+N/-S	0.0 usft	Northing:	1,619,652.09 usft	Latitude:	39° 30' 22.591 N
	+E/-W	0.0 usft	Easting:	2,271,205.65 usft	Longitude:	108° 4' 59.759 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	5,976.0 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (")	Dip Angle (")	Field Strength (nT)
	IGRF2010	10/4/2010	10.482	65.750	52,314

Design	Design #1 04Oct10 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	308.51

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	
140.0	0.00	0.00	140.0	0.0	0.0	0.00	0.00	0.00	0.000	
488.4	8.71	308.51	487.1	16.5	-20.7	2.50	2.50	0.00	308.511	
5,078.8	8.71	308.51	5,024.5	449.4	-564.7	0.00	0.00	0.00	0.000	
5,659.5	0.00	0.00	5,603.0	476.8	-599.2	1.50	-1.50	0.00	180.000	
5,759.5	0.00	0.00	5,703.0	476.8	-599.2	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
7,659.5	0.00	0.00	7,603.0	476.8	-599.2	0.00	0.00	0.00	0.000	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 13-23 - Slot A2
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)
Project:	GV 23-06S-096W	MD Reference:	KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)
Site:	MV 10-23 Pad	North Reference:	True
Well:	GM 13-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 04Oct10 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	1,619,652.09	2,271,205.65	39° 30' 22.591 N	108° 4' 59.759 W
140.0	0.00	0.00	140.0	0.0	0.0	1,619,652.09	2,271,205.65	39° 30' 22.591 N	108° 4' 59.759 W
Start Build 2.50									
488.4	8.71	308.51	487.1	16.5	-20.7	1,619,669.13	2,271,185.44	39° 30' 22.754 N	108° 5' 0.023 W
Hold 8.71 Inclination									
766.0	8.71	308.51	761.5	42.6	-53.6	1,619,696.23	2,271,153.31	39° 30' 23.013 N	108° 5' 0.443 W
9 5/8"									
2,484.4	8.71	308.51	2,460.0	204.7	-257.2	1,619,863.99	2,270,954.36	39° 30' 24.614 N	108° 5' 3.041 W
Top of "G" Sand									
2,585.5	8.71	308.51	2,560.0	214.2	-269.2	1,619,873.87	2,270,942.65	39° 30' 24.709 N	108° 5' 3.194 W
Base of "G" Sand									
4,419.7	8.71	308.51	4,373.0	387.2	-486.6	1,620,052.94	2,270,730.29	39° 30' 26.418 N	108° 5' 5.967 W
Mesaverde									
5,078.8	8.71	308.51	5,024.5	449.4	-564.7	1,620,117.29	2,270,653.98	39° 30' 27.032 N	108° 5' 6.864 W
Start Drop -1.50									
5,659.5	0.00	0.00	5,603.0	476.8	-599.2	1,620,145.70	2,270,620.30	39° 30' 27.303 N	108° 5' 7.404 W
Vertical									
5,759.5	0.00	0.00	5,703.0	476.8	-599.2	1,620,145.70	2,270,620.30	39° 30' 27.303 N	108° 5' 7.404 W
Top Gas - Approx. Top Gas									
7,092.5	0.00	0.00	7,036.0	476.8	-599.2	1,620,145.70	2,270,620.30	39° 30' 27.303 N	108° 5' 7.404 W
Cameo Coals									
7,559.5	0.00	0.00	7,503.0	476.8	-599.2	1,620,145.70	2,270,620.30	39° 30' 27.303 N	108° 5' 7.404 W
Rollins SS									
7,659.5	0.00	0.00	7,603.0	476.8	-599.2	1,620,145.70	2,270,620.30	39° 30' 27.303 N	108° 5' 7.404 W
TD at 7659.5 - 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	5,703.0	476.8	-599.2	1,620,145.70	2,270,620.30	39° 30' 27.303 N	108° 5' 7.404 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
766.0	761.5	9 5/8"	9.625	12.250	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well GM 13-23 - Slot A2
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)
Project:	GV 23-06S-096W	MD Reference:	KELLY BUSHING @ 6002.0usft (Nabors 576 (26' RKB) kjs)
Site:	MV 10-23 Pad	North Reference:	True
Well:	GM 13-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 04Oct10 kjs		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,484.4	2,460.0	Top of "G" Sand			
2,585.5	2,560.0	Base of "G" Sand			
4,419.7	4,373.0	Mesaverde			
5,759.5	5,703.0	Approx. Top Gas			
7,092.5	7,036.0	Cameo Coals			
7,559.5	7,503.0	Rollins SS			
7,659.5	7,603.0	TD			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
140.0	140.0	0.0	0.0	Start Build 2.50
488.4	487.1	16.5	-20.7	Hold 8.71 Inclination
5,078.8	5,024.5	449.4	-564.7	Start Drop -1.50
5,659.5	5,603.0	476.8	-599.2	Vertical
5,759.5	5,703.0	476.8	-599.2	Top Gas
7,659.5	7,603.0	476.8	-599.2	TD at 7659.5