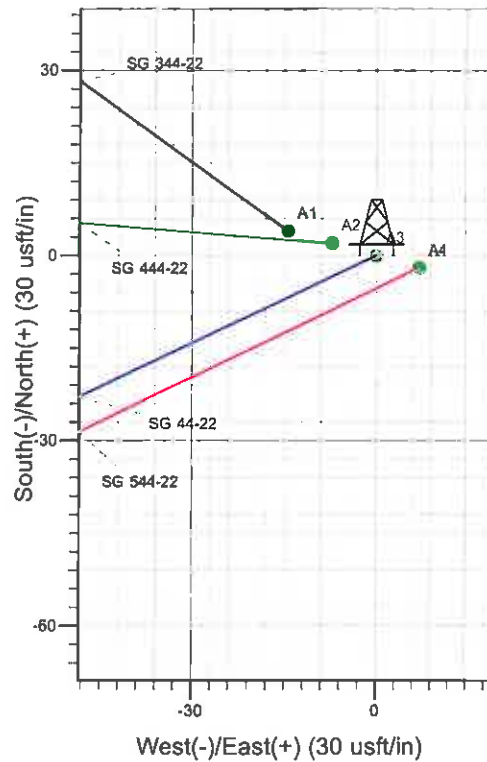
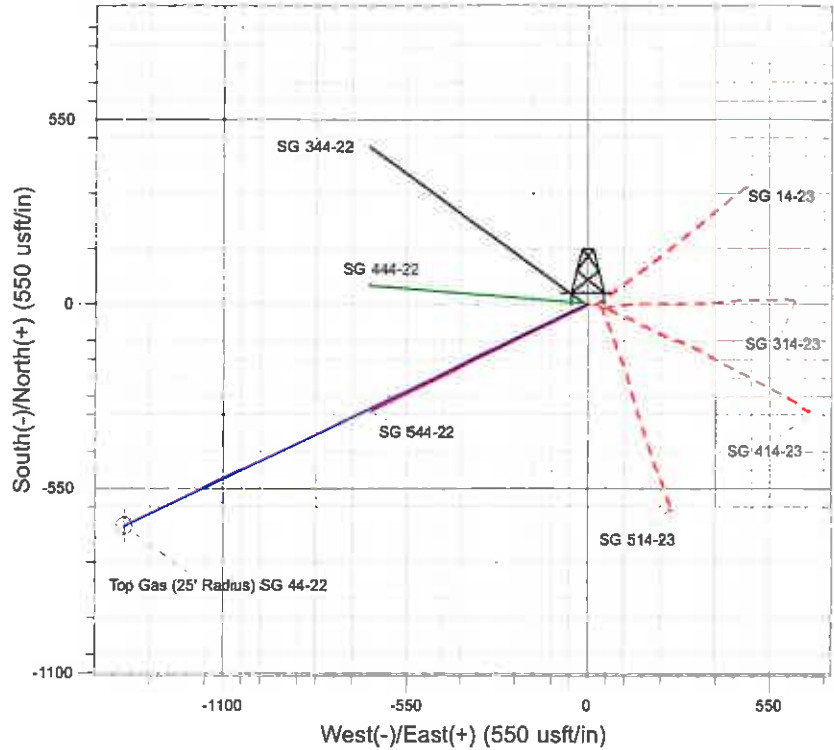
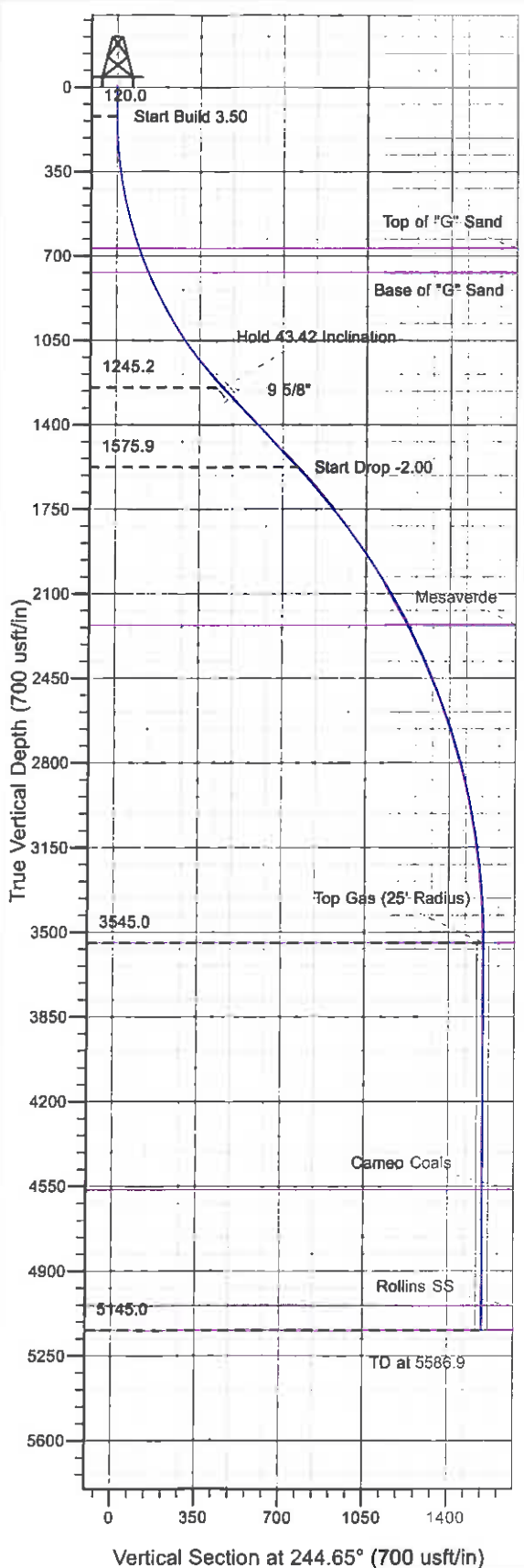




Well Name: SG 44-22  
 Surface Location: SG 14-23 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 5070.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1587597.10	2269416.20	39° 25' 5.395 N	108° 5' 10.939 W	A3

KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)



Project: SG 23-07S-096W  
 Site: SG 14-23 Pad  
 Well: SG 44-22  
 Design #1 17Feb11 kjs

Azimuths to True North  
 Magnetic North: 10.40°

Magnetic Field  
 Strength: 52267.9nT  
 Dip Angle: 65.68°  
 Date: 2/17/2011  
 Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.50
1245.2	1360.6	43.42	244.65	-191.8	-404.9	448.0	448.0	Hold 43.42 Inclination
1575.9	1815.9	43.42	244.65	-325.8	-687.7	761.0	761.0	Start Drop -2.00
3545.0	3986.9	0.00	0.00	-661.4	-1396.2	1545.0	1545.0	Top Gas
5145.0	5586.9	0.00	0.00	-661.4	-1396.2	1545.0	1545.0	TD at 5586.9

# **PICEANCE VLY NAD 83**

**SG 23-07S-096W**

**SG 14-23 Pad**

**SG 44-22 - Slot A3**

**Wellbore #1**

**Plan: Design #1 17Feb11 kjs**

## **Standard Planning Report - Geographic**

**24 March, 2011**

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well SG 44-22 - Slot A3
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)
Project:	SG 23-07S-096W	MD Reference:	KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)
Site:	SG 14-23 Pad	North Reference:	True
Well:	SG 44-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Feb11 kjs		

Project	SG 23-07S-096W, Garfield County, CO, 23-07S-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		SG 14-23 Pad			
Site Position:		Northing:	1,587,587.20 usft	Latitude:	39° 25' 5.303 N
From:	Map	Easting:	2,269,437.40 usft	Longitude:	108° 5' 10.665 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.631 °

Well	SG 44-22 - Slot A3					
Well Position	+N/-S	0.0 usft	Northing:	1,587,597.10 usft	Latitude:	39° 25' 5.395 N
	+E/-W	0.0 usft	Easting:	2,269,416.20 usft	Longitude:	108° 5' 10.939 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	5,070.0 usft	

Wellbore	Wellbore #1			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2/17/2011	10.400	65.679	52,268

Design	Design #1 17Feb11 kjs			
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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	244.65

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	
1,360.6	43.42	244.65	1,245.2	-191.8	-404.9	3.50	3.50	0.00	244.651	
1,815.9	43.42	244.65	1,575.9	-325.8	-687.7	0.00	0.00	0.00	0.000	
3,986.9	0.00	0.00	3,545.0	-661.4	-1,396.2	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
5,586.9	0.00	0.00	5,145.0	-661.4	-1,396.2	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well SG 44-22 - Slot A3
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)
Project:	SG 23-07S-096W	MD Reference:	KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)
Site:	SG 14-23 Pad	North Reference:	True
Well:	SG 44-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Feb11 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	1,587,597.10	2,269,416.20	39° 25' 5.395 N	108° 5' 10.939 W
120.0	0.00	0.00	120.0	0.0	0.0	1,587,597.10	2,269,416.20	39° 25' 5.395 N	108° 5' 10.939 W
<b>Start Build 3.50</b>									
680.9	19.63	244.65	670.0	-40.7	-86.0	1,587,558.82	2,269,329.08	39° 25' 4.992 N	108° 5' 12.035 W
<b>Top of "G" Sand</b>									
788.4	23.39	244.65	770.0	-57.6	-121.6	1,587,542.97	2,269,293.00	39° 25' 4.825 N	108° 5' 12.489 W
<b>Base of "G" Sand</b>									
1,360.6	43.42	244.65	1,245.2	-191.8	-404.9	1,587,416.90	2,269,006.06	39° 25' 3.499 N	108° 5' 16.098 W
<b>Hold 43.42 Inclination</b>									
1,411.0	43.42	244.65	1,281.8	-206.6	-436.2	1,587,402.96	2,268,974.33	39° 25' 3.352 N	108° 5' 16.497 W
<b>9 5/8"</b>									
1,815.9	43.42	244.65	1,575.9	-325.8	-687.7	1,587,291.03	2,268,719.55	39° 25' 2.175 N	108° 5' 19.701 W
<b>Start Drop -2.00</b>									
2,620.7	27.32	244.65	2,230.0	-524.6	-1,107.3	1,587,104.26	2,268,294.43	39° 25' 0.210 N	108° 5' 25.049 W
<b>Mesaverde</b>									
3,986.9	0.00	0.00	3,545.0	-661.4	-1,396.2	1,586,975.70	2,268,001.80	39° 24' 58.857 N	108° 5' 28.729 W
<b>Top Gas - Approx. Top Gas</b>									
5,006.9	0.00	0.00	4,565.0	-661.4	-1,396.2	1,586,975.70	2,268,001.80	39° 24' 58.857 N	108° 5' 28.729 W
<b>Cameo Coals</b>									
5,486.9	0.00	0.00	5,045.0	-661.4	-1,396.2	1,586,975.70	2,268,001.80	39° 24' 58.857 N	108° 5' 28.729 W
<b>Rollins SS</b>									
5,586.9	0.00	0.00	5,145.0	-661.4	-1,396.2	1,586,975.70	2,268,001.80	39° 24' 58.857 N	108° 5' 28.729 W
<b>TD</b>									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (25' Radius) SC - plan hits target center - Circle (radius 25.0)	0.00	0.00	3,545.0	-661.4	-1,396.2	1,586,975.70	2,268,001.80	39° 24' 58.857 N	108° 5' 28.729 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,411.0	1,281.8	9 5/8"	9.625	12.250	

**Williams**  
Planning Report - Geographic

Database: Compass R5000 WIN AUTH  
Company: PICEANCE VLY NAD 83  
  
Project: SG 23-07S-096W  
  
Site: SG 14-23 Pad  
Well: SG 44-22  
Wellbore: Wellbore #1  
Design: Design #1 17Feb11 kjs

Local Co-ordinate Reference: Well SG 44-22 - Slot A3  
TVD Reference: KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)  
MD Reference: KELLY BUSHING @ 5094.0usft (H&P 280 (24' RKB) kjs)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")
680.9	670.0	Top of "G" Sand			
788.4	770.0	Base of "G" Sand			
2,620.7	2,230.0	Mesaverde			
3,986.9	3,545.0	Approx. Top Gas			
5,006.9	4,565.0	Cameo Coals			
5,486.9	5,045.0	Rollins SS			
5,586.9	5,145.0	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 3.50
1,360.6	1,245.2	-191.8	-404.9	Hold 43.42 Inclination
1,815.9	1,575.9	-325.8	-687.7	Start Drop -2.00
3,986.9	3,545.0	-661.4	-1,396.2	Top Gas
5,586.9	5,145.0	-661.4	-1,396.2	TD at 5586.9