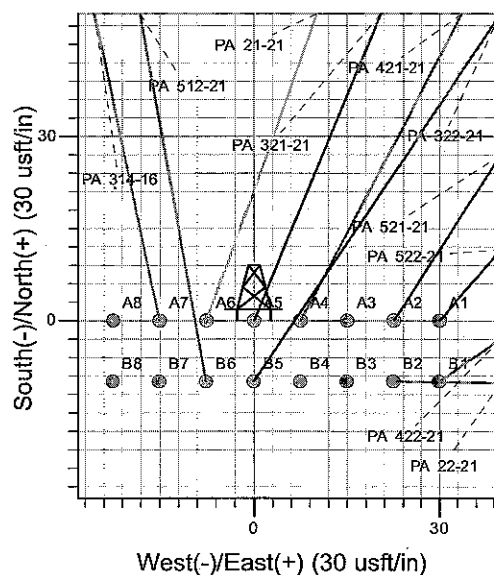
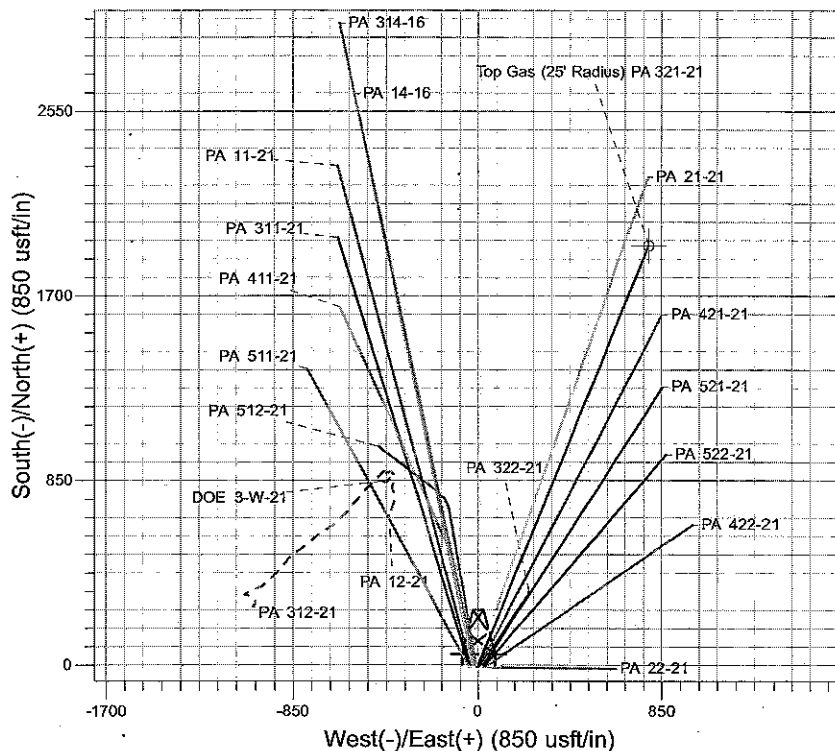
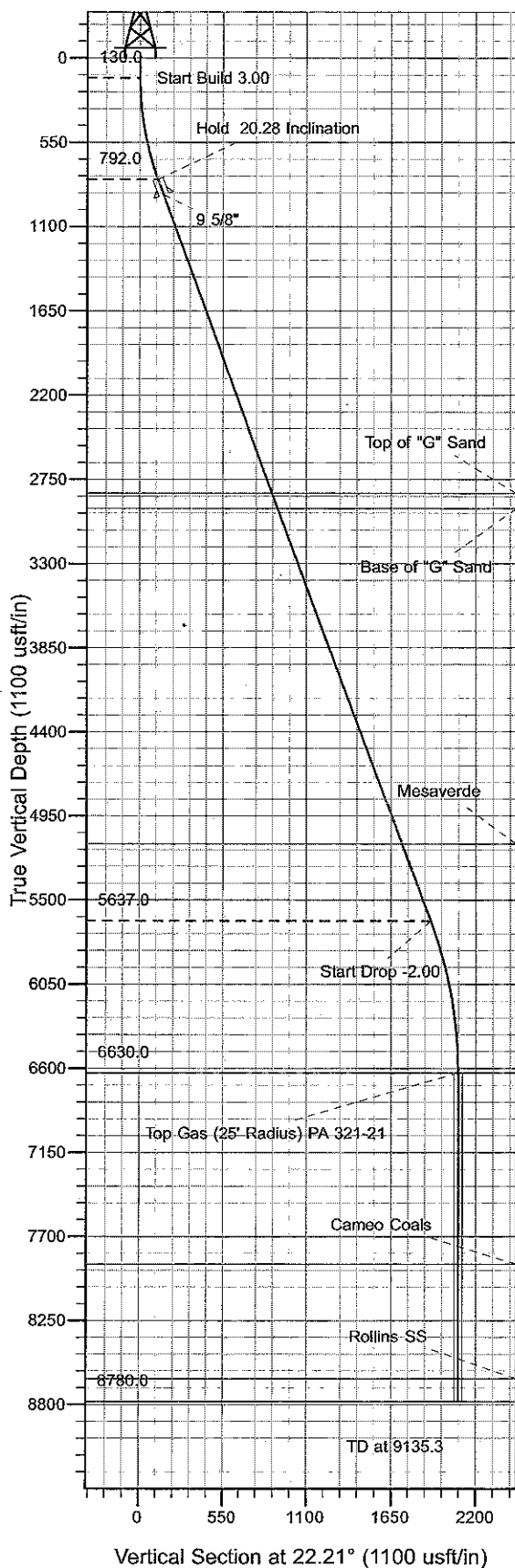




Well Name: PA 321-21
 Surface Location: PA 22-21 Pad
 North American Datum 1983 , US State Plane 1983, Colorado Central Zone
 Ground Elevation: 6023.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1620699.56 2292482.26 39° 30' 38.832 N 108° 0' 28.768 W A5
 WELL @ 6047.0usft (Original Well Elev)



Project: PA 21-06S-095W
 Site: PA 22-21 Pad
 Well: PA 321-21
 Design #1 18Mar10 kjs



Azimuths to True North
 Magnetic North: 10.52°
 Magnetic Field
 Strength: 52381.8snT
 Dip Angle: 65.78°
 Date: 3/18/2010
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
130.0	130.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.00
792.0	806.0	20.28	22.21	109.6	44.7	118.4	118.4	Hold 20.28 Inclination
5637.0	5971.3	20.28	22.21	1767.1	721.4	1908.7	1908.7	Start Drop -2.00
6630.0	6985.3	0.00	0.00	1931.5	788.6	2086.3	2086.3	Top Gas
8780.0	9135.3	0.00	0.00	1931.5	788.6	2086.3	2086.3	TD at 9135.3

PICEANCE VLY NAD 83

PA 21-06S-095W

PA 22-21 Pad

PA 321-21 - Slot A5

Wellbore #1

Plan: Design #1 18Mar10 kjs

Standard Planning Report - Geographic

20 April, 2010

Williams

Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well PA 321-21 - Slot A5
Company:	PICEANCE VLY NAD 83	TVD Reference:	WELL @ 6047.0usft (Original Well Elev)
Project:	PA 21-06S-095W	MD Reference:	WELL @ 6047.0usft (Original Well Elev)
Site:	PA 22-21 Pad	North Reference:	True
Well:	PA 321-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 18Mar10 kjs		

Project	PA 21-06S-095W, Garfield County, CO, 21-06S-095W		
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	PA 22-21 Pad		
Site Position:		Northing:	1,620,681.59 usft
From:	Map	Easting:	2,292,411.75 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	39° 30' 38.635 N
		Longitude:	108° 0' 29.662 W
		Grid Convergence:	-1.582 °

Well	PA 321-21 - Slot A5		
Well Position	+N/-S	0.0 usft	Northing: 1,620,699.55 usft
	+E/-W	0.0 usft	Easting: 2,292,482.27 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level: 6,023.0 usft
		Latitude:	39° 30' 38.832 N
		Longitude:	108° 0' 28.768 W

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	3/18/2010	(°)
			10.520
			Dip Angle (°)
			65.783
			Field Strength (nT)
			52,382

Design	Design #1 18Mar10 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 (°)
			22.21

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
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	
806.0	20.28	22.21	792.0	109.6	44.7	3.00	3.00	0.00	22.208	
5,971.3	20.28	22.21	5,637.0	1,767.1	721.4	0.00	0.00	0.00	0.000	
6,985.3	0.00	0.00	6,630.0	1,931.5	788.6	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
9,135.3	0.00	0.00	8,780.0	1,931.5	788.6	0.00	0.00	0.00	0.000	

Williams

Planning Report - Geographic

Database: Compass R5000 WIN AUTH
Company: PICEANCE VLY NAD 83
Project: PA 21-06S-095W
Site: PA 22-21 Pad
Well: PA 321-21
Wellbore: Wellbore #1
Design: Design #1 18Mar10 kjs

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well PA 321-21 - Slot A5
 WELL @ 6047.0usft (Original Well Elev)
 WELL @ 6047.0usft (Original Well Elev)
 True
 Minimum Curvature

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	1,620,699.55	2,292,482.27	39° 30' 38.832 N	108° 0' 28.768 W
130.0	0.00	0.00	130.0	0.0	0.0	1,620,699.55	2,292,482.27	39° 30' 38.832 N	108° 0' 28.768 W
806.0	20.28	22.21	792.0	109.6	44.7	1,620,807.88	2,292,530.02	39° 30' 39.915 N	108° 0' 28.197 W
5,971.3	20.28	22.21	5,637.0	1,767.1	721.4	1,622,446.01	2,293,252.17	39° 30' 56.296 N	108° 0' 19.563 W
6,985.3	0.00	0.00	6,630.0	1,931.5	788.6	1,622,608.50	2,293,323.80	39° 30' 57.921 N	108° 0' 18.706 W
9,135.3	0.00	0.00	8,780.0	1,931.5	788.6	1,622,608.50	2,293,323.80	39° 30' 57.921 N	108° 0' 18.706 W

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) P/	0.00	0.00	6,630.0	1,931.5	788.6	1,622,608.50	2,293,323.80	39° 30' 57.921 N	108° 0' 18.706 W
- plan hits target center									
- Circle (radius 25.0)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
914.0	893.3	9 5/8"	9.625	12.250

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,989.4	2,842.0	Top of "G" Sand		0.000	
3,096.0	2,942.0	Base of "G" Sand		0.000	
5,436.0	5,137.0	Mesaverde		0.000	
6,985.3	6,632.0	Approx. Top Gas		0.000	
8,235.3	7,882.0	Cameo Coals		0.000	
8,985.3	8,632.0	Rollins SS		0.000	
9,135.3	8,782.0	TD		0.000	

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
806.0	792.0	109.6	44.7	Hold 20.28 Inclination
5,971.3	5,637.0	1,767.1	721.4	Start Drop -2.00
6,985.3	6,630.0	1,931.5	788.6	Top Gas
9,135.3	8,780.0	1,931.5	788.6	TD at 9135.3