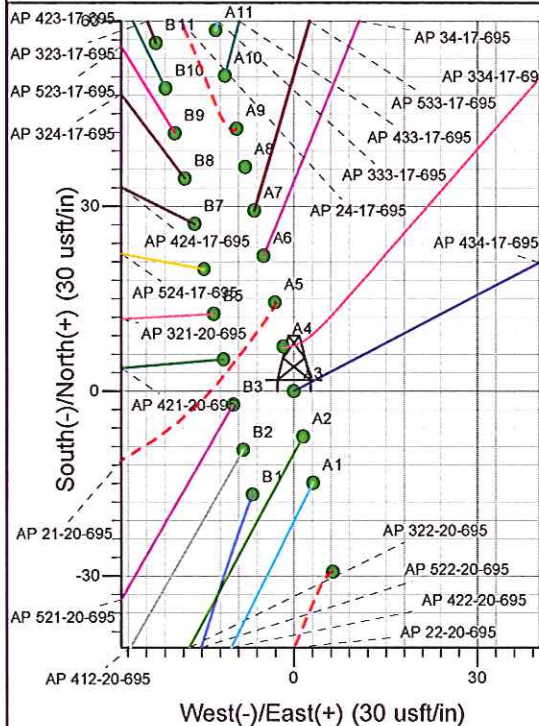
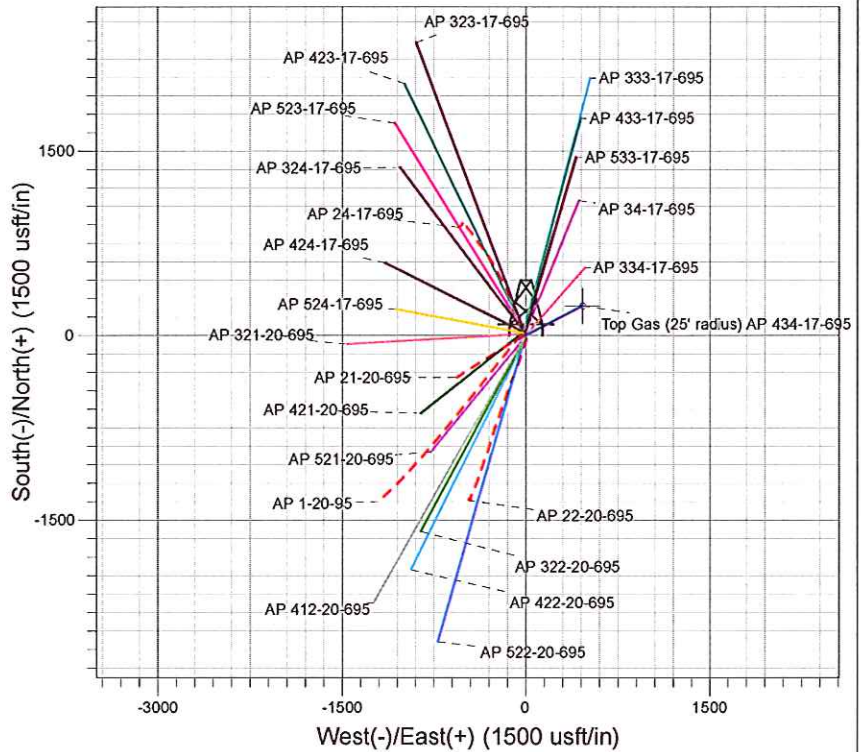
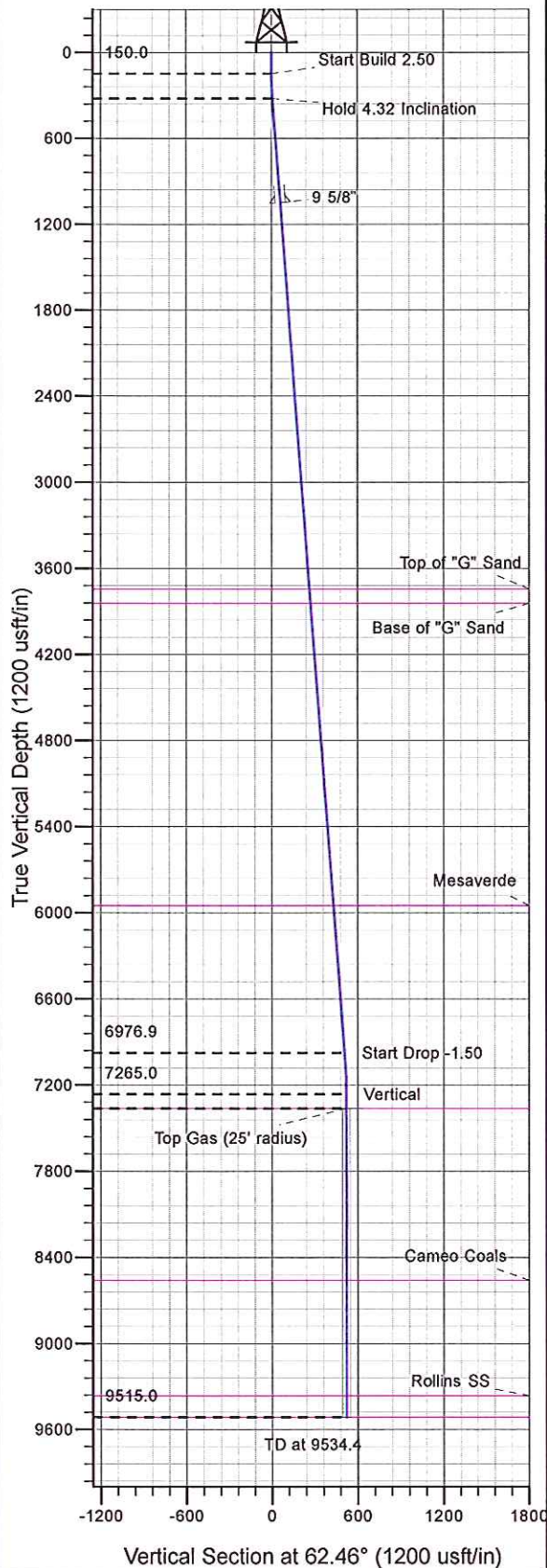




Well Name: AP 434-17-695  
 Surface Location: AP 21-20-695 Pad  
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 Ground Elevation: 6909.0  
 +N/-S 0.0 +E/-W 0.0 Northing 1623244.30 Easting 2288344.90 Latitude 39° 31' 2.841 N Longitude 108° 1' 22.441 W Slot A3  
 KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)



Project: AP 20-06S-095W  
 Site: AP 21-20-695 Pad  
 Well: AP 434-17-695  
 Design #1 13Jul10 kjs



Azimuths to True North  
 Magnetic North: 10.46°  
 Magnetic Field  
 Strength: 52373.9snT  
 Dip Angle: 65.79°  
 Date: 7/13/2010  
 Model: IGRF2005-10

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
150.0	150.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.50
322.9	323.0	4.33	62.46	3.0	5.8	6.5	6.5	Hold 4.32 Inclination
6976.9	6996.1	4.33	62.46	235.7	452.1	509.8	509.8	Start Drop -1.50
7265.0	7284.4	0.00	0.00	240.7	461.7	520.7	520.7	Vertical
7365.0	7384.4	0.00	0.00	240.7	461.7	520.7	520.7	Top Gas
9515.0	9534.4	0.00	0.00	240.7	461.7	520.7	520.7	TD at 9534.4

# **PICEANCE VLY NAD 83**

**AP 20-06S-095W**

**AP 21-20-695 Pad**

**AP 434-17-695 - Slot A3**

**Wellbore #1**

**Plan: Design #1 13Jul10 kjs**

## **Standard Planning Report - Geographic**

**11 April, 2011**



**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well AP 434-17-695 - Slot A3
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)
<b>Project:</b>	AP 20-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)
<b>Site:</b>	AP 21-20-695 Pad	<b>North Reference:</b>	True
<b>Well:</b>	AP 434-17-695	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jul10 kjs		

<b>Project</b>	AP 20-06S-095W, Garfield County, CO, 20-06S-095W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

<b>Site</b>	AP 21-20-695 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,623,258.80 usft	<b>Latitude:</b> 39° 31' 2.984 N
<b>From:</b> Map		<b>Easting:</b>	2,288,342.20 usft	<b>Longitude:</b> 108° 1' 22.480 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.591 °

<b>Well</b>	AP 434-17-695 - Slot A3			
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	1,623,244.30 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	2,288,344.90 usft
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 6,909.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	7/13/2010	10.462	65.788	52,374

<b>Design</b>	Design #1 13Jul10 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	62.46

<b>Plan Sections</b>										
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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.000	
323.0	4.33	62.46	322.9	3.0	5.8	2.50	2.50	0.00	62.464	
6,996.1	4.33	62.46	6,976.9	235.7	452.1	0.00	0.00	0.00	0.000	
7,284.4	0.00	0.00	7,265.0	240.7	461.7	1.50	-1.50	0.00	180.000	
7,384.4	0.00	0.00	7,365.0	240.7	461.7	0.00	0.00	0.00	0.000	Top Gas (25' radius) /
9,534.4	0.00	0.00	9,515.0	240.7	461.7	0.00	0.00	0.00	0.000	

**Williams**  
Planning Report - Geographic

<b>Database:</b>	Compass R5000 WIN AUTH	<b>Local Co-ordinate Reference:</b>	Well AP 434-17-695 - Slot A3
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)
<b>Project:</b>	AP 20-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)
<b>Site:</b>	AP 21-20-695 Pad	<b>North Reference:</b>	True
<b>Well:</b>	AP 434-17-695	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jul10 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	1,623,244.30	2,288,344.90	39° 31' 2.841 N	108° 1' 22.441 W
150.0	0.00	0.00	150.0	0.0	0.0	1,623,244.30	2,288,344.90	39° 31' 2.841 N	108° 1' 22.441 W
<b>Start Build 2.50</b>									
323.0	4.33	62.46	322.9	3.0	5.8	1,623,247.15	2,288,350.77	39° 31' 2.871 N	108° 1' 22.367 W
<b>Hold 4.32 Inclination</b>									
1,053.0	4.33	62.46	1,050.8	28.5	54.6	1,623,271.24	2,288,400.28	39° 31' 3.122 N	108° 1' 21.744 W
<b>9 5/8"</b>									
3,754.9	4.33	62.46	3,745.0	122.7	235.3	1,623,360.39	2,288,583.51	39° 31' 4.054 N	108° 1' 19.438 W
<b>Top of "G" Sand</b>									
3,855.2	4.33	62.46	3,845.0	126.2	242.0	1,623,363.70	2,288,590.31	39° 31' 4.088 N	108° 1' 19.352 W
<b>Base of "G" Sand</b>									
5,966.2	4.33	62.46	5,950.0	199.8	383.2	1,623,433.36	2,288,733.48	39° 31' 4.816 N	108° 1' 17.551 W
<b>Mesaverde</b>									
6,996.1	4.33	62.46	6,976.9	235.7	452.1	1,623,467.34	2,288,803.32	39° 31' 5.170 N	108° 1' 16.672 W
<b>Start Drop -1.50</b>									
7,284.4	0.00	0.00	7,265.0	240.7	461.7	1,623,472.10	2,288,813.10	39° 31' 5.220 N	108° 1' 16.549 W
<b>Vertical</b>									
7,384.4	0.00	0.00	7,365.0	240.7	461.7	1,623,472.10	2,288,813.10	39° 31' 5.220 N	108° 1' 16.549 W
<b>Top Gas - Approx. Top Gas</b>									
8,579.4	0.00	0.00	8,560.0	240.7	461.7	1,623,472.10	2,288,813.10	39° 31' 5.220 N	108° 1' 16.549 W
<b>Cameo Coals</b>									
9,384.4	0.00	0.00	9,365.0	240.7	461.7	1,623,472.10	2,288,813.10	39° 31' 5.220 N	108° 1' 16.549 W
<b>Rollins SS</b>									
9,534.4	0.00	0.00	9,515.0	240.7	461.7	1,623,472.10	2,288,813.10	39° 31' 5.220 N	108° 1' 16.549 W
<b>TD at 9534.4 - 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) AP - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,365.0	240.7	461.7	1,623,472.10	2,288,813.10	39° 31' 5.220 N	108° 1' 16.549 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,053.0	1,050.8	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 AP 434-17-695 - Slot A3
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)
<b>Project:</b>	AP 20-06S-095W	<b>MD Reference:</b>	KELLY BUSHING @ 6935.0usft (Nabors 574 (26' RKB) kjs)
<b>Site:</b>	AP 21-20-695 Pad	<b>North Reference:</b>	True
<b>Well:</b>	AP 434-17-695	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 13Jul10 kjs		

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,754.9	3,745.0	Top of "G" Sand		0.000	
3,855.2	3,845.0	Base of "G" Sand		0.000	
5,966.2	5,950.0	Mesaverde		0.000	
7,384.4	7,365.0	Approx. Top Gas		0.000	
8,579.4	8,560.0	Cameo Coals		0.000	
9,384.4	9,365.0	Rollins SS		0.000	
9,534.4	9,515.0	TD		0.000	

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
150.0	150.0	0.0	0.0	Start Build 2.50
323.0	322.9	3.0	5.8	Hold 4.32 Inclination
6,996.1	6,976.9	235.7	452.1	Start Drop -1.50
7,284.4	7,265.0	240.7	461.7	Vertical
7,384.4	7,365.0	240.7	461.7	Top Gas
9,534.4	9,515.0	240.7	461.7	TD at 9534.4