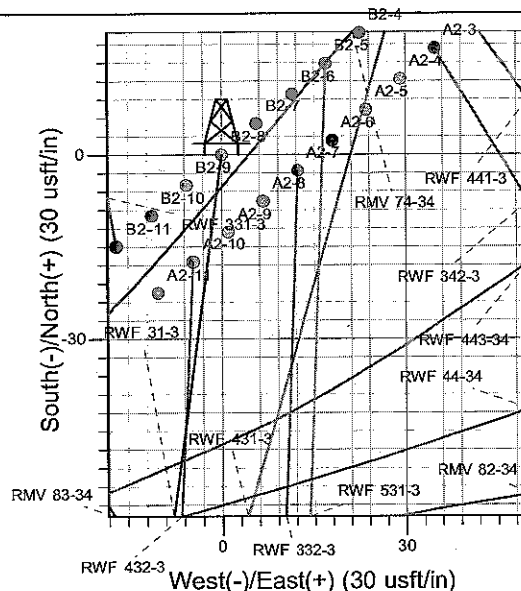
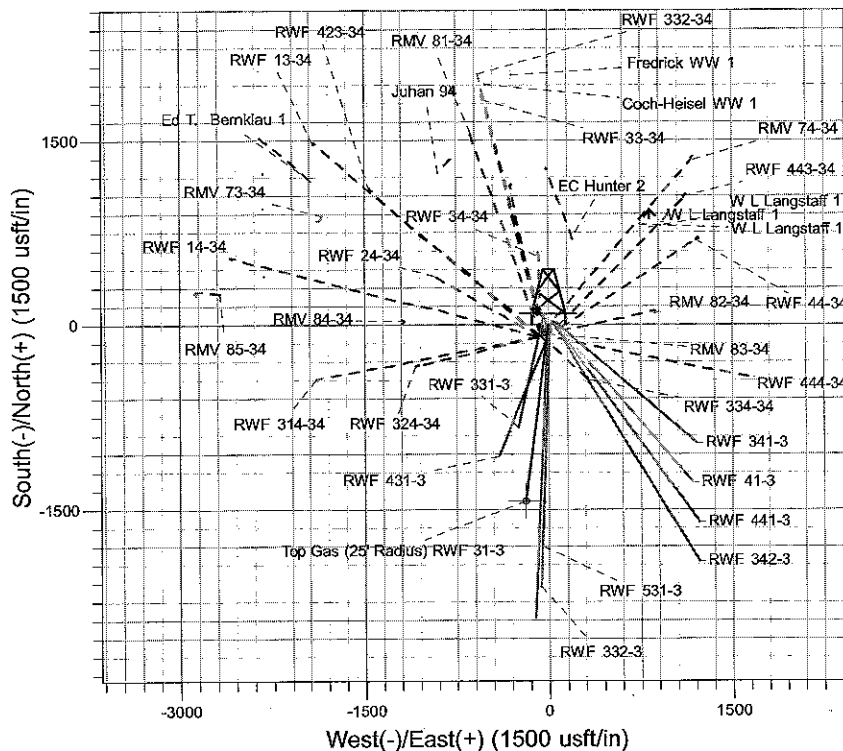
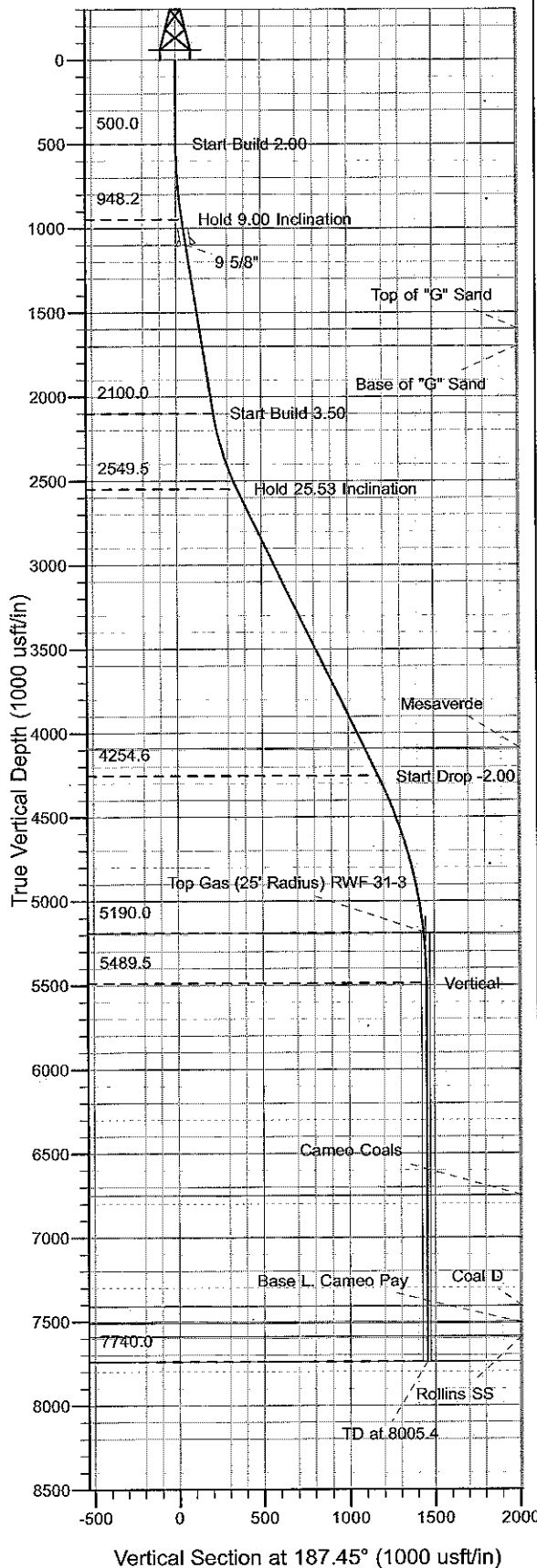




Well Name: RWF 31-3
 Surface Location: RMV 83-34 Pad
 North American Datum 1983 , US State Plane 1983, Colorado Central Zone
 Ground Elevation: 5626.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1607097.00 2330678.50 39° 28' 34.575 N 107° 52' 17.037 W B2-8
 KELLY BUSHING @ 5650.0usft (H&P 24')



Project: RU 34-06S-094W
 Site: RMV 83-34 Pad
 Well: RWF 31-3
 Design #1 14Apr10 Jms



Azimuths to True North
 Magnetic North: 10.45°
 Magnetic Field
 Strength: 52376.8snT
 Dip Angle: 65.78°
 Date: 4/14/2010
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
500.0	500.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00
948.2	950.0	9.00	187.48	-35.0	-4.6	35.3	35.3	Hold 9.00 Inclination
2100.0	2116.2	9.00	187.48	-215.9	-28.3	217.7	217.7	Start Build 3.50
2549.5	2588.6	25.53	187.45	-354.4	-46.4	357.4	357.4	Hold 25.53 Inclination
4254.6	4478.2	25.53	187.45	-1182.0	-152.0	1171.9	1171.9	Start Drop -2.00
5190.0	5454.9	6.00	187.45	-1423.9	-186.2	1436.0	1436.0	Top Gas
5489.5	5754.9	0.00	0.00	-1439.5	-188.3	1451.7	1451.7	Vertical
7740.0	8005.4	0.00	0.00	-1439.5	-188.3	1451.7	1451.7	TD at 8005.4

PICEANCE VLY NAD 83

RU 34-06S-094W

RMV 83-34 Pad

RWF 31-3 - Slot B2-8

Wellbore #1

Plan: Design #1 14Apr10 Jms

Standard Planning Report - Geographic

29 April, 2010

Williams

Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 31-3 - Slot B2-8
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5650.0usft (H&P 24')
Project:	RU 34-06S-094W	MD Reference:	KELLY BUSHING @ 5650.0usft (H&P 24')
Site:	RMV 83-34 Pad	North Reference:	True
Well:	RWF 31-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 14Apr10 Jms		

Project	RU 34-06S-094W, Garfield County, CO, 34-06S-094W		
Map System:	US State Plane 1983	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	RMV 83-34 Pad		
Site Position:		Northing:	1,607,043.10 usft
From:	Map	Easting:	2,330,648.70 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0.000 in
		Latitude:	39° 28' 34.035 N
		Longitude:	107° 52' 17.399 W
		Grid Convergence:	-1.496 °

Well	RWF 31-3 - Slot B2-8		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			5,626.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	4/14/2010	10.445
			Dip Angle
			65.778
			Field Strength
			52,377

Design	Design #1 14Apr10 Jms		
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
			(°)
			187.45

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.000	
950.0	9.00	187.48	948.2	-35.0	-4.6	2.00	2.00	0.00	187.480	
2,116.2	9.00	187.48	2,100.0	-215.9	-28.3	0.00	0.00	0.00	0.000	
2,588.6	25.53	187.45	2,549.5	-354.4	-46.4	3.50	3.50	0.00	0.000	
4,478.2	25.53	187.45	4,254.6	-1,162.0	-152.0	0.00	0.00	0.00	0.000	
5,454.9	6.00	187.45	5,190.0	-1,423.9	-186.2	2.00	-2.00	0.00	180.000	Top Gas (25' Radius)
5,754.9	0.00	0.00	5,489.5	-1,439.5	-188.3	2.00	-2.00	57.52	180.000	
8,005.4	0.00	0.00	7,740.0	-1,439.5	-188.3	0.00	0.00	0.00	0.000	

Williams

Planning Report - Geographic

Database: Compass R5000 WIN AUTH
Company: PICEANCE VLY NAD 83
Project: RU 34-06S-094W
Site: RMV 83-34 Pad
Well: RWF 31-3
Wellbore: Wellbore #1
Design: Design #1 14Apr10 Jms

Local Co-ordinate Reference: Well RWF 31-3 - Slot B2-8
TVD Reference: KELLY BUSHING @ 5650.0usft (H&P 24')
MD Reference: KELLY BUSHING @ 5650.0usft (H&P 24')
North Reference: True
Survey Calculation Method: 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	1,607,097.00	2,330,678.50	39° 28' 34.575 N	107° 52' 17.037 W
500.0	0.00	0.00	500.0	0.0	0.0	1,607,097.00	2,330,678.50	39° 28' 34.575 N	107° 52' 17.037 W
Start Build 2.00									
950.0	9.00	187.48	948.2	-35.0	-4.6	1,607,062.16	2,330,673.00	39° 28' 34.229 N	107° 52' 17.095 W
Hold 9.00 Inclination									
1,103.7	9.00	187.48	1,100.0	-58.8	-7.7	1,607,038.40	2,330,669.25	39° 28' 33.994 N	107° 52' 17.135 W
9 5/8"									
1,610.0	9.00	187.48	1,600.0	-137.3	-18.0	1,606,960.18	2,330,656.89	39° 28' 33.218 N	107° 52' 17.267 W
Top of "G" Sand									
1,711.2	9.00	187.48	1,700.0	-153.0	-20.1	1,606,944.54	2,330,654.42	39° 28' 33.062 N	107° 52' 17.293 W
Base of "G" Sand									
2,116.2	9.00	187.48	2,100.0	-215.9	-28.3	1,606,881.97	2,330,644.54	39° 28' 32.442 N	107° 52' 17.398 W
Start Build 3.50									
2,588.6	25.53	187.45	2,549.5	-354.4	-46.4	1,606,743.95	2,330,622.82	39° 28' 31.072 N	107° 52' 17.629 W
Hold 25.53 Inclination									
4,295.8	25.53	187.45	4,090.0	-1,084.1	-141.8	1,606,017.05	2,330,508.46	39° 28' 23.861 N	107° 52' 18.845 W
Mesaverde									
4,478.2	25.53	187.45	4,254.6	-1,162.0	-152.0	1,605,939.37	2,330,496.24	39° 28' 23.090 N	107° 52' 18.975 W
Start Drop -2.00									
5,454.9	6.00	187.45	5,190.0	-1,423.9	-186.2	1,605,678.50	2,330,455.19	39° 28' 20.502 N	107° 52' 19.411 W
Top Gas - Approx. Top Gas									
5,754.9	0.00	0.00	5,489.5	-1,439.5	-188.3	1,605,662.99	2,330,452.75	39° 28' 20.348 N	107° 52' 19.437 W
Vertical									
7,015.4	0.00	0.00	6,750.0	-1,439.5	-188.3	1,605,662.99	2,330,452.75	39° 28' 20.348 N	107° 52' 19.437 W
Cameo Coals									
7,675.4	0.00	0.00	7,410.0	-1,439.5	-188.3	1,605,662.99	2,330,452.75	39° 28' 20.348 N	107° 52' 19.437 W
Coal D									
7,775.4	0.00	0.00	7,510.0	-1,439.5	-188.3	1,605,662.99	2,330,452.75	39° 28' 20.348 N	107° 52' 19.437 W
Base L. Cameo Pay									
7,855.4	0.00	0.00	7,590.0	-1,439.5	-188.3	1,605,662.99	2,330,452.75	39° 28' 20.348 N	107° 52' 19.437 W
Rollins SS									
8,005.4	0.00	0.00	7,740.0	-1,439.5	-188.3	1,605,662.99	2,330,452.75	39° 28' 20.348 N	107° 52' 19.437 W
TD at 8005.4									

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) R\	0.00	0.00	5,190.0	-1,435.0	-187.4	1,605,667.40	2,330,453.70	39° 28' 20.392 N	107° 52' 19.427 W
- plan misses target center by 11.2usft at 5455.5usft MD (5190.6 TVD, -1424.0 N, -186.2 E)									
- Circle (radius 25.0)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,103.7	1,100.0	9 5/8"	9.625	12.250

Williams

Planning Report - Geographic

Database: Compass R5000 WIN AUTH
Company: PICEANCE VLY NAD 83
Project: RU 34-06S-094W
Site: RMV 83-34 Pad
Well: RWF 31-3
Wellbore: Wellbore #1
Design: Design #1 14Apr10 Jms

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

Well RWF 31-3 - Slot B2-8
 KELLY BUSHING @ 5650.0usft (H&P 24')
 KELLY BUSHING @ 5650.0usft (H&P 24')
 True
 Minimum Curvature

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,610.0	1,600.0	Top of "G" Sand				
1,711.2	1,700.0	Base of "G" Sand				
4,295.8	4,090.0	Mesaverde				
5,454.9	5,190.0	Approx. Top Gas				
7,015.4	6,750.0	Cameo Coals				
7,675.4	7,410.0	Coal D				
7,775.4	7,510.0	Base L. Cameo Pay				
7,855.4	7,590.0	Rollins SS				
8,005.4	7,740.0	TD				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	Start Build 2.00
950.0	948.2	-35.0	-4.6	Hold 9.00 Inclination
2,116.2	2,100.0	-215.9	-28.3	Start Build 3.50
2,588.6	2,549.5	-354.4	-46.4	Hold 25.53 Inclination
4,478.2	4,254.6	-1,162.0	-152.0	Start Drop -2.00
5,454.9	5,190.0	-1,423.9	-186.2	Top Gas
5,754.9	5,489.5	-1,439.5	-188.3	Vertical
8,005.4	7,740.0	-1,439.5	-188.3	TD at 8005.4