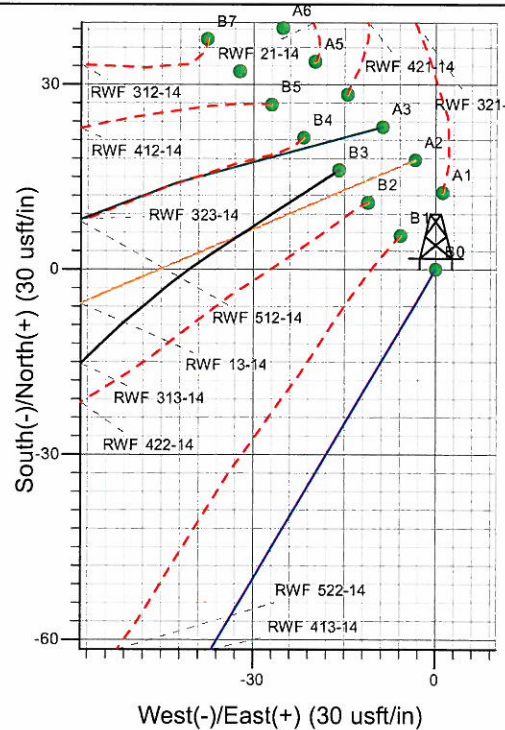
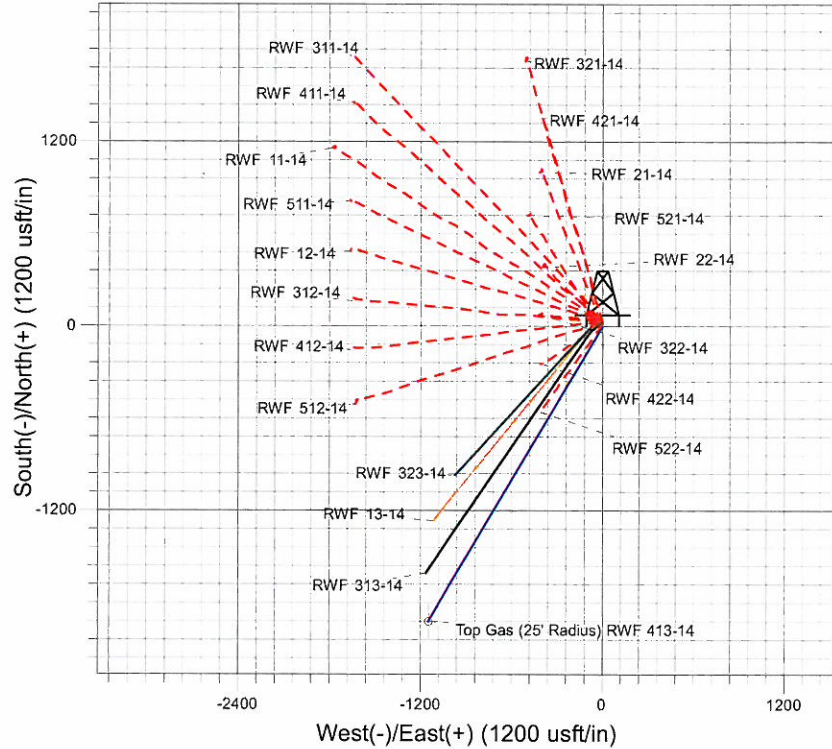
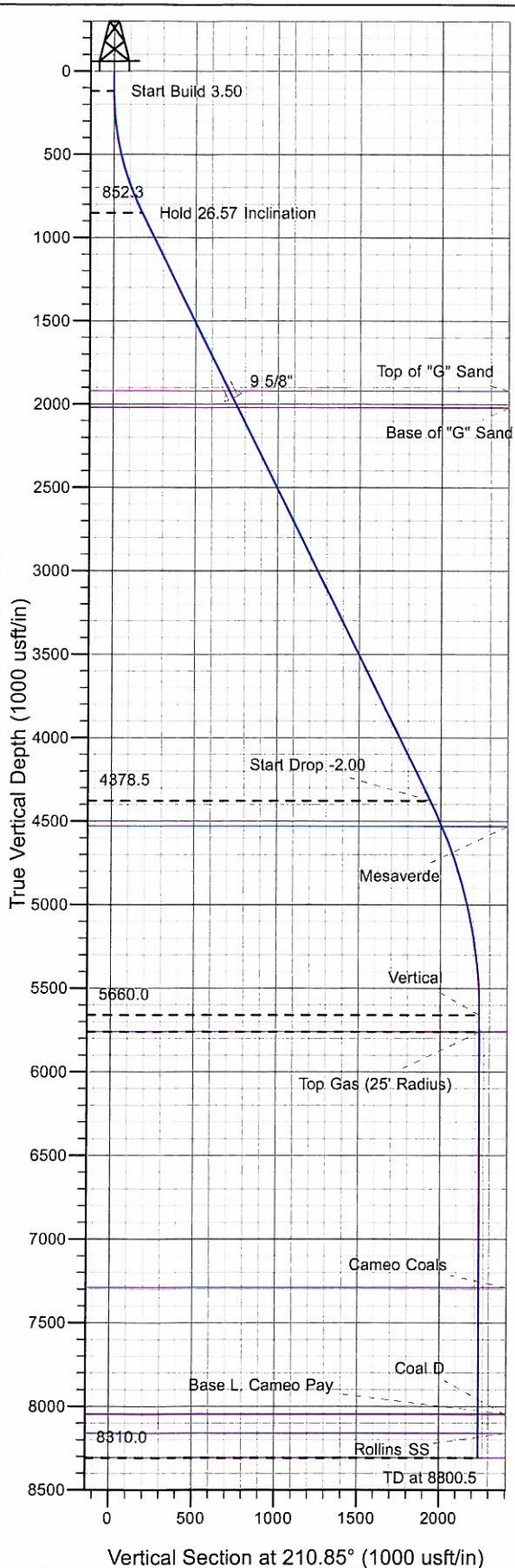




Well Name: RWF 413-14
 Surface Location: RWF 22-14 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 5493.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1625595.10 2335314.10 39° 31' 38.533 N 107° 51' 24.056 W B0
 KELLY BUSHING @ 5517.0usft ((24' KB) kjs)



Project: RU 14-06S-094W
 Site: RWF 22-14 Pad
 Well: RWF 413-14
 Design #1 29Jul10 kjs

M Azimuths to True North
 Magnetic North: 10.41°
 Magnetic Field
 Strength: 52378.3nT
 Dip Angle: 65.82°
 Date: 7/29/2010
 Model: IGRF2010

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
852.3	879.2	26.57	210.85	-148.5	-88.7	172.9	172.9	Hold 26.57 Inclination
4378.5	4821.9	26.57	210.85	-1662.7	-993.0	1936.6	1936.6	Start Drop -2.00
5660.0	6150.5	0.00	0.00	-1922.5	-1148.2	2239.3	2239.3	Vertical
5760.0	6250.5	0.00	0.00	-1922.5	-1148.2	2239.3	2239.3	Top Gas
8310.0	8800.5	0.00	0.00	-1922.5	-1148.2	2239.3	2239.3	TD at 8800.5

PICEANCE VLY NAD 83

RU 14-06S-094W

RWF 22-14 Pad

RWF 413-14 - Slot B0

Wellbore #1

Plan: Design #1 29Jul10 kjs

Standard Planning Report - Geographic

08 September, 2010

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 413-14 - Slot B0
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5517.0usft ((24' KB) kjs)
Project:	RU 14-06S-094W	MD Reference:	KELLY BUSHING @ 5517.0usft ((24' KB) kjs)
Site:	RWF 22-14 Pad	North Reference:	True
Well:	RWF 413-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 29Jul10 kjs		

Project	RU 14-06S-094W, 14-06S-094W		
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		RWF 22-14 Pad			
Site Position:		Northing:	1,625,607.50 usft	Latitude:	39° 31' 38.656 N
From:	Map	Easting:	2,335,315.60 usft	Longitude:	107° 51' 24.041 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.486 °

Well	RWF 413-14 - Slot B0					
Well Position	+N/-S	0.0 usft	Northing:	1,625,595.10 usft	Latitude:	39° 31' 38.533 N
	+E/-W	0.0 usft	Easting:	2,335,314.10 usft	Longitude:	107° 51' 24.056 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,493.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/29/2010	10.408	65.815	52,378

Design	Design #1 29Jul10 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	210.85

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	
879.2	26.57	210.85	852.3	-148.5	-88.7	3.50	3.50	0.00	210.847	
4,821.9	26.57	210.85	4,378.5	-1,662.7	-993.0	0.00	0.00	0.00	0.000	
6,150.5	0.00	0.00	5,660.0	-1,922.5	-1,148.2	2.00	-2.00	0.00	180.000	
6,250.5	0.00	0.00	5,760.0	-1,922.5	-1,148.2	0.00	0.00	0.00	0.000	Top Gas (25' Radius)
8,800.5	0.00	0.00	8,310.0	-1,922.5	-1,148.2	0.00	0.00	0.00	0.000	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 413-14 - Slot B0
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5517.0usft ((24' KB) kjs)
Project:	RU 14-06S-094W	MD Reference:	KELLY BUSHING @ 5517.0usft ((24' KB) kjs)
Site:	RWF 22-14 Pad	North Reference:	True
Well:	RWF 413-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 29Jul10 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	1,625,595.10	2,335,314.10	39° 31' 38.533 N	107° 51' 24.056 W
120.0	0.00	0.00	120.0	0.0	0.0	1,625,595.10	2,335,314.10	39° 31' 38.533 N	107° 51' 24.056 W
Start Build 3.50									
879.2	26.57	210.85	852.3	-148.5	-88.7	1,625,448.98	2,335,221.62	39° 31' 37.065 N	107° 51' 25.188 W
Hold 26.57 Inclination									
2,073.0	26.57	210.85	1,920.0	-607.0	-362.5	1,624,997.77	2,334,936.00	39° 31' 32.534 N	107° 51' 28.683 W
Top of "G" Sand									
2,120.0	26.57	210.85	1,962.0	-625.0	-373.3	1,624,980.01	2,334,924.77	39° 31' 32.356 N	107° 51' 28.820 W
9 5/8"									
2,184.8	26.57	210.85	2,020.0	-649.9	-388.1	1,624,955.50	2,334,909.25	39° 31' 32.110 N	107° 51' 29.010 W
Base of "G" Sand									
4,821.9	26.57	210.85	4,378.5	-1,662.7	-993.0	1,623,958.79	2,334,278.35	39° 31' 22.100 N	107° 51' 36.728 W
Start Drop -2.00									
4,989.0	23.23	210.85	4,530.0	-1,723.1	-1,029.1	1,623,899.35	2,334,240.73	39° 31' 21.503 N	107° 51' 37.189 W
Mesaverde									
6,150.5	0.00	0.00	5,660.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
Vertical									
6,250.5	0.00	0.00	5,760.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
Top Gas - Approx. Top Gas									
7,780.5	0.00	0.00	7,290.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
Cameo Coals									
8,535.5	0.00	0.00	8,045.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
Base L. Cameo Pay									
8,540.5	0.00	0.00	8,050.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
Coal D									
8,650.5	0.00	0.00	8,160.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
Rollins SS									
8,800.5	0.00	0.00	8,310.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W
TD at 8800.5 - TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (25' Radius) R1 - hit/miss target - Shape - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,760.0	-1,922.5	-1,148.2	1,623,703.10	2,334,116.50	39° 31' 19.532 N	107° 51' 38.708 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,120.0	1,962.0	9 5/8"	9.625	12.250	

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well RWF 413-14 - Slot B0
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5517.0usft ((24' KB) kjs)
Project:	RU 14-06S-094W	MD Reference:	KELLY BUSHING @ 5517.0usft ((24' KB) kjs)
Site:	RWF 22-14 Pad	North Reference:	True
Well:	RWF 413-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 29Jul10 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,073.0	1,920.0	Top of "G" Sand				
2,184.8	2,020.0	Base of "G" Sand				
4,989.0	4,530.0	Mesaverde				
6,250.5	5,760.0	Approx. Top Gas				
7,780.5	7,290.0	Cameo Coals				
8,535.5	8,045.0	Base L. Cameo Pay				
8,540.5	8,050.0	Coal D				
8,650.5	8,160.0	Rollins SS				
8,800.5	8,310.0	TD		0.000		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.0	120.0	0.0	0.0	Start Build 3.50	
879.2	852.3	-148.5	-88.7	Hold 26.57 Inclination	
4,821.9	4,378.5	-1,662.7	-993.0	Start Drop -2.00	
6,150.5	5,660.0	-1,922.5	-1,148.2	Vertical	
6,250.5	5,760.0	-1,922.5	-1,148.2	Top Gas	
8,800.5	8,310.0	-1,922.5	-1,148.2	TD at 8800.5	