

PICEANCE VLY NAD 83

RU 32-06S-094W

RWF 44-32 Pad

RWF 44-32 - Slot B10

Wellbore #1

Plan: Plan #1 13Aug09 kjs

Standard Planning Report - Geographic

09 October, 2009

Williams Production RMT Company

Planning Report - Geographic

Database:	EDMDB_COMPASS	Local Co-ordinate Reference:	Well RWF 44-32 - Slot B10
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6036.0ft (H&P (24' RKB) kjs)
Project:	RU 32-06S-094W	MD Reference:	KELLY BUSHING @ 6036.0ft (H&P (24' RKB) kjs)
Site:	RWF 44-32 Pad	North Reference:	True
Well:	RWF 44-32	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 13Aug09 kjs		

Project	RU 32-06S-094W, Garfield County, CO		
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 44-32 Pad		
Site Position:		Northing:	1,607,842.20 ft
From:	Map	Easting:	2,321,025.20 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	39° 28' 39.429 N
		Longitude:	107° 54' 20.357 W
		Grid Convergence:	-1.52 °

Well	RWF 44-32 - Slot B10		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	39° 28' 38.782 N
		Longitude:	107° 54' 20.115 W
		Ground Level:	6,012.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2005-10	8/13/2009	10.53	65.80	52,513

Design	Plan #1 13Aug09 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	145.72

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.00	
350.7	6.92	145.72	350.1	-11.5	7.8	3.00	3.00	0.00	145.72	
5,356.8	6.92	145.72	5,319.7	-510.0	347.6	0.00	0.00	0.00	0.00	
5,818.2	0.00	0.00	5,780.0	-533.0	363.2	1.50	-1.50	0.00	180.00	Top Gas (25' Radius)
8,368.2	0.00	0.00	8,330.0	-533.0	363.2	0.00	0.00	0.00	0.00	

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Wellbore:	Wellbore #1		
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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,607,776.17	2,321,042.41	39° 28' 38.782 N	107° 54' 20.115 W
120.0	0.00	0.00	120.0	0.0	0.0	1,607,776.17	2,321,042.41	39° 28' 38.782 N	107° 54' 20.115 W
350.7	6.92	145.72	350.1	-11.5	7.8	1,607,764.47	2,321,049.94	39° 28' 38.668 N	107° 54' 20.015 W
1,106.1	6.92	145.72	1,100.0	-86.7	59.1	1,607,687.93	2,321,099.19	39° 28' 37.925 N	107° 54' 19.361 W
9 5/8"									
2,385.4	6.92	145.72	2,370.0	-214.1	145.9	1,607,558.29	2,321,182.60	39° 28' 36.666 N	107° 54' 18.254 W
Top of "G" Sand									
2,486.1	6.92	145.72	2,470.0	-224.1	152.8	1,607,548.09	2,321,189.17	39° 28' 36.566 N	107° 54' 18.167 W
Base of "G" Sand									
4,752.6	6.92	145.72	4,720.0	-449.8	306.6	1,607,318.42	2,321,336.95	39° 28' 34.336 N	107° 54' 16.205 W
Mesaverde									
5,356.8	6.92	145.72	5,319.7	-510.0	347.6	1,607,257.21	2,321,376.34	39° 28' 33.741 N	107° 54' 15.683 W
5,818.2	0.00	0.00	5,780.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
Approx. Top Gas									
7,268.2	0.00	0.00	7,230.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
Cameo Coals									
8,038.2	0.00	0.00	8,000.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
Coal D									
8,168.2	0.00	0.00	8,130.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
Base Lower Cameo Pay									
8,218.2	0.00	0.00	8,180.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
Rollins									
8,368.2	0.00	0.00	8,330.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
TD									

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Top Gas (25' Radius) R\	0.00	0.00	5,780.0	-533.0	363.2	1,607,233.80	2,321,391.40	39° 28' 33.514 N	107° 54' 15.483 W
- plan hits target									
- Circle (radius 25.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,106.1	1,100.0	9 5/8"	9-5/8	12-1/4

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Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,385.4	2,370.00	Top of "G" Sand				
2,486.1	2,470.00	Base of "G" Sand				
4,752.6	4,720.00	Mesaverde				
5,818.2	5,780.00	Approx. Top Gas				
7,268.2	7,230.00	Cameo Coals				
8,038.2	8,000.00	Coal D				
8,168.2	8,130.00	Base Lower Cameo Pay				
8,218.2	8,180.00	Rollins				
8,368.2	8,330.00	TD				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
120.0	120.0	0.0	0.0	Start Build 3.00	
350.7	350.1	-11.5	7.8	Hold 6.92 Inclination	
5,356.8	5,319.7	-510.0	347.6	Start Drop -1.50	
5,818.2	5,780.0	-533.0	363.2	Top Gas	
8,368.2	8,330.0	-533.0	363.2	TD at 8368.2	