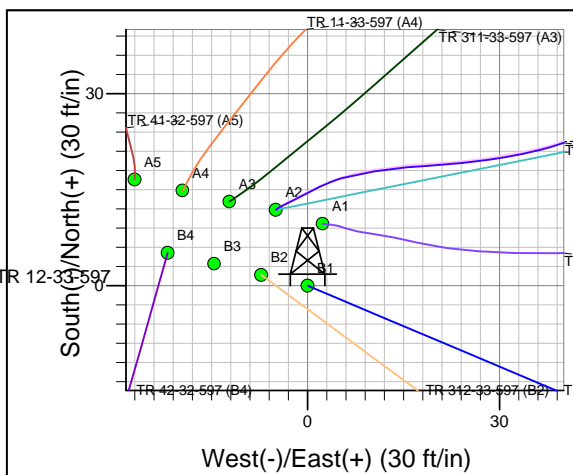
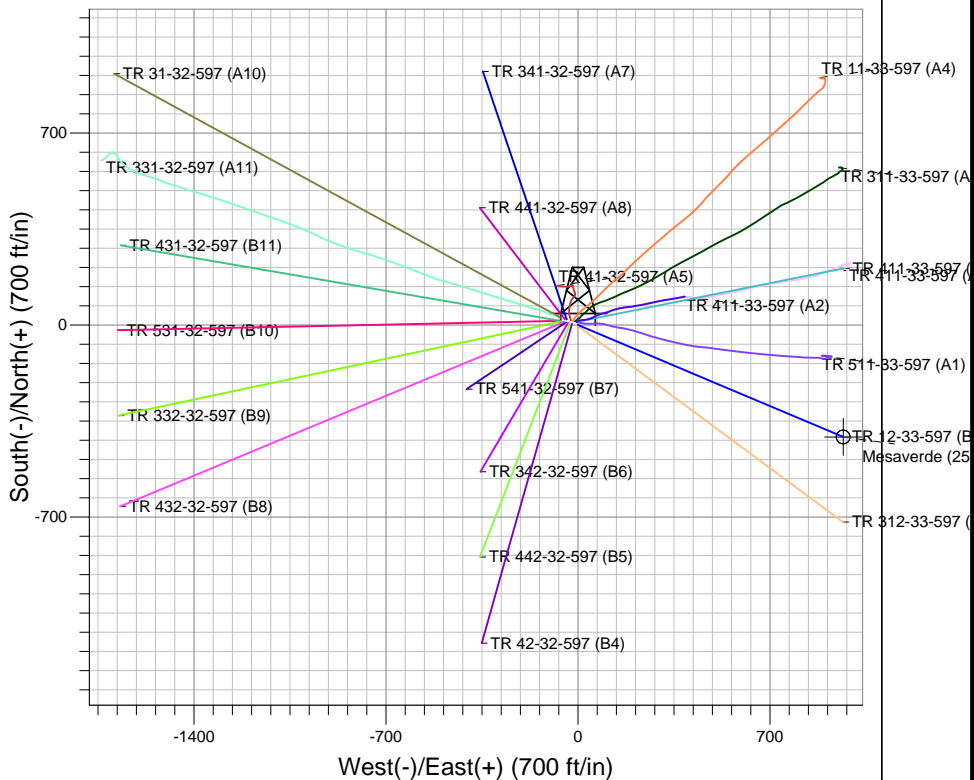
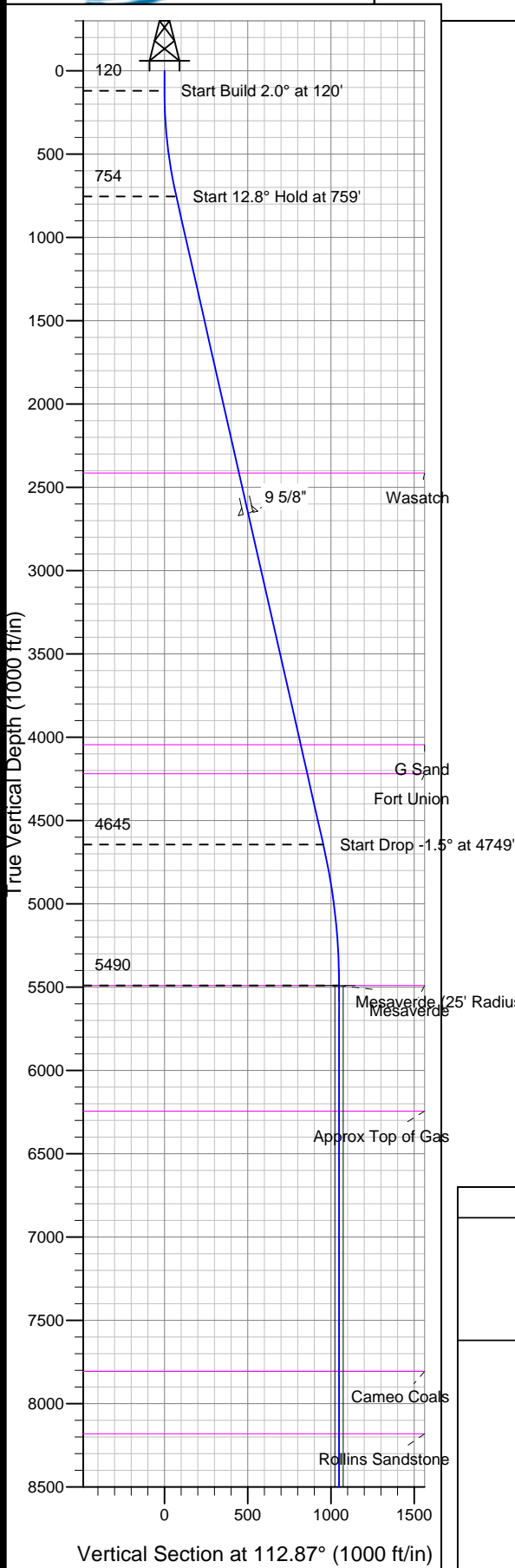




Well Name: TR 12-33-597  
 Surface Location: TR 41-32-597 Pad  
 NAD 1927 (NADCON CONUS), US State Plane 1927 (Exact solution) Colorado Central 502  
 Ground Elevation: 8260.0  
 +N/-E/-W Northing Easting Longitude Slot  
 0.0 0.0646258 50212843.30 34' 28.50408° 17' 34.221 W B1  
 Frontier 11 (28' RKB) WELL @ 8288.0ft (Frontier 11 (28' RKB))



Project: TR 32-05S-097W  
 Site: TR 41-32-597 Pad  
 Well: TR 12-33-597  
 Plan: Plan #1 14Jul09 sdb

Azimuths to True North  
 Magnetic North: 10.90°  
 Magnetic Field  
 Strength: 52652.5nT  
 Dip Angle: 65.84°  
 Date: 3/7/2008  
 Model: IGRF2005-10

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.0	
3	759.4	12.79	112.87	754.1	-27.6	65.5	2.00	112.87	71.0	
4	4748.8	12.79	112.87	4644.6	-370.8	879.0	0.00	0.00	954.0	
5	5601.3	0.00	0.00	5490.0	-407.6	966.3	1.50	180.00	1048.8	Mesaverde (25' Radius) TR 12-33-597
6	8692.3	0.00	0.00	8581.0	-407.6	966.3	0.00	0.00	1048.8	

TVD MD Annotation  
 120.0 120.0 Start Build 2.0° at 120'  
 754.1 759.4 Start 12.8° Hold at 759'  
 4644.6 4748.8 Start Drop -1.5° at 4749'  
 5490.0 5601.3 Start 0° Hold at 5601'  
 8581.0 8692.3 TD at 8692'

# **PICEANCE HL**

**TR 32-05S-097W**

**TR 41-32-597 Pad**

**TR 12-33-597 - Slot B1**

**Wellbore #1**

**Plan: Plan #1 14Jul09 sdb**

## **Standard Planning Report - Geographic**

**06 August, 2009**

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well TR 12-33-597 (B1) - Slot B1
<b>Company:</b>	PICEANCE HL	<b>TVD Reference:</b>	WELL @ 8288.0ft (Frontier 11 (28' RKB))
<b>Project:</b>	TR 32-05S-097W	<b>MD Reference:</b>	WELL @ 8288.0ft (Frontier 11 (28' RKB))
<b>Site:</b>	TR 41-32-597 Pad	<b>North Reference:</b>	True
<b>Well:</b>	TR 12-33-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 14Jul09 sdb		

<b>Project</b>	TR 32-05S-097W, Garfield County, CO, 32-05S-097W		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado Central 502		Using geodetic scale factor

<b>Site</b>	TR 41-32-597 Pad		
<b>Site Position:</b>		<b>Northing:</b>	646,275.90 ft
<b>From:</b>	Map	<b>Easting:</b>	1,212,816.50 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	in
		<b>Latitude:</b>	39° 34' 28.668 N
		<b>Longitude:</b>	108° 17' 34.566 W
		<b>Grid Convergence:</b>	-1.76 °

<b>Well</b>	TR 12-33-597 - Slot B1		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 646,258.50 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 1,212,843.00 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	39° 34' 28.504 N
		<b>Longitude:</b>	108° 17' 34.221 W
		<b>Ground Level:</b>	8,260.0 ft

<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	3/7/2008	10.90	65.84	52,652

<b>Design</b>	Plan #1 14Jul09 sdb			
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	112.87

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
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	
759.4	12.79	112.87	754.1	-27.6	65.5	2.00	2.00	0.00	112.87	
4,748.8	12.79	112.87	4,644.6	-370.8	879.0	0.00	0.00	0.00	0.00	
5,601.3	0.00	0.00	5,490.0	-407.6	966.3	1.50	-1.50	0.00	180.00	Mesaverde (25' Radiu
8,692.3	0.00	0.00	8,581.0	-407.6	966.3	0.00	0.00	0.00	0.00	

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well TR 12-33-597 (B1) - Slot B1
<b>Company:</b>	PICEANCE HL	<b>TVD Reference:</b>	WELL @ 8288.0ft (Frontier 11 (28' RKB))
<b>Project:</b>	TR 32-05S-097W	<b>MD Reference:</b>	WELL @ 8288.0ft (Frontier 11 (28' RKB))
<b>Site:</b>	TR 41-32-597 Pad	<b>North Reference:</b>	True
<b>Well:</b>	TR 12-33-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 14Jul09 sdb		

### 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	646,258.50	1,212,843.00	39° 34' 28.504 N	108° 17' 34.221 W
120.0	0.00	0.00	120.0	0.0	0.0	646,258.50	1,212,843.00	39° 34' 28.504 N	108° 17' 34.221 W
<b>Start Build 2.0° at 120'</b>									
759.4	12.79	112.87	754.1	-27.6	65.5	646,228.89	1,212,907.58	39° 34' 28.231 N	108° 17' 33.385 W
<b>Start 12.8° Hold at 759'</b>									
2,461.5	12.79	112.87	2,414.0	-174.0	412.6	646,071.87	1,213,250.02	39° 34' 26.784 N	108° 17' 28.952 W
<b>Wasatch</b>									
2,711.0	12.79	112.87	2,657.3	-195.5	463.5	646,048.86	1,213,300.22	39° 34' 26.572 N	108° 17' 28.302 W
<b>9 5/8"</b>									
4,134.0	12.79	112.87	4,045.0	-317.9	753.6	645,917.60	1,213,586.50	39° 34' 25.362 N	108° 17' 24.596 W
<b>G Sand</b>									
4,312.4	12.79	112.87	4,219.0	-333.2	790.0	645,901.14	1,213,622.39	39° 34' 25.211 N	108° 17' 24.132 W
<b>Fort Union</b>									
4,748.8	12.79	112.87	4,644.6	-370.8	879.0	645,860.88	1,213,710.19	39° 34' 24.840 N	108° 17' 22.995 W
<b>Start Drop -1.5° at 4749'</b>									
5,601.3	0.00	0.00	5,490.0	-407.6	966.3	645,821.40	1,213,796.30	39° 34' 24.476 N	108° 17' 21.881 W
<b>Start 0° Hold at 5601' - Mesaverde - Mesaverde (25' Radius) TR 12-33-597</b>									
6,355.3	0.00	0.00	6,244.0	-407.6	966.3	645,821.40	1,213,796.30	39° 34' 24.476 N	108° 17' 21.881 W
<b>Approx Top of Gas</b>									
7,918.3	0.00	0.00	7,807.0	-407.6	966.3	645,821.40	1,213,796.30	39° 34' 24.476 N	108° 17' 21.881 W
<b>Cameo Coals</b>									
8,292.3	0.00	0.00	8,181.0	-407.6	966.3	645,821.40	1,213,796.30	39° 34' 24.476 N	108° 17' 21.881 W
<b>Rollins Sandstone</b>									
8,692.3	0.00	0.00	8,581.0	-407.6	966.3	645,821.40	1,213,796.30	39° 34' 24.476 N	108° 17' 21.881 W
<b>TD at 8692' - TD</b>									

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Mesaverde (25' Radius)	0.00	0.00	5,490.0	-407.6	966.3	645,821.40	1,213,796.30	39° 34' 24.476 N	108° 17' 21.881 W
- plan hits target									
- Circle (radius 25.0)									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,711.0	2,657.3	9 5/8"	9.625	14.750

# Williams Production RMT Company

## Planning Report - Geographic

<b>Database:</b>	EDMDB_COMPASS	<b>Local Co-ordinate Reference:</b>	Well TR 12-33-597 (B1) - Slot B1
<b>Company:</b>	PICEANCE HL	<b>TVD Reference:</b>	WELL @ 8288.0ft (Frontier 11 (28' RKB))
<b>Project:</b>	TR 32-05S-097W	<b>MD Reference:</b>	WELL @ 8288.0ft (Frontier 11 (28' RKB))
<b>Site:</b>	TR 41-32-597 Pad	<b>North Reference:</b>	True
<b>Well:</b>	TR 12-33-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 14Jul09 sdb		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,461.5	2,414.00	Wasatch		0.00		
4,134.0	4,045.00	G Sand		0.00		
4,312.4	4,219.00	Fort Union		0.00		
5,601.3	5,490.00	Mesaverde		0.00		
6,355.3	6,244.00	Approx Top of Gas		0.00		
7,918.3	7,807.00	Cameo Coals		0.00		
8,292.3	8,181.00	Rollins Sandstone		0.00		
8,692.3	8,581.00	TD		0.00		

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 2.0° at 120'	
759.4	754.1	-27.6	65.5	Start 12.8° Hold at 759'	
4,748.8	4,644.6	-370.8	879.0	Start Drop -1.5° at 4749'	
5,601.3	5,490.0	-407.6	966.3	Start 0° Hold at 5601'	
8,692.3	8,581.0	-407.6	966.3	TD at 8692'	