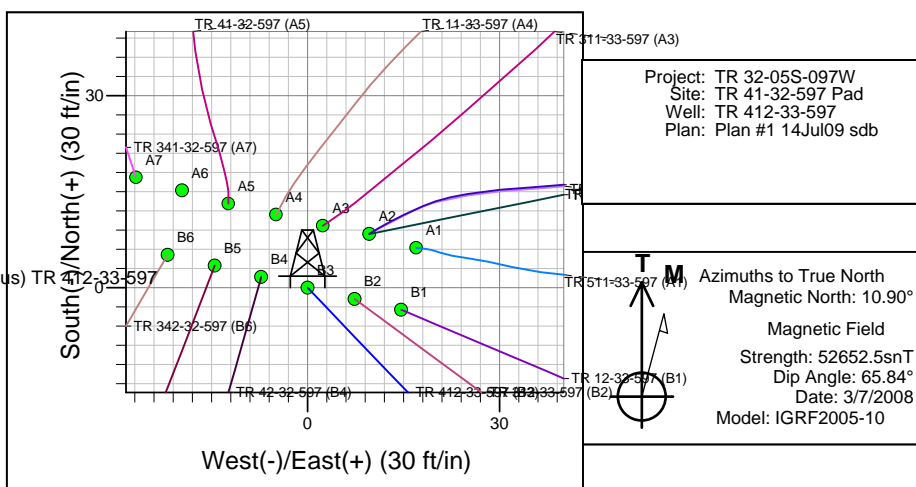
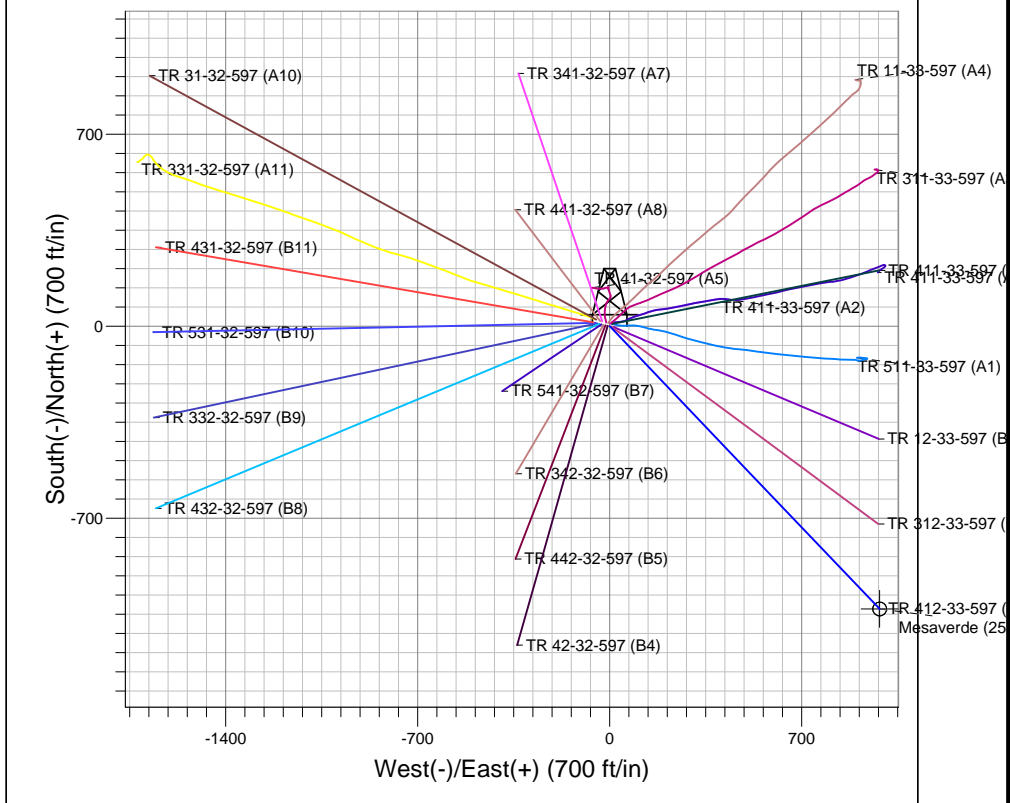
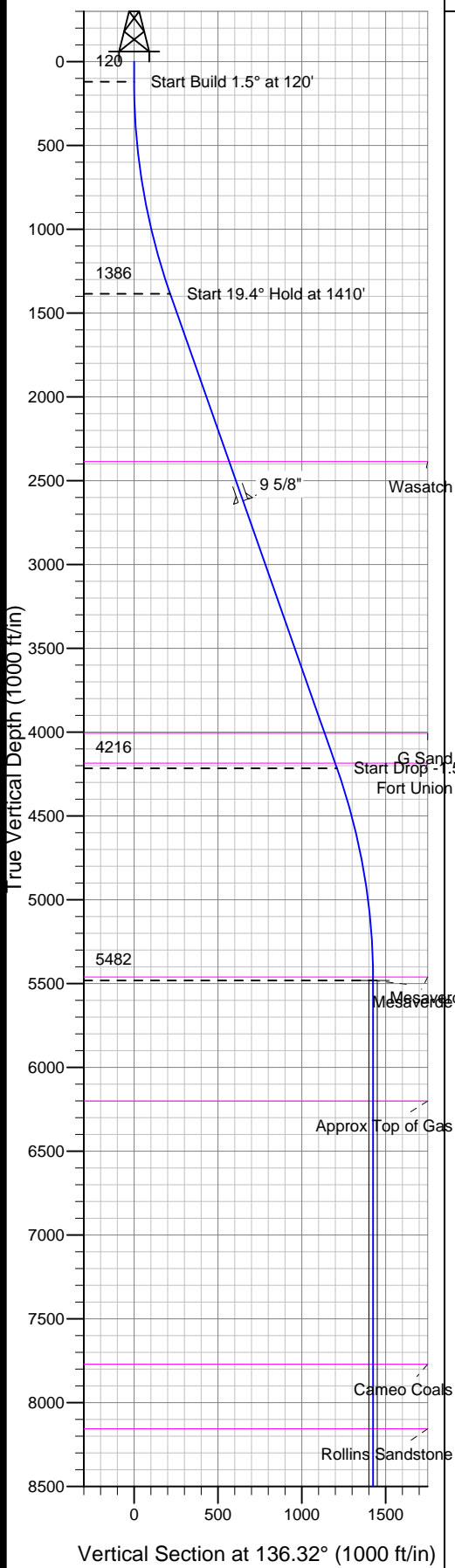




Well Name: TR 412-33-597
 Surface Location: TR 41-32-597 Pad
 NAD 1927 (NADCON CONUS), US State Plane 1927 (Exact solution)
 Colorado Central 502
 Ground Elevation: 8260.0
 +N/-E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0646262 40212828.30 34' 28.53808° 17' 34.407 W B3
 Frontier 11 (28' RKB) @ 8288.0ft (Frontier 11 (28' RKB))



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	1410.1	19.35	136.32	1385.7	-156.1	149.0	1.50	136.32	215.8	
4	4410.2	19.35	136.32	4216.3	-875.0	835.6	0.00	0.00	1209.9	
5	5700.3	0.00	0.00	5482.0	-1031.1	984.7	1.50	180.00	1425.7	Mesaverde (25' Radius) TR 412-33-597
6	8794.3	0.00	0.00	8576.0	-1031.1	984.7	0.00	0.00	1425.7	

TVD	MD	Annotation
120.0	120.0	Start Build 1.5° at 120'
1385.7	1410.1	Start 19.4° Hold at 1410'
4216.3	4410.2	Start Drop -1.5° at 4410'
5482.0	5700.3	Start 0° Hold at 5700'
8576.0	8794.3	TD at 8794'

PICEANCE HL

TR 32-05S-097W

TR 41-32-597 Pad

TR 412-33-597 - Slot B3

Wellbore #1

Plan: Plan #1 14Jul09 sdb

Standard Planning Report - Geographic

11 August, 2009

Williams Production RMT Company

Planning Report - Geographic

Database:	EDMDB_COMPASS	Local Co-ordinate Reference:	Well TR 412-33-597 (B3) - Slot B3
Company:	PICEANCE HL	TVD Reference:	RKB @ 8288.0ft (Frontier 11 (28' RKB))
Project:	TR 32-05S-097W	MD Reference:	RKB @ 8288.0ft (Frontier 11 (28' RKB))
Site:	TR 41-32-597 Pad	North Reference:	True
Well:	TR 412-33-597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 14Jul09 sdb		

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

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

Well	TR 412-33-597 - Slot B3		
Well Position	+N/-S	0.0 ft	Northing: 646,262.40 ft
	+E/-W	0.0 ft	Easting: 1,212,828.50 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	39° 34' 28.538 N
		Longitude:	108° 17' 34.407 W
		Ground Level:	8,260.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	3/7/2008	10.90	65.84	52,652

Design	Plan #1 14Jul09 sdb			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	136.32

Plan Sections										
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	
1,410.1	19.35	136.32	1,385.7	-156.1	149.0	1.50	1.50	0.00	136.32	
4,410.2	19.35	136.32	4,216.3	-875.0	835.6	0.00	0.00	0.00	0.00	
5,700.3	0.00	0.00	5,482.0	-1,031.1	984.7	1.50	-1.50	0.00	180.00	Mesaverde (25' Radiu
8,794.3	0.00	0.00	8,576.0	-1,031.1	984.7	0.00	0.00	0.00	0.00	

Williams Production RMT Company

Planning Report - Geographic

Database:	EDMDB_COMPASS	Local Co-ordinate Reference:	Well TR 412-33-597 (B3) - Slot B3
Company:	PICEANCE HL	TVD Reference:	RKB @ 8288.0ft (Frontier 11 (28' RKB))
Project:	TR 32-05S-097W	MD Reference:	RKB @ 8288.0ft (Frontier 11 (28' RKB))
Site:	TR 41-32-597 Pad	North Reference:	True
Well:	TR 412-33-597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	646,262.40	1,212,828.50	39° 34' 28.538 N	108° 17' 34.407 W
120.0	0.00	0.00	120.0	0.0	0.0	646,262.40	1,212,828.50	39° 34' 28.538 N	108° 17' 34.407 W
Start Build 1.5° at 120'									
1,410.1	19.35	136.32	1,385.7	-156.1	149.0	646,101.83	1,212,972.67	39° 34' 26.996 N	108° 17' 32.504 W
Start 19.4° Hold at 1410'									
2,505.3	19.35	136.32	2,419.0	-418.5	399.7	645,831.82	1,213,215.12	39° 34' 24.402 N	108° 17' 29.303 W
Wasatch									
2,755.0	19.35	136.32	2,654.6	-478.3	456.8	645,770.25	1,213,270.41	39° 34' 23.811 N	108° 17' 28.573 W
9 5/8"									
4,228.6	19.35	136.32	4,045.0	-831.5	794.1	645,406.93	1,213,596.64	39° 34' 20.321 N	108° 17' 24.267 W
G Sand									
4,410.2	19.35	136.32	4,216.3	-875.0	835.6	645,362.17	1,213,636.83	39° 34' 19.891 N	108° 17' 23.736 W
Start Drop -1.5° at 4410'									
4,413.0	19.31	136.32	4,219.0	-875.7	836.3	645,361.46	1,213,637.46	39° 34' 19.884 N	108° 17' 23.728 W
Fort Union									
5,700.3	0.00	0.00	5,482.0	-1,031.1	984.7	645,201.60	1,213,781.00	39° 34' 18.348 N	108° 17' 21.833 W
Start 0° Hold at 5700' - Mesaverde - Mesaverde (25' Radius) TR 412-33-597									
6,431.3	0.00	0.00	6,213.0	-1,031.1	984.7	645,201.60	1,213,781.00	39° 34' 18.348 N	108° 17' 21.833 W
Approx Top of Gas									
8,005.3	0.00	0.00	7,787.0	-1,031.1	984.7	645,201.60	1,213,781.00	39° 34' 18.348 N	108° 17' 21.833 W
Cameo Coals									
8,394.3	0.00	0.00	8,176.0	-1,031.1	984.7	645,201.60	1,213,781.00	39° 34' 18.348 N	108° 17' 21.833 W
Rollins Sandstone									
8,794.3	0.00	0.00	8,576.0	-1,031.1	984.7	645,201.60	1,213,781.00	39° 34' 18.348 N	108° 17' 21.833 W
TD at 8794'									

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	5,482.0	-1,031.1	984.7	645,201.60	1,213,781.00	39° 34' 18.348 N	108° 17' 21.833 W
- plan hits target									
- Circle (radius 25.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,755.0	2,654.6	9 5/8"	9.625	14.750

Williams Production RMT Company

Planning Report - Geographic

Database:	EDMDB_COMPASS	Local Co-ordinate Reference:	Well TR 412-33-597 (B3) - Slot B3
Company:	PICEANCE HL	TVD Reference:	RKB @ 8288.0ft (Frontier 11 (28' RKB))
Project:	TR 32-05S-097W	MD Reference:	RKB @ 8288.0ft (Frontier 11 (28' RKB))
Site:	TR 41-32-597 Pad	North Reference:	True
Well:	TR 412-33-597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 14Jul09 sdb		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,505.3	2,419.00	Wasatch		0.00		
4,228.6	4,045.00	G Sand		0.00		
4,413.0	4,219.00	Fort Union		0.00		
5,700.3	5,482.00	Mesaverde		0.00		
6,431.3	6,213.00	Approx Top of Gas		0.00		
8,005.3	7,787.00	Cameo Coals		0.00		
8,394.3	8,176.00	Rollins Sandstone		0.00		
		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 1.5° at 120'	
1,410.1	1,385.7	-156.1	149.0	Start 19.4° Hold at 1410'	
4,410.2	4,216.3	-875.0	835.6	Start Drop -1.5° at 4410'	
5,700.3	5,482.0	-1,031.1	984.7	Start 0° Hold at 5700'	
8,794.3	8,576.0	-1,031.1	984.7	TD at 8794'	