



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well TR 412-28-597 - Slot TR 412-28-597, True North  
Vertical (TVD) Reference: RKB@ 30' @ 8513.0ft  
Section (VS) Reference: Slot - TR 412-28-597(0.0N, 0.0E)  
Measured Depth Reference: RKB@ 30' @ 8513.0ft  
Calculation Method: Minimum Curvature

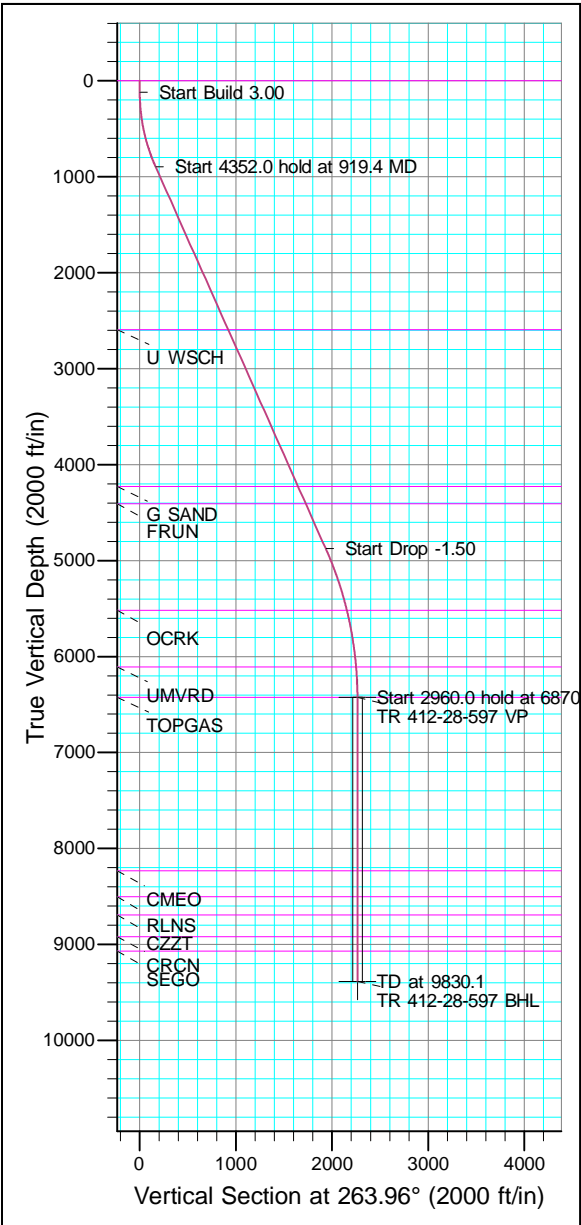


Project: Garfield County, CO (Nad 83)  
Site: TR 32-28-597 Pad  
Well: TR 412-28-597  
Wellbore: OWB  
Design: Plan

Azimuths to True North  
Magnetic North: 9.23°  
Magnetic Field

Strength: 51011.5nT  
Dip Angle: 65.58°  
Date: 6/5/2023  
Model: HDGM

WELL DETAILS: TR 412-28-597							
Ground Level:	8483.0						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.0	0.0	1650708.600	2216043.200	39.587029	-108.282046	TR 412-28-597	

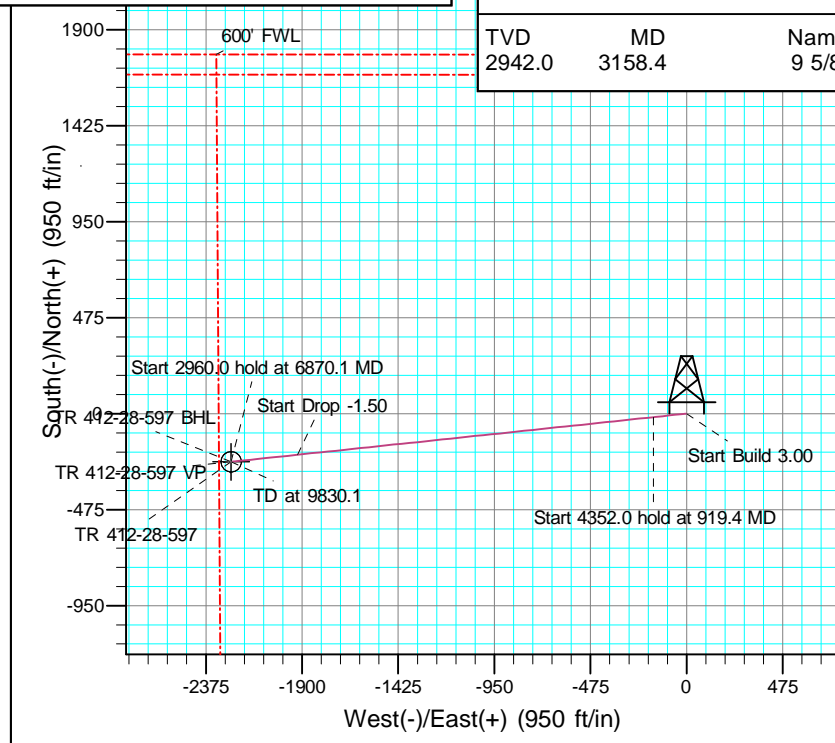
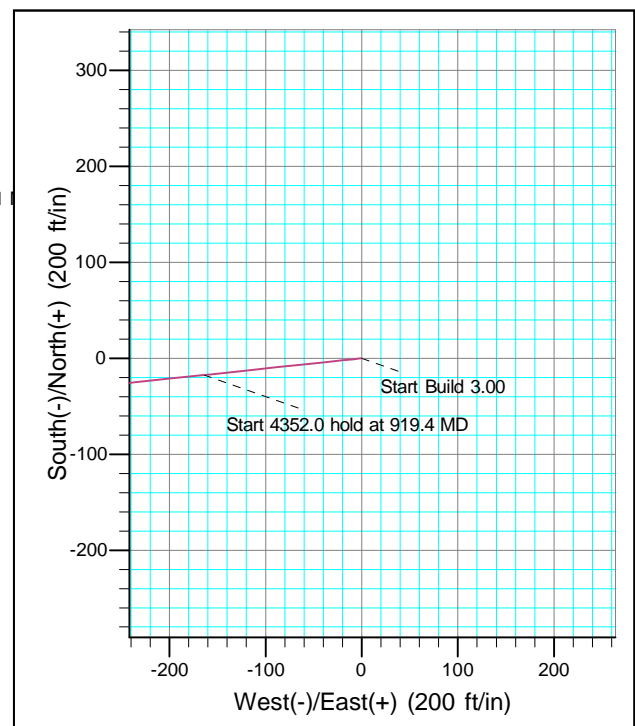


ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation	
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 3.00	
896.2	919.4	23.98	263.96	-17.4	-163.9	164.9	164.9	Start 4352.0 hold at 919.4	
4872.6	5271.3	23.98	263.96	-203.5	-1922.9	1933.6	1933.6	Start Drop -1.50	
6425.0	6870.1	0.00	0.00	-238.2	-2250.8	2263.3	2263.3	Start 2960.0 hold at 6870.1	
9385.0	9830.1	0.00	0.00	-238.2	-2250.8	2263.3	2263.3	TD at 9830.1	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
0.0	0.0	GRRV
2592.0	2775.3	U WSCH
4226.0	4563.7	G SAND
4405.0	4759.6	FRUN
5518.0	5954.3	OCRK
6108.0	6552.7	UMVRD
6425.0	6870.1	TOPGAS
8234.0	8679.1	CMEO
8504.0	8949.1	RLNS
8691.0	9136.1	CZZT
8919.0	9364.1	CRCN
9069.0	9514.1	SEGO

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
VP	6425.0	-238.2	-2250.8	1650539.400	2213786.200	39.586375	-108.290032	Point	
BHL	9385.0	-238.2	-2250.8	1650539.400	2213786.200	39.586375	-108.290032	Circle (Radius: 50.0)	

CASING DETAILS		
TVD	MD	Name
2942.0	3158.4	9 5/8"





## **Terra Energy Partners, LLP**

**Garfield County, CO (Nad 83)**

**TR 32-28-597 Pad**

**TR 412-28-597 - Slot TR 412-28-597**

**OWB**

**Plan: Plan**

## **Standard Planning Report**

**13 June, 2023**



<b>Database:</b>	NN	<b>Local Co-ordinate Reference:</b>	Well TR 412-28-597 - Slot TR 412-28-597
<b>Company:</b>	Terra Energy Partners, LLP	<b>TVD Reference:</b>	RKB@ 30' @ 8513.0ft
<b>Project:</b>	Garfield County, CO (Nad 83)	<b>MD Reference:</b>	RKB@ 30' @ 8513.0ft
<b>Site:</b>	TR 32-28-597 Pad	<b>North Reference:</b>	True
<b>Well:</b>	TR 412-28-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan		

<b>Project</b>	Garfield County, CO (Nad 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	TR 32-28-597 Pad, Sec 28, T5S, R97W			
<b>Site Position:</b>		<b>Northing:</b>	1,650,709.300 usft	<b>Latitude:</b> 39.587032
<b>From:</b>	Map	<b>Easting:</b>	2,216,053.200 usft	<b>Longitude:</b> -108.282011
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> -1.75 °

Well	TR 412-28-597 - Slot TR 412-28-597					
Well Position	+N/-S	-1.0 ft	Northing:	1,650,708.600 usft	Latitude:	39.587030
	+E/-W	-10.0 ft	Easting:	2,216,043.200 usft	Longitude:	-108.282046
Position Uncertainty		0.0 ft	Wellhead Elevation:	8,513.0 ft	Ground Level:	8,483.0 ft

<b>Wellbore</b>	OWB				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	6/5/2023	9.23	65.58	51,012

<b>Design</b>	Plan			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	263.96

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.00	
919.4	23.98	263.96	896.2	-17.4	-163.9	3.00	3.00	0.00	263.96	
5,271.3	23.98	263.96	4,872.6	-203.5	-1,922.9	0.00	0.00	0.00	0.00	
6,870.1	0.00	0.00	6,425.0	-238.2	-2,250.8	1.50	-1.50	0.00	180.00	
9,830.1	0.00	0.00	9,385.0	-238.2	-2,250.8	0.00	0.00	0.00	0.00	TR 412-28-597 BHL

<b>Database:</b>	NN	<b>Local Co-ordinate Reference:</b>	Well TR 412-28-597 - Slot TR 412-28-597
<b>Company:</b>	Terra Energy Partners, LLP	<b>TVD Reference:</b>	RKB@ 30' @ 8513.0ft
<b>Project:</b>	Garfield County, CO (Nad 83)	<b>MD Reference:</b>	RKB@ 30' @ 8513.0ft
<b>Site:</b>	TR 32-28-597 Pad	<b>North Reference:</b>	True
<b>Well:</b>	TR 412-28-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.00									
200.0	2.40	263.96	200.0	-0.2	-1.7	1.7	3.00	3.00	0.00
300.0	5.40	263.96	299.7	-0.9	-8.4	8.5	3.00	3.00	0.00
400.0	8.40	263.96	399.0	-2.2	-20.4	20.5	3.00	3.00	0.00
500.0	11.40	263.96	497.5	-4.0	-37.5	37.7	3.00	3.00	0.00
600.0	14.40	263.96	595.0	-6.3	-59.7	60.0	3.00	3.00	0.00
700.0	17.40	263.96	691.1	-9.2	-86.9	87.4	3.00	3.00	0.00
800.0	20.40	263.96	785.7	-12.6	-119.1	119.8	3.00	3.00	0.00
900.0	23.40	263.96	878.5	-16.5	-156.2	157.1	3.00	3.00	0.00
919.4	23.98	263.96	896.2	-17.4	-163.9	164.9	3.00	3.00	0.00
Start 4352.0 hold at 919.4 MD									
1,000.0	23.98	263.96	969.9	-20.8	-196.5	197.6	0.00	0.00	0.00
1,100.0	23.98	263.96	1,061.3	-25.1	-236.9	238.3	0.00	0.00	0.00
1,200.0	23.98	263.96	1,152.6	-29.4	-277.4	278.9	0.00	0.00	0.00
1,300.0	23.98	263.96	1,244.0	-33.6	-317.8	319.6	0.00	0.00	0.00
1,400.0	23.98	263.96	1,335.4	-37.9	-358.2	360.2	0.00	0.00	0.00
1,500.0	23.98	263.96	1,426.7	-42.2	-398.6	400.8	0.00	0.00	0.00
1,600.0	23.98	263.96	1,518.1	-46.5	-439.0	441.5	0.00	0.00	0.00
1,700.0	23.98	263.96	1,609.5	-50.7	-479.5	482.1	0.00	0.00	0.00
1,800.0	23.98	263.96	1,700.9	-55.0	-519.9	522.8	0.00	0.00	0.00
1,900.0	23.98	263.96	1,792.2	-59.3	-560.3	563.4	0.00	0.00	0.00
2,000.0	23.98	263.96	1,883.6	-63.6	-600.7	604.1	0.00	0.00	0.00
2,100.0	23.98	263.96	1,975.0	-67.9	-641.1	644.7	0.00	0.00	0.00
2,200.0	23.98	263.96	2,066.3	-72.1	-681.5	685.3	0.00	0.00	0.00
2,300.0	23.98	263.96	2,157.7	-76.4	-722.0	726.0	0.00	0.00	0.00
2,400.0	23.98	263.96	2,249.1	-80.7	-762.4	766.6	0.00	0.00	0.00
2,500.0	23.98	263.96	2,340.4	-85.0	-802.8	807.3	0.00	0.00	0.00
2,600.0	23.98	263.96	2,431.8	-89.2	-843.2	847.9	0.00	0.00	0.00
2,700.0	23.98	263.96	2,523.2	-93.5	-883.6	888.6	0.00	0.00	0.00
2,800.0	23.98	263.96	2,614.5	-97.8	-924.0	929.2	0.00	0.00	0.00
2,900.0	23.98	263.96	2,705.9	-102.1	-964.5	969.8	0.00	0.00	0.00
3,000.0	23.98	263.96	2,797.3	-106.4	-1,004.9	1,010.5	0.00	0.00	0.00
3,100.0	23.98	263.96	2,888.6	-110.6	-1,045.3	1,051.1	0.00	0.00	0.00
3,200.0	23.98	263.96	2,980.0	-114.9	-1,085.7	1,091.8	0.00	0.00	0.00
3,300.0	23.98	263.96	3,071.4	-119.2	-1,126.1	1,132.4	0.00	0.00	0.00
3,400.0	23.98	263.96	3,162.7	-123.5	-1,166.5	1,173.1	0.00	0.00	0.00
3,500.0	23.98	263.96	3,254.1	-127.7	-1,207.0	1,213.7	0.00	0.00	0.00
3,600.0	23.98	263.96	3,345.5	-132.0	-1,247.4	1,254.3	0.00	0.00	0.00
3,700.0	23.98	263.96	3,436.8	-136.3	-1,287.8	1,295.0	0.00	0.00	0.00
3,800.0	23.98	263.96	3,528.2	-140.6	-1,328.2	1,335.6	0.00	0.00	0.00
3,900.0	23.98	263.96	3,619.6	-144.9	-1,368.6	1,376.3	0.00	0.00	0.00
4,000.0	23.98	263.96	3,711.0	-149.1	-1,409.0	1,416.9	0.00	0.00	0.00
4,100.0	23.98	263.96	3,802.3	-153.4	-1,449.5	1,457.6	0.00	0.00	0.00
4,200.0	23.98	263.96	3,893.7	-157.7	-1,489.9	1,498.2	0.00	0.00	0.00
4,300.0	23.98	263.96	3,985.1	-162.0	-1,530.3	1,538.8	0.00	0.00	0.00
4,400.0	23.98	263.96	4,076.4	-166.2	-1,570.7	1,579.5	0.00	0.00	0.00
4,500.0	23.98	263.96	4,167.8	-170.5	-1,611.1	1,620.1	0.00	0.00	0.00
4,600.0	23.98	263.96	4,259.2	-174.8	-1,651.6	1,660.8	0.00	0.00	0.00
4,700.0	23.98	263.96	4,350.5	-179.1	-1,692.0	1,701.4	0.00	0.00	0.00
4,800.0	23.98	263.96	4,441.9	-183.4	-1,732.4	1,742.1	0.00	0.00	0.00
4,900.0	23.98	263.96	4,533.3	-187.6	-1,772.8	1,782.7	0.00	0.00	0.00

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<b>Well:</b>	TR 412-28-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.0	23.98	263.96	4,624.6	-191.9	-1,813.2	1,823.3	0.00	0.00	0.00
5,100.0	23.98	263.96	4,716.0	-196.2	-1,853.6	1,864.0	0.00	0.00	0.00
5,200.0	23.98	263.96	4,807.4	-200.5	-1,894.1	1,904.6	0.00	0.00	0.00
5,271.3	23.98	263.96	4,872.6	-203.5	-1,922.9	1,933.6	0.00	0.00	0.00
Start Drop -1.50									
5,300.0	23.55	263.96	4,898.8	-204.7	-1,934.4	1,945.2	1.50	-1.50	0.00
5,400.0	22.05	263.96	4,991.0	-208.8	-1,972.9	1,983.9	1.50	-1.50	0.00
5,500.0	20.55	263.96	5,084.1	-212.6	-2,009.0	2,020.3	1.50	-1.50	0.00
5,600.0	19.05	263.96	5,178.2	-216.2	-2,042.7	2,054.1	1.50	-1.50	0.00
5,700.0	17.55	263.96	5,273.2	-219.5	-2,073.9	2,085.5	1.50	-1.50	0.00
5,800.0	16.05	263.96	5,368.9	-222.6	-2,102.7	2,114.4	1.50	-1.50	0.00
5,900.0	14.55	263.96	5,465.3	-225.3	-2,128.9	2,140.8	1.50	-1.50	0.00
6,000.0	13.05	263.96	5,562.4	-227.8	-2,152.7	2,164.7	1.50	-1.50	0.00
6,100.0	11.55	263.96	5,660.1	-230.1	-2,173.8	2,186.0	1.50	-1.50	0.00
6,200.0	10.05	263.96	5,758.4	-232.1	-2,192.5	2,204.7	1.50	-1.50	0.00
6,300.0	8.55	263.96	5,857.1	-233.8	-2,208.5	2,220.9	1.50	-1.50	0.00
6,400.0	7.05	263.96	5,956.1	-235.2	-2,222.0	2,234.5	1.50	-1.50	0.00
6,500.0	5.55	263.96	6,055.5	-236.3	-2,233.0	2,245.4	1.50	-1.50	0.00
6,600.0	4.05	263.96	6,155.2	-237.2	-2,241.3	2,253.8	1.50	-1.50	0.00
6,700.0	2.55	263.96	6,255.0	-237.8	-2,247.0	2,259.6	1.50	-1.50	0.00
6,800.0	1.05	263.96	6,354.9	-238.2	-2,250.1	2,262.7	1.50	-1.50	0.00
6,870.1	0.00	0.00	6,425.0	-238.2	-2,250.8	2,263.3	1.50	-1.50	0.00
Start 2960.0 hold at 6870.1 MD									
6,900.0	0.00	0.00	6,454.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,554.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,100.0	0.00	0.00	6,654.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,754.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,300.0	0.00	0.00	6,854.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,400.0	0.00	0.00	6,954.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,054.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,154.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,700.0	0.00	0.00	7,254.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,354.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,454.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,554.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,100.0	0.00	0.00	7,654.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,200.0	0.00	0.00	7,754.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,300.0	0.00	0.00	7,854.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,400.0	0.00	0.00	7,954.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,054.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,600.0	0.00	0.00	8,154.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,700.0	0.00	0.00	8,254.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,800.0	0.00	0.00	8,354.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
8,900.0	0.00	0.00	8,454.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,000.0	0.00	0.00	8,554.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,100.0	0.00	0.00	8,654.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,200.0	0.00	0.00	8,754.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,300.0	0.00	0.00	8,854.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,400.0	0.00	0.00	8,954.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,500.0	0.00	0.00	9,054.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,600.0	0.00	0.00	9,154.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,700.0	0.00	0.00	9,254.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,800.0	0.00	0.00	9,354.9	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00
9,830.1	0.00	0.00	9,385.0	-238.2	-2,250.8	2,263.3	0.00	0.00	0.00

<b>Database:</b>	NN	<b>Local Co-ordinate Reference:</b>	Well TR 412-28-597 - Slot TR 412-28-597
<b>Company:</b>	Terra Energy Partners, LLP	<b>TVD Reference:</b>	RKB@ 30' @ 8513.0ft
<b>Project:</b>	Garfield County, CO (Nad 83)	<b>MD Reference:</b>	RKB@ 30' @ 8513.0ft
<b>Site:</b>	TR 32-28-597 Pad	<b>North Reference:</b>	True
<b>Well:</b>	TR 412-28-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD at 9830.1									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TR 412-28-597 VP	0.00	0.00	6,425.0	-238.2	-2,250.8	1,650,539.400	2,213,786.200	39.586375	-108.290032
- plan hits target center									
- Point									
TR 412-28-597 BHL	0.00	0.00	9,385.0	-238.2	-2,250.8	1,650,539.400	2,213,786.200	39.586375	-108.290032
- plan hits target center									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
3,158.4	2,942.0	9 5/8"	9-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.0	0.0	GRRV		0.00		
2,775.3	2,592.0	U WSCH		0.00		
4,563.7	4,226.0	G SAND		0.00		
4,759.6	4,405.0	FRUN		0.00		
5,954.3	5,518.0	OCRK		0.00		
6,552.7	6,108.0	UMVRD		0.00		
6,870.1	6,425.0	TOPGAS		0.00		
8,679.1	8,234.0	CME0		0.00		
8,949.1	8,504.0	RLNS		0.00		
9,136.1	8,691.0	CZZT		0.00		
9,364.1	8,919.0	CRCN		0.00		
9,514.1	9,069.0	SEGO		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
120.0	120.0	0.0	0.0	Start Build 3.00	
919.4	896.2	-17.4	-163.9	Start 4352.0 hold at 919.4 MD	
5,271.3	4,872.6	-203.5	-1,922.9	Start Drop -1.50	
6,870.1	6,425.0	-238.2	-2,250.8	Start 2960.0 hold at 6870.1 MD	
9,830.1	9,385.0	-238.2	-2,250.8	TD at 9830.1	