

# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**TR 23-22-597**

**TR 444-22-597 - Slot B8**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**25 July, 2017**

**N/A**  
Planning Report

<b>Database:</b>	EDM_PROD	<b>Local Co-ordinate Reference:</b>	Well TR 444-22-597 - Slot B8
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Site:</b>	TR 23-22-597	<b>North Reference:</b>	True
<b>Well:</b>	TR 444-22-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	Garfield County, CO NAD83		
<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		

Site		TR 23-22-597			
Site Position:		Northing:	1,653,700.36 ft	Latitude:	39° 35' 44.289 N
From:	Map	Easting:	2,220,890.08 ft	Longitude:	108° 15' 54.702 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.74 °

Well	TR 444-22-597 - Slot B8					
Well Position	+N/-S	-47.7 ft	Northing:	1,653,653.44 ft	Latitude:	39° 35' 43.818 N
	+E/-W	-24.1 ft	Easting:	2,220,864.59 ft	Longitude:	108° 15' 55.009 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	8,143.0 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2000	12/31/2004	11.59	66.02	53,045.89399764

<b>Design</b>	Plan #1			
<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	105.21

<b>Plan Survey Tool Program</b>	<b>Date</b>	7/25/2017		
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	9,950.4 Plan #1 (OH)	SDI MWD	
			SDI MWD - Standard ver 1.0.1	

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,116.5	23.00	105.21	1,096.1	-39.8	146.5	3.00	3.00	0.00	105.21	
5,887.3	23.00	105.21	5,487.7	-528.9	1,944.9	0.00	0.00	0.00	0.00	
7,420.4	0.00	0.00	6,980.0	-608.5	2,237.9	1.50	-1.50	0.00	180.00	
9,950.4	0.00	0.00	9,510.0	-608.5	2,237.9	0.00	0.00	0.00	0.00	TR_444-22-597-BHL

**N/A**  
Planning Report

<b>Database:</b>	EDM_PROD	<b>Local Co-ordinate Reference:</b>	Well TR 444-22-597 - Slot B8
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Site:</b>	TR 23-22-597	<b>North Reference:</b>	True
<b>Well:</b>	TR 444-22-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	1.50	105.21	400.0	-0.2	0.6	0.7	3.00	3.00	0.00
500.0	4.50	105.21	499.8	-1.5	5.7	5.9	3.00	3.00	0.00
600.0	7.50	105.21	599.3	-4.3	15.8	16.3	3.00	3.00	0.00
700.0	10.50	105.21	698.0	-8.4	30.9	32.0	3.00	3.00	0.00
800.0	13.50	105.21	795.8	-13.8	50.9	52.8	3.00	3.00	0.00
900.0	16.50	105.21	892.4	-20.6	75.9	78.6	3.00	3.00	0.00
1,000.0	19.50	105.21	987.5	-28.7	105.7	109.5	3.00	3.00	0.00
1,100.0	22.50	105.21	1,080.9	-38.1	140.3	145.4	3.00	3.00	0.00
1,116.5	23.00	105.21	1,096.1	-39.8	146.5	151.8	3.00	3.00	0.00
1,200.0	23.00	105.21	1,173.0	-48.4	177.9	184.4	0.00	0.00	0.00
1,300.0	23.00	105.21	1,265.0	-58.6	215.6	223.4	0.00	0.00	0.00
1,400.0	23.00	105.21	1,357.1	-68.9	253.3	262.5	0.00	0.00	0.00
1,500.0	23.00	105.21	1,449.1	-79.1	291.0	301.6	0.00	0.00	0.00
1,600.0	23.00	105.21	1,541.2	-89.4	328.7	340.6	0.00	0.00	0.00
1,700.0	23.00	105.21	1,633.2	-99.6	366.4	379.7	0.00	0.00	0.00
1,800.0	23.00	105.21	1,725.3	-109.9	404.1	418.8	0.00	0.00	0.00
1,900.0	23.00	105.21	1,817.3	-120.1	441.8	457.9	0.00	0.00	0.00
2,000.0	23.00	105.21	1,909.4	-130.4	479.5	496.9	0.00	0.00	0.00
2,100.0	23.00	105.21	2,001.4	-140.6	517.2	536.0	0.00	0.00	0.00
2,200.0	23.00	105.21	2,093.5	-150.9	554.9	575.1	0.00	0.00	0.00
2,300.0	23.00	105.21	2,185.5	-161.1	592.6	614.1	0.00	0.00	0.00
2,400.0	23.00	105.21	2,277.6	-171.4	630.3	653.2	0.00	0.00	0.00
2,500.0	23.00	105.21	2,369.6	-181.6	668.0	692.3	0.00	0.00	0.00
2,600.0	23.00	105.21	2,461.7	-191.9	705.7	731.3	0.00	0.00	0.00
2,700.0	23.00	105.21	2,553.8	-202.1	743.4	770.4	0.00	0.00	0.00
2,727.4	23.00	105.21	2,579.0	-205.0	753.7	781.1	0.00	0.00	0.00
<b>Wasatch</b>									
2,800.0	23.00	105.21	2,645.8	-212.4	781.1	809.5	0.00	0.00	0.00
2,827.0	23.00	105.21	2,670.7	-215.2	791.3	820.0	0.00	0.00	0.00
<b>9 5/8"</b>									
2,900.0	23.00	105.21	2,737.9	-222.6	818.8	848.5	0.00	0.00	0.00
3,000.0	23.00	105.21	2,829.9	-232.9	856.5	887.6	0.00	0.00	0.00
3,100.0	23.00	105.21	2,922.0	-243.1	894.2	926.7	0.00	0.00	0.00
3,200.0	23.00	105.21	3,014.0	-253.4	931.9	965.7	0.00	0.00	0.00
3,300.0	23.00	105.21	3,106.1	-263.6	969.6	1,004.8	0.00	0.00	0.00
3,400.0	23.00	105.21	3,198.1	-273.9	1,007.3	1,043.9	0.00	0.00	0.00
3,500.0	23.00	105.21	3,290.2	-284.1	1,045.0	1,082.9	0.00	0.00	0.00
3,600.0	23.00	105.21	3,382.2	-294.4	1,082.7	1,122.0	0.00	0.00	0.00
3,700.0	23.00	105.21	3,474.3	-304.7	1,120.4	1,161.1	0.00	0.00	0.00
3,800.0	23.00	105.21	3,566.3	-314.9	1,158.1	1,200.1	0.00	0.00	0.00
3,900.0	23.00	105.21	3,658.4	-325.2	1,195.8	1,239.2	0.00	0.00	0.00
4,000.0	23.00	105.21	3,750.4	-335.4	1,233.5	1,278.3	0.00	0.00	0.00
4,100.0	23.00	105.21	3,842.5	-345.7	1,271.2	1,317.3	0.00	0.00	0.00
4,200.0	23.00	105.21	3,934.6	-355.9	1,308.9	1,356.4	0.00	0.00	0.00
4,300.0	23.00	105.21	4,026.6	-366.2	1,346.6	1,395.5	0.00	0.00	0.00
4,400.0	23.00	105.21	4,118.7	-376.4	1,384.3	1,434.5	0.00	0.00	0.00
4,500.0	23.00	105.21	4,210.7	-386.7	1,422.0	1,473.6	0.00	0.00	0.00
4,562.2	23.00	105.21	4,268.0	-393.0	1,445.4	1,497.9	0.00	0.00	0.00

**N/A**  
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<b>Well:</b>	TR 444-22-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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)
<b>G Sand</b>									
4,587.2	23.00	105.21	4,291.0	-395.6	1,454.8	1,507.7	0.00	0.00	0.00
<b>G Sand Base</b>									
4,600.0	23.00	105.21	4,302.8	-396.9	1,459.7	1,512.7	0.00	0.00	0.00
4,700.0	23.00	105.21	4,394.8	-407.2	1,497.4	1,551.7	0.00	0.00	0.00
4,800.0	23.00	105.21	4,486.9	-417.4	1,535.1	1,590.8	0.00	0.00	0.00
4,900.0	23.00	105.21	4,578.9	-427.7	1,572.8	1,629.9	0.00	0.00	0.00
5,000.0	23.00	105.21	4,671.0	-437.9	1,610.5	1,668.9	0.00	0.00	0.00
5,100.0	23.00	105.21	4,763.0	-448.2	1,648.2	1,708.0	0.00	0.00	0.00
5,200.0	23.00	105.21	4,855.1	-458.4	1,685.8	1,747.1	0.00	0.00	0.00
5,300.0	23.00	105.21	4,947.1	-468.7	1,723.5	1,786.1	0.00	0.00	0.00
5,400.0	23.00	105.21	5,039.2	-478.9	1,761.2	1,825.2	0.00	0.00	0.00
5,408.5	23.00	105.21	5,047.0	-479.8	1,764.4	1,828.5	0.00	0.00	0.00
<b>Fort Union</b>									
5,500.0	23.00	105.21	5,131.2	-489.2	1,798.9	1,864.3	0.00	0.00	0.00
5,600.0	23.00	105.21	5,223.3	-499.4	1,836.6	1,903.3	0.00	0.00	0.00
5,700.0	23.00	105.21	5,315.4	-509.7	1,874.3	1,942.4	0.00	0.00	0.00
5,800.0	23.00	105.21	5,407.4	-519.9	1,912.0	1,981.5	0.00	0.00	0.00
5,887.3	23.00	105.21	5,487.7	-528.9	1,944.9	2,015.6	0.00	0.00	0.00
5,900.0	22.81	105.21	5,499.5	-530.2	1,949.7	2,020.5	1.50	-1.50	0.00
6,000.0	21.31	105.21	5,592.1	-540.0	1,986.0	2,058.1	1.50	-1.50	0.00
6,042.7	20.67	105.21	5,632.0	-544.0	2,000.7	2,073.3	1.50	-1.50	0.00
<b>Ohio Creek</b>									
6,100.0	19.81	105.21	5,685.8	-549.2	2,019.8	2,093.2	1.50	-1.50	0.00
6,200.0	18.31	105.21	5,780.3	-557.8	2,051.3	2,125.8	1.50	-1.50	0.00
6,280.5	17.10	105.21	5,857.0	-564.2	2,075.0	2,150.3	1.50	-1.50	0.00
<b>Upper MVRD</b>									
6,300.0	16.81	105.21	5,875.6	-565.7	2,080.4	2,156.0	1.50	-1.50	0.00
6,400.0	15.31	105.21	5,971.7	-573.0	2,107.1	2,183.6	1.50	-1.50	0.00
6,500.0	13.81	105.21	6,068.5	-579.6	2,131.4	2,208.8	1.50	-1.50	0.00
6,600.0	12.31	105.21	6,165.9	-585.5	2,153.2	2,231.4	1.50	-1.50	0.00
6,700.0	10.81	105.21	6,263.9	-590.7	2,172.5	2,251.4	1.50	-1.50	0.00
6,800.0	9.31	105.21	6,362.4	-595.3	2,189.4	2,268.8	1.50	-1.50	0.00
6,900.0	7.81	105.21	6,461.2	-599.2	2,203.7	2,283.7	1.50	-1.50	0.00
7,000.0	6.31	105.21	6,560.5	-602.5	2,215.6	2,296.0	1.50	-1.50	0.00
7,100.0	4.81	105.21	6,660.0	-605.0	2,224.9	2,305.7	1.50	-1.50	0.00
7,200.0	3.31	105.21	6,759.8	-606.8	2,231.7	2,312.8	1.50	-1.50	0.00
7,205.3	3.23	105.21	6,765.0	-606.9	2,232.0	2,313.1	1.50	-1.50	0.00
<b>Top Gas</b>									
7,300.0	1.81	105.21	6,859.7	-608.0	2,236.0	2,317.2	1.50	-1.50	0.00
7,400.0	0.31	105.21	6,959.6	-608.5	2,237.8	2,319.1	1.50	-1.50	0.00
7,420.4	0.00	0.00	6,980.0	-608.5	2,237.9	2,319.1	1.50	-1.50	0.00
7,500.0	0.00	0.00	7,059.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,159.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
7,700.0	0.00	0.00	7,259.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
7,800.0	0.00	0.00	7,359.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
7,900.0	0.00	0.00	7,459.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,000.0	0.00	0.00	7,559.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,100.0	0.00	0.00	7,659.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,200.0	0.00	0.00	7,759.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,300.0	0.00	0.00	7,859.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,400.0	0.00	0.00	7,959.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,500.0	0.00	0.00	8,059.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00

**N/A**  
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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Site:</b>	TR 23-22-597	<b>North Reference:</b>	True
<b>Well:</b>	TR 444-22-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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)
8,600.0	0.00	0.00	8,159.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,700.0	0.00	0.00	8,259.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,800.0	0.00	0.00	8,359.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
8,812.4	0.00	0.00	8,372.0	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
<b>Cameo</b>									
8,900.0	0.00	0.00	8,459.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,000.0	0.00	0.00	8,559.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,100.0	0.00	0.00	8,659.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,161.4	0.00	0.00	8,721.0	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
<b>Rollins</b>									
9,200.0	0.00	0.00	8,759.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,300.0	0.00	0.00	8,859.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,342.4	0.00	0.00	8,902.0	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
<b>Cozzette</b>									
9,400.0	0.00	0.00	8,959.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,500.0	0.00	0.00	9,059.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,571.4	0.00	0.00	9,131.0	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
<b>Corcoran</b>									
9,600.0	0.00	0.00	9,159.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,700.0	0.00	0.00	9,259.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,750.4	0.00	0.00	9,310.0	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
<b>Sego</b>									
9,800.0	0.00	0.00	9,359.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,900.0	0.00	0.00	9,459.6	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
9,950.4	0.00	0.00	9,510.0	-608.5	2,237.9	2,319.1	0.00	0.00	0.00
<b>TR_444-22-597-BHL</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TR_444-22-597-BHL	0.00	0.00	9,510.0	-608.5	2,237.9	1,652,977.10	2,223,082.89	39° 35' 37.803 N	108° 15' 26.422 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,827.0	2,670.7	9 5/8"	9.625	14.750	

**N/A**  
Planning Report

<b>Database:</b>	EDM_PROD	<b>Local Co-ordinate Reference:</b>	Well TR 444-22-597 - Slot B8
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 8167.0ft (Original Well Elev)
<b>Site:</b>	TR 23-22-597	<b>North Reference:</b>	True
<b>Well:</b>	TR 444-22-597	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,727.4	2,579.0	Wasatch		0.00		
4,562.2	4,268.0	G Sand		0.00		
4,587.2	4,291.0	G Sand Base		0.00		
5,408.5	5,047.0	Fort Union		0.00		
6,042.7	5,632.0	Ohio Creek		0.00		
6,280.5	5,857.0	Upper MVRD		0.00		
7,205.3	6,765.0	Top Gas		0.00		
8,812.4	8,372.0	Cameo		0.00		
9,161.4	8,721.0	Rollins		0.00		
9,342.4	8,902.0	Cozzette		0.00		
9,571.4	9,131.0	Corcoran		0.00		
9,750.4	9,310.0	Sego		0.00		