

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 321-26 - Slot A4

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 321-26 - Slot A4
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5658.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 321-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	PA 23-26 Pad				
Site Position:	Northing:	1,614,400.30 ft	Latitude:	39° 29' 39.674 N	
From: Map	Easting:	2,303,981.10 ft	Longitude:	107° 57' 59.978 W	
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.56 °

Well	PA 321-26 - Slot A4, A4					
Well Position	+N/-S	-0.9 ft	Northing:	1,614,400.02 ft	Latitude:	39° 29' 39.665 N
	+E/-W	-22.5 ft	Easting:	2,303,958.60 ft	Longitude:	107° 58' 0.265 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	5,637.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/19/2017	9.70	65.59	51,543.21623342

Design	Plan #1			
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	354.90

Plan Survey Tool Program	Date	7/10/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,235.7 Plan #1 (OH)	SDI MWD	
			SDI MWD - Standard ver 1.0.1	

Plan Sections										
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	
180.0	0.00	0.00	180.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,279.9	33.00	354.90	1,220.1	306.9	-27.4	3.00	3.00	0.00	354.90	
5,004.3	33.00	354.90	4,343.7	2,327.2	-207.6	0.00	0.00	0.00	0.00	
7,204.2	0.00	0.00	6,424.0	2,940.9	-262.3	1.50	-1.50	0.00	180.00	
9,236.2	0.00	0.00	8,456.0	2,940.9	-262.3	0.00	0.00	0.00	0.00	PBHL(PA 321-26)

N/A
Planning Report

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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 321-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.60	354.90	200.0	0.1	0.0	0.1	3.00	3.00	0.00
300.0	3.60	354.90	299.9	3.8	-0.3	3.8	3.00	3.00	0.00
400.0	6.60	354.90	399.5	12.6	-1.1	12.7	3.00	3.00	0.00
500.0	9.60	354.90	498.5	26.6	-2.4	26.7	3.00	3.00	0.00
600.0	12.60	354.90	596.6	45.8	-4.1	46.0	3.00	3.00	0.00
700.0	15.60	354.90	693.6	70.1	-6.3	70.4	3.00	3.00	0.00
800.0	18.60	354.90	789.2	99.4	-8.9	99.8	3.00	3.00	0.00
900.0	21.60	354.90	883.1	133.6	-11.9	134.1	3.00	3.00	0.00
1,000.0	24.60	354.90	975.0	172.7	-15.4	173.3	3.00	3.00	0.00
1,100.0	27.60	354.90	1,064.8	216.5	-19.3	217.3	3.00	3.00	0.00
9 5/8"									
1,200.0	30.60	354.90	1,152.2	264.9	-23.6	266.0	3.00	3.00	0.00
1,279.9	33.00	354.90	1,220.1	306.9	-27.4	308.1	3.00	3.00	0.00
1,300.0	33.00	354.90	1,237.0	317.7	-28.3	319.0	0.00	0.00	0.00
1,400.0	33.00	354.90	1,320.8	372.0	-33.2	373.5	0.00	0.00	0.00
1,500.0	33.00	354.90	1,404.7	426.2	-38.0	427.9	0.00	0.00	0.00
1,600.0	33.00	354.90	1,488.6	480.5	-42.9	482.4	0.00	0.00	0.00
1,700.0	33.00	354.90	1,572.4	534.7	-47.7	536.9	0.00	0.00	0.00
1,800.0	33.00	354.90	1,656.3	589.0	-52.5	591.3	0.00	0.00	0.00
1,900.0	33.00	354.90	1,740.2	643.2	-57.4	645.8	0.00	0.00	0.00
2,000.0	33.00	354.90	1,824.0	697.5	-62.2	700.2	0.00	0.00	0.00
2,100.0	33.00	354.90	1,907.9	751.7	-67.1	754.7	0.00	0.00	0.00
2,200.0	33.00	354.90	1,991.8	806.0	-71.9	809.2	0.00	0.00	0.00
2,300.0	33.00	354.90	2,075.6	860.2	-76.7	863.6	0.00	0.00	0.00
2,400.0	33.00	354.90	2,159.5	914.5	-81.6	918.1	0.00	0.00	0.00
2,500.0	33.00	354.90	2,243.4	968.7	-86.4	972.5	0.00	0.00	0.00
2,600.0	33.00	354.90	2,327.3	1,022.9	-91.2	1,027.0	0.00	0.00	0.00
2,700.0	33.00	354.90	2,411.1	1,077.2	-96.1	1,081.5	0.00	0.00	0.00
2,800.0	33.00	354.90	2,495.0	1,131.4	-100.9	1,135.9	0.00	0.00	0.00
2,900.0	33.00	354.90	2,578.9	1,185.7	-105.8	1,190.4	0.00	0.00	0.00
3,000.0	33.00	354.90	2,662.7	1,239.9	-110.6	1,244.9	0.00	0.00	0.00
3,100.0	33.00	354.90	2,746.6	1,294.2	-115.4	1,299.3	0.00	0.00	0.00
3,113.6	33.00	354.90	2,758.0	1,301.6	-116.1	1,306.7	0.00	0.00	0.00
Wasatch G									
3,185.1	33.00	354.90	2,818.0	1,340.4	-119.6	1,345.7	0.00	0.00	0.00
Wasatch G base									
3,200.0	33.00	354.90	2,830.5	1,348.4	-120.3	1,353.8	0.00	0.00	0.00
3,300.0	33.00	354.90	2,914.3	1,402.7	-125.1	1,408.2	0.00	0.00	0.00
3,400.0	33.00	354.90	2,998.2	1,456.9	-130.0	1,462.7	0.00	0.00	0.00
3,500.0	33.00	354.90	3,082.1	1,511.2	-134.8	1,517.2	0.00	0.00	0.00
3,600.0	33.00	354.90	3,165.9	1,565.4	-139.6	1,571.6	0.00	0.00	0.00
3,700.0	33.00	354.90	3,249.8	1,619.7	-144.5	1,626.1	0.00	0.00	0.00
3,800.0	33.00	354.90	3,333.7	1,673.9	-149.3	1,680.6	0.00	0.00	0.00
3,900.0	33.00	354.90	3,417.5	1,728.2	-154.2	1,735.0	0.00	0.00	0.00
4,000.0	33.00	354.90	3,501.4	1,782.4	-159.0	1,789.5	0.00	0.00	0.00
4,100.0	33.00	354.90	3,585.3	1,836.6	-163.8	1,843.9	0.00	0.00	0.00
4,200.0	33.00	354.90	3,669.2	1,890.9	-168.7	1,898.4	0.00	0.00	0.00
4,300.0	33.00	354.90	3,753.0	1,945.1	-173.5	1,952.9	0.00	0.00	0.00
4,400.0	33.00	354.90	3,836.9	1,999.4	-178.3	2,007.3	0.00	0.00	0.00
4,500.0	33.00	354.90	3,920.8	2,053.6	-183.2	2,061.8	0.00	0.00	0.00

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 321-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)	
4,600.0	33.00	354.90	4,004.6	2,107.9	-188.0	2,116.2	0.00	0.00	0.00	
4,700.0	33.00	354.90	4,088.5	2,162.1	-192.9	2,170.7	0.00	0.00	0.00	
4,800.0	33.00	354.90	4,172.4	2,216.4	-197.7	2,225.2	0.00	0.00	0.00	
4,900.0	33.00	354.90	4,256.2	2,270.6	-202.5	2,279.6	0.00	0.00	0.00	
5,000.0	33.00	354.90	4,340.1	2,324.9	-207.4	2,334.1	0.00	0.00	0.00	
5,004.3	33.00	354.90	4,343.7	2,327.2	-207.6	2,336.4	0.00	0.00	0.00	
5,100.0	31.56	354.90	4,424.6	2,378.1	-212.1	2,387.5	1.50	-1.50	0.00	
5,200.0	30.06	354.90	4,510.5	2,429.1	-216.7	2,438.8	1.50	-1.50	0.00	
5,300.0	28.56	354.90	4,597.7	2,477.9	-221.0	2,487.7	1.50	-1.50	0.00	
5,400.0	27.06	354.90	4,686.1	2,524.4	-225.2	2,534.4	1.50	-1.50	0.00	
5,500.0	25.56	354.90	4,775.8	2,568.5	-229.1	2,578.7	1.50	-1.50	0.00	
5,541.2	24.95	354.90	4,813.0	2,586.0	-230.7	2,596.3	1.50	-1.50	0.00	
Ohio Creek										
5,600.0	24.06	354.90	4,866.5	2,610.3	-232.8	2,620.7	1.50	-1.50	0.00	
5,700.0	22.56	354.90	4,958.4	2,649.7	-236.4	2,660.2	1.50	-1.50	0.00	
5,737.4	22.00	354.90	4,993.0	2,663.9	-237.6	2,674.4	1.50	-1.50	0.00	
Upper MVRD										
5,800.0	21.06	354.90	5,051.2	2,686.7	-239.7	2,697.4	1.50	-1.50	0.00	
5,900.0	19.56	354.90	5,145.0	2,721.3	-242.7	2,732.1	1.50	-1.50	0.00	
6,000.0	18.06	354.90	5,239.6	2,753.4	-245.6	2,764.4	1.50	-1.50	0.00	
6,100.0	16.56	354.90	5,335.1	2,783.1	-248.3	2,794.1	1.50	-1.50	0.00	
6,200.0	15.06	354.90	5,431.3	2,810.2	-250.7	2,821.4	1.50	-1.50	0.00	
6,300.0	13.56	354.90	5,528.2	2,834.8	-252.9	2,846.1	1.50	-1.50	0.00	
6,400.0	12.06	354.90	5,625.7	2,856.9	-254.8	2,868.3	1.50	-1.50	0.00	
6,500.0	10.56	354.90	5,723.8	2,876.5	-256.6	2,887.9	1.50	-1.50	0.00	
6,600.0	9.06	354.90	5,822.3	2,893.4	-258.1	2,904.9	1.50	-1.50	0.00	
6,700.0	7.56	354.90	5,921.3	2,907.8	-259.4	2,919.4	1.50	-1.50	0.00	
6,792.4	6.18	354.90	6,013.0	2,918.8	-260.4	2,930.4	1.50	-1.50	0.00	
Top of Gas										
6,800.0	6.06	354.90	6,020.6	2,919.7	-260.4	2,931.2	1.50	-1.50	0.00	
6,900.0	4.56	354.90	6,120.1	2,928.9	-261.3	2,940.5	1.50	-1.50	0.00	
7,000.0	3.06	354.90	6,219.9	2,935.5	-261.9	2,947.2	1.50	-1.50	0.00	
7,100.0	1.56	354.90	6,319.8	2,939.5	-262.2	2,951.2	1.50	-1.50	0.00	
7,200.0	0.06	354.90	6,419.8	2,940.9	-262.3	2,952.6	1.50	-1.50	0.00	
7,204.2	0.00	0.00	6,424.0	2,940.9	-262.3	2,952.6	1.50	-1.50	0.00	
7,300.0	0.00	0.00	6,519.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
7,400.0	0.00	0.00	6,619.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
7,500.0	0.00	0.00	6,719.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
7,600.0	0.00	0.00	6,819.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
7,700.0	0.00	0.00	6,919.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,019.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,119.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,219.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,319.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,419.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,300.0	0.00	0.00	7,519.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,373.2	0.00	0.00	7,593.0	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
Cameo										
8,400.0	0.00	0.00	7,619.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,500.0	0.00	0.00	7,719.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,600.0	0.00	0.00	7,819.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,700.0	0.00	0.00	7,919.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,019.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,119.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00	

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 321-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
9,000.0	0.00	0.00	8,219.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00
9,083.2	0.00	0.00	8,303.0	2,940.9	-262.3	2,952.6	0.00	0.00	0.00
RLNS									
9,100.0	0.00	0.00	8,319.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00
9,200.0	0.00	0.00	8,419.8	2,940.9	-262.3	2,952.6	0.00	0.00	0.00
9,236.2	0.00	0.00	8,456.0	2,940.9	-262.3	2,952.6	0.00	0.00	0.00
PBHL(PA 321-26)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(PA 321-26)	0.00	0.00	8,456.0	2,940.9	-262.3	1,617,347.00	2,303,776.20	39° 30' 8.732 N	107° 58' 3.612 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)		
1,100.0	1,064.8	9 5/8"	9.625	14.750		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,113.6	2,758.0	Wasatch G		0.00		
3,185.1	2,818.0	Wasatch G base		0.00		
5,541.2	4,813.0	Ohio Creek		0.00		
5,737.4	4,993.0	Upper MVRD		0.00		
6,792.4	6,013.0	Top of Gas		0.00		
8,373.2	7,593.0	Cameo		0.00		
9,083.2	8,303.0	RLNS		0.00		