

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 431-26 - Slot A8

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 431-26 - Slot A8
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 431-26	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 431-26 - Slot A8, A12					
Well Position	+N/-S	-2.1 ft	Northing:	1,614,399.60 ft	Latitude:	39° 29' 39.653 N
	+E/-W	-52.5 ft	Easting:	2,303,928.60 ft	Longitude:	107° 58' 0.647 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	51,543.20089829

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	27.78

Plan Survey Tool Program	Date	7/10/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,249.3 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	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,405.5	39.17	27.78	2,306.2	379.6	200.0	3.00	3.00	0.00	27.78	
4,836.0	39.17	27.78	4,190.6	1,737.7	915.5	0.00	0.00	0.00	0.00	
7,447.0	0.00	0.00	6,603.0	2,496.9	1,315.5	1.50	-1.50	0.00	180.00	
9,250.0	0.00	0.00	8,406.0	2,496.9	1,315.5	0.00	0.00	0.00	0.00	PBHL(PA 431-26)

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 431-26	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
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
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
1,200.0	3.00	27.78	1,200.0	2.3	1.2	2.6	3.00	3.00	0.00
1,300.0	6.00	27.78	1,299.6	9.3	4.9	10.5	3.00	3.00	0.00
1,400.0	9.00	27.78	1,398.8	20.8	11.0	23.5	3.00	3.00	0.00
1,500.0	12.00	27.78	1,497.1	36.9	19.5	41.7	3.00	3.00	0.00
1,600.0	15.00	27.78	1,594.3	57.6	30.3	65.1	3.00	3.00	0.00
1,700.0	18.00	27.78	1,690.2	82.7	43.6	93.5	3.00	3.00	0.00
1,800.0	21.00	27.78	1,784.4	112.2	59.1	126.9	3.00	3.00	0.00
1,900.0	24.00	27.78	1,876.8	146.1	77.0	165.1	3.00	3.00	0.00
2,000.0	27.00	27.78	1,967.1	184.2	97.0	208.2	3.00	3.00	0.00
2,100.0	30.00	27.78	2,054.9	226.4	119.3	255.9	3.00	3.00	0.00
2,200.0	33.00	27.78	2,140.2	272.6	143.6	308.1	3.00	3.00	0.00
2,300.0	36.00	27.78	2,222.6	322.7	170.0	364.8	3.00	3.00	0.00
2,400.0	39.00	27.78	2,301.9	376.6	198.4	425.6	3.00	3.00	0.00
2,405.5	39.17	27.78	2,306.2	379.6	200.0	429.1	3.00	3.00	0.00
2,500.0	39.17	27.78	2,379.5	432.4	227.8	488.8	0.00	0.00	0.00
2,600.0	39.17	27.78	2,457.0	488.3	257.3	551.9	0.00	0.00	0.00
2,700.0	39.17	27.78	2,534.5	544.2	286.7	615.1	0.00	0.00	0.00
2,730.3	39.17	27.78	2,558.0	561.1	295.6	634.2	0.00	0.00	0.00
Wasatch G									
2,800.0	39.17	27.78	2,612.1	600.1	316.1	678.2	0.00	0.00	0.00
2,807.7	39.17	27.78	2,618.0	604.3	318.4	683.1	0.00	0.00	0.00
Wasatch G Base									
2,900.0	39.17	27.78	2,689.6	655.9	345.6	741.4	0.00	0.00	0.00
3,000.0	39.17	27.78	2,767.1	711.8	375.0	804.6	0.00	0.00	0.00
3,100.0	39.17	27.78	2,844.7	767.7	404.4	867.7	0.00	0.00	0.00
3,200.0	39.17	27.78	2,922.2	823.6	433.9	930.9	0.00	0.00	0.00
3,300.0	39.17	27.78	2,999.7	879.4	463.3	994.0	0.00	0.00	0.00
3,400.0	39.17	27.78	3,077.3	935.3	492.8	1,057.2	0.00	0.00	0.00
3,500.0	39.17	27.78	3,154.8	991.2	522.2	1,120.3	0.00	0.00	0.00
3,600.0	39.17	27.78	3,232.3	1,047.1	551.6	1,183.5	0.00	0.00	0.00
3,700.0	39.17	27.78	3,309.9	1,102.9	581.1	1,246.6	0.00	0.00	0.00
3,800.0	39.17	27.78	3,387.4	1,158.8	610.5	1,309.8	0.00	0.00	0.00
3,900.0	39.17	27.78	3,464.9	1,214.7	639.9	1,373.0	0.00	0.00	0.00
4,000.0	39.17	27.78	3,542.5	1,270.6	669.4	1,436.1	0.00	0.00	0.00
4,100.0	39.17	27.78	3,620.0	1,326.4	698.8	1,499.3	0.00	0.00	0.00
4,200.0	39.17	27.78	3,697.5	1,382.3	728.3	1,562.4	0.00	0.00	0.00
4,300.0	39.17	27.78	3,775.1	1,438.2	757.7	1,625.6	0.00	0.00	0.00
4,400.0	39.17	27.78	3,852.6	1,494.1	787.1	1,688.7	0.00	0.00	0.00
4,500.0	39.17	27.78	3,930.1	1,549.9	816.6	1,751.9	0.00	0.00	0.00
4,600.0	39.17	27.78	4,007.6	1,605.8	846.0	1,815.0	0.00	0.00	0.00

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 431-26	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)
4,700.0	39.17	27.78	4,085.2	1,661.7	875.5	1,878.2	0.00	0.00	0.00
4,800.0	39.17	27.78	4,162.7	1,717.6	904.9	1,941.4	0.00	0.00	0.00
4,836.0	39.17	27.78	4,190.6	1,737.7	915.5	1,964.1	0.00	0.00	0.00
4,900.0	38.21	27.78	4,240.6	1,773.1	934.1	2,004.1	1.50	-1.50	0.00
5,000.0	36.71	27.78	4,320.0	1,826.9	962.5	2,064.9	1.50	-1.50	0.00
5,100.0	35.21	27.78	4,400.9	1,878.8	989.8	2,123.6	1.50	-1.50	0.00
5,200.0	33.71	27.78	4,483.4	1,928.9	1,016.2	2,180.2	1.50	-1.50	0.00
5,300.0	32.21	27.78	4,567.3	1,977.0	1,041.6	2,234.6	1.50	-1.50	0.00
5,400.0	30.71	27.78	4,652.6	2,023.2	1,065.9	2,286.8	1.50	-1.50	0.00
5,500.0	29.21	27.78	4,739.2	2,067.3	1,089.2	2,336.7	1.50	-1.50	0.00
5,527.2	28.80	27.78	4,763.0	2,079.0	1,095.3	2,349.9	1.50	-1.50	0.00
Ohio Creek									
5,600.0	27.71	27.78	4,827.1	2,109.5	1,111.4	2,384.3	1.50	-1.50	0.00
5,700.0	26.21	27.78	4,916.3	2,149.6	1,132.5	2,429.7	1.50	-1.50	0.00
5,729.7	25.76	27.78	4,943.0	2,161.1	1,138.6	2,442.7	1.50	-1.50	0.00
Upper MVRD									
5,800.0	24.71	27.78	5,006.6	2,187.6	1,152.5	2,472.7	1.50	-1.50	0.00
5,900.0	23.21	27.78	5,097.9	2,223.5	1,171.5	2,513.3	1.50	-1.50	0.00
6,000.0	21.71	27.78	5,190.4	2,257.3	1,189.3	2,551.5	1.50	-1.50	0.00
6,100.0	20.21	27.78	5,283.7	2,289.0	1,205.9	2,587.2	1.50	-1.50	0.00
6,200.0	18.71	27.78	5,378.0	2,318.4	1,221.5	2,620.5	1.50	-1.50	0.00
6,300.0	17.21	27.78	5,473.2	2,345.7	1,235.8	2,651.3	1.50	-1.50	0.00
6,400.0	15.71	27.78	5,569.1	2,370.8	1,249.0	2,679.7	1.50	-1.50	0.00
6,500.0	14.21	27.78	5,665.7	2,393.6	1,261.1	2,705.5	1.50	-1.50	0.00
6,600.0	12.71	27.78	5,762.9	2,414.2	1,271.9	2,728.7	1.50	-1.50	0.00
6,700.0	11.21	27.78	5,860.7	2,432.5	1,281.6	2,749.5	1.50	-1.50	0.00
6,800.0	9.71	27.78	5,959.1	2,448.6	1,290.0	2,767.6	1.50	-1.50	0.00
6,804.0	9.65	27.78	5,963.0	2,449.2	1,290.3	2,768.3	1.51	-1.51	0.00
Top of Gas									
6,900.0	8.21	27.78	6,057.9	2,462.3	1,297.3	2,783.2	1.50	-1.50	0.00
7,000.0	6.71	27.78	6,157.0	2,473.8	1,303.3	2,796.1	1.50	-1.50	0.00
7,100.0	5.21	27.78	6,256.5	2,483.0	1,308.2	2,806.5	1.50	-1.50	0.00
7,200.0	3.71	27.78	6,356.2	2,489.9	1,311.8	2,814.3	1.50	-1.50	0.00
7,300.0	2.21	27.78	6,456.0	2,494.4	1,314.2	2,819.4	1.50	-1.50	0.00
7,400.0	0.71	27.78	6,556.0	2,496.7	1,315.4	2,822.0	1.50	-1.50	0.00
7,447.0	0.00	0.00	6,603.0	2,496.9	1,315.5	2,822.3	1.50	-1.50	0.00
7,500.0	0.00	0.00	6,656.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
7,600.0	0.00	0.00	6,756.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
7,700.0	0.00	0.00	6,856.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
7,800.0	0.00	0.00	6,956.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,056.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,156.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,100.0	0.00	0.00	7,256.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,200.0	0.00	0.00	7,356.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,300.0	0.00	0.00	7,456.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,387.0	0.00	0.00	7,543.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
Cameo									
8,400.0	0.00	0.00	7,556.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,500.0	0.00	0.00	7,656.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,600.0	0.00	0.00	7,756.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,700.0	0.00	0.00	7,856.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,800.0	0.00	0.00	7,956.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
8,900.0	0.00	0.00	8,056.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00
9,000.0	0.00	0.00	8,156.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 431-26	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)	
9,097.0	0.00	0.00	8,253.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00	
RLNS										
9,100.0	0.00	0.00	8,256.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00	
9,200.0	0.00	0.00	8,356.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00	
9,250.0	0.00	0.00	8,406.0	2,496.9	1,315.5	2,822.3	0.00	0.00	0.00	
PBHL(PA 431-26)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
PBHL(PA 431-26)	0.00	0.00	8,406.0	2,496.9	1,315.5	1,616,859.90	2,305,311.40	39° 30' 4.331 N	107° 57' 43.864 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	1,100.0	9 5/8"	9.625	13.500		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,730.3	2,558.0	Wasatch G		0.00		
2,807.7	2,618.0	Wasatch G Base		0.00		
5,527.2	4,763.0	Ohio Creek		0.00		
5,729.7	4,943.0	Upper MVRD		0.00		
6,804.0	5,963.0	Top of Gas		0.00		
8,387.0	7,543.0	Cameo		0.00		
9,097.0	8,253.0	RLNS		0.00		