

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 424-13 - Slot B4

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 424-13 - Slot B4
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 6594.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 424-13	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 44-13			
Site Position:		Northing:	1,623,782.10 ft	Latitude: 39° 31' 14.301 N
From: Map		Easting:	2,311,231.60 ft	Longitude: 107° 56' 30.736 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.54 °

Well	PA 424-13 - Slot B4			
Well Position	+N/-S	-21.5 ft	Northing:	1,623,760.40 ft
	+E/-W	6.5 ft	Easting:	2,311,237.50 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	Latitude: 39° 31' 14.089 N
				Longitude: 107° 56' 30.654 W
				Ground Level: 6,570.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	11.43	66.02	53,064.30678729

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	251.19

Plan Survey Tool Program	Date	7/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,899.9 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	
135.0	0.00	0.00	135.0	0.0	0.0	0.00	0.00	0.00	0.00	
879.8	22.34	251.19	861.0	-46.2	-135.7	3.00	3.00	0.00	251.19	
5,950.3	22.34	251.19	5,550.9	-667.9	-1,960.3	0.00	0.00	0.00	0.00	
7,439.9	0.00	0.00	7,003.0	-760.4	-2,231.8	1.50	-1.50	0.00	180.00	
9,899.9	0.00	0.00	9,463.0	-760.4	-2,231.8	0.00	0.00	0.00	0.00	PA 424-13 TD

N/A
Planning Report

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Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 6594.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 424-13	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
135.0	0.00	0.00	135.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	1.95	251.19	200.0	-0.4	-1.0	1.1	3.00	3.00	0.00
300.0	4.95	251.19	299.8	-2.3	-6.7	7.1	3.00	3.00	0.00
400.0	7.95	251.19	399.2	-5.9	-17.4	18.4	3.00	3.00	0.00
500.0	10.95	251.19	497.8	-11.2	-32.9	34.8	3.00	3.00	0.00
600.0	13.95	251.19	595.4	-18.2	-53.3	56.3	3.00	3.00	0.00
700.0	16.95	251.19	691.8	-26.8	-78.5	83.0	3.00	3.00	0.00
800.0	19.95	251.19	786.6	-37.0	-108.5	114.6	3.00	3.00	0.00
879.8	22.34	251.19	861.0	-46.2	-135.7	143.4	3.00	3.00	0.00
900.0	22.34	251.19	879.7	-48.7	-143.0	151.1	0.00	0.00	0.00
1,000.0	22.34	251.19	972.2	-61.0	-179.0	189.1	0.00	0.00	0.00
1,100.0	22.34	251.19	1,064.7	-73.2	-215.0	227.1	0.00	0.00	0.00
9 5/8"									
1,200.0	22.34	251.19	1,157.2	-85.5	-251.0	265.1	0.00	0.00	0.00
1,300.0	22.34	251.19	1,249.7	-97.8	-286.9	303.1	0.00	0.00	0.00
1,400.0	22.34	251.19	1,342.2	-110.0	-322.9	341.2	0.00	0.00	0.00
1,500.0	22.34	251.19	1,434.7	-122.3	-358.9	379.2	0.00	0.00	0.00
1,600.0	22.34	251.19	1,527.2	-134.5	-394.9	417.2	0.00	0.00	0.00
1,700.0	22.34	251.19	1,619.7	-146.8	-430.9	455.2	0.00	0.00	0.00
1,800.0	22.34	251.19	1,712.2	-159.1	-466.9	493.2	0.00	0.00	0.00
1,900.0	22.34	251.19	1,804.7	-171.3	-502.8	531.2	0.00	0.00	0.00
2,000.0	22.34	251.19	1,897.2	-183.6	-538.8	569.2	0.00	0.00	0.00
2,100.0	22.34	251.19	1,989.7	-195.8	-574.8	607.3	0.00	0.00	0.00
2,200.0	22.34	251.19	2,082.2	-208.1	-610.8	645.3	0.00	0.00	0.00
2,300.0	22.34	251.19	2,174.6	-220.4	-646.8	683.3	0.00	0.00	0.00
2,400.0	22.34	251.19	2,267.1	-232.6	-682.8	721.3	0.00	0.00	0.00
2,500.0	22.34	251.19	2,359.6	-244.9	-718.8	759.3	0.00	0.00	0.00
2,600.0	22.34	251.19	2,452.1	-257.1	-754.7	797.3	0.00	0.00	0.00
2,700.0	22.34	251.19	2,544.6	-269.4	-790.7	835.4	0.00	0.00	0.00
2,800.0	22.34	251.19	2,637.1	-281.7	-826.7	873.4	0.00	0.00	0.00
2,900.0	22.34	251.19	2,729.6	-293.9	-862.7	911.4	0.00	0.00	0.00
3,000.0	22.34	251.19	2,822.1	-306.2	-898.7	949.4	0.00	0.00	0.00
3,100.0	22.34	251.19	2,914.6	-318.4	-934.7	987.4	0.00	0.00	0.00
3,200.0	22.34	251.19	3,007.1	-330.7	-970.6	1,025.4	0.00	0.00	0.00
3,300.0	22.34	251.19	3,099.6	-343.0	-1,006.6	1,063.4	0.00	0.00	0.00
3,400.0	22.34	251.19	3,192.1	-355.2	-1,042.6	1,101.5	0.00	0.00	0.00
3,500.0	22.34	251.19	3,284.6	-367.5	-1,078.6	1,139.5	0.00	0.00	0.00
3,589.1	22.34	251.19	3,367.0	-378.4	-1,110.7	1,173.4	0.00	0.00	0.00
G SAND									
3,600.0	22.34	251.19	3,377.0	-379.7	-1,114.6	1,177.5	0.00	0.00	0.00
3,689.7	22.34	251.19	3,460.0	-390.7	-1,146.8	1,211.6	0.00	0.00	0.00
G SAND BASE									
3,700.0	22.34	251.19	3,469.5	-392.0	-1,150.6	1,215.5	0.00	0.00	0.00
3,800.0	22.34	251.19	3,562.0	-404.3	-1,186.5	1,253.5	0.00	0.00	0.00
3,900.0	22.34	251.19	3,654.5	-416.5	-1,222.5	1,291.5	0.00	0.00	0.00
4,000.0	22.34	251.19	3,747.0	-428.8	-1,258.5	1,329.5	0.00	0.00	0.00
4,100.0	22.34	251.19	3,839.5	-441.0	-1,294.5	1,367.6	0.00	0.00	0.00
4,200.0	22.34	251.19	3,932.0	-453.3	-1,330.5	1,405.6	0.00	0.00	0.00
4,300.0	22.34	251.19	4,024.5	-465.5	-1,366.5	1,443.6	0.00	0.00	0.00
4,400.0	22.34	251.19	4,117.0	-477.8	-1,402.5	1,481.6	0.00	0.00	0.00
4,500.0	22.34	251.19	4,209.5	-490.1	-1,438.4	1,519.6	0.00	0.00	0.00

N/A
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Site:	PA 44-13	North Reference:	True
Well:	PA 424-13	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	22.34	251.19	4,302.0	-502.3	-1,474.4	1,557.6	0.00	0.00	0.00	
4,700.0	22.34	251.19	4,394.5	-514.6	-1,510.4	1,595.7	0.00	0.00	0.00	
4,800.0	22.34	251.19	4,487.0	-526.8	-1,546.4	1,633.7	0.00	0.00	0.00	
4,900.0	22.34	251.19	4,579.5	-539.1	-1,582.4	1,671.7	0.00	0.00	0.00	
5,000.0	22.34	251.19	4,671.9	-551.4	-1,618.4	1,709.7	0.00	0.00	0.00	
5,100.0	22.34	251.19	4,764.4	-563.6	-1,654.3	1,747.7	0.00	0.00	0.00	
5,200.0	22.34	251.19	4,856.9	-575.9	-1,690.3	1,785.7	0.00	0.00	0.00	
5,300.0	22.34	251.19	4,949.4	-588.1	-1,726.3	1,823.7	0.00	0.00	0.00	
5,400.0	22.34	251.19	5,041.9	-600.4	-1,762.3	1,861.8	0.00	0.00	0.00	
5,500.0	22.34	251.19	5,134.4	-612.7	-1,798.3	1,899.8	0.00	0.00	0.00	
5,600.0	22.34	251.19	5,226.9	-624.9	-1,834.3	1,937.8	0.00	0.00	0.00	
5,700.0	22.34	251.19	5,319.4	-637.2	-1,870.2	1,975.8	0.00	0.00	0.00	
5,800.0	22.34	251.19	5,411.9	-649.4	-1,906.2	2,013.8	0.00	0.00	0.00	
5,900.0	22.34	251.19	5,504.4	-661.7	-1,942.2	2,051.8	0.00	0.00	0.00	
5,950.3	22.34	251.19	5,550.9	-667.9	-1,960.3	2,071.0	0.00	0.00	0.00	
6,000.0	21.60	251.19	5,597.0	-673.9	-1,977.9	2,089.6	1.50	-1.50	0.00	
6,100.0	20.10	251.19	5,690.4	-685.3	-2,011.6	2,125.1	1.50	-1.50	0.00	
6,197.1	18.64	251.19	5,782.0	-695.7	-2,042.1	2,157.3	1.50	-1.50	0.00	
MVRD										
6,200.0	18.60	251.19	5,784.8	-696.0	-2,043.0	2,158.3	1.49	-1.49	0.00	
6,256.0	17.76	251.19	5,838.0	-701.7	-2,059.5	2,175.7	1.50	-1.50	0.00	
WFRK/UMVRD										
6,300.0	17.10	251.19	5,880.0	-705.9	-2,072.0	2,188.9	1.50	-1.50	0.00	
6,400.0	15.60	251.19	5,975.9	-715.0	-2,098.6	2,217.1	1.50	-1.50	0.00	
6,500.0	14.10	251.19	6,072.6	-723.3	-2,122.9	2,242.7	1.50	-1.50	0.00	
6,600.0	12.60	251.19	6,169.9	-730.7	-2,144.7	2,265.8	1.50	-1.50	0.00	
6,700.0	11.10	251.19	6,267.8	-737.3	-2,164.2	2,286.3	1.50	-1.50	0.00	
6,800.0	9.60	251.19	6,366.1	-743.1	-2,181.2	2,304.3	1.50	-1.50	0.00	
6,900.0	8.10	251.19	6,464.9	-748.1	-2,195.7	2,319.7	1.50	-1.50	0.00	
7,000.0	6.60	251.19	6,564.1	-752.2	-2,207.8	2,332.4	1.50	-1.50	0.00	
7,100.0	5.10	251.19	6,663.6	-755.5	-2,217.5	2,342.6	1.50	-1.50	0.00	
7,200.0	3.60	251.19	6,763.3	-757.9	-2,224.6	2,350.2	1.50	-1.50	0.00	
7,300.0	2.10	251.19	6,863.2	-759.5	-2,229.3	2,355.2	1.50	-1.50	0.00	
7,389.9	0.75	251.19	6,953.0	-760.2	-2,231.5	2,357.4	1.50	-1.50	0.00	
TOP GAS										
7,400.0	0.60	251.19	6,963.1	-760.3	-2,231.6	2,357.5	1.50	-1.50	0.00	
7,439.9	0.00	0.00	7,003.0	-760.4	-2,231.8	2,357.7	1.50	-1.50	0.00	
7,500.0	0.00	0.00	7,063.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,163.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,263.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,363.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,463.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,563.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,663.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,763.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,300.0	0.00	0.00	7,863.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,400.0	0.00	0.00	7,963.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,063.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,163.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,263.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,363.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
8,853.9	0.00	0.00	8,417.0	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	
CME0										
8,900.0	0.00	0.00	8,463.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00	

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 424-13 - Slot B4
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 6594.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 424-13	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	8,563.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,100.0	0.00	0.00	8,663.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,200.0	0.00	0.00	8,763.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,300.0	0.00	0.00	8,863.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,400.0	0.00	0.00	8,963.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,500.0	0.00	0.00	9,063.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,600.0	0.00	0.00	9,163.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,700.0	0.00	0.00	9,263.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,749.9	0.00	0.00	9,313.0	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
RLNS									
9,800.0	0.00	0.00	9,363.1	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
9,899.9	0.00	0.00	9,463.0	-760.4	-2,231.8	2,357.7	0.00	0.00	0.00
PA 424-13 TD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PA 424-13 TD - plan hits target center - Point	0.00	0.00	9,463.0	-760.4	-2,231.8	1,623,060.30	2,308,986.10	39° 31' 6.573 N	107° 56' 59.133 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,100.0	1,064.7	9 5/8"		9.625	13.500

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,589.1	3,367.0	G SAND		0.00		
3,689.7	3,460.0	G SAND BASE		0.00		
6,197.1	5,782.0	MVRD		0.00		
6,256.0	5,838.0	WFRK/UMVRD		0.00		
7,389.9	6,953.0	TOP GAS		0.00		
8,853.9	8,417.0	CME0		0.00		
9,749.9	9,313.0	RLNS		0.00		