

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 433-13 - Slot B8

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 433-13 - Slot B8
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 433-13	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 433-13 - Slot B8					
Well Position	+N/-S	7.2 ft	Northing:	1,623,789.40 ft	Latitude:	39° 31' 14.373 N
	+E/-W	-2.1 ft	Easting:	2,311,229.70 ft	Longitude:	107° 56' 30.763 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		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	53,064.34564962

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	313.07

Plan Survey Tool Program	Date	7/17/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	9,615.0	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	
165.0	0.00	0.00	165.0	0.0	0.0	0.00	0.00	0.00	0.00	
583.2	12.55	313.07	579.9	31.1	-33.3	3.00	3.00	0.00	313.07	
6,318.5	12.55	313.07	6,178.2	882.0	-943.5	0.00	0.00	0.00	0.00	
7,155.0	0.00	0.00	7,008.0	944.3	-1,010.1	1.50	-1.50	0.00	180.00	
9,615.0	0.00	0.00	9,468.0	944.3	-1,010.1	0.00	0.00	0.00	0.00	PA 433-13 TD

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 433-13	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
165.0	0.00	0.00	165.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	1.05	313.07	200.0	0.2	-0.2	0.3	3.00	3.00	0.00
300.0	4.05	313.07	299.9	3.3	-3.5	4.8	3.00	3.00	0.00
400.0	7.05	313.07	399.4	9.9	-10.5	14.4	3.00	3.00	0.00
500.0	10.05	313.07	498.3	20.0	-21.4	29.3	3.00	3.00	0.00
583.2	12.55	313.07	579.9	31.1	-33.3	45.6	3.00	3.00	0.00
600.0	12.55	313.07	596.3	33.6	-36.0	49.3	0.00	0.00	0.00
700.0	12.55	313.07	693.9	48.5	-51.9	71.0	0.00	0.00	0.00
800.0	12.55	313.07	791.5	63.3	-67.7	92.7	0.00	0.00	0.00
900.0	12.55	313.07	889.1	78.1	-83.6	114.4	0.00	0.00	0.00
1,000.0	12.55	313.07	986.7	93.0	-99.5	136.2	0.00	0.00	0.00
1,100.0	12.55	313.07	1,084.3	107.8	-115.3	157.9	0.00	0.00	0.00
9 5/8"									
1,200.0	12.55	313.07	1,181.9	122.6	-131.2	179.6	0.00	0.00	0.00
1,300.0	12.55	313.07	1,279.5	137.5	-147.1	201.3	0.00	0.00	0.00
1,400.0	12.55	313.07	1,377.2	152.3	-162.9	223.0	0.00	0.00	0.00
1,500.0	12.55	313.07	1,474.8	167.2	-178.8	244.8	0.00	0.00	0.00
1,600.0	12.55	313.07	1,572.4	182.0	-194.7	266.5	0.00	0.00	0.00
1,700.0	12.55	313.07	1,670.0	196.8	-210.6	288.2	0.00	0.00	0.00
1,800.0	12.55	313.07	1,767.6	211.7	-226.4	309.9	0.00	0.00	0.00
1,900.0	12.55	313.07	1,865.2	226.5	-242.3	331.7	0.00	0.00	0.00
2,000.0	12.55	313.07	1,962.8	241.3	-258.2	353.4	0.00	0.00	0.00
2,100.0	12.55	313.07	2,060.4	256.2	-274.0	375.1	0.00	0.00	0.00
2,200.0	12.55	313.07	2,158.1	271.0	-289.9	396.8	0.00	0.00	0.00
2,300.0	12.55	313.07	2,255.7	285.8	-305.8	418.6	0.00	0.00	0.00
2,400.0	12.55	313.07	2,353.3	300.7	-321.6	440.3	0.00	0.00	0.00
2,500.0	12.55	313.07	2,450.9	315.5	-337.5	462.0	0.00	0.00	0.00
2,600.0	12.55	313.07	2,548.5	330.3	-353.4	483.7	0.00	0.00	0.00
2,700.0	12.55	313.07	2,646.1	345.2	-369.3	505.5	0.00	0.00	0.00
2,800.0	12.55	313.07	2,743.7	360.0	-385.1	527.2	0.00	0.00	0.00
2,900.0	12.55	313.07	2,841.3	374.8	-401.0	548.9	0.00	0.00	0.00
3,000.0	12.55	313.07	2,939.0	389.7	-416.9	570.6	0.00	0.00	0.00
3,100.0	12.55	313.07	3,036.6	404.5	-432.7	592.4	0.00	0.00	0.00
3,200.0	12.55	313.07	3,134.2	419.4	-448.6	614.1	0.00	0.00	0.00
3,300.0	12.55	313.07	3,231.8	434.2	-464.5	635.8	0.00	0.00	0.00
3,400.0	12.55	313.07	3,329.4	449.0	-480.3	657.5	0.00	0.00	0.00
3,448.8	12.55	313.07	3,377.0	456.3	-488.1	668.1	0.00	0.00	0.00
G SAND									
3,500.0	12.55	313.07	3,427.0	463.9	-496.2	679.3	0.00	0.00	0.00
3,544.0	12.55	313.07	3,470.0	470.4	-503.2	688.8	0.00	0.00	0.00
G SAND BASE									
3,600.0	12.55	313.07	3,524.6	478.7	-512.1	701.0	0.00	0.00	0.00
3,700.0	12.55	313.07	3,622.2	493.5	-527.9	722.7	0.00	0.00	0.00
3,800.0	12.55	313.07	3,719.8	508.4	-543.8	744.4	0.00	0.00	0.00
3,900.0	12.55	313.07	3,817.5	523.2	-559.7	766.2	0.00	0.00	0.00
4,000.0	12.55	313.07	3,915.1	538.0	-575.6	787.9	0.00	0.00	0.00
4,100.0	12.55	313.07	4,012.7	552.9	-591.4	809.6	0.00	0.00	0.00
4,200.0	12.55	313.07	4,110.3	567.7	-607.3	831.3	0.00	0.00	0.00
4,300.0	12.55	313.07	4,207.9	582.5	-623.2	853.1	0.00	0.00	0.00
4,400.0	12.55	313.07	4,305.5	597.4	-639.0	874.8	0.00	0.00	0.00
4,500.0	12.55	313.07	4,403.1	612.2	-654.9	896.5	0.00	0.00	0.00

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 433-13	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	12.55	313.07	4,500.7	627.1	-670.8	918.2	0.00	0.00	0.00
4,700.0	12.55	313.07	4,598.4	641.9	-686.6	940.0	0.00	0.00	0.00
4,800.0	12.55	313.07	4,696.0	656.7	-702.5	961.7	0.00	0.00	0.00
4,900.0	12.55	313.07	4,793.6	671.6	-718.4	983.4	0.00	0.00	0.00
5,000.0	12.55	313.07	4,891.2	686.4	-734.3	1,005.1	0.00	0.00	0.00
5,100.0	12.55	313.07	4,988.8	701.2	-750.1	1,026.8	0.00	0.00	0.00
5,200.0	12.55	313.07	5,086.4	716.1	-766.0	1,048.6	0.00	0.00	0.00
5,300.0	12.55	313.07	5,184.0	730.9	-781.9	1,070.3	0.00	0.00	0.00
5,400.0	12.55	313.07	5,281.6	745.7	-797.7	1,092.0	0.00	0.00	0.00
5,500.0	12.55	313.07	5,379.3	760.6	-813.6	1,113.7	0.00	0.00	0.00
5,600.0	12.55	313.07	5,476.9	775.4	-829.5	1,135.5	0.00	0.00	0.00
5,700.0	12.55	313.07	5,574.5	790.2	-845.3	1,157.2	0.00	0.00	0.00
5,800.0	12.55	313.07	5,672.1	805.1	-861.2	1,178.9	0.00	0.00	0.00
5,900.0	12.55	313.07	5,769.7	819.9	-877.1	1,200.6	0.00	0.00	0.00
5,922.9	12.55	313.07	5,792.0	823.3	-880.7	1,205.6	0.00	0.00	0.00
MVRD									
5,980.2	12.55	313.07	5,848.0	831.8	-889.8	1,218.1	0.00	0.00	0.00
WFRK/UMVRD									
6,000.0	12.55	313.07	5,867.3	834.7	-893.0	1,222.4	0.00	0.00	0.00
6,100.0	12.55	313.07	5,964.9	849.6	-908.8	1,244.1	0.00	0.00	0.00
6,200.0	12.55	313.07	6,062.5	864.4	-924.7	1,265.8	0.00	0.00	0.00
6,300.0	12.55	313.07	6,160.1	879.3	-940.6	1,287.5	0.00	0.00	0.00
6,318.5	12.55	313.07	6,178.2	882.0	-943.5	1,291.6	0.00	0.00	0.00
6,400.0	11.32	313.07	6,257.9	893.5	-955.8	1,308.4	1.50	-1.50	0.00
6,500.0	9.82	313.07	6,356.2	906.0	-969.2	1,326.8	1.50	-1.50	0.00
6,600.0	8.32	313.07	6,455.0	916.8	-980.7	1,342.5	1.50	-1.50	0.00
6,700.0	6.82	313.07	6,554.1	925.8	-990.4	1,355.7	1.50	-1.50	0.00
6,800.0	5.32	313.07	6,653.5	933.0	-998.1	1,366.3	1.50	-1.50	0.00
6,900.0	3.82	313.07	6,753.2	938.5	-1,003.9	1,374.3	1.50	-1.50	0.00
7,000.0	2.32	313.07	6,853.1	942.1	-1,007.8	1,379.6	1.50	-1.50	0.00
7,100.0	0.82	313.07	6,953.0	944.0	-1,009.9	1,382.4	1.50	-1.50	0.00
7,110.0	0.68	313.07	6,963.0	944.1	-1,010.0	1,382.5	1.50	-1.50	0.00
TOP GAS									
7,155.0	0.00	0.00	7,008.0	944.3	-1,010.1	1,382.8	1.50	-1.50	0.00
7,200.0	0.00	0.00	7,053.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,300.0	0.00	0.00	7,153.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,253.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,500.0	0.00	0.00	7,353.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,600.0	0.00	0.00	7,453.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,700.0	0.00	0.00	7,553.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,800.0	0.00	0.00	7,653.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
7,900.0	0.00	0.00	7,753.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,000.0	0.00	0.00	7,853.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,100.0	0.00	0.00	7,953.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,200.0	0.00	0.00	8,053.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,300.0	0.00	0.00	8,153.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,400.0	0.00	0.00	8,253.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,500.0	0.00	0.00	8,353.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,574.0	0.00	0.00	8,427.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
CMEO									
8,600.0	0.00	0.00	8,453.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,700.0	0.00	0.00	8,553.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,800.0	0.00	0.00	8,653.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
8,900.0	0.00	0.00	8,753.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 433-13 - Slot B8
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 433-13	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	8,853.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,100.0	0.00	0.00	8,953.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,200.0	0.00	0.00	9,053.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,300.0	0.00	0.00	9,153.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,400.0	0.00	0.00	9,253.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,465.0	0.00	0.00	9,318.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
RLNS									
9,500.0	0.00	0.00	9,353.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,600.0	0.00	0.00	9,453.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
9,615.0	0.00	0.00	9,468.0	944.3	-1,010.1	1,382.8	0.00	0.00	0.00
PA 433-13 TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PA 433-13 TD	0.00	0.00	9,468.0	944.3	-1,010.1	1,624,760.50	2,310,245.30	39° 31' 23.706 N	107° 56' 43.654 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	1,084.3	9 5/8"	9.625	13.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,448.8	3,377.0	G SAND		0.00	
3,544.0	3,470.0	G SAND BASE		0.00	
5,922.9	5,792.0	MVRD		0.00	
5,980.2	5,848.0	WFRK/UMVRD		0.00	
7,110.0	6,963.0	TOP GAS		0.00	
8,574.0	8,427.0	CME0		0.00	
9,465.0	9,318.0	RLNS		0.00	