

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 334-13 - Slot A5

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 334-13 - Slot A5
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 334-13	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 334-13 - Slot A5			
Well Position	+N/-S	-11.5 ft	Northing:	1,623,770.20 ft
	+E/-W	13.9 ft	Easting:	2,311,245.20 ft
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	53,064.32556483

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	273.62

Plan Survey Tool Program	Date	7/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,529.5 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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
447.4	8.92	273.62	446.2	1.5	-23.1	3.00	3.00	0.00	273.62	
6,474.8	8.92	273.62	6,400.7	60.5	-955.9	0.00	0.00	0.00	0.00	
7,069.5	0.00	0.00	6,993.0	63.4	-1,002.0	1.50	-1.50	0.00	180.00	
9,529.5	0.00	0.00	9,453.0	63.4	-1,002.0	0.00	0.00	0.00	0.00	PA 334-13 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 334-13	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
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	1.50	273.62	200.0	0.0	-0.7	0.7	3.00	3.00	0.00
300.0	4.50	273.62	299.8	0.4	-5.9	5.9	3.00	3.00	0.00
400.0	7.50	273.62	399.3	1.0	-16.3	16.3	3.00	3.00	0.00
447.4	8.92	273.62	446.2	1.5	-23.1	23.1	3.00	3.00	0.00
500.0	8.92	273.62	498.2	2.0	-31.2	31.3	0.00	0.00	0.00
600.0	8.92	273.62	597.0	3.0	-46.7	46.8	0.00	0.00	0.00
700.0	8.92	273.62	695.7	3.9	-62.2	62.3	0.00	0.00	0.00
800.0	8.92	273.62	794.5	4.9	-77.6	77.8	0.00	0.00	0.00
900.0	8.92	273.62	893.3	5.9	-93.1	93.3	0.00	0.00	0.00
1,000.0	8.92	273.62	992.1	6.9	-108.6	108.8	0.00	0.00	0.00
1,100.0	8.92	273.62	1,090.9	7.8	-124.1	124.3	0.00	0.00	0.00
9 5/8"									
1,200.0	8.92	273.62	1,189.7	8.8	-139.5	139.8	0.00	0.00	0.00
1,300.0	8.92	273.62	1,288.5	9.8	-155.0	155.3	0.00	0.00	0.00
1,400.0	8.92	273.62	1,387.3	10.8	-170.5	170.8	0.00	0.00	0.00
1,500.0	8.92	273.62	1,486.1	11.8	-186.0	186.3	0.00	0.00	0.00
1,600.0	8.92	273.62	1,584.9	12.7	-201.4	201.8	0.00	0.00	0.00
1,700.0	8.92	273.62	1,683.7	13.7	-216.9	217.3	0.00	0.00	0.00
1,800.0	8.92	273.62	1,782.4	14.7	-232.4	232.9	0.00	0.00	0.00
1,900.0	8.92	273.62	1,881.2	15.7	-247.9	248.4	0.00	0.00	0.00
2,000.0	8.92	273.62	1,980.0	16.7	-263.3	263.9	0.00	0.00	0.00
2,100.0	8.92	273.62	2,078.8	17.6	-278.8	279.4	0.00	0.00	0.00
2,200.0	8.92	273.62	2,177.6	18.6	-294.3	294.9	0.00	0.00	0.00
2,300.0	8.92	273.62	2,276.4	19.6	-309.8	310.4	0.00	0.00	0.00
2,400.0	8.92	273.62	2,375.2	20.6	-325.2	325.9	0.00	0.00	0.00
2,500.0	8.92	273.62	2,474.0	21.6	-340.7	341.4	0.00	0.00	0.00
2,600.0	8.92	273.62	2,572.8	22.5	-356.2	356.9	0.00	0.00	0.00
2,700.0	8.92	273.62	2,671.6	23.5	-371.7	372.4	0.00	0.00	0.00
2,800.0	8.92	273.62	2,770.3	24.5	-387.1	387.9	0.00	0.00	0.00
2,900.0	8.92	273.62	2,869.1	25.5	-402.6	403.4	0.00	0.00	0.00
3,000.0	8.92	273.62	2,967.9	26.5	-418.1	418.9	0.00	0.00	0.00
3,100.0	8.92	273.62	3,066.7	27.4	-433.6	434.4	0.00	0.00	0.00
3,200.0	8.92	273.62	3,165.5	28.4	-449.1	450.0	0.00	0.00	0.00
3,300.0	8.92	273.62	3,264.3	29.4	-464.5	465.5	0.00	0.00	0.00
3,393.8	8.92	273.62	3,357.0	30.3	-479.0	480.0	0.00	0.00	0.00
G SAND									
3,400.0	8.92	273.62	3,363.1	30.4	-480.0	481.0	0.00	0.00	0.00
3,488.0	8.92	273.62	3,450.0	31.2	-493.6	494.6	0.00	0.00	0.00
G SAND BASE									
3,500.0	8.92	273.62	3,461.9	31.3	-495.5	496.5	0.00	0.00	0.00
3,600.0	8.92	273.62	3,560.7	32.3	-511.0	512.0	0.00	0.00	0.00
3,700.0	8.92	273.62	3,659.5	33.3	-526.4	527.5	0.00	0.00	0.00
3,800.0	8.92	273.62	3,758.3	34.3	-541.9	543.0	0.00	0.00	0.00
3,900.0	8.92	273.62	3,857.0	35.3	-557.4	558.5	0.00	0.00	0.00
4,000.0	8.92	273.62	3,955.8	36.2	-572.9	574.0	0.00	0.00	0.00
4,100.0	8.92	273.62	4,054.6	37.2	-588.3	589.5	0.00	0.00	0.00
4,200.0	8.92	273.62	4,153.4	38.2	-603.8	605.0	0.00	0.00	0.00
4,300.0	8.92	273.62	4,252.2	39.2	-619.3	620.5	0.00	0.00	0.00
4,400.0	8.92	273.62	4,351.0	40.2	-634.8	636.0	0.00	0.00	0.00
4,500.0	8.92	273.62	4,449.8	41.1	-650.2	651.5	0.00	0.00	0.00

N/A
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Well:	PA 334-13	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	8.92	273.62	4,548.6	42.1	-665.7	667.0	0.00	0.00	0.00
4,700.0	8.92	273.62	4,647.4	43.1	-681.2	682.6	0.00	0.00	0.00
4,800.0	8.92	273.62	4,746.2	44.1	-696.7	698.1	0.00	0.00	0.00
4,900.0	8.92	273.62	4,844.9	45.1	-712.1	713.6	0.00	0.00	0.00
5,000.0	8.92	273.62	4,943.7	46.0	-727.6	729.1	0.00	0.00	0.00
5,100.0	8.92	273.62	5,042.5	47.0	-743.1	744.6	0.00	0.00	0.00
5,200.0	8.92	273.62	5,141.3	48.0	-758.6	760.1	0.00	0.00	0.00
5,300.0	8.92	273.62	5,240.1	49.0	-774.0	775.6	0.00	0.00	0.00
5,400.0	8.92	273.62	5,338.9	50.0	-789.5	791.1	0.00	0.00	0.00
5,500.0	8.92	273.62	5,437.7	50.9	-805.0	806.6	0.00	0.00	0.00
5,600.0	8.92	273.62	5,536.5	51.9	-820.5	822.1	0.00	0.00	0.00
5,700.0	8.92	273.62	5,635.3	52.9	-835.9	837.6	0.00	0.00	0.00
5,800.0	8.92	273.62	5,734.1	53.9	-851.4	853.1	0.00	0.00	0.00
5,838.4	8.92	273.62	5,772.0	54.2	-857.4	859.1	0.00	0.00	0.00
MVRD									
5,895.1	8.92	273.62	5,828.0	54.8	-866.1	867.9	0.00	0.00	0.00
WFRK/UMVRD									
5,900.0	8.92	273.62	5,832.9	54.8	-866.9	868.6	0.00	0.00	0.00
6,000.0	8.92	273.62	5,931.6	55.8	-882.4	884.1	0.00	0.00	0.00
6,100.0	8.92	273.62	6,030.4	56.8	-897.9	899.6	0.00	0.00	0.00
6,200.0	8.92	273.62	6,129.2	57.8	-913.3	915.2	0.00	0.00	0.00
6,300.0	8.92	273.62	6,228.0	58.8	-928.8	930.7	0.00	0.00	0.00
6,400.0	8.92	273.62	6,326.8	59.7	-944.3	946.2	0.00	0.00	0.00
6,474.8	8.92	273.62	6,400.7	60.5	-955.9	957.8	0.00	0.00	0.00
6,500.0	8.54	273.62	6,425.6	60.7	-959.7	961.6	1.50	-1.50	0.00
6,600.0	7.04	273.62	6,524.7	61.6	-973.2	975.2	1.50	-1.50	0.00
6,700.0	5.54	273.62	6,624.1	62.3	-984.1	986.1	1.50	-1.50	0.00
6,800.0	4.04	273.62	6,723.7	62.8	-992.5	994.5	1.50	-1.50	0.00
6,900.0	2.54	273.62	6,823.6	63.2	-998.2	1,000.2	1.50	-1.50	0.00
7,000.0	1.04	273.62	6,923.5	63.4	-1,001.3	1,003.3	1.50	-1.50	0.00
7,019.5	0.75	273.62	6,943.0	63.4	-1,001.6	1,003.6	1.50	-1.50	0.00
TOP GAS									
7,069.5	0.00	0.00	6,993.0	63.4	-1,002.0	1,004.0	1.50	-1.50	0.00
7,100.0	0.00	0.00	7,023.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,123.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,223.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,323.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,423.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,523.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,623.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,723.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,823.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,923.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,023.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,123.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,223.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,323.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,483.5	0.00	0.00	8,407.0	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
CMEQ									
8,500.0	0.00	0.00	8,423.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,523.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,623.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,723.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,823.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 334-13 - Slot A5
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 334-13	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	8,923.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,023.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,123.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,223.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
9,379.5	0.00	0.00	9,303.0	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
RLNS									
9,400.0	0.00	0.00	9,323.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,423.5	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
9,529.5	0.00	0.00	9,453.0	63.4	-1,002.0	1,004.0	0.00	0.00	0.00
PA 334-13 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 334-13 TD - plan hits target center - Point	0.00	0.00	9,453.0	63.4	-1,002.0	1,623,860.50	2,310,245.30	39° 31' 14.814 N	107° 56' 43.345 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,100.0	1,090.9	9 5/8"		9.625	13.500

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,393.8	3,357.0	G SAND		0.00	
3,488.0	3,450.0	G SAND BASE		0.00	
5,838.4	5,772.0	MVRD		0.00	
5,895.1	5,828.0	WFRK/UMVRD		0.00	
7,019.5	6,943.0	TOP GAS		0.00	
8,483.5	8,407.0	CMEO		0.00	
9,379.5	9,303.0	RLNS		0.00	