

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 332-13 - Slot A10

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 332-13 - Slot A10
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 332-13	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 332-13 - Slot A10			
Well Position	+N/-S	24.4 ft	Northing:	1,623,806.40 ft
	+E/-W	3.2 ft	Easting:	2,311,235.50 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	53,064.37409567

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	337.50

Plan Survey Tool Program	Date	7/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,976.2 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	
876.4	22.24	337.50	857.9	131.3	-54.4	3.00	3.00	0.00	337.50	
6,693.5	22.24	337.50	6,242.2	2,165.4	-897.1	0.00	0.00	0.00	0.00	
8,176.2	0.00	0.00	7,688.0	2,427.9	-1,005.8	1.50	-1.50	0.00	180.00	
9,976.2	0.00	0.00	9,488.0	2,427.9	-1,005.8	0.00	0.00	0.00	0.00	PA 332-13 TD

N/A
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Site:	PA 44-13	North Reference:	True
Well:	PA 332-13	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	337.50	200.0	1.0	-0.4	1.1	3.00	3.00	0.00
300.0	4.95	337.50	299.8	6.6	-2.7	7.1	3.00	3.00	0.00
400.0	7.95	337.50	399.2	17.0	-7.0	18.4	3.00	3.00	0.00
500.0	10.95	337.50	497.8	32.1	-13.3	34.8	3.00	3.00	0.00
600.0	13.95	337.50	595.4	52.0	-21.6	56.3	3.00	3.00	0.00
700.0	16.95	337.50	691.8	76.6	-31.8	83.0	3.00	3.00	0.00
800.0	19.95	337.50	786.6	105.9	-43.9	114.6	3.00	3.00	0.00
876.4	22.24	337.50	857.9	131.3	-54.4	142.1	3.00	3.00	0.00
900.0	22.24	337.50	879.8	139.5	-57.8	151.0	0.00	0.00	0.00
1,000.0	22.24	337.50	972.3	174.5	-72.3	188.9	0.00	0.00	0.00
1,100.0	22.24	337.50	1,064.9	209.5	-86.8	226.7	0.00	0.00	0.00
9 5/8"									
1,200.0	22.24	337.50	1,157.4	244.4	-101.3	264.6	0.00	0.00	0.00
1,300.0	22.24	337.50	1,250.0	279.4	-115.8	302.4	0.00	0.00	0.00
1,400.0	22.24	337.50	1,342.6	314.4	-130.2	340.3	0.00	0.00	0.00
1,500.0	22.24	337.50	1,435.1	349.3	-144.7	378.1	0.00	0.00	0.00
1,600.0	22.24	337.50	1,527.7	384.3	-159.2	416.0	0.00	0.00	0.00
1,700.0	22.24	337.50	1,620.2	419.3	-173.7	453.8	0.00	0.00	0.00
1,800.0	22.24	337.50	1,712.8	454.3	-188.2	491.7	0.00	0.00	0.00
1,900.0	22.24	337.50	1,805.4	489.2	-202.7	529.5	0.00	0.00	0.00
2,000.0	22.24	337.50	1,897.9	524.2	-217.2	567.4	0.00	0.00	0.00
2,100.0	22.24	337.50	1,990.5	559.2	-231.6	605.2	0.00	0.00	0.00
2,200.0	22.24	337.50	2,083.1	594.1	-246.1	643.1	0.00	0.00	0.00
2,300.0	22.24	337.50	2,175.6	629.1	-260.6	680.9	0.00	0.00	0.00
2,400.0	22.24	337.50	2,268.2	664.1	-275.1	718.8	0.00	0.00	0.00
2,500.0	22.24	337.50	2,360.7	699.0	-289.6	756.6	0.00	0.00	0.00
2,600.0	22.24	337.50	2,453.3	734.0	-304.1	794.5	0.00	0.00	0.00
2,700.0	22.24	337.50	2,545.9	769.0	-318.6	832.3	0.00	0.00	0.00
2,800.0	22.24	337.50	2,638.4	803.9	-333.0	870.2	0.00	0.00	0.00
2,900.0	22.24	337.50	2,731.0	838.9	-347.5	908.0	0.00	0.00	0.00
3,000.0	22.24	337.50	2,823.5	873.9	-362.0	945.9	0.00	0.00	0.00
3,100.0	22.24	337.50	2,916.1	908.8	-376.5	983.7	0.00	0.00	0.00
3,200.0	22.24	337.50	3,008.7	943.8	-391.0	1,021.6	0.00	0.00	0.00
3,300.0	22.24	337.50	3,101.2	978.8	-405.5	1,059.4	0.00	0.00	0.00
3,400.0	22.24	337.50	3,193.8	1,013.7	-420.0	1,097.3	0.00	0.00	0.00
3,500.0	22.24	337.50	3,286.3	1,048.7	-434.4	1,135.1	0.00	0.00	0.00
3,600.0	22.24	337.50	3,378.9	1,083.7	-448.9	1,173.0	0.00	0.00	0.00
3,614.2	22.24	337.50	3,392.0	1,088.6	-451.0	1,178.3	0.00	0.00	0.00
G SAND									
3,700.0	22.24	337.50	3,471.5	1,118.6	-463.4	1,210.8	0.00	0.00	0.00
3,714.6	22.24	337.50	3,485.0	1,123.8	-465.5	1,216.4	0.00	0.00	0.00
G SAND BASE									
3,800.0	22.24	337.50	3,564.0	1,153.6	-477.9	1,248.7	0.00	0.00	0.00
3,900.0	22.24	337.50	3,656.6	1,188.6	-492.4	1,286.5	0.00	0.00	0.00
4,000.0	22.24	337.50	3,749.1	1,223.5	-506.9	1,324.4	0.00	0.00	0.00
4,100.0	22.24	337.50	3,841.7	1,258.5	-521.4	1,362.2	0.00	0.00	0.00
4,200.0	22.24	337.50	3,934.3	1,293.5	-535.8	1,400.1	0.00	0.00	0.00
4,300.0	22.24	337.50	4,026.8	1,328.4	-550.3	1,437.9	0.00	0.00	0.00
4,400.0	22.24	337.50	4,119.4	1,363.4	-564.8	1,475.8	0.00	0.00	0.00
4,500.0	22.24	337.50	4,211.9	1,398.4	-579.3	1,513.6	0.00	0.00	0.00

N/A
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Well:	PA 332-13	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	22.24	337.50	4,304.5	1,433.4	-593.8	1,551.5	0.00	0.00	0.00
4,700.0	22.24	337.50	4,397.1	1,468.3	-608.3	1,589.3	0.00	0.00	0.00
4,800.0	22.24	337.50	4,489.6	1,503.3	-622.8	1,627.2	0.00	0.00	0.00
4,900.0	22.24	337.50	4,582.2	1,538.3	-637.2	1,665.0	0.00	0.00	0.00
5,000.0	22.24	337.50	4,674.7	1,573.2	-651.7	1,702.9	0.00	0.00	0.00
5,100.0	22.24	337.50	4,767.3	1,608.2	-666.2	1,740.7	0.00	0.00	0.00
5,200.0	22.24	337.50	4,859.9	1,643.2	-680.7	1,778.6	0.00	0.00	0.00
5,300.0	22.24	337.50	4,952.4	1,678.1	-695.2	1,816.4	0.00	0.00	0.00
5,400.0	22.24	337.50	5,045.0	1,713.1	-709.7	1,854.3	0.00	0.00	0.00
5,500.0	22.24	337.50	5,137.5	1,748.1	-724.2	1,892.1	0.00	0.00	0.00
5,600.0	22.24	337.50	5,230.1	1,783.0	-738.7	1,930.0	0.00	0.00	0.00
5,700.0	22.24	337.50	5,322.7	1,818.0	-753.1	1,967.8	0.00	0.00	0.00
5,800.0	22.24	337.50	5,415.2	1,853.0	-767.6	2,005.7	0.00	0.00	0.00
5,900.0	22.24	337.50	5,507.8	1,887.9	-782.1	2,043.5	0.00	0.00	0.00
6,000.0	22.24	337.50	5,600.3	1,922.9	-796.6	2,081.4	0.00	0.00	0.00
6,100.0	22.24	337.50	5,692.9	1,957.9	-811.1	2,119.2	0.00	0.00	0.00
6,200.0	22.24	337.50	5,785.5	1,992.8	-825.6	2,157.1	0.00	0.00	0.00
6,223.3	22.24	337.50	5,807.0	2,001.0	-828.9	2,165.9	0.00	0.00	0.00
MVRD									
6,283.8	22.24	337.50	5,863.0	2,022.1	-837.7	2,188.8	0.00	0.00	0.00
WFRK/UMVRD									
6,300.0	22.24	337.50	5,878.0	2,027.8	-840.1	2,194.9	0.00	0.00	0.00
6,400.0	22.24	337.50	5,970.6	2,062.8	-854.5	2,232.8	0.00	0.00	0.00
6,500.0	22.24	337.50	6,063.1	2,097.7	-869.0	2,270.6	0.00	0.00	0.00
6,600.0	22.24	337.50	6,155.7	2,132.7	-883.5	2,308.5	0.00	0.00	0.00
6,693.5	22.24	337.50	6,242.2	2,165.4	-897.1	2,343.9	0.00	0.00	0.00
6,700.0	22.14	337.50	6,248.3	2,167.7	-898.0	2,346.3	1.50	-1.50	0.00
6,800.0	20.64	337.50	6,341.4	2,201.4	-912.0	2,382.8	1.50	-1.50	0.00
6,900.0	19.14	337.50	6,435.4	2,232.8	-925.0	2,416.8	1.50	-1.50	0.00
7,000.0	17.64	337.50	6,530.3	2,262.0	-937.1	2,448.4	1.50	-1.50	0.00
7,100.0	16.14	337.50	6,626.0	2,288.8	-948.2	2,477.4	1.50	-1.50	0.00
7,200.0	14.64	337.50	6,722.4	2,313.3	-958.3	2,504.0	1.50	-1.50	0.00
7,300.0	13.14	337.50	6,819.5	2,335.5	-967.5	2,528.0	1.50	-1.50	0.00
7,400.0	11.64	337.50	6,917.1	2,355.3	-975.7	2,549.4	1.50	-1.50	0.00
7,462.1	10.71	337.50	6,978.0	2,366.4	-980.3	2,561.5	1.50	-1.50	0.00
TOP GAS									
7,500.0	10.14	337.50	7,015.3	2,372.8	-983.0	2,568.3	1.50	-1.50	0.00
7,600.0	8.64	337.50	7,114.0	2,387.9	-989.2	2,584.7	1.50	-1.50	0.00
7,700.0	7.14	337.50	7,213.0	2,400.6	-994.5	2,598.4	1.50	-1.50	0.00
7,800.0	5.64	337.50	7,312.4	2,410.8	-998.7	2,609.5	1.50	-1.50	0.00
7,900.0	4.14	337.50	7,412.0	2,418.7	-1,002.0	2,618.1	1.50	-1.50	0.00
8,000.0	2.64	337.50	7,511.9	2,424.2	-1,004.3	2,624.0	1.50	-1.50	0.00
8,100.0	1.14	337.50	7,611.8	2,427.2	-1,005.5	2,627.3	1.50	-1.50	0.00
8,176.2	0.00	0.00	7,688.0	2,427.9	-1,005.8	2,628.0	1.50	-1.50	0.00
8,200.0	0.00	0.00	7,711.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,300.0	0.00	0.00	7,811.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,400.0	0.00	0.00	7,911.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,011.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,111.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,211.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,311.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,411.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
8,930.2	0.00	0.00	8,442.0	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
CMEQ									

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 332-13 - Slot A10
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 332-13	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	8,511.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,100.0	0.00	0.00	8,611.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,200.0	0.00	0.00	8,711.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,300.0	0.00	0.00	8,811.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,400.0	0.00	0.00	8,911.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,011.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,111.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,211.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,311.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,826.2	0.00	0.00	9,338.0	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
RLNS									
9,900.0	0.00	0.00	9,411.8	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
9,976.2	0.00	0.00	9,488.0	2,427.9	-1,005.8	2,628.0	0.00	0.00	0.00
PA 332-13 TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PA 332-13 TD	0.00	0.00	9,488.0	2,427.9	-1,005.8	1,626,260.50	2,310,295.30	39° 31' 38.539 N	107° 56' 43.532 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points						Casing Diameter (in)	Hole Diameter (in)
Measured Depth (ft)	Vertical Depth (ft)	Name					
1,100.0	1,064.9	9 5/8"				9.625	13.500

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,614.2	3,392.0	G SAND		0.00		
3,714.6	3,485.0	G SAND BASE		0.00		
6,223.3	5,807.0	MVRD		0.00		
6,283.8	5,863.0	WFRK/UMVRD		0.00		
7,462.1	6,978.0	TOP GAS		0.00		
8,930.2	8,442.0	CME0		0.00		
9,826.2	9,338.0	RLNS		0.00		