

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 532-13 - Slot A9

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 532-13 - Slot A9
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 532-13	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 532-13 - Slot A9			
Well Position	+N/-S	17.2 ft	Northing:	1,623,799.20 ft
	+E/-W	5.3 ft	Easting:	2,311,237.40 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	53,064.36442715

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	331.13

Plan Survey Tool Program	Date	7/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,820.9 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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
804.0	19.62	331.13	791.3	97.1	-53.6	3.00	3.00	0.00	331.13	
6,052.8	19.62	331.13	5,735.3	1,640.5	-904.7	0.00	0.00	0.00	0.00	
7,360.9	0.00	0.00	7,018.0	1,834.8	-1,011.8	1.50	-1.50	0.00	180.00	
9,820.9	0.00	0.00	9,478.0	1,834.8	-1,011.8	0.00	0.00	0.00	0.00	PA 532-13 TD

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 532-13 - Slot A9
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 532-13	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	331.13	200.0	0.6	-0.3	0.7	3.00	3.00	0.00
300.0	4.50	331.13	299.8	5.2	-2.8	5.9	3.00	3.00	0.00
400.0	7.50	331.13	399.3	14.3	-7.9	16.3	3.00	3.00	0.00
500.0	10.50	331.13	498.0	28.0	-15.4	32.0	3.00	3.00	0.00
600.0	13.50	331.13	595.8	46.2	-25.5	52.8	3.00	3.00	0.00
700.0	16.50	331.13	692.4	68.9	-38.0	78.6	3.00	3.00	0.00
800.0	19.50	331.13	787.5	95.9	-52.9	109.5	3.00	3.00	0.00
804.0	19.62	331.13	791.3	97.1	-53.6	110.9	3.00	3.00	0.00
900.0	19.62	331.13	881.7	125.3	-69.1	143.1	0.00	0.00	0.00
1,000.0	19.62	331.13	975.9	154.7	-85.3	176.7	0.00	0.00	0.00
1,100.0	19.62	331.13	1,070.1	184.1	-101.5	210.3	0.00	0.00	0.00
9 5/8"									
1,200.0	19.62	331.13	1,164.3	213.5	-117.8	243.9	0.00	0.00	0.00
1,300.0	19.62	331.13	1,258.5	243.0	-134.0	277.4	0.00	0.00	0.00
1,400.0	19.62	331.13	1,352.7	272.4	-150.2	311.0	0.00	0.00	0.00
1,500.0	19.62	331.13	1,446.9	301.8	-166.4	344.6	0.00	0.00	0.00
1,600.0	19.62	331.13	1,541.1	331.2	-182.6	378.2	0.00	0.00	0.00
1,700.0	19.62	331.13	1,635.3	360.6	-198.8	411.8	0.00	0.00	0.00
1,800.0	19.62	331.13	1,729.5	390.0	-215.1	445.3	0.00	0.00	0.00
1,900.0	19.62	331.13	1,823.7	419.4	-231.3	478.9	0.00	0.00	0.00
2,000.0	19.62	331.13	1,917.8	448.8	-247.5	512.5	0.00	0.00	0.00
2,100.0	19.62	331.13	2,012.0	478.2	-263.7	546.1	0.00	0.00	0.00
2,200.0	19.62	331.13	2,106.2	507.6	-279.9	579.7	0.00	0.00	0.00
2,300.0	19.62	331.13	2,200.4	537.0	-296.1	613.2	0.00	0.00	0.00
2,400.0	19.62	331.13	2,294.6	566.4	-312.3	646.8	0.00	0.00	0.00
2,500.0	19.62	331.13	2,388.8	595.8	-328.6	680.4	0.00	0.00	0.00
2,600.0	19.62	331.13	2,483.0	625.2	-344.8	714.0	0.00	0.00	0.00
2,700.0	19.62	331.13	2,577.2	654.6	-361.0	747.6	0.00	0.00	0.00
2,800.0	19.62	331.13	2,671.4	684.0	-377.2	781.1	0.00	0.00	0.00
2,900.0	19.62	331.13	2,765.6	713.4	-393.4	814.7	0.00	0.00	0.00
3,000.0	19.62	331.13	2,859.8	742.8	-409.6	848.3	0.00	0.00	0.00
3,100.0	19.62	331.13	2,954.0	772.3	-425.9	881.9	0.00	0.00	0.00
3,200.0	19.62	331.13	3,048.2	801.7	-442.1	915.5	0.00	0.00	0.00
3,300.0	19.62	331.13	3,142.4	831.1	-458.3	949.0	0.00	0.00	0.00
3,400.0	19.62	331.13	3,236.6	860.5	-474.5	982.6	0.00	0.00	0.00
3,500.0	19.62	331.13	3,330.8	889.9	-490.7	1,016.2	0.00	0.00	0.00
3,554.4	19.62	331.13	3,382.0	905.9	-499.5	1,034.5	0.00	0.00	0.00
G SAND									
3,600.0	19.62	331.13	3,424.9	919.3	-506.9	1,049.8	0.00	0.00	0.00
3,653.1	19.62	331.13	3,475.0	934.9	-515.6	1,067.6	0.00	0.00	0.00
G SAND BASE									
3,700.0	19.62	331.13	3,519.1	948.7	-523.1	1,083.4	0.00	0.00	0.00
3,800.0	19.62	331.13	3,613.3	978.1	-539.4	1,117.0	0.00	0.00	0.00
3,900.0	19.62	331.13	3,707.5	1,007.5	-555.6	1,150.5	0.00	0.00	0.00
4,000.0	19.62	331.13	3,801.7	1,036.9	-571.8	1,184.1	0.00	0.00	0.00
4,100.0	19.62	331.13	3,895.9	1,066.3	-588.0	1,217.7	0.00	0.00	0.00
4,200.0	19.62	331.13	3,990.1	1,095.7	-604.2	1,251.3	0.00	0.00	0.00
4,300.0	19.62	331.13	4,084.3	1,125.1	-620.4	1,284.9	0.00	0.00	0.00
4,400.0	19.62	331.13	4,178.5	1,154.5	-636.7	1,318.4	0.00	0.00	0.00
4,500.0	19.62	331.13	4,272.7	1,183.9	-652.9	1,352.0	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 532-13 - Slot A9
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 532-13	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	19.62	331.13	4,366.9	1,213.3	-669.1	1,385.6	0.00	0.00	0.00
4,700.0	19.62	331.13	4,461.1	1,242.7	-685.3	1,419.2	0.00	0.00	0.00
4,800.0	19.62	331.13	4,555.3	1,272.1	-701.5	1,452.8	0.00	0.00	0.00
4,900.0	19.62	331.13	4,649.5	1,301.6	-717.7	1,486.3	0.00	0.00	0.00
5,000.0	19.62	331.13	4,743.7	1,331.0	-734.0	1,519.9	0.00	0.00	0.00
5,100.0	19.62	331.13	4,837.8	1,360.4	-750.2	1,553.5	0.00	0.00	0.00
5,200.0	19.62	331.13	4,932.0	1,389.8	-766.4	1,587.1	0.00	0.00	0.00
5,300.0	19.62	331.13	5,026.2	1,419.2	-782.6	1,620.7	0.00	0.00	0.00
5,400.0	19.62	331.13	5,120.4	1,448.6	-798.8	1,654.2	0.00	0.00	0.00
5,500.0	19.62	331.13	5,214.6	1,478.0	-815.0	1,687.8	0.00	0.00	0.00
5,600.0	19.62	331.13	5,308.8	1,507.4	-831.2	1,721.4	0.00	0.00	0.00
5,700.0	19.62	331.13	5,403.0	1,536.8	-847.5	1,755.0	0.00	0.00	0.00
5,800.0	19.62	331.13	5,497.2	1,566.2	-863.7	1,788.6	0.00	0.00	0.00
5,900.0	19.62	331.13	5,591.4	1,595.6	-879.9	1,822.1	0.00	0.00	0.00
6,000.0	19.62	331.13	5,685.6	1,625.0	-896.1	1,855.7	0.00	0.00	0.00
6,052.8	19.62	331.13	5,735.3	1,640.5	-904.7	1,873.4	0.00	0.00	0.00
6,100.0	18.91	331.13	5,779.9	1,654.2	-912.2	1,889.0	1.50	-1.50	0.00
6,118.1	18.64	331.13	5,797.0	1,659.3	-915.0	1,894.8	1.50	-1.50	0.00
MVRD									
6,177.0	17.76	331.13	5,853.0	1,675.4	-923.9	1,913.3	1.50	-1.50	0.00
WFRK/UMVRD									
6,200.0	17.41	331.13	5,874.9	1,681.5	-927.2	1,920.2	1.50	-1.50	0.00
6,300.0	15.91	331.13	5,970.7	1,706.6	-941.1	1,948.9	1.50	-1.50	0.00
6,400.0	14.41	331.13	6,067.2	1,729.5	-953.7	1,975.0	1.50	-1.50	0.00
6,500.0	12.91	331.13	6,164.4	1,750.2	-965.1	1,998.6	1.50	-1.50	0.00
6,600.0	11.41	331.13	6,262.1	1,768.6	-975.3	2,019.7	1.50	-1.50	0.00
6,700.0	9.91	331.13	6,360.4	1,784.8	-984.2	2,038.2	1.50	-1.50	0.00
6,800.0	8.41	331.13	6,459.1	1,798.8	-991.9	2,054.1	1.50	-1.50	0.00
6,900.0	6.91	331.13	6,558.2	1,810.5	-998.4	2,067.5	1.50	-1.50	0.00
7,000.0	5.41	331.13	6,657.6	1,819.9	-1,003.5	2,078.2	1.50	-1.50	0.00
7,100.0	3.91	331.13	6,757.3	1,827.0	-1,007.5	2,086.3	1.50	-1.50	0.00
7,200.0	2.41	331.13	6,857.2	1,831.8	-1,010.1	2,091.9	1.50	-1.50	0.00
7,300.0	0.91	331.13	6,957.1	1,834.3	-1,011.5	2,094.8	1.50	-1.50	0.00
7,310.9	0.75	331.13	6,968.0	1,834.5	-1,011.6	2,094.9	1.50	-1.50	0.00
TOP GAS									
7,360.9	0.00	0.00	7,018.0	1,834.8	-1,011.8	2,095.3	1.50	-1.50	0.00
7,400.0	0.00	0.00	7,057.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,157.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,257.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
7,700.0	0.00	0.00	7,357.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,457.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,557.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,657.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,100.0	0.00	0.00	7,757.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,200.0	0.00	0.00	7,857.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,300.0	0.00	0.00	7,957.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,400.0	0.00	0.00	8,057.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,157.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,600.0	0.00	0.00	8,257.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,700.0	0.00	0.00	8,357.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,774.9	0.00	0.00	8,432.0	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
CME0									
8,800.0	0.00	0.00	8,457.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
8,900.0	0.00	0.00	8,557.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 532-13 - Slot A9
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 532-13	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	8,657.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,100.0	0.00	0.00	8,757.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,200.0	0.00	0.00	8,857.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,300.0	0.00	0.00	8,957.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,400.0	0.00	0.00	9,057.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,500.0	0.00	0.00	9,157.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,600.0	0.00	0.00	9,257.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,670.9	0.00	0.00	9,328.0	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
RLNS									
9,700.0	0.00	0.00	9,357.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,800.0	0.00	0.00	9,457.1	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
9,820.9	0.00	0.00	9,478.0	1,834.8	-1,011.8	2,095.3	0.00	0.00	0.00
PA 532-13 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 532-13 TD - plan hits target center - Point	0.00	0.00	9,478.0	1,834.8	-1,011.8	1,625,660.50	2,310,275.30	39° 31' 32.606 N	107° 56' 43.581 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.0	1,070.1	9 5/8"	9.625	13.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,554.4	3,382.0	G SAND		0.00		
3,653.1	3,475.0	G SAND BASE		0.00		
6,118.1	5,797.0	MVRD		0.00		
6,177.0	5,853.0	WFRK/UMVRD		0.00		
7,310.9	6,968.0	TOP GAS		0.00		
8,774.9	8,432.0	CME0		0.00		
9,670.9	9,328.0	RLNS		0.00		